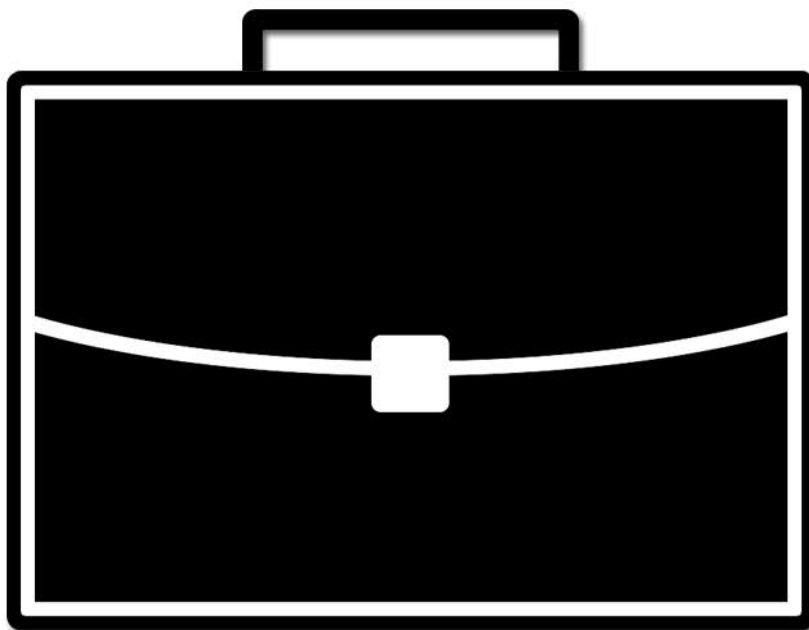


Champion Briefs

February 2024

Public Forum Brief



Resolved: The United States federal government should ban single-use plastics.

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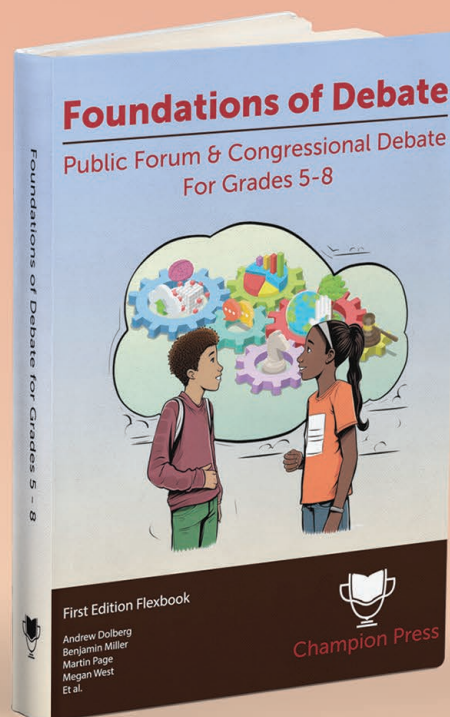
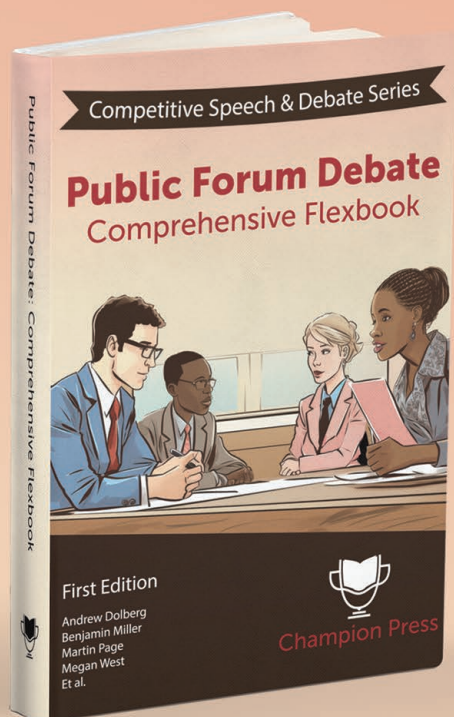
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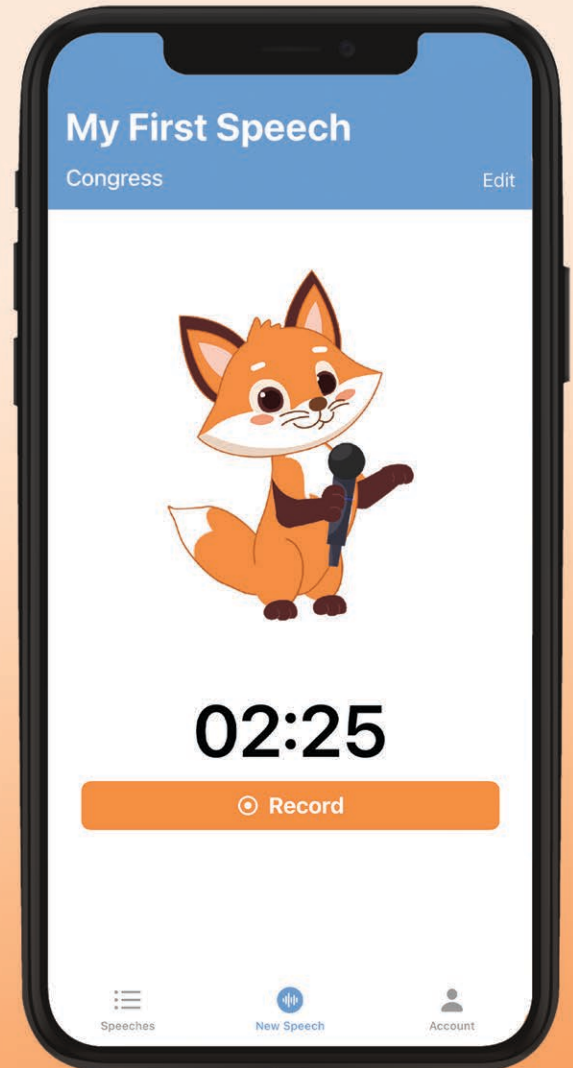
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These seven statements, while simple, represent the complex notion of what it means to advance students' understanding of the world around them, as is the purpose of educators.

Letter from the Editor

It is often said that global issues are also local issues. Nowhere is this truer than in the debate about single-use plastics. On the one hand, plastics are an intercontinental multi-billion-dollar industry that involves advanced materials science, manufacturing, logistics, and economics. They have effects on climate change, ecological sustainability, and innovation. On the other hand, plastics are often consumed by individuals, who make choices about what types of bags, straws, and packaging materials to use. Every day, we make choices about how to balance competing values of sustainability, flexibility, and convenience.

This topic contemplates a nationwide policy direction about single-use plastics. Debaters must toggle between global and local frameworks to make persuasive arguments. Judges will come to the table with policy perspectives and lived experiences that inform their predisposition. Students should not be lulled into a false sense of security that this topic will be straightforward and simple compared to other recent topics about more niche national and global issues. The relatively non-threatening nature of the topic belies its true complexity.

This topic promises debaters an opportunity to inform their perspective on an issue that could actually impact their daily lives. Students should take extra time to consider how arguments on this topic might compel them to behave as individuals and citizens. Many initiatives regarding plastics happen on the personal, family, or community level. As such, young people are in an important position of conscience and authority to guide real change. Students should remember that although the round is over, the issues animating the debate continue.

Jakob Urda
Editor-in-Chief

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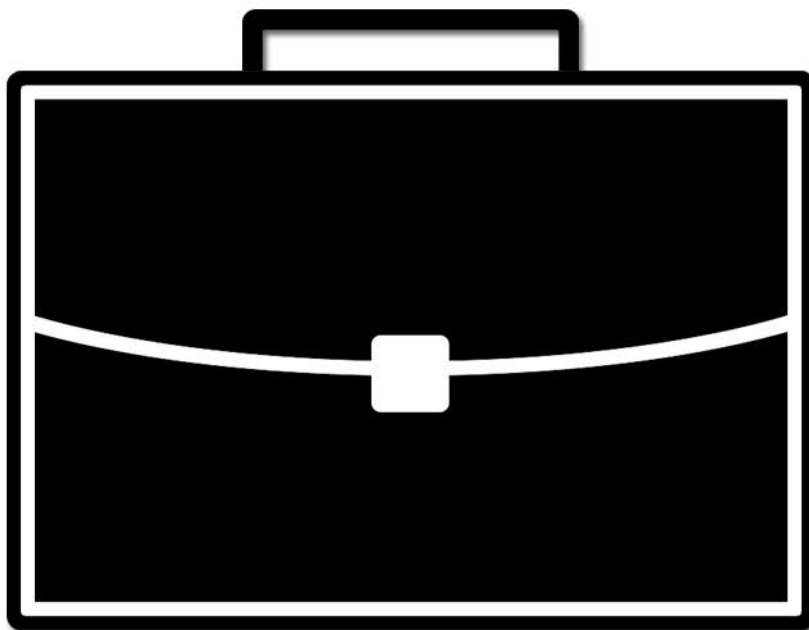
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Topic Analyses

Topic Analysis by Jakob Urda

Resolved: The United States federal government should ban single-use plastics.

Introduction

The February topic offers a narrow topic on a specific public policy issue. It will force debaters to combine big-picture thematic analysis with granular insights on the proposal. The big-picture issue is environmental conservation—how human activities damage and diminish the natural world. This substantial challenge spans multiple sub-issues, from climate change to pesticide use. The granular issue is the public policy wisdom of combating single-use plastics through a ban. This requires debaters to look at tradeoffs, political capital, alternative solvency, and a whole host of other public policy frameworks to make their argument. The apparent simplicity of the resolution belies an exciting variety of arguments and narratives for debaters to engage in.

Single-use plastics implicate the tension between consumerism and environmental protection. There are a variety of circumstances where economic activity and consumer preferences collide with sustainability and environmental consciousness. At a high level of generality, almost all human activity reflects a preference that overrides the environmental benefit of inaction. Nevertheless, single-use plastics occupy a particularly salient place in the firmament of environmental causes. Their particular resilience to degradation and ubiquity in the storefront makes them a hyper-visible example of the human footprint on the natural world.

The best teams will draw persuasive analogies to other environmental protection efforts. Few judges would disagree that the United States and the rest of the world acted appropriately by banning the use of chlorofluorocarbons in order to protect the ozone layer of the atmosphere. That decision conferred immense environmental benefits at negligible economic cost. However, judges might recoil at the thought of banning more commonplace products and services, such as air travel or combustion engines, because of the high degree of social reliance on them. Smart teams will be able to focus the round on favorable analogies to prime the judges to agree with them on single-use plastics.

Background

Plastics were developed in the late 19th century and popularized in the early 20th century. The advent of mass production saw plastics become ubiquitous parts of our daily lives as packaging materials. In the 1950s, scientists invented polyethylene, an affordable, lightweight, and durable plastic. Polyethylene and other synthetic polymers quickly replaced glass and paper as the premier material for packaging and disposable items. Plastics enabled a culture of convenience around grab-and-go meals, quick trips to the supermarket, and vending machine soda bottles.

Over the ensuing decades, the environmental drawbacks of plastics became apparent. Single-use plastics are, by nature, disposable and contribute to substantial amounts of waste. This is especially acute because plastics have replaced many reusable materials, like how plastic bags replaced cloth bags. Importantly, plastics take substantially longer to break down and biodegrade than alternative materials made from natural fibers. One particularly salient

depiction of the effect of plastics on the natural world is the Great Pacific Garbage Patch. It is a swirling vortex of plastic waste larger than the state of Texas that sits in the middle of the Pacific Ocean. It is a hazard to marine life that chokes fish, turtles, and birds alike.

The problems associated with plastics have led governments to design regulatory efforts to combat their negative effects. Some countries have implemented bans on all or some forms of single-use plastics. For example, several states have banned single-use plastic bags. Other countries impose taxes on single-use plastics or provide financial incentives for recycling. Yet other countries focus on education initiatives and developing advanced waste management infrastructure to recycle or store plastics safely.

Strategy Considerations

Debaters must consider a ban on single-use plastics in the constellation of alternative public policy proposals. This is an idea called “inherency.” Inherency forces debaters to consider what the most likely manifestation of the resolution will look like. Debaters cannot just make up hypothetical facts about the world; they must couch their arguments to determine the likely outcomes. This involves analyzing what could happen in the aftermath of a ban as well as whether the ban trades off with other important environmental initiatives.

Debaters must consider a ban on plastics in connection to other plausible environmental legislation. On the one hand, a negative team could argue that Congress is unlikely to pass multiple substantive pieces of environmental legislation, so we need to pick the best policy. On the other hand, an affirmative team could argue that Congress is unlikely to pass any environmental legislation at all, so they should pass any policy (such as this one) that has a net-

positive effect. Either way, the background political situation determines whether banning single-use plastics effectively deploys resources.

What other policies should debaters think about when considering inherency? Political capital could alternatively be used for any number of other programs that regulate the use of plastics. For example, a ban on single-use plastics would necessarily tradeoff with efforts to recycle single-use plastics because Congress would never authorize a program to recycle plastics that were already banned. A ban on single-use plastics might also trade off with efforts to tax plastics or incentivize plastic returns. On the other hand, a ban on single-use plastics might spur innovation into biodegradable materials and alternative forms of disposable technology.

Affirmative Arguments

The affirmative team can make arguments about how single-use plastics are bad for the environment. This resolution presents a very simple and straightforward argument for affirmative teams; they should not avoid it.

Single-use plastics are a scourge on the natural world. They take up mountains of space in landfills, poison the soil, and choke the wildlife. Debaters should engage with this commonsense debate because it is the animating reason that restrictions on single-use plastics have been deployed in countries around the world. To make this argument, debaters should find particularly substantial examples of pollution that results from plastic use and explain why it justifies a prohibition. For example, leaning in to the particular devastation caused by the Great Pacific Garbage Patch can help judges understand the scope of the worldwide plastic waste problem.

Pro teams should also anticipate the types of arguments the negative side will make and try to address them in case. Negative teams will almost certainly try to make economic arguments. There is not a lot of ground to make environmental arguments on the negative side, so negative teams will probably make the strategic decision to focus on human welfare, cost, and convenience.

To the extent that the affirmative team can also access those impacts—for example, by talking about biodegradable innovations in packaging technology or the economic benefits of reducing consumption—they will be better positioned for weighing at the end of the round. The affirmative may wish to consider arguments such as how banning plastics will spur new technologies or the monetary cost of environmental degradation and waste management. The affirmative team does not want to be in a position where they must solely rely on weighing environmental impacts against human welfare impacts.

Negative Arguments

The negative team will wish to make arguments about economic activity. The primary benefits of single-use plastics are their convenience and low cost. As such, the affirmative team should make arguments about how banning single-use plastics will pass higher costs onto consumers, particularly low-income consumers who rely on the cheapness of plastic packaging.

To make this argument, the negative team should come up with a few examples where the most likely alternative to plastic packaging would involve a substantially more expensive material. For example, ready-made meals might have to be sold in more expensive glass containers. The main benefit of ready-made meals is that they offer a cost-effective, fast

alternative to preparing food for yourself. If packaging costs were increased, people who rely on those foods would end up paying substantially more.

The negative side should stress that a ban on all single-use plastics requires the judge to throw out “good” applications of plastics alongside “bad” applications of plastics. So if the judge is reticent of banning the entire category of single-use plastics, it would be better for them to vote for the negative side and consider future regulations of single-use plastics that banned only the most harmful applications of single-use plastics.

The negative side should also argue that a ban on single-use plastics would disproportionately affect small businesses and those who are less economically fortunate. By increasing the cost of consumption, a ban on single-use plastics acts like a regressive tax. A single dollar is worth more to a poor person than a rich person, so by forcing everybody to pay for the increased costs of non-plastic materials, we disproportionately hurt the poor and less fortunate. The negative side should stress that there are alternative public policy proposals that would not trigger this type of harm. For example, the government could subsidize renewable packaging to make it price-competitive with single-use plastics. This would achieve the exact same effect as a ban on single-use plastics but would distribute the costs more evenly because the money for subsidies would be collected via taxes, which are not regressive.

Overall, this topic forces debaters to engage in granular public policy analysis while maintaining a narrative focus on big-picture issues such as environmental protection. It will push students to think of creative solutions to vexing problems and practice their analogies and persuasive reasoning. Good luck this month!

About Jakob Urda

Jakob grew up in Brooklyn, New York. He graduated from the University of Chicago with a BA in Political Science and is currently seeking a Juris Doctorate from the Georgetown University Law Center. Jakob debated for Stuyvesant High School where he won Blake, GMU, Ridge, Scarsdale, Columbia, the NCFL national championship, and amassed 11 bids. He coached the winners of the NCFL national tournament, Harvard, and Blake.

Topic Analysis by Rachel Mauchline

Resolved: The United States federal government should ban single-use plastics.

Introduction

Upon glance when examining the topic selections for February at the release this summer, this was the topic that I was the most confident in the selection of was this topic. Personally, I would have loved to talk about Brazil for this month and would have written a delightful topic analysis about foreign policy. However, this resolution has a simple wording that creates a level of accessibility to debaters and is a much less intimidating resolution compared to that of January for all concerned. I am excited for this topic to be discussed around the nation. This is a topic that has a very direct connection to students, like the student loan topic and is an opportunity for some creative thinking for debaters. While it is helpful that some individuals have a default understanding on some level, it creates a potential bias that individuals have on the topic, which shapes the side bias they have when doing research. My advice to individuals on this topic is that they should make sure that they are aware and do research that is well-fleshed out on both sides. You can't just hope to win the coin flip every round. As you read this topic analysis, keep in mind that it is important to look below the surface level of the resolution and to critically examine the motivations behind this topic and the impact a policy action would have on the world.

Single-use plastics are a topic of concern for the environment and is an issue that needs examination. This isn't a topic that isn't going away anytime soon as more and more questions

about the actions or lack of actions are being raised. As localized efforts are being made to support the environment, especially by reducing the use of single-use plastics and single-use materials in general, now is the critical time to investigate how federal action would be taken. Also, one great thing about this topic is that it allows the opportunity to be comparative in nature since this is a topic that isn't just unique to the United States alone. It will be interesting to examine how other countries have engaged with single-use plastics and created stances that better the environment more than the United States.

This topic will be debated at large tournaments, such as Harvard and UC Berkley, but also at many NSDA Districts tournaments to qualify for NSDA Nationals. It will be very interesting to see how teams change their strategy based on judges in the back of the room and based on the style of the case. It will be exciting to see what debaters across the country do during the month of February. Good luck to all of you on this topic!

Strategy Considerations

Currently, single-use plastics continue to have implications on the environment. There are a variety of different sources that examine the role that single-use plastics have on the climate. This includes but is not limited to impacting climate change, harm to wildlife, pollution, and accumulation of landfills. It will be hard for the con on this topic to make the compelling argument that single-use plastics are good – but I am sure some teams will try. I think that could be a very interesting impact turn debate on the topic at its very core. This topic is one that is growing in interest, with more articles and updates being constantly released. When doing the research for this topic analysis, and even in the days since the topic was released,

there have been a variety of updates on the domestic and international front. Since the start of 2024, there have been a variety of measures related to single-use plastics. For example, Dubai, on December 31st, 2023 (so to begin in 2024), issued a ban on single-use plastic bags. Another example is Colorado, which started on January 1st, 2024, and started a ban on single-use plastic carryout bags in grocery stores. This is just the beginning of more conversations about single plastic bans throughout the world. Of course, this does leave a question that is hard for debaters. We can't always tell the future well. With many of these bans being implemented in recent days, there are limitations in looking at the implications of these bans and their impact on societies. This also means that debaters will need to constantly update their evidence throughout the topic to consider the perception of the public and the short-term impact on the environment.

As I've said in many topic analysis papers, it is critical to understand the definitional components of the resolution prior to debating the topic. Of course, at face value, as I said, individuals will assume a sort of level of understanding on the topic. We've got another United States action-based topic. For those who have debated on other topics this year, they do have some understanding of what the United States federal government means. It is important to keep in mind that this action is of a federal nature. This could lead to an interesting debate about the concept of whether the United States federal government is the three branches of government or if it should just be the federal government overseeing the actions of the state-level governments. This is the debate that policy debaters often have, but especially as the public forum pivots more, it could be a possible argument.

The word that made me raise my eyebrows upon the first reading of the topic was that of banning single-use plastics. I think this can be an interesting debate. While some states and countries have begun to implement bans, those bans have mostly been to specific single-use plastics and not just in general. The pro can defend the holistic solvency of the impacts with a complete ban on single-use plastics. The con also can defend that a complete ban isn't the best approach but instead a specific-based reduction in usage or possibly taxation to those that utilize single-use plastics. It will be interesting to see the approach that both sides take on the topic in each debate. It is important for teams to ask for clarity early in rounds as needed rather than allow the debate to be unclear throughout and hard to defend. I don't think that the resolution is calling into question a specific plan-based action, but teams do have the opportunity to do so if that is the approach that they choose to take.

The last component of the resolution is that of single-use plastics in general. The general definition of such a phrase is that of plastics that can only be used or a small, limited number of times before disposal. These plastics are often more likely to not be disposed of in the best ways and, with their single-use nature, are in greater quantity. There are several different examples that can be given about single-use plastics. My advice to teams is that they shouldn't overly specify the form of single-use plastics as the only example that is focused on in the debate. Utilizing a variety of examples of single-use plastics provides a more holistic evaluation of the topic and allows more variety in argumentation.

The main strategy that I think teams should keep in mind is that while there are main stock arguments in this topic, there will be the opportunity to consider current events and news to shape the link story and impacts that are presented throughout. By using the Google News

feature and even with the phrase “single-use plastics” being saved as a key phrase that will email you any news stories, it provides the updates that teams will need to be current and recent with the topic. I am excited to see how the topic adjusts and how teams' strategy changes throughout the month of February!

Affirmative Arguments

The affirmative of this resolution is something that I believe many individuals are believing and considering more and more as their opinion. Single-use plastics are bad. The important thing for affirmative teams to consider is that there is a difference between just stating that single-use plastics are bad and the action of the resolution, which is the banning of single-use plastics. Affirmative teams need to be sure that their arguments are stressing that the ban is the best action to resolve the bad consequences of single-use plastics.

The first main argument is that if the United States takes action, such as a wide-sweeping ban on single-use plastics, it will lead to spillover. The United States can shape the environmental policy of other countries based on its hegemony and the ability to be a global superpower. This means that the affirmative can engage in the solvency of not just the United States but also possibly the entire world. There are lots of options that affirmative teams can take with them when it comes to the structure of their cases and access to high-magnitude impacts.

The second main affirmative argument that I think would be a less stock argument is that if the United States bans single-use plastics, then it forces pragmatic change to happen. Change won't happen without a really large policy shift. Local-level actions won't work. Only

large, sweeping actions will force the companies that produce single-use plastics to question their approach. This is what needs to happen. Companies will be forced to make changes to their products to comply and will then, in turn, solve back for any affirmative scenarios examined.

Negative Arguments

When it comes to the negative side of this topic, the central question that is easy for negative teams to ask is simple: Why has this policy not already happened? This is a big question that is important to consider when examining potential negative arguments on the topic. Negative teams need to consider what actions have been taken by other actors and why they won't work in the United States. This will put the negative in a better stance of topic positioning in each debate.

The first main argument to examine on the negative is that alternatives to single-use plastics are actually worse. This can be taken in several different ways. Teams can discuss the environment or the economy or whatever they would like. There are approaches that have been done on a small scale that have had pushback from the public. I don't think this has much impact, but it does aid the link of this argument. There is a lot of potential that can be taken with this form of argumentation. It would take out any affirmative argument because it takes out the solvency mechanism of any topical affirmative.

The second main negative to consider on the negative is that a ban on single-use plastics can cause environmental harm. A ban itself doesn't do enough and creates a smokescreen for the public that they are doing enough by taking small actions. This, in turn, leads to less focus on the environment because individuals assume nothing else is needed, which causes

environmental harm. While these actions do help, they aren't going to solve the environmental disasters. The negative can provide an approach that allows individuals to have a more conscious role, but then also is just the beginning of actions.

Hope you all have a great run on the February topic!

Topic Analysis by Yair Fraifeld

Resolved: The United States federal government should ban single-use plastics.

Introduction

The February topic is one that, interestingly, can change the way that we decide to consume products. The pervasive issue of single-use plastics has become concerning to many, and some of you may even know someone personally or have individually made the decision to quit using single-use plastics. Yet, as with all debates, it is important to consider the various arguments on both sides of the debate. This topic analysis will delve into the intricacies of this debate, exploring considerations for debaters as they prepare to engage with opposing teams. The environmental impact, economic implications, and societal changes associated with banning single-use plastics will be examined, providing some knowledge of the complexities of the debate.

Strategy Considerations

In preparing for debates on the ban on single-use plastics, debaters should keep in mind a number of considerations that each contribute to the complexity of the topic. First, the debaters should examine the impact on the environment. Debaters should analyze the extent of pollution caused by single-use plastics, examining their contribution to the degradation of marine and terrestrial ecosystems. Secondly, economic considerations are paramount, as the ban could potentially disrupt industries reliant on single-use plastics, leading to job losses and economic strain. Finally, the societal impact of such a ban must be carefully weighed,

considering the convenience and accessibility that single-use plastics offer to individuals in their daily lives.

Affirmative Arguments

The three most common affirmative arguments on this topic will likely be on the environmental benefits of banning single-use plastics, the benefits to human health and well-being, and how banning single-use plastics would encourage the use of less harmful alternatives. When it comes to the environmental impacts of banning single-use plastics, teams will argue that it will put a larger emphasis on conservation. The detrimental effects of non-biodegradable plastic pollution on ecosystems, particularly in oceans and waterways, necessitate action as our environment continues to wreak havoc. Proponents argue that by implementing a ban on single-use plastics, the volume of plastic pollution can be substantially reduced. This reduction would help mitigate the ecological damage caused by plastics, preserve biodiversity, protect marine habitats, and prevent further contamination of soil and water sources.

Teams can also argue that there are benefits to human health and well-being when single-use plastics are banned. There are potential health hazards associated with single-use plastics. Debaters may emphasize the risks posed by chemicals leaching from plastic products into consumables, potentially affecting human health. A ban could lead to a healthier population and mitigate long-term health issues. Pro teams can further argue that a ban would alleviate the burden on healthcare systems. This argument aligns with a broader public health perspective, framing the ban as a preventative measure to safeguard the well-being of current and future generations.

Finally, teams may argue that a ban would stimulate innovation and encourage the adoption of sustainable alternatives. By eliminating single-use plastics, the market would be incentivized to develop and embrace eco-friendly materials, fostering a culture of sustainability and responsibility. This shift towards sustainability is seen as an opportunity to reshape consumer behavior, encouraging individuals to make environmentally conscious choices and participate in a more circular economy. The promotion of sustainable alternatives aligns with a vision of a future where packaging and materials have minimal adverse effects on the environment. It may be useful for teams to have some examples of products that, once banned, were replaced by another alternative that was not just more cost-effective but recognized as a safer alternative.

Negative Arguments

The Con's argument playbook on this topic will require some uniqueness. Three common arguments will be that there are economic implications to banning single-use plastics, that it is convenient for consumers to use single-use plastics, and that there are challenges in switching over from single-use plastics to other feasible alternatives. When it comes to the economic implications associated with banning single-use plastics, Con teams will argue that a ban on single-use plastics could have severe economic consequences, particularly for industries heavily reliant on these materials. Job losses, increased production costs, and potential market disruptions are points of concern that debaters may raise to underscore the economic impact. Opponents argue that the sudden disruption of these industries could have a cascading effect throughout the supply chain. From raw material suppliers to distributors, each segment of the industry would face challenges adapting to the ban, potentially resulting in a domino effect of

economic hardship. The economic argument makes it necessary for teams to recognize that a more gradual and well-managed transition might be necessary to mitigate these adverse consequences and allow affected sectors to adjust without causing undue hardship.

When it comes to the argument on convenience, single-use plastics provide a level of accessibility and ease that alternatives may not match. Opponents suggest that a ban could inconvenience individuals and hinder certain aspects of daily life, such as food packaging and transportation. It might even be appealing in a debate to point out when single-use plastics or other harmful, similar products are being used by affirmative teams during a debate.

Finally, while there will be affirmative teams arguing for alternatives to single-use plastics, transitioning from single-use plastics may not be as easy as teams may argue that it will be. Critics of the ban will emphasize the challenges associated with transitioning away from single-use plastics. Debaters may highlight the infrastructure required for a smooth transition, including waste management systems and recycling facilities. They argue that a sudden ban might lead to chaos rather than an effective shift towards sustainability.

Conclusion

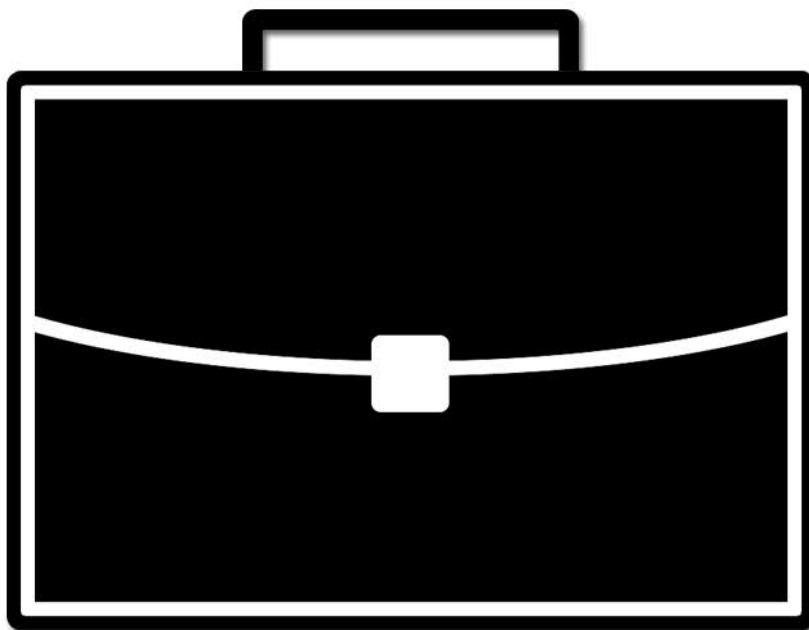
In conclusion, the debate surrounding the proposition for the United States federal government to ban single-use plastics is multifaceted, demanding a nuanced understanding of its environmental, economic, and societal dimensions. Advocates stress the imperative of environmental conservation, human health, and the promotion of sustainable alternatives. On the other hand, opponents underscore the potential economic downturn, the importance of consumer convenience, and the challenges associated with a rapid transition away from single-

use plastics. As debaters engage in this discourse, it is crucial to acknowledge the complexity of the issue and the necessity of finding a balanced solution that addresses environmental concerns while considering economic and societal implications. The call for action is evident, and it is within the realm of informed and thoughtful debate that viable solutions may emerge to tackle the pressing issue of single-use plastics.

Champion Briefs

February 2024

Public Forum Brief



General
Information

General Information

Resolved: The United States federal government should ban single-use plastics.

Foreword: We at Champion Briefs feel that having deep knowledge about a topic is just as valuable as formulating the right arguments. Having general background knowledge about the topic area helps debaters form more coherent arguments from their breadth of knowledge. As such, we have compiled general information on the key concepts and general areas that we feel will best suit you for in- and out-of-round use. Any strong strategy or argument must be built from a strong foundation of information; we hope that you will utilize this section to help build that foundation.

What are single-use plastics?

Single-use plastics are materials that are made from petrochemicals and meant to be disposed of after use. They are typically used in packaging and service items, such as wrappers, straws, and bags.

Plastics were invented in the mid-1800s. During the twentieth century, manufacturers developed a variety of plastics that competed with and ultimately replaced many natural materials in the production process. Plastics serve as substitutes to wood, cloth, and metal in different circumstances. By the 1980s, plastics were cheap enough to be mass-manufactured into single-use items like shopping bags.

Plastics have become ubiquitous. According to one study, 8.3 billion metric tons of plastics have been produced since the 1950s, and half of that in the past 15 years alone. Over half of non-fiber plastic, which excludes synthetic fabrics like polyester and nylon that are typically used in clothing, comes from packaging alone, much of which is for single-use items. Across the world, 12 million tons of plastic enters the oceans annually.

Plastic use continues to increase around the world. In 2021, the world generated 6 million metric tons more than in 2019. Recently, many countries around the world have endeavored to reduce the volume of single-use plastics by banning plastic products or introducing other regulations.




8% Of the plastics we produce are recycled and made into new products



500 BILLION Plastic bags are used worldwide annually



1 MILLION seabirds
100,000 marine mammals
are killed annually from plastics in our ocean



OVER THE LAST **10 YEARS** we have produced more plastic than during the whole of the last century



50% Of the plastic we use are single-use plastics



The Great Pacific Garbage Patch is largest ocean garbage site in the world.
2X the size of Texas

It is estimated that there will be more waste plastic in the sea than fish by the year

2050



There are over **5.25 trillion** pieces of plastic trash in the world's oceans

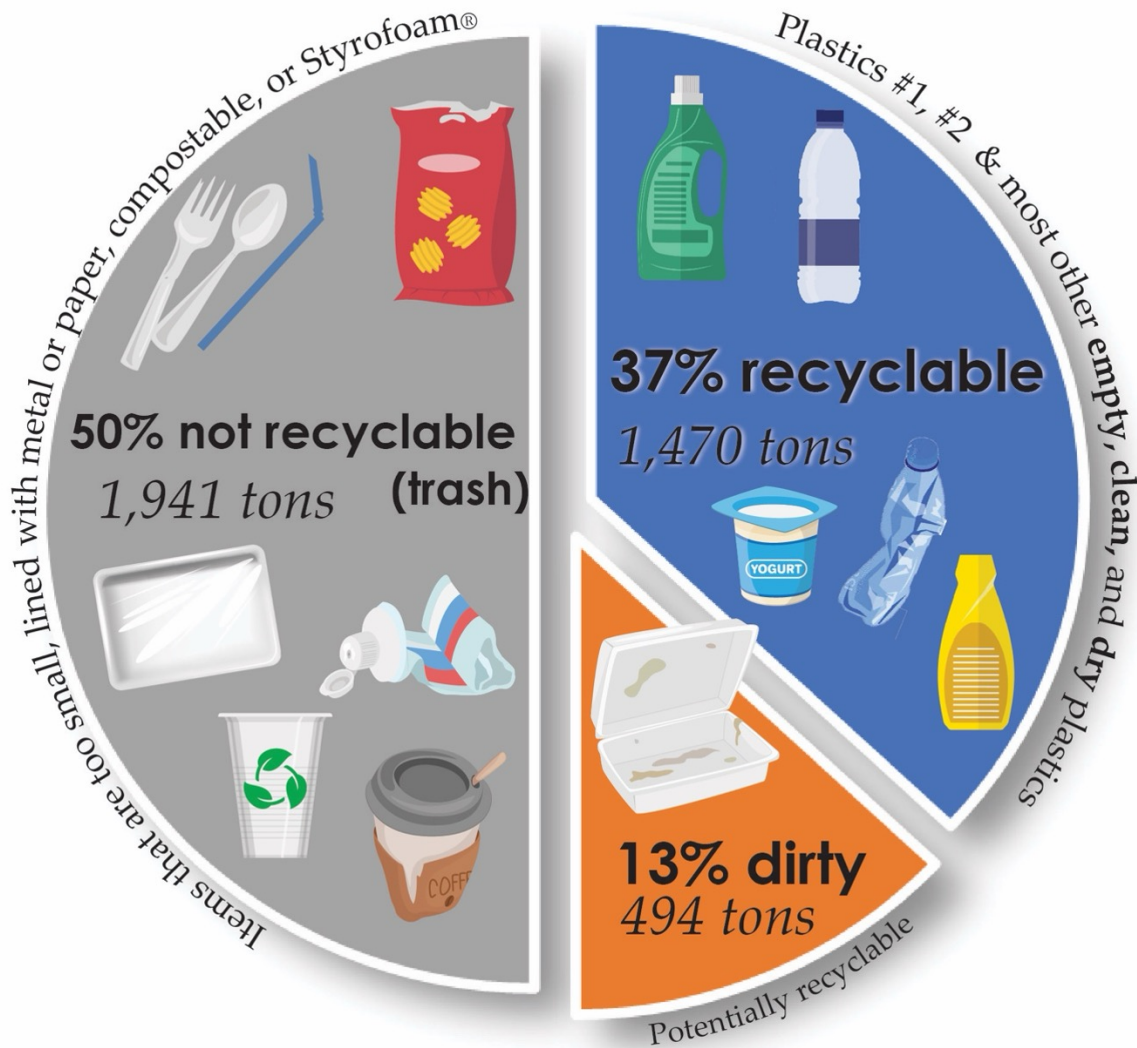
What is the environmental impact of plastics?

The primary concern with plastics is their environmental impact. The same advantages that have made plastics omnipresent in modern life—their versatility and durability—make plastics dangerous to the natural world.

One of the primary challenges created by plastics is their persistence. Plastics do not easily decompose because most organisms do not eat them. This means that they accumulate and last in landfills or other environments for centuries. If plastics are unattended in natural environments, they can hurt local animals who eat them or become tangled. For example, photos of turtles choking on plastic straws galvanized a particular backlash on social media. In landfills, they may leach harmful chemicals into the surrounding environment.

The production of plastics can also have negative consequences for the environment. Plastics are petrochemicals, so their creation involves a complex extraction, refining, and transportation process. Plastics enhance our dependence on fossil fuels and require substantial amounts of energy to create. This contributes greenhouse gases to the atmosphere which can worsen climate change.

3,909 tons of plastic waste annually




What are countries doing about plastics?










The environmental issues created by widespread plastic use have spurred countries around the world to act. But regulations are not one-size-fits-all. Countries use a variety of different regulatory measures to address the impact of single-use plastics. The policy design of these initiatives is informed by factors such as the state's capabilities, cost, and technology.

Some countries, like Rwanda and Bhutan, have banned plastic products like disposable bags. Other countries have implemented government programs to incentivize the producers and manufacturers of plastic waste to shift towards more sustainable alternatives. Many countries have invested in improving their waste collection and recycling infrastructure to minimize the harm caused by plastics.

The international community has pushed for a comprehensive solution to the problems caused by single-use plastics. A recent UN resolution committed the world to ending plastic pollution. International initiatives focus on fostering knowledge sharing and accelerating innovation in plastic substitute and waste management technologies.



The Lifecycle of Plastics

				
Plastic bag 20 years	Coffee cup 30 years	Plastic straw 200 years	6-pack plastic rings 400 years	
				
Plastic water bottle 450 years	Coffee pod 500 years	Plastic cup 450 years	Disposable diaper 500 years	Plastic toothbrush 500 years

What are the alternatives to single-use plastics?

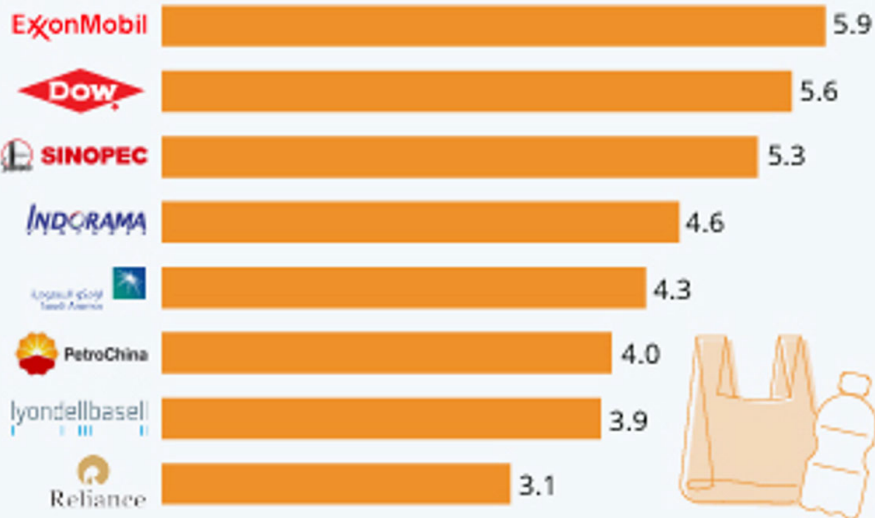
If single-use plastics were banned, consumers and manufacturers would have to find suitable replacements that satisfied their needs. Some plastics could be replaced with natural alternatives. Biodegradable materials like bamboo cutlery, wooden utensils, and leaf-based foam cups offer sustainable alternatives for disposable service ware. Glass, metal, and ceramic can replace plastic plates and trays.

Materials innovation can produce new bioplastics derived from renewable resources. Corn starch and cellulose are promising avenues for new plastics that decompose faster than traditional plastics and offer a viable solution for packaging and disposable items. Coatings made from seaweed or resin may be available as an alternative for plastic food wrap.

Beyond changing materials, societies can replace single-use plastics by designing systems that do not need discardable materials at all. Systems to refill and reuse products can reduce waste by pushing consumers to bring their own packages for bulk goods like nuts. Buying products at scale or implementing community-sharing initiatives can also reduce the total amount of resources consumed.

The World's Biggest Single-Use Plastic Waste Producers

Companies contributing the most to single-use plastic waste in 2019 (million metric tons)



Source: The Plastic Waste Makers Index by The Mindaroo Foundation



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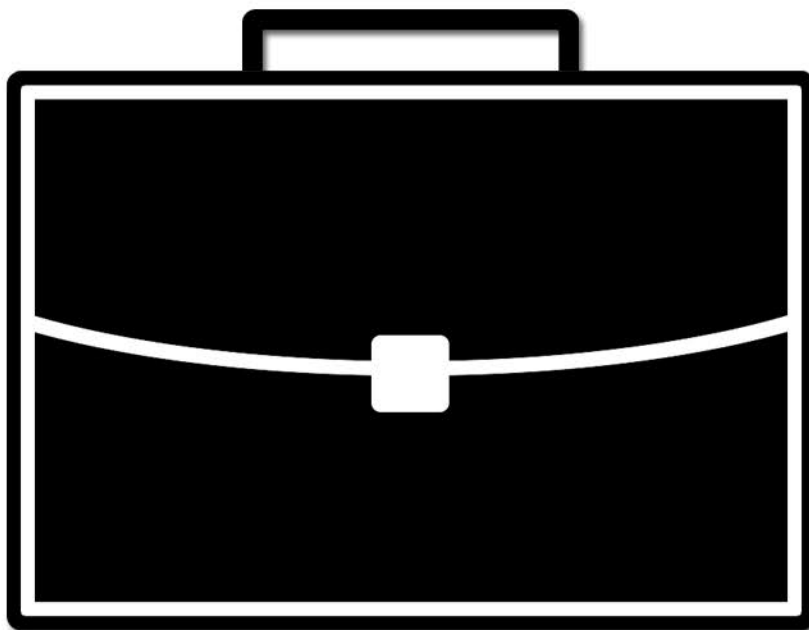
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Pro Arguments

PRO: Single-use plastics harm marine life

Argument: Single-use plastics do not biodegrade and wind up in the oceans. They are ingested by marine life and prove toxic.

Warrant: Single-use plastics waste is at record highs

Whiteman, Hilary. "The world is creating more single-use plastic waste than ever, report finds." *CNN Business*, February 5, 2023, <https://www.cnn.com/2023/02/05/energy/single-use-plastics-volume-grows-climate-intl-hnk/index.html>.

The world is producing a record amount of single-use plastic waste, mostly made from polymers created from fossil fuels, despite global efforts to reduce plastic pollution and carbon emissions, according to a new report released Monday. The second Plastic Waste Makers Index, compiled by the philanthropic Minderoo Foundation, found the world generated 139 million metric tons of single-use plastic waste in 2021, which was 6 million metric tons more than in 2019, when the first index was released. The report found the additional plastic waste created in those two years equates to nearly one 1 kilogram (2.2 pounds) more for every person on the planet and was driven by demand for flexible packaging like films and sachets.

Warrant: The vast majority of all plastic is never recycled and continues to pollute the environment

Geyer, Roland, Jenna Jambeck, and Kara Law. "Production, use, and fate of all plastics ever made." *ScienceAdvances*, July 19, 2017, <https://www.science.org/doi/10.1126/sciadv.1700782>.

Plastics have outgrown most man-made materials and have long been under environmental scrutiny. However, robust global information, particularly about their end-of-life fate, is lacking. By identifying and synthesizing dispersed data on production, use, and end-of-life management of polymer resins, synthetic fibers, and additives, we present the first global analysis of all mass-produced plastics ever manufactured. **We estimate that 8300 million metric tons (Mt) as of virgin plastics have been produced to date. As of 2015, approximately 6300 Mt of plastic waste had been generated, around 9% of which had been recycled, 12% was incinerated, and 79% was accumulated in landfills or the natural environment. If current production and waste management trends continue, roughly 12,000 Mt of plastic waste will be in landfills or in the natural environment by 2050.**

Warrant: Plastic makes up 80% of all marine debris

“Marine plastic pollution.” *International Union for Conservation of Nature*, November 1, 2021, <https://www.iucn.org/resources/issues-brief/marine-plastic-pollution>.

Plastic is a synthetic organic polymer made from petroleum with properties ideally suited for a wide variety of applications including: packaging, building and construction, household and sports equipment, vehicles, electronics and agriculture. **Over 400 million tons of plastic are produced every year, half of which is used to create single-use items such as shopping bags, cups and straws. If discarded improperly, plastic waste can harm the environment and biodiversity. At least 14 million tons of plastic end up in the ocean every year. Plastic debris is currently the most abundant type of litter in the ocean, making up 80% of all marine debris found from surface waters to deep-sea sediments. Plastic is found on the shorelines of every continent, with more plastic waste found near popular tourist destinations and densely populated areas.** The main sources of plastic debris found in the ocean are land-based, coming from urban and stormwater runoff, sewer overflows, littering, inadequate waste disposal and management, industrial

activities, tyre abrasion, construction and illegal dumping. Ocean-based plastic pollution originates primarily from the fishing industry, nautical activities and aquaculture.

Impact: Single-use plastic bans reduce the amount of plastic ending up on beaches

Elton, Charlotte. "Really encouraging: Plastic bag bans work, say campaigners. Where is Europe lagging behind?" *EuroNews*, April 5, 2023, <https://www.euronews.com/green/2023/04/05/really-encouraging-plastic-bag-bans-work-say-campaigners-where-is-europe-lagging-behind>.

Plastic bag bans have so far been highly successful. A ban on thin plastic bags in California reduced consumption by 71.5 per cent. Research shows that taxes work too. According to a 2019 review of existing studies, levies and taxes led to a 66 per cent reduction in usage in Denmark, more than 90 per cent in Ireland, between 74 and 90 per cent in South Africa, Belgium, Hong Kong, Washington D.C., Santa Barbara, the UK and Portugal, and around 50 per cent. in Botswana and China. **And the impact is visible on the ground too. At a 2022 annual beach clean in New Jersey, US - where a ban was recently introduced - the number of plastic bags collected dropped 37 per cent on the previous year. Straws and takeaway containers dropped by a similar amount.**

Impact: Marine animals are significantly harmed by single-use plastic pollution

"Ocean Plastics Pollution." *Center for Biological Diversity*, n.d., https://www.biologicaldiversity.org/campaigns/ocean_plastics/.

Thousands of animals, from small finches to blue whales, die grisly deaths from eating and getting caught in plastic. **Fish in the North Pacific ingest 12,000 to 24,000 tons of plastic each year, which can cause intestinal injury and death and transfers plastic up the food chain to bigger fish, marine mammals and human seafood eaters. A recent**

study found that a quarter of fish at markets in California contained plastic in their guts, mostly in the form of plastic microfibers. Sea turtles can mistake floating plastic garbage for food. They can choke, sustain internal injury and die — or starve by thinking they're full from eating plastic. Tragically, research indicates that half of sea turtles worldwide have ingested plastic. New studies find plastic pollution is so pervasive on many beaches that its affecting their reproduction. Hundreds of thousands of seabirds ingest plastic every year. Plastic ingestion reduces the storage volume of the stomach, causing starvation. It's estimated that 60 percent of all seabird species have eaten pieces of plastic, with that number predicted to increase to 99 percent by 2050. Dead seabirds are often found with stomachs full of plastic, reflecting how the amount of garbage in our oceans has rapidly increased in the past 40 years. Marine mammals ingest, and get tangled up in, plastic. Large amounts of plastic debris have been found in the habitat of critically endangered Hawaiian monk seals, including in areas that serve as pup nurseries. Entanglement in plastic debris has also led to injury and mortality in the endangered Steller sea lion, with packing bands the most common entangling material. Dead whales have been found with bellies full of plastic.

Analysis: This argument says that single-use plastics are uniquely bad for marine wildlife, killing endangered animals and posing a threat to the food chain and the world's biodiversity. This argument could be coupled with an argument about the impacts of pollution more broadly for multiple links into the same general topic of climate change.

PRO: Single-use plastics preclude reusable alternatives

Argument: If the world got rid of single-use plastics, it would stimulate demand for new types of materials.

Warrant: The vast majority of all plastic is never recycled and continues to pollute the environment

Geyer, Roland, Jenna Jambeck, and Kara Law. "Production, use, and fate of all plastics ever made." *ScienceAdvances*, July 19, 2017, <https://www.science.org/doi/10.1126/sciadv.1700782>.

Plastics have outgrown most man-made materials and have long been under environmental scrutiny. However, robust global information, particularly about their end-of-life fate, is lacking. By identifying and synthesizing dispersed data on production, use, and end-of-life management of polymer resins, synthetic fibers, and additives, we present the first global analysis of all mass-produced plastics ever manufactured. **We estimate that 8300 million metric tons (Mt) as of virgin plastics have been produced to date. As of 2015, approximately 6300 Mt of plastic waste had been generated, around 9% of which had been recycled, 12% was incinerated, and 79% was accumulated in landfills or the natural environment. If current production and waste management trends continue, roughly 12,000 Mt of plastic waste will be in landfills or in the natural environment by 2050.**

Warrant: Paper bags are more easily recycled than plastic bags

Mackenzie, Wood. "Is Paper A More Sustainable Flexible Packaging Material Than Plastic?" *Forbes*, August 24, 2020,

<https://www.forbes.com/sites/woodmackenzie/2020/08/24/is-paper-a-more-sustainable-flexible-packaging-material-than-plastic/?sh=3b8131ec12d4>.

Plastic's properties make plastic packaging ideally suited for efficiently containing and protecting products during shipment and delivery to customers. **However, despite its advantages, plastic is made of a non-renewable resource, whereas paper is made of trees. Furthermore, plastic can be recycled but it is currently difficult to achieve high levels of post-consumer recycled content in plastics due to post-consumer waste contamination. Conversely, paper is relatively easy to recycle as it can be re-pulped. This means it does not rely on chemical reactions and is less sensitive to contamination.** As such, there are some environmental advantages to using paper as a substrate for flexible packaging if it does not increase food waste and/or compromise other properties essential to the packaged product. This has led to some brands replacing plastic packaging with paper.

Warrant: Bioplastics, an alternative to single-use plastic, decompose without negative side effects

Zhang, Alex. "The Plastic Alternative the World Needs." *Forbes*, May 17, 2022, <https://www.forbes.com/sites/columbiabusinessschool/2022/05/17/the-plastic-alternative-the-world-needs/?sh=4aa2b4681461>.

Unlike traditional plastic, bioplastics are typically made from renewable sources such as plants, starches, and sugars. One of the most advanced bioplastic materials is called PHA (Polyhydroxyalkanoates). **It's an excellent alternative to traditional fossil fuel-based plastic because it offers a completely compostable solution, biodegradable in all types of natural environments. Products made of PHA will completely decompose without any special treatment, which is crucial for preventing single-use plastic pollution. For example, single-use straws made of traditional plastics can take up to 200 years to**

degrade on land or in the ocean. However, single-use straws made of PHA will degrade in just 90 days when buried in soil and 180 days in the ocean.

Impact: Climate change is a threat multiplier, making all other impacts worse

Torres, Phil. "Climate Change is the most urgent existential risk." IEET, July 22, 2016, <http://ieet.org/index.php/IEET/more/Torres20160807>.

Multiplying Threats Ask yourself the following: are wars more or less likely in a world marked by extreme weather events, megadroughts, food supply disruptions, and sea-level rise? **Are terrorist attacks more or less likely in a world beset by the collapse of global ecosystems, agricultural failures, economic uncertainty, and political instability? Both government officials and scientists agree that the answer is "more likely."** For example, the current Director of the CIA, John Brennan, recently identified "the impact of climate change" as one of the "deeper causes of this rising instability" in countries like Syria, Iraq, Yemen, Libya, and Ukraine. Similarly, the former Secretary of Defense, Chuck Hagel, has described climate change as a "threat multiplier" with "the potential to exacerbate many of the challenges we are dealing with today — from infectious disease to terrorism."

Impact: Reusable alternatives are better for marine life than plastic

Kolcon, Margaret. "Plastic Prohibition: The Case For A National Single-Use Plastic Ban In The United States." *Penn State Journal of Law & International Affairs*, May 2021, vol. 9, no. 2, <https://elibrary.law.psu.edu/cgi/viewcontent.cgi?article=1302&context=jlia>.

While that may be true, **paper biodegrades more quickly than plastic, with paper taking only about two to six weeks to decompose. Further, marine animals are negatively**

affected by plastic, not paper. Paper bags do not look like jellyfish, unlike plastic bags, which sea turtles often confuse for food. Waterlogged paper is not sharp enough to pierce the intestinal lining of a marine animal, causing death. If the reason for banning plastic is to protect marine animals (and the humans who eat them), then the argument that plastic bags have a lower environmental impact should weigh less heavily. While paper bags do have a large carbon footprint, they are easy to recycle or compost, making it less likely that they will end up in the ocean. It is unfortunate that the choice must be between clean water or lower carbon emissions, but preserving our ocean animals and concern for human health should take precedent at present. There are more options than paper bags, and eventually, consumers should be trained to bring reusable bags each time they shop.

Analysis: This argument is good because it looks at the most likely effect of banning single-use plastics (consumers shifting to other, reusable alternatives) and pulls several positive impacts from that shift. This argument can be made hyperspecific with a focus on a specific type of alternative and can be coupled well with an argument about marine pollution.

PRO: Single-use plastics' manufacturing process is bad for the environment

Argument: The production of plastic is energy intensive and creates negative environmental externalities.

Warrant: The US plastics industry is one of the country's leading polluters

"The New Coal: Plastics and Climate Change." *Beyond Plastics*, October 2021,
<https://www.beyondplastics.org/plastics-and-climate>.

As of 2020, the U.S. plastics industry is responsible for at least 232 million tons of CO₂e gas emissions per year. This amount is equivalent to the average emissions from 116 average-sized (500-megawatt) coal-fired power plants. The U.S. plastics industry's contribution to climate change is on track to exceed that of coal-fired power in this country by 2030. At least 42 plastics facilities have opened since 2019, are under construction, or are in the permitting process. If they become fully operational, these new plastics plants could release an additional 55 million tons of greenhouse gases—the equivalent of another 27 average-sized coal plants. The health impacts of these emissions are disproportionately borne by low-income communities and communities of color, making this a major environmental justice issue. Plastics are the new coal.

Warrant: Oil extraction and plastics refining all release greenhouse gas emissions

Bauman, Brooke. "How plastics contribute to climate change." *Yale Climate Connections*, August 20, 2019, <https://yaleclimateconnections.org/2019/08/how-plastics-contribute-to-climate-change/>.

Land disturbance also contributes to greenhouse gas emissions associated with extraction. Kelso said each mile of pipeline must be surrounded by a “right of way” zone of cleared land. **About 19.2 million acres have been cleared for oil and gas development in the United States. Assuming just a third of the impacted land is forested, 1.686 billion metric tons of carbon dioxide are released into the atmosphere as a result of clearing, authors of the CIEL report said. “These figures really add up over time because you’re talking about millions of miles of pipelines in the United States,” Kelso said. “You have to clear cut. So you’re taking all of the carbon from the trees and from soils and removing that from the earth basically and introducing it to the atmosphere.”** Plastics refining is also greenhouse-gas intensive. **In 2015, emissions from manufacturing ethylene, the building block for polyethylene plastics, were 184.3 to 213 million metric tons of carbon dioxide equivalent, which is about as much as 45 million passenger vehicles emit during one year,** according to the CIEL report. Globally, carbon dioxide emissions from ethylene production are projected to expand by 34% between 2015 and 2030.

Warrant: Most American voters support ending new plastic production

Jordan, Megan. “Americans are Sick of Single-Use Plastic Pollution, Poll Finds.” *Oceana*, February 23, 2023, <https://usa.oceana.org/press-releases/americans-are-sick-of-single-use-plastic-pollution-poll-finds/>.

Today, Oceana released the results of a new poll revealing that 73% of American voters support a stop in building new plastic production facilities, in addition to widespread support for policies that limit the use of single-use plastics. Survey results further indicated national concern for plastic production impacts with 82% of voters supporting the protection of people in neighborhoods affected by pollution from nearby plastic production facilities. According to the poll, over 8 in 10 voters are concerned about

single-use plastic products and are in favor of requiring companies to reduce plastic packaging and foodware, increasing the use of reusable packaging and foodware, and holding companies accountable for plastic waste.

Impact: We only have a few more years to solve climate change

Fischetti, Mark. “Theres still time to fix climate change – About 11 years.” *Scientific American*, October 27, 2021, <https://www.scientificamerican.com/article/theres-still-time-to-fix-climate-about-11-years/>.

But scientists discounted that idea at least a decade ago. Climate models consistently show that “committed” (baked-in) warming does not happen. As soon as CO2 emissions stop rising, the atmospheric concentration of CO2 levels off and starts to slowly fall because the oceans, soils and vegetation keep absorbing CO2, as they always do. Temperature doesn’t rise further. It also doesn’t drop, because atmospheric and ocean interactions adjust and balance out. The net effect is that “temperature does not go up or down,” says Joeri Rogelj, director of research at the Grantham Institute—Climate Change and Environment at Imperial College London. **The good news is that if nations can cut emissions substantially and quickly, warming can be held to less than 1.5 degrees. To avoid that threshold, the world can emit only a set amount of CO2 from now into the future. This quantity is known as the carbon budget. In 2019, the year before the COVID pandemic depressed the global economy, the world discharged about 42 gigatons of CO2—similar to the 2018 level and to what is happening in 2021. According to the midrange scenario in the Intergovernmental Panel on Climate Change’s comprehensive report released in August, “Climate Change 2021: The Physical Science Basis,” another 500 gigatons of CO2 emissions will raise global temperature by 1.5 degrees. Nations have about 11 more years at current emissions rates—2032—before exhausting the budget.**

Impact: Climate change is a threat multiplier, making all other impacts worse

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Multiplying Threats Ask yourself the following: are wars more or less likely in a world marked by extreme weather events, megadroughts, food supply disruptions, and sea-level rise? **Are terrorist attacks more or less likely in a world beset by the collapse of global ecosystems, agricultural failures, economic uncertainty, and political instability? Both government officials and scientists agree that the answer is "more likely." For example, the current Director of the CIA, John Brennan, recently identified "the impact of climate change" as one of the "deeper causes of this rising instability" in countries like Syria, Iraq, Yemen, Libya, and Ukraine. Similarly, the former Secretary of Defense, Chuck Hagel, has described climate change as a "threat multiplier" with "the potential to exacerbate many of the challenges we are dealing with today — from infectious disease to terrorism."**

Analysis: This argument says that, from their moment of conception, single-use plastics are bad for the environment. This is good because it looks at an often understated aspect of single-use plastics, which is the beginning of their lifecycle rather than the end.

PRO: Single-use plastics disproportionately harm low-income communities

Argument: Plastic waste pollution disproportionate finds its way into low income communities, hurting economically marginalized people.

Warrant: Single-use plastic waste is at record highs

Whiteman, Hilary. "The world is creating more single-use plastic waste than ever, report finds." *CNN Business*, February 5, 2023, <https://www.cnn.com/2023/02/05/energy/single-use-plastics-volume-grows-climate-intl-hnk/index.html>.

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Warrant: The vast majority of all plastic is never recycled and continues to pollute the environment

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Warrant: The real number is even lower because "recycled" plastic often ends up in landfills anyway

Sullivan, Laura, Emily Kwong, and Rebecca Ramirez. "The Myth of Plastic Recycling." *NPR*, December 12, 2022, <https://www.npr.org/2022/12/08/1141601301/the-myth-of-plastic-recycling>.

But the reality is that only a small fraction of plastic is ultimately recycled. **A recent Greenpeace report found that people may be putting plastic into recycling bins — but the amount of plastic transformed into new items in the U.S. is at a new roughly 5-6% low. The plastic industry has spent tens of millions of dollars promoting the benefits of plastic, a product that, for the most part, was buried, was burned or, in some cases, wound up in the ocean. The problem has existed for decades. In all that time, less than**

10 percent of plastic has ever been recycled. Meanwhile, plastic production is ramping up. New plastic is cheap. It's made from oil and gas, and it's almost always less expensive and higher quality. The result is that plastic trash has few markets — a reality the public has not wanted to hear.

Impact: People living near plastic production facilities are more likely to be low-income

“The New Coal: Plastics and Climate Change.” *Beyond Plastics*, October 2021,
https://static1.squarespace.com/static/5eda91260bbb7e7a4bf528d8/t/616ef29221985319611a64e0/1634661022294/REPORT_The_New-Coal_Plastics_and_Climate-Change_10-21-2021.pdf.

The petrochemical industry’s plastics infrastructure is expanding, and emissions are slated to increase dramatically. At least 42 plastics facilities have opened since 2019, are under construction, or are in the permitting process. If they become fully operational, these new plastics plants could release an additional 55 million tons of CO₂e gases – the equivalent of another twenty-seven 500-megawatt coal-fired power plants – by the year 2025. **The health impacts of emissions released by the plastics industry are disproportionately felt by low-income communities and people of color. The industry releases more than 90% of its reported climate pollution into 18 communities, mostly along the coastlines of Texas and Louisiana. People living within 3 miles of these petrochemical clusters earn 28% less than the average U.S. household and are 67% more likely to be people of color.**

Warrant: Low-income people around the world are impacted by plastic waste

Lema, Karen. “Slave to sachets - How poverty worsens the plastics crisis in the Philippines.” *Reuters*, September 3, 2019,
<https://www.reuters.com/article/idUSKCN1VO0FW/>.

No one lives on the island, yet each morning its shores are covered in garbage, much of it single-use sachets of shampoo, toothpaste, detergent and coffee that are carried out to sea by the rivers of overcrowded Manila. “We collect mostly plastics here and the number one type are sachets,” said Gualva, one of 17 people employed by the environment agency to help preserve the island and its forest. The agency, the Department of Environment and Natural Resources (DENR), calls them “Mangrove Warriors”, and pays them slightly above \$8 per day. **Five days of coastal cleanup on the Manila Bay island last month yielded a total of 16,000 kg of trash, DENR data showed, the bulk of it plastics, including the sachets made of aluminium and blends of plastics. These packets give some of the poorest people in Asia access to everyday household essentials. For the multinationals that manufacture them, it's a way to increase sales by targeting customers who cannot afford bigger quantities. Such sachets are sold in most developing countries but the number consumed in the Philippines is staggering - 163 million pieces a day, according to a recent study by environment group The Global Alliance for Incinerator Alternatives (GAIA).**

Analysis: This argument, which argues that single-use plastic production has a negative impact on low-income communities, could be coupled with a structural violence framework for maximum effect. Teams could make this argument stronger by looking into how the United States offshores plastic waste to other, poorer countries.

PRO: Single-use plastics disproportionately harm communities of color

Argument: The negative environmental externalities of plastic, such as production and waste, are disproportionately located in communities of color.

Warrant: Single-use plastic waste is at record highs

Whiteman, Hilary. "The world is creating more single-use plastic waste than ever, report finds." *CNN Business*, February 5, 2023, <https://www.cnn.com/2023/02/05/energy/single-use-plastics-volume-grows-climate-intl-hnk/index.html>.

The world is producing a record amount of single-use plastic waste, mostly made from polymers created from fossil fuels, despite global efforts to reduce plastic pollution and carbon emissions, according to a new report released Monday. The second Plastic Waste Makers Index, compiled by the philanthropic Minderoo Foundation, found the world generated 139 million metric tons of single-use plastic waste in 2021, which was 6 million metric tons more than in 2019, when the first index was released. The report found the additional plastic waste created in those two years equates to nearly one 1 kilogram (2.2 pounds) more for every person on the planet and was driven by demand for flexible packaging like films and sachets.

Warrant: The vast majority of all plastic is never recycled and continues to pollute the environment

Geyer, Roland, Jenna Jambeck, and Kara Law. "Production, use, and fate of all plastics ever made." *ScienceAdvances*, July 19, 2017, <https://www.science.org/doi/10.1126/sciadv.1700782>.

Plastics have outgrown most man-made materials and have long been under environmental scrutiny. However, robust global information, particularly about their end-of-life fate, is lacking. By identifying and synthesizing dispersed data on production, use, and end-of-life management of polymer resins, synthetic fibers, and additives, we present the first global analysis of all mass-produced plastics ever manufactured. **We estimate that 8300 million metric tons (Mt) as of virgin plastics have been produced to date. As of 2015, approximately 6300 Mt of plastic waste had been generated, around 9% of which had been recycled, 12% was incinerated, and 79% was accumulated in landfills or the natural environment. If current production and waste management trends continue, roughly 12,000 Mt of plastic waste will be in landfills or in the natural environment by 2050.**

Warrant: The real number is even lower because "recycled" plastic often ends up in landfills anyway

Sullivan, Laura, Emily Kwong, and Rebecca Ramirez. "The Myth of Plastic Recycling." *NPR*, December 12, 2022, <https://www.npr.org/2022/12/08/1141601301/the-myth-of-plastic-recycling>.

But the reality is that only a small fraction of plastic is ultimately recycled. **A recent Greenpeace report found that people may be putting plastic into recycling bins — but the amount of plastic transformed into new items in the U.S. is at a new roughly 5-6% low. The plastic industry has spent tens of millions of dollars promoting the benefits of plastic, a product that, for the most part, was buried, was burned or, in some cases, wound up in the ocean. The problem has existed for decades. In all that time, less than**

10 percent of plastic has ever been recycled. Meanwhile, plastic production is ramping up. New plastic is cheap. It's made from oil and gas, and it's almost always less expensive and higher quality. The result is that plastic trash has few markets — a reality the public has not wanted to hear.

Impact: Plastic manufacturing emissions disproportionately impact communities of color

Morath, Sarah J. "INSIGHT: Plastic pollution is an environmental justice issue." *Bloomberg Law*, July 14, 2020, <https://news.bloomberglaw.com/environment-and-energy/insight-plastic-pollution-is-an-environmental-justice-issue>.

In 2018, the EPA's National Center for Environmental Assessment published a report in the *American Journal of Public Health* that confirmed people of color are disproportionately impacted by air pollution, specifically, small airborne particles called particulate matter (PM) that have been linked to lung cancer. **The study looked at communities located within 2.5 miles of refineries, including those associated with plastic production, and found that these communities were disproportionately non-White, with the result that Black people were being exposed to about 1.5 times more particulate matter than White people. Hispanics had about 1.2 times the exposure of non-Hispanic Whites.**

Cancer Alley Is Now Coronavirus Alley The impacts from plastic refineries are particularly apparent in an 85-mile stretch between Baton Rouge, La., and New Orleans, dubbed **Cancer Alley**. This area, which is home to more than 150 plants and refineries, is also home to some of the highest cancer rates in the country. The communities closest to the plants and refineries are predominately Black. (ProPublica and RollingStone Magazine have published detailed articles on Cancer Alley). Recently, Cancer Alley has been declared Coronavirus Alley; the respiratory illnesses that residents

experience as a result of the refineries are also pre-existing conditions that make residents more susceptible to Covid-19.

Impact: Communities of color are more likely to use and less likely to recycle plastic

Harris, Chante. "Plastics in America Are a 'Story of Environmental Racism'." *The Energy Mix*, July 27, 2020, <https://www.theenergymix.com/plastics-in-america-are-a-story-of-environmental-racism/>.

Citing recent reports from the U.S. Sierra Club and Wired, **Harris notes that low-income Black, Indigenous and people of colour (BIPOC) are both more likely to use plastic products—since they're cheaper than alternatives, and few alternatives are on offer in their neighborhoods—and less likely to have the resources to recycle them after use. That means the only available option is to dispose of plastics in landfills that "have historically been placed in or near BIPOC neighborhoods," she writes. Citing the Global Alliance for Incinerator Alternatives (GAIA), Harris notes that "one of the distinct characteristics of garbage incinerators in the United States is that they are often sited in communities of colour and low-income communities."** That applies to 79% of the incinerators in America, and to all the health risks that go along with those communities' zoning.

Analysis: This argument, which argues that single-use plastic production has a negative impact on communities of color, could be coupled with a structural violence framework for maximum effect. The argument could also go hand-in-hand with an argument about how low-income communities are impacted by plastic production, which would use many of the same links.

PRO: Single-use plastics damage ecosystems.

Argument: Single-use plastics disrupt interspecies interactions within various ecosystems.

Warrant: North American ecosystems have been disrupted by plastic waste that kills wildlife and humans alike.

Milton, Lena. "Our Plastic Problem: Impacts of Single-Use Plastics on the Environment."
Ontario Nature, 12 May 2022. <https://ontarionature.org/plastic-problem-impacts-of-single-use-plastics-on-environment-blog>.

In 2010, over 8000 tonnes of plastic waste ended up in Canadian waterways, a number that has only grown in recent years. In fact, over 22 million pounds of garbage enters the Great Lakes every year, with 3 million pounds entering Lake Ontario. This pollution has devastating effects on aquatic and terrestrial ecosystems. The plastic debris injures and kills wildlife, either from being tangled or through ingestion. Additionally, as the plastic decomposes, it leaches toxic chemicals that can harm both humans and animals alike.

Warrant: Microplastics found in single use plastics help transport invasive species into vulnerable ecosystems.

Chebbi, Nour. "Microplastics and Invasive Species Threat to Marine Life and Ecosystems."
EdenTech, 1 Mar. 2023. <https://eden-microfluidics.com/news-events/microplastics-and-invasive-species-threat-to-marine-life>.

Microplastics and invasive species are two major environmental issues that have emerged as significant challenges to the global community. While they are distinct problems, they **share commonalities that have created a convergent impact on marine**

ecosystems. Microplastics have a range of harmful effects, including entanglement and ingestion by marine life and the introduction of invasive species. But the emergence of microplastics and invasive species as convergent issues is linked to the transport of non-native species on the plastics, which fragment and float in the ocean for years as they travel vast distances. Microplastics can then serve as a vehicle for invasive species, allowing them to travel long distances and colonize new environments. Once established, invasive species can have devastating effects on native ecosystems, outcompeting native species for resources, and altering habitats.

Warrant: Plastics interfere with the way oceanic ecosystems regulate climate change.

Oceana. "How Single Use Plastics are Hurting Our Oceans and Warming Our Planet." Peril & Promise, 1 Nov. 2023. <https://www.pbs.org/wnet/peril-and-promise/2023/11/how-single-use-plastics-hurt-our-oceans-and-warm-our-planet/>.

Plastic in the oceans may also interfere with the ocean's capacity to absorb and sequester carbon dioxide, thus creating another pathway through which plastic pollution contributes to and accelerates climate change. Microplastics concentrate on the very thin surface layer of the ocean. Dr. Warner said, "The oceans have been taking up 30 to 50% of all of this carbon dioxide that we've emitted. So, if we disrupt the ability of the ocean to do this, it will just make climate change that much worse." "We know from experiments that plastic could affect their [aquatic animal's] survival, their behavior, metabolism, reproduction. It could make all of these things worse, including the fish that we eat. If fish behavior changes, they can't avoid predators as rapidly and have problems reproducing. There'll be fewer fish," Dr. Warner added.

Impact: Banning single use plastics would prevent invasive species from having disastrous environmental impacts.

US Department of Agriculture National Invasive Species Information Center.

“Environmental and Ecological Impacts.” USDA, 09 Mar. 2023.

<https://www.invasivespeciesinfo.gov/subject/environmental-and-ecological-impacts>.

Invasive species can impact both the native species living within an ecosystem as well as the ecosystem itself. Native species populations can be directly affected through predation, herbivory, and disease (Simerloff 2013). For example, the brown tree snake (*Boiga irregularis*) caused the extirpation of nine species of bird on Guam, and the hemlock woolly adelgid (*Adelges tsugae*) has caused widespread mortality of eastern hemlock trees by feeding on its sap (Simerloff and Rejmánek 2011). Indirectly, invasive species may cause native species declines due to resource competition and habitat alteration (Davis 2009). For instance, plant invasions have been demonstrated to alter carbon and nitrogen cycles and fire regimes in invaded ecosystems (Simerloff and Rejmánek 2011). The invasion of downy brome (*Bromus tectorum*) in Western U.S. grasslands has led to an increase in the frequency and intensity of wildfires (Simerloff and Rejmánek 2011), and saltcedar (*Tamarix spp.*) makes the soil inhospitable to native species by depositing large amounts of salt into the surrounding soil (Bell et al. 2002).

Impact: Climate action now is extremely effective at saving lives and resources.

Jones, Ernesta. “EPA Report: For the US, Global Action Now Saves Lives and Avoids Significant Climate Change Damages.” United States Environmental Protection Agency, 22 Jun. 2015. <https://www.epa.gov/archive/epa/newsreleases/epa-report-us-global-action-now-saves-lives-and-avoids-significant-climate-change.html>.

The peer-reviewed report, “Climate Change in the United States: Benefits of Global Action,” examines how future impacts and damages of climate change across a number of sectors in the United States can be avoided or reduced with global action. **The report compares two future scenarios: a future with significant global action on climate change, where global warming has been limited to 2 degrees Celsius (3.6 degrees Fahrenheit), and a future with no action on climate change (where global temperatures rise 9 degrees Fahrenheit).** The report then quantifies the differences in health, infrastructure and ecosystem impacts under the two scenarios, producing estimates of the costs of inaction and the benefits of reducing global GHG emissions. “Will the United States benefit from climate action? Absolutely. This report shows us how costly inaction will be to Americans' health, our environment and our society. But more importantly, it helps us understand the magnitude of benefits to a number of sectors of the U.S. with global climate action,” said EPA Administrator Gina McCarthy. **“We can save tens of thousands of American lives, and hundreds of billions of dollars, annually in the United States by the end of this century, but the sooner we act, the better off America and future generations of Americans will be.”** The report examines how the impacts and damages of climate change across a number of sectors in the United States can be avoided with global action. The findings include: **Global action on climate change reduces the frequency of extreme weather events and associated impacts. For example, by 2100 global action on climate change is projected to avoid an estimated 12,000 deaths annually associated with extreme temperatures in 49 U.S. cities, compared to a future with no reductions in greenhouse gas emissions. This is more than a 90 percent reduction from what we would expect with no action. Global action now leads to greater benefits over time.** The decisions we make today will have long-term effects, and future generations will either benefit from, or be burdened by, our current actions. **Compared to a future with unchecked climate change, climate action is projected to avoid approximately 13,000 deaths in 2050 and 57,000 deaths annually in 2100 from poor air quality. Delaying action on emissions reductions will likely reduce these and other benefits. Global action on climate change avoids costly**

damages in the United States. For nearly all of the 20 sectors studied, global action on climate change significantly reduces the economic damages of climate change. For example, without climate action, we estimated up to \$10 billion in increased road maintenance costs each year by the end of the century. With action, we can avoid up to \$7 billion of these damages.

Analysis: This is a classical argument that can be impacted out in many different ways and it will be the staple of any argument on this topic. The only problem with it is that it is non-specific to bans on single-use plastic since it only looks at the impact of plastics on the environment as a whole.

PRO: Single-use plastics create waste buildup

Argument: Single-use plastics contribute to the excessive waste that the United States is unable to sustainably dispose of.

Warrant: The United States struggles to dispose of its waste.

Environment America. “Trash in America: Moving from Destructive Consumption Towards a Zero-Waste System.” Environment America Research & Policy Center, 29 Sept. 2021. <https://environmentamerica.org/center/resources/trash-in-america-2/>.

To protect public health and the environment, conserve natural resources and landscapes, and address the mounting crisis of climate change, **America should move toward an economic system characterized by zero waste.** To achieve that goal, **federal, state and local governments should enact policies and programs that incentivize shifting to a “circular” or “closed-loop” economy in which less is consumed and all materials are reused, recycled and composted in a continuous cycle.** The U.S. produces more than 12% of the planet’s trash, though it is home to only 4% of the world’s population. In 2018 alone, the U.S. threw out over 292 million tons of municipal solid waste (MSW) — the materials discarded by homes, businesses and institutions, such as universities and libraries. Americans throw out 4.9 pounds of trash per person every day — that’s nearly 1,800 pounds of materials per American every year. The majority of waste (62%) discarded by homes and businesses in the U.S. is ultimately dumped into landfills or burned in incinerators. More than 91% of plastic was landfilled or incinerated in 2018. Every 15.5 hours, Americans throw out enough plastic to fill the largest NFL stadium in the country, AT&T Stadium (the home of the Dallas Cowboys), and the pile grows larger every year. Our trash leads to even more waste than we see.

The products we use and dispose of are created by processes like mining and manufacturing, which generate far more, and far more dangerous, waste.

Warrant: Single-use plastics are increasing the amount of waste needing disposal faster than recycling can account for.

Whiteman, Hilary. "The world is creating more single-use plastic waste than ever report finds." CNN Business, 5 Feb. 2023.

<https://www.cnn.com/2023/02/05/energy/single-use-plastics-volume-grows-climate-intl-hnk/index.html>.

The second Plastic Waste Makers Index, compiled by the philanthropic Mindereroo Foundation, **found the world generated 139 million metric tons of single-use plastic waste in 2021, which was 6 million metric tons more than in 2019, when the first index was released.** The report found **the additional plastic waste created in those two years equates to nearly one 1 kilogram (2.2 pounds) more for every person on the planet and was driven by demand for flexible packaging like films and sachets.** In recent years, governments around the world have announced policies to reduce the volume of single-use plastic, banning products like single-use straws, disposable cutlery, food containers, cotton swabs, bags and balloons. In July, California became the first US state to announce its own targets — including a drop of 25% in the sale of plastic packaging by 2032. In December, the UK extended its list of banned items to include single-use trays, balloon sticks and some types of polystyrene cups and food containers. Bans are also in place in the European Union, Australia and India, among other places. But the report found that **recycling isn't scaling up fast enough to deal with the amount of plastic being produced, meaning that used products are far more likely to be dumped in landfills, on beaches and in rivers and oceans than to make it into recycling plants.** The index named just two companies in the petrochemical industry that are recycling and producing recycled polymers at scale: Taiwanese conglomerate Far Eastern New

Century and Thailand's Indorama Ventures, the world's largest producer of recycled PET for drink bottles. Indorama Ventures is also number four on a list of 20 of the world's biggest producers of virgin polymers used in single-use plastic. The list is led by US oil major Exxon (XOM)Mobil, China's Sinopec (SHI) and another US heavyweight, Dow, in that order, according to the report. And in making polymers bound for single-use plastic, those 20 companies generated around 450 million metric tons of greenhouse gas emissions — around the same amount of total emissions as the United Kingdom, according to Carbon Trust and Wood Mackenzie, which analyzed the data. Last June, the UK's Office for National Statistics said UK greenhouse gas emissions fell by 13% to just over 478 million tonnes of carbon dioxide equivalent (Mt Co2e) in the year to 2020.

Impact: Plastic waste from American homes is rarely properly recycled and instead contributes to environmental degradation in the developing world.

McCormick, Erin et al. "Where does your plastic go? Global investigation reveals America's dirty secret." The Guardian, 27 Jun. 2019.

<https://www.theguardian.com/us-news/2019/jun/17/recycled-plastic-america-global-crisis>.

What happens to your plastic after you drop it in a recycling bin? According to promotional materials from America's plastics industry, it is whisked off to a factory where it is seamlessly transformed into something new. This is not the experience of Nguyễn Thị Hồng Thắm, a 60-year-old Vietnamese mother of seven, living amid piles of grimy American plastic **on the outskirts of Hanoi.** Outside her home, **the sun beats down on a Cheetos bag; aisle markers from a Walmart store; and a plastic bag from ShopRite, a chain of supermarkets in New Jersey, bearing a message urging people to recycle it.** Nguyễn Thị Hồng Thắm is paid \$6.50 a day to sort recycling on the outskirts of Hanoi. Tham is paid the equivalent of \$6.50 a day to strip off the non-recyclable elements and sort what remains: translucent plastic in one pile, opaque in another. **A**

Guardian investigation has found that hundreds of thousands of tons of US plastic are being shipped every year to poorly regulated developing countries around the globe for the dirty, labor-intensive process of recycling. The consequences for public health and the environment are grim. A team of Guardian reporters in 11 countries has found: Last year, the equivalent of 68,000 shipping containers of American plastic recycling were exported from the US to developing countries that mismanage more than 70% of their own plastic waste. The newest hotspots for handling US plastic recycling are some of the world's poorest countries, including Bangladesh, Laos, Ethiopia and Senegal, offering cheap labor and limited environmental regulation. In some places, like Turkey, a surge in foreign waste shipments is disrupting efforts to handle locally generated plastics. With these nations overwhelmed, thousands of tons of waste plastic are stranded at home in the US, as we reveal in our story later this week.

Impact: Landfills with single-use plastic produce methane which increases greenhouse gas emissions.

Clifford, Catherine. "Trillions of pounds of trash: New technology tries to solve an old garbage problem." CNBC, 29 May 2021.
<https://www.cnbc.com/2021/05/29/can-new-technology-solve-a-trillion-pound-garbage-problem.html>.

Even if you could figure out where to put that much garbage, it's going to leak dangerous greenhouse gasses that contribute to climate change. Solid waste landfills are the third-largest source of methane emissions in the United States, according to the most recent data available from the Environmental Protection Agency. In 2019, landfills released 15% of methane emissions, which is equivalent to emissions from more than 21.6 million passenger cars driven for one year.

Analysis: This will be one of the strongest arguments to use in rounds, particularly if attention is paid to the Whiteman card that notes how the companies leading the use of recyclable polymers are also selling some of the highest quantities of single-use plastics. Used the right way, this card can be leveraged to suggest that waiting for technological development will not solve the problem of waste because companies will continue to produce the technologically advanced polymers alongside the harmful single use plastics unless a ban is instituted.

PRO: Single-use plastics create harmful microplastics

Argument: Banning single-use plastics would reduce the presence of microplastics in food and water supplies.

Warrant: Microplastics from single-use plastics do not break down and cannot be removed through water treatment.

Brown, Tyson. "Microplastics." National Geographic, 31 Oct. 2023.

<https://education.nationalgeographic.org/resource/microplastics/>.

Microplastics, as the name implies, **are tiny plastic particles**. Officially, they are defined as plastics less than five millimeters (0.2 inches) in diameter—smaller in diameter than the standard pearl used in jewelry. There are two categories of microplastics: primary and secondary. **Primary microplastics are tiny particles designed for commercial use, such as cosmetics, as well as microfibers shed from clothing and other textiles, such as fishing nets. Secondary microplastics are particles that result from the breakdown of larger plastic items, such as water bottles. This breakdown is caused by exposure to environmental factors, mainly the sun’s radiation and ocean waves. The problem with microplastics is that—like plastic items of any size—they do not readily break down into harmless molecules. Plastics can take hundreds or thousands of years to decompose—and in the meantime, wreak havoc on the environment. On beaches, microplastics are visible as tiny multicolored plastic bits in sand. In the oceans, microplastic pollution is often consumed by marine animals. Some of this environmental pollution is from littering, but much is the result of storms, water runoff, and winds that carry plastic—both intact objects and microplastics—into our oceans. Single-use plastics—plastic items meant to be used just once and then discarded, such as a straw—are the primary source of secondary plastics in the environment.** Microplastics have been detected in marine organisms from plankton to

whales, in commercial seafood, and even in drinking water. **Alarmingly, standard water treatment facilities cannot remove all traces of microplastics.** To further complicate matters, microplastics in the ocean can bind with other harmful chemicals before being ingested by marine organisms.

Warrant: Microplastics are significantly present in human drinking water sources.

Koelmans, Albert. "Microplastics in Freshwaters and Drinking Water: Critical Review and Assessment of Data Quality." *Water Research*, vol. 155, 15 May 2019.
<https://doi.org/10.1016%2Fj.watres.2019.02.054>.

Microplastics have recently been detected in drinking water as well as in drinking water sources. This presence has triggered discussions on possible implications for human health. However, there have been questions regarding the quality of these occurrence studies since there are no standard sampling, extraction and identification methods for microplastics. Accordingly, **we assessed the quality of fifty studies researching microplastics in drinking water and in its major freshwater sources. This includes an assessment of microplastic occurrence data from river and lake water, groundwater, tap water and bottled drinking water. Studies of occurrence in wastewater were also reviewed.** We review and propose best practices to sample, extract and detect microplastics and provide a quantitative quality assessment of studies reporting microplastic concentrations. Further, we summarize the findings related to microplastic concentrations, polymer types and particle shapes. **Microplastics are frequently present in freshwaters and drinking water, and number concentrations spanned ten orders of magnitude (1×10^{-2} to 10^8 #/m³) across individual samples and water types. However, only four out of 50 studies received positive scores for all proposed quality criteria, implying there is a significant need to improve quality assurance of microplastic sampling and analysis in water samples.** The order in globally detected polymers in these studies is PE \approx PP > PS > PVC > PET, which probably reflects the global plastic

demand and a higher tendency for PVC and PET to settle as a result of their higher densities. **Fragments, fibres, film, foam and pellets were the most frequently reported shapes.** We conclude that more high quality data is needed on the occurrence of microplastics in drinking water, to better understand potential exposure and to inform human health risk assessments.

Impact: Exposure to microplastics found in single-use plastics has negative impacts on human health.

Lee, Yongjin et al. "Health Effects of Microplastic Exposures: Current Issues and Perspectives in South Korea." *Yonsei Medical Journal*, 20 Apr. 2023. 10.3349/ymj.2023.0048.

Recently, **microplastics have been recognized as important pollutants that cause environmental problems.** Microplastics have been detected in food consumed by humans or in the air. Therefore, **they may affect human health through food consumption or inhalation. Ingested or inhaled microplastics may accumulate in the body and trigger an immune response or cause local particle toxicity. In addition, chronic exposure may cause more problems through accumulation in the body.** However, to date, no definitive evidence has been reported regarding exposure levels, due to a limited number of studies on the exposure doses. [...] Plastic, which has become inseparable from human life, has given various benefits to mankind, but is naturally or artificially divided into various sizes and affecting the natural ecosystem. **When the size of the plastic becomes smaller and microplastics are formed, they can be absorbed, ingested, or inhaled into the human body through the skin, gastrointestinal system, or lungs. These microplastics can physically block the digestive system, stimulate the mucous membrane, and injure it. Also, when the size of microplastics becomes smaller than 1 micrometer to form nanoplastics, which are ultrafine plastics, they can pass through the primary tissue barrier in the body and penetrate the capillary blood vessel**

through the blood stream, which can be dispersed throughout the body. In addition, ultrafine plastics have hydrophobic properties that do not dissolve in water and can be dispersed, resulting in various properties. Microplastics are so small that they are almost impossible to recover once they are released into the ecosystem. As a result, countries around the world are strengthening related laws on primary microplastics. For example, the EU is taking various measures to recycle plastics, develop biodegradable plastics, distinguish harmful substances in plastics, and prevent marine waste generation.

Impact: Chemical additives to microplastics pose additional risks.

Singh, Surya et al. "Microplastics in Drinking Water: a Macro Issue." *Water Supply*, vol 22, no. 5, 03 May 2022. <https://doi.org/10.2166/ws.2022.189>.

Apart from the microplastics themselves, chemical additives and contaminants sorbed on to these particles might also pose serious health hazards (Ziccardi et al. 2016; Barboza et al. 2018; Rist et al. 2018). It has been reported in marine organisms that translocation of contaminants adsorbed on the microplastics into other body tissues increases with the duration of passage through the gut of the organisms (Chua et al. 2014). Similar may be the fate of microplastics in the human body as well. Moreover, the chemicals/additives used in the manufacturing process of plastics/microplastics cause various impacts upon ingestion, such as reproductive abnormalities (Swan et al. 2005; Lang et al. 2008; Swan 2008). It has been demonstrated that chemicals, such as phthalates and bisphenol A (BPA), which are commonly added in microplastics, are found in the human body (Thompson et al. 2009). Moreover, epidemiological studies have proven the relation between phthalate levels and adverse human health effects (Swan et al. 2005). Microplastics are also known to adsorb various metals/metalloids, such as cadmium, manganese, lead, arsenic, copper, zinc, chromium, etc., on their surfaces (Brennecke et al. 2016; Gao et al. 2019; Selvam et al. 2021). Polyethylene terephthalate particles have been reported

to accumulate lead, cadmium, and zinc (Abbasi *et al.* 2020). Likewise, arsenic, cadmium, chromium, and lead were found to be associated with high density polyethylene (Holmes *et al.* 2012; Jinhui *et al.* 2019; Mohsen *et al.* 2019). Deleterious health impacts associated with metals are widely recognized (Table 4) (Khan *et al.* 2008; Rehman *et al.* 2017; Jain *et al.* 2018; Jain *et al.* 2019) and altered endocrine system and abrupt hormonal responses have been reported in organisms due to the effects of microplastics laden with metals/metalloids (Rochman *et al.* 2014). Furthermore, ingested microplastics can also serve as vectors of harmful bacteria that are adsorbed on their surface such as *Vibrio* spp. (Kirstein *et al.* 2016).

Analysis: Refer back to the health impacts listed above but do not excessively exaggerate their significance to win the weighing battle- it will sound excessively conspiratorial or paranoid to say that drinking water is not safe and that drinking it will cause society's downfall.

PRO: Single-use plastics create significant greenhouse gas emissions

Argument: Banning single-use plastics would eliminate the emissions they release at every stage of their life cycle.

Warrant: Coal is an essential part of the single-use plastics industry which damages the environment.

Cabernard, Livia et al. "Growing Environmental Footprint of Plastics Driven by Coal Combustion." *Nature Sustainability*, vol. 5, 2 Dec. 2021.
<https://doi.org/10.1038/s41893-021-00807-2>.

Research on the environmental impacts from the global value chain of plastics has typically focused on the disposal phase, considered most harmful to the environment and human health. However, the production of plastics is also responsible for substantial environmental, health and socioeconomic impacts. We show that the **carbon and particulate-matter-related health footprint of plastics has doubled since 1995, due mainly to growth in plastics production in coal-based economies. Coal-based emissions have quadrupled since 1995, causing almost half of the plastics-related carbon and particulate-matter-related health footprint in 2015. Plastics-related carbon footprints of China's transportation, Indonesia's electronics industry and India's construction sector have increased more than 50-fold since 1995. In 2015, plastics caused 4.5% of global greenhouse gas emissions. Moreover, 6% of global coal electricity is used for plastics production. The European Union and the United States have increasingly consumed plastics produced in coal-based economies. In 2015, 85% of the workforce required for plastics consumed by the European Union and the United States was employed abroad, but 80% of the related value added was generated**

domestically. As high-income regions have outsourced the energy-intensive steps of plastics production to coal-based economies, renewable energy investments throughout the plastics value chain are critical for sustainable production and consumption of plastics.

Warrant: Plastics are created through a fossil fuel-intensive process that releases a significant amount of greenhouse gas emissions.

Lindwall, Courtney. "Single-Use Plastics 101." NRDC, 9 Jan. 2020.
<https://www.nrdc.org/stories/single-use-plastics-101>.

Our addiction to plastic also has negative impacts on the climate. **A 2019 report by the Center for International Environmental Law (CIEL) showed that plastic production contributes to planet-warming greenhouse gas emissions at every point in its life cycle. The process of drilling for plastic's source materials, oil and gas, leads to methane leaking and flaring and is often combined with clearing forests and wetlands that otherwise would have sequestered carbon. Refineries where crude oil is turned into plastic make up one of the most greenhouse gas-intensive industries in the manufacturing sector. And "cracker plants"—which break, or "crack," ethane molecules, a component of natural gas, into the chemical building blocks of plastic products—are energy intensive and highly polluting. According to the CIEL report, in 2015 a mere 24 of these ethane cracker facilities in the United States had the combined carbon output of 3.8 million passenger vehicles. And the recent fracking boom, resulting in a surplus of oil, is fueling a subsequent rise in cracker plants, too. That's bad news for our carbon reduction goals: If plastic production continues unabated, its greenhouse gas emissions could reach 1.34 gigatons per year by 2030—equal to adding nearly 300 new coal-fired power plants—even as the need to curb global climate change becomes more urgent.**

Warrant: Plastics compose a significant percentage of human greenhouse gas emissions.

OECD. "Plastic leakage and greenhouse gas emissions are increasing." OECD, 2019.

<https://www.oecd.org/environment/plastics/increased-plastic-leakage-and-greenhouse-gas-emissions.htm>.

Beyond the hazards posed to the marine and terrestrial environment as well as to humans, **plastics are also a substantial contributor to global greenhouse gas emissions. In 2019, plastics generated 1.8 billion tonnes of greenhouse gas (GHG) emissions – 3.4% of global emissions – with 90% of these emissions coming from their production and conversion from fossil fuels. By 2060, emissions from the plastics lifecycle are set to more than double, reaching 4.3 billion tonnes of GHG emissions.** Furthermore, airborne microplastics have been found in remote regions, including the Arctic, where they may contribute to accelerated warming through absorbing light and decreasing the surface albedo of snow.

Impact: Reusable plastics release fewer emissions than single-use plastics.

Nissi, Milla and Mark Potter. "Reusable Packaging Could Cut Emissions From Plastics by Up to 69% - study." Reuters, 21 Nov. 2023.

<https://www.reuters.com/business/environment/reusable-packaging-could-cut-emissions-plastics-by-up-69-study-2023-11-22/>.

The widespread adoption of returning and reusing plastic packaging could help to cut greenhouse gas emissions by up to 69%, a study by the Ellen MacArthur Foundation showed on Wednesday. Such schemes not only lower companies' emissions but can also drive down costs for some items, according to the study covering over 60 organisations including national governments and consumer goods companies such as Danone (DANO.PA), Nestlé (NESN.S), PepsiCo (PEP.O) and Unilever (ULVR.L). The

foundation, known for promoting a circular economy, carried out the study in partnership with Systemiq, a UK-based firm focused on sustainable businesses, and environmental consultancy Eunomia. The study, published at a time when the United Nations' attempts to deliver the world's first treaty to control plastic pollution show little sign of progress, called for a systemic change to stem and reverse plastic waste across beverages, personal care, fresh food, and food cupboard sectors. **Under its most ambitious scenario - called System Change - reuse schemes could reduce greenhouse gas emissions by 35% to 69%, water usage by 45% to 70%, and material usage by 45% to 76%, the foundation said.** However, deposit schemes are likely to be key to achieving such targets by driving high return rates, it added. In the System Change scenario, if consumers received 20 euro cents back when they return packaging to seller, it would lead to significantly lower net costs for returnable beverage and personal care bottles compared with single-use options.

Impact: Reducing carbon emissions is necessary to stall the consequences of global warming.

Milman, Oliver. "How Millions of Lives Can Be Saved if the US Acts Now on Climate." The Guardian, 16 Jun. 2022.

<https://www.theguardian.com/environment/2022/jun/16/us-climate-crisis-millions-lives-saved>.

For the first time, researchers have calculated exactly how many people the US could save by acting on the climate crisis. **A total of 7.4 million lives around the world will be saved over this century if the US manages to cut its emissions to net zero by 2050, according to the analysis. The financial savings would be enormous, too, with a net zero America able to save the world \$3.7tn in costs to adapt to the rising heat. As the world's second largest polluter of greenhouse gases, the US and its political vagaries will in large part decide how many people in faraway countries will be subjected to deadly heat, as well as endure punishing storms, floods, drought and other**

consequences of the climate emergency. “Each additional ton of carbon has these global impacts – there is a tangible difference in terms of death rates,” said Hannah Hess, associate director at the research group Rhodium, which is part of the Climate Impact Lab consortium that conducted the study. “There’s a sense of frustration over the lack of progress at the national level on climate but every action at state or local level makes a difference in terms of lives.”

Analysis: This is just a more targeted version of the standard “single-use plastics are bad for the environment” argument, but the competitive advantage is that you can more easily compare single-use plastic emissions against a likely counterfactual of reusable plastic emissions to show why reusable plastics are better.

PRO: Single-use plastics create plastic incineration

Argument: Banning single-use plastics would reduce the demand for plastic incineration.

Warrant: Burning plastic is a significantly dirtier method of waste management than the burning of fossil fuels directly.

Merante, Anthony. "Burning Plastic is Not a Recycling Solution; It's More Pollution."
Oceana, 28 Jul. 2022. <https://oceana.ca/en/blog/burning-plastic-is-not-a-recycling-solution-its-more-pollution/>.

Burning plastic is actually one of the highest greenhouse gas emitting forms of energy production. Burning plastic for energy emits 3.8 times more greenhouse gas emissions than the energy grid average and is a significantly dirtier source of energy than coal and oil. In Canada, we have numerous renewable energy options, like hydro, wind and solar in many of our populated areas. Simply put, we do not need energy created from burning plastic waste in Canada.

Warrant: Plastic incineration is a silent driver of climate change.

Gaia. "The Hidden Climate Polluter: Plastic Incineration." 2023. <https://www.no-burn.org/the-hidden-climate-polluter-plastic-incineration/>.

Globally, **burning plastic packaging adds 16 million metric tons of GHGs into the air, which is equivalent to more than 2.7 million homes' electricity use for one year. If the petrochemical industry massively expands by 2050, GHG emissions from plastic packaging incineration will increase to 309 million metric tons. These estimates only account for plastic packaging, which represents 40% of whole plastic waste stream, and only the 64% of plastic packaging waste that is managed after use.** That is just a

little more than a quarter of all plastic waste. Therefore, possibilities for far greater climate impact lie in the remaining portion. **The U.S. is the second largest plastic consumer and generates almost 38 million tons of plastic waste each year. The climate impact of plastic waste incineration in the U.S. was about 5.9 million metric tons in 2015, which is equivalent to 1.26 million passenger vehicles driven for one year, or more than half a billion gallons of gasoline consumed.** Despite the urgency in tackling plastic pollution and climate change by reducing the amount of plastic used and burned, the incineration industry has worked to portray themselves as “renewable energy,” misleading decision makers and the general public into providing them with renewable energy subsidies that should be going to *real* renewables.

Warrant: Burning plastic has intense negative health consequences for people in the surrounding area.

UN Environment Programme. “Plastic Bag Bans Can Help Reduce Toxic Fumes.” United Nations, 2 May 2019. <https://www.unep.org/news-and-stories/story/plastic-bag-bans-can-help-reduce-toxic-fumes>.

The burning of plastics releases toxic gases like dioxins, furans, mercury and polychlorinated biphenyls (better known as BCPs) into the atmosphere, and poses a threat to vegetation, and human and animal health. Dioxins settle on crops and in our waterways where they eventually enter our food and hence our bodies. These dioxins are potentially lethal persistent organic pollutants that can cause cancer and disrupt thyroid and respiratory systems. Phthalates, the very chemicals that give plastic their desirable qualities—flexibility and softness—are endocrine disruptors, associated with a plethora of health problems, from fertility issues and neonatal impacts on babies to allergies and asthma. “Burning of plastic waste increase the risk of heart disease, aggravates respiratory ailments such as asthma and emphysema and cause rashes, nausea or headaches, and damages the nervous system,” says the study. Burning

plastic also releases black carbon (soot), which contributes to climate change and air pollution. Around the world, efforts are being made to reduce the amount of plastic waste that ends up in landfills or in our oceans. For instance, in March 2019, the European Union approved a law to ban many single-use plastic items, such as plastic cutlery, single-use plastic plates, plastic straws, and plastic balloon sticks, from 2021.

Impact: The plastic trade and the ensuing incineration with its negative health impacts perpetuate global inequalities.

Environmental Investigation Agency. "Plastic Waste Power Play." EIA & Rethink Plastic, Jan. 2023. https://eia-international.org/wp-content/uploads/EIA_UK_Plastic_Waste_Trade_Report_0123_FINAL_SINGLES.pdf.

The majority of plastic consumed since the 1950s stems from Organisation for Economic Co-operation and Development (OECD) 10 America and OECD Europe, which have collectively consumed 54 per cent of the world's plastics produced since records began (30 per cent and 24 per cent, respectively). Perhaps unsurprisingly, the US and EU Member States have also formed the top 10 plastic waste exporting countries since records began. 11 Plastic consumption patterns are changing, but OECD Europe is still one of the largest plastic consuming regions in the world. In 2021 the largest plastic consuming regions were OECD America (22 per cent), China (21 per cent), OECD Europe (18 per cent) and Other Asia (15 per cent). However, it is vital to note that per capita plastic waste generated, OECD America and OECD Europe are the biggest plastic waste producers. For instance, in 2016 the EU-28 produced 349 per cent more kilogrammes of plastic waste per person per annum than China. 12 The exporting of plastic waste helps perpetuate the linear status quo – EIA's The Truth Behind Trash report found that the increase of plastic resin production (virgin plastic) over time correlated with the level of plastic waste exported globally

Impact: Cutting emissions by banning single-use plastics would save lives.

Candanosa, Roberto. "Reducing Emissions to Lessen Climate Change Would Yield Dramatic Health Benefits by 2030." NASA Global Climate Change, 30 Nov. 2021. <https://climate.nasa.gov/news/3134/reducing-emissions-to-lesser-climate-change-would-yield-dramatic-health-benefits-by-2030/>.

The research shows **reducing global emissions over the next 50 years to meet the goal of the Paris Agreement to keep global warming under 2°C through the end of the century would prevent about 4.5 million premature deaths, 1.4 million hospitalizations and emergency room visits, 300 million lost workdays, 1.7 million incidences of dementia, and 440 million tons of crop losses in the United States. Roughly two-thirds of those benefits would be realized even if only the United States reduced emissions.** "What we found was that there was a real difference across time, that you have to spend a lot of money now to deal with climate change and transition your economy to renewable energy, and your cars to electric vehicles, electrify all appliances, all of these kinds of things," Shindell said. "That saves you money in the long run, but in the near term, it doesn't really give you benefits from reduced climate change that outweigh the cost, because climate is slow, it just doesn't respond that quickly." The effects of improved air quality, however, occur at a faster pace.

Analysis: Prove that plastic incineration is the most likely method of waste disposal, but if they try to suggest it will sit in landfills instead, then show why this is equally unsatisfactory.

PRO: Other countries will follow US lead

Argument: The United States can establish itself as a global leader against climate change and inspire other countries to follow its lead in establishing a single-use plastic ban. Based on plastic bag bans and recent policies in the UK, plastic bans are highly contagious globally and have the potential to significantly reduce the adverse impacts of climate change.

Claim: The US can lead by example in the global fight against climate change and forge international coalitions.

Hultman, Nathan and Samantha Gross. "How the United States can return to credible climate leadership", Brookings Institute, 1 Mar 2021, <https://www.brookings.edu/articles/us-action-is-the-lynchpin-for-successful-international-climate-policy-in-2021/>.

Support international efforts and national strategies. **The United States can employ its substantial foreign policy apparatus to engage with key countries, partners, and allies around the world. In doing this, the United States can first communicate how it will achieve its own ambitious goals, then seek to understand how other countries anticipate delivering on their own goals and work with them bilaterally or multilaterally to support their national climate strategies.** Finally, it can work with partners around the world to ensure that there is broad support for a strong outcome at the climate conference later this year. Fundamentally, the climate challenge requires pushing the technological frontier in a dozen key sectors, from electricity to cars to building materials. In every sector the challenge is different, and **in every sector there are different arrays of international partners, such as national and subnational governments and pioneering firms.** The United States should ally with the U.K. government as it advances key "campaigns" that reflect this sector-focused approach to deep decarbonization. The effort should identify a few sectors, such as cars and

electricity, where the United States is at the frontier and can particularly shape the global effort.

Warrant: Globally, 3 in 4 people support a single-use plastic ban.

Geddie, John. "75% of people want single-use plastics banned, global survey finds", Reuters, 21 Feb 2022, <https://www.reuters.com/business/environment/75-people-want-single-use-plastics-banned-global-survey-finds-2022-02-22/>.

LONDON, Feb 22 (Reuters) - **Three in four people worldwide want single-use plastics to be banned as soon as possible**, according to a poll released on Tuesday, as United Nations members prepare to begin talks on a global treaty to rein in soaring plastic pollution. **The percentage of people calling for bans is up from 71% since 2019, while those who said they favoured products with less plastic packaging rose to 82% from 75%, according to the IPSOS poll of more than 20,000 people across 28 countries.** Activists say **the results send a clear message to governments** meeting in Nairobi this month to press ahead with an ambitious treaty to tackle plastic waste, a deal being touted as the most important environmental pact since the Paris Agreement on climate change in 2015.

Warrant: Plastic bans spread globally; plastic bag bans prove.

Woodward, Aylin. "In some countries, people face jail time for using plastic bags. Here are all the places that have banned plastic bags and straws so far.", Business Insider, 3 Apr 2019, <https://www.businessinsider.com/plastic-bans-around-the-world-2019-4>.

The first country to ban plastic bags was Bangladesh, which enacted the rule in 2002. The country imposed the ban after officials discovered that the bags had blocked Bangladesh's drainage system during devastating floods, the BBC reported. **Nearly two**

decades later, dozens of countries — including France, India, Mali, the Republic of the Congo, Morocco, and Papua New Guinea — also have bans in place. Italy, Nepal, Myanmar, Sri Lanka, and French Guyana do, too.

Warrant: The United States can encourage other countries to adopt environmental policies by enacting the same policies itself.

Howard, Peter H. and Jason A. Schwartz. “Think Global: International Reciprocity as Justification for a Global Social Cost of Carbon”, Institute for Policy Integrity, Mar 2016, https://policyintegrity.org/files/publications/Global_SCC_Reciprocity_v2.pdf.

International reciprocity presents the strongest justification for a global focus. **Because the world’s climate is a single interconnected system, the United States benefits greatly when foreign countries consider the global externalities of their greenhouse gas pollution and cut emissions accordingly.** Game theory predicts that **one viable strategy for the United States to encourage other countries to think globally in setting their climate policies is for the United States to do the same, in a tit-for-tat, lead-by-example, or coalition-building dynamic.** In fact, most other countries with climate policies already use a global social cost of carbon or set their carbon taxes or allowances at prices above their domestic-only costs. **Additional policy justifications for a global SCC include the inevitability of significant “spillover” effects and the United States’ willingness to pay to prevent climate damages occurring outside U.S. borders.** For all these reasons, a domestic-only social cost of carbon or methane would fail to transparently disclose the true scope of climate-related costs and benefits that matter to U.S. policymakers and the public.

Warrant: UK plastic ban will motivate other countries.

Shaw, Jack. "Single-Use Plastic Bans Elsewhere Foreshadow US Future", Packaging Digest, 15 Nov 2023, <https://www.packagingdigest.com/sustainability/single-use-plastic-bans-elsewhere-foreshadow-us-future>.

Meanwhile, in the United States, American lawmakers have not yet placed a federal ban on single-use plastics. However, **California, Connecticut, Delaware, Hawaii, Maine, New York, Oregon, and Vermont have all banned plastic shopping bags. The US Department of the Interior wants to phase out single-use plastics from public lands by 2032. For now, initiatives to reduce plastic waste are largely at the local and state levels. Small-scale changes will give businesses more time to find cost-effective alternatives and help consumers adjust their buying habits. As Europe and the UK make progress, other countries should follow suit with their own plastic bans.**

Impact: Reducing plastic pollution can help reverse climate change, but only if it's done at a global scale.

Crawford, Iris and Christopher Noble. "Would stopping plastic pollution help with climate change? How do we do it?", MIT Climate Portal, 16 Aug 2022, <https://climate.mit.edu/ask-mit/would-stopping-plastic-pollution-help-climate-change-how-do-we-do-it>.

Reducing plastics is vital, he adds, but doing so requires worldwide cooperation. Nearly 130 countries have plastic regulations, ranging from bans on certain types of plastics and plastic products, to laws mandating that producers ensure a certain rate of recycling or responsible disposal, but policies vary between nations and have limited efficacy as plastic consumption keeps rising. Despite the challenges, there are movements toward a global shift. The UN Environment Programme, for example, is currently working to create an internationally-binding agreement focused on ending plastic pollution.¹² **Without these types of legal incentives and disincentives**

motivating plastic producers and consumers to choose alternatives, says Noble, the problems won't stop. "Policy innovation and cooperation are needed at the international, national, and local levels."

Analysis: This argument aims to achieve a high magnitude impact: climate change can be significantly curbed only if efforts are taken globally. Because the US has so much international clout, it can lead by example in order to tackle the problem of plastic pollution. The example of the UK proves that countries can act as inspiration for others to follow suit.

PRO: Single-use plastics cause health problems.

Argument: Single-use plastics contain a variety of harmful chemicals that cause adverse effects on humans' hormones, immune systems, and digestive tracts, increasing the risk of cancer and other deadly diseases. Due to the adverse effects of plastic, some estimates put the global death toll at as high as 1 million per year.

Claim: Single-use plastics pollute the air, water, and soil, causing a variety of health problems.

Gold, Eryn. "WHAT YOU NEED TO KNOW ABOUT THE IMPACT OF PLASTICS ON HUMAN HEALTH", EarthDay.Org, 19 Jul 2023, <https://www.earthday.org/what-you-need-to-know-about-the-impact-of-plastics-on-human-health/#:~:text=Studies%20have%20shown%20microplastics%20significantly,lung%20disease%2C%20and%20birth%20defects.>

Did you know the most commonly used plastic products carry toxic chemicals easily inhaled and ingested by humans? In fact, **the incineration of plastic waste in the disposal stage disperses these chemicals into the air and causes the contamination of water and soil, lethal to all people who inevitably come in contact with it.** Every time someone litters at the beach or fails to dispose of their waste properly, they contribute to the spread of toxic chemicals into the environment. This is because ocean waves and radiation from the sun break down plastics such as water bottles, producing microplastics. **Microplastics float around in the environment, carrying chemicals used in plastic production along with them and end up being consumed by people through food, water, and breathing them from air. Studies have shown microplastics significantly damage cells in the human body, leading to serious health effects, including cancers, lung disease, and birth defects.** Not only this, but **toxic chemical additives in plastics can alter hormone activity in the human body which disrupts reproduction, growth and cognitive function. Microplastics also act as vessels for**

pathogens to enter the human body which increases the spread of disease. Plastics production is hazardous to human health and contributes to greenhouse gas emissions, marking plastics as a significant aspect of the fight against climate change. In fact, in 2022 the global cost of plastic-related health effects was estimated at a staggering \$100bn per year.

Warrant: High concentrations of microplastics in the human body can lead to health problems in future generations via reproductive repercussions.

“Exposure to Chemicals in Plastic”, Breastcancer.org, 12 Oct 2023,
<https://www.breastcancer.org/risk/risk-factors/exposure-to-chemicals-in-plastic>.

Depending on where you live and work, you're likely to be exposed to many plastic products every day. **Food and beverage containers, some disposable plates, and toiletry bottles are all plastic and all are made from chemicals. Research suggests that all plastics may leach chemicals if they're scratched or heated.** Research also strongly suggests that at certain exposure levels, some of the chemicals in these products, such as bisphenol A (BPA), may cause cancer in people. **BPA is a weak synthetic estrogen found in many rigid plastic products, food and formula can linings, dental sealants, and on the shiny side of paper cashier receipts (to stabilize the ink). Its estrogen-like activity makes it a hormone disruptor, like many other chemicals in plastics. Hormone disruptors can affect how estrogen and other hormones act in the body, by blocking them or mimicking them, which throws off the body's hormonal balance.** Because estrogen can make hormone-receptor-positive breast cancer develop and grow, many women choose to limit their exposure to these chemicals that can act like estrogen. BPA also seems to affect brain development in the womb. **In 2011, a study found that pregnant women with high levels of BPA in their urine were more likely to have daughters who showed signs of hyperactivity, anxiety, and depression. The symptoms were seen in girls as young as 3.** It's not clear why boys aren't affected in the same way.

Warrant: Plastics in waste water provide pathogenic organisms an opportunity to reproduce, leading to an increase in human infection.

Maquart, Pierre-Olivier, et al. "Plastic pollution and infectious diseases", *The Lancet*, Oct 2022, [https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196\(22\)00198-X/fulltext](https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196(22)00198-X/fulltext).

The versatility and resistance of plastic allowed for its massive use during the second half of the 20th century. Plastic is hardly degradable and—because waste management is often inefficient—around 55% ends up either in landfill or in nature. Plastic mismanagement thus durably pollutes the environment. Although several studies have pointed out the effect of microplastic and nanoplastic pollution on global health, few have focused on the effect of macroplastics on the proliferation and propagation of infectious diseases and thus on human and livestock health. **Plastic debris that holds water can encourage arthropod-borne disease by providing a habitat for some vectors' immature stages and shelter to anthropophilic and medically important species, potentially increasing local vector populations with implications for disease burden. Similarly, by acting as a stagnant water reservoir, waste plastic promotes the development of pathogenic bacteria (such as leptospirosis) and harmful algae. These microorganisms can produce biofilms, coating plastic fragments that can then colonise new water bodies. These concerns point to the need for a transdisciplinary approach to understand and potentially prevent plastic debris from influencing local vector-borne and waterborne diseases.**

Warrant: Single-use plastics in the body disrupt the balance of intestinal microbiota and can lead to a variety of gastrointestinal disorders.

De Souza-Silva, Thaiany Goulart, et al. "Impact of microplastics on the intestinal microbiota: A systematic review of preclinical evidence", ScienceDirect, Jan 2022, <https://www.sciencedirect.com/science/article/pii/S0024320522000662#s0065>.

Despite the quite heterogeneity of studies, we observed that, **in general, MPs are potent triggers of intestinal dysbiosis**, since they promoted an enrichment in the bacteria group of the phylum Firmicutes, Proteobacteria and Verrucomicrobia, while the phyla Bacteroidetes and Actinobacteria were reduced (Fig. 3). It is known that the intestinal microbiota of humans and other animals have different microbial compositions and can be influenced mainly by diet [62]. In addition, Firmicutes and Bacteroidetes are dominant microbial phyla in the intestinal microbiota of fish [63], mice and humans, representing about 90% of the human intestinal microbiota [64]. The Firmicutes phylum comprises bacterial distinct classes (Clostridia, Mollicutes and Bacilli) and a wide range of families and genera of commensal and pathobionts bacteria. That is, beneficial as well as opportunistic bacteria that take advantage of the intestinal microenvironment imbalance to become pathogenic [65], [66]. In fact, bacteria of the genus Clostridium, Staphylococcus, Enterococcus and Streptococcus, belonging to the Firmicutes phylum, **were enriched in the microbiota of animals fed with MPs and are bacterial genera that, when in imbalance, have been considered as potential biomarkers of inflammatory bowel diseases, such as Chron disease, pseudomembranous colitis [67], [68], in addition to being associated with antimicrobial resistance genes [69] and colon cancer [70].**

Impact: Plastics lead to upwards of a million human deaths per year.

Gulland, Anne. "Plastics killing up to a million people a year, warns Sir David Attenborough", The Telegraph, 14 May 2019,

<https://www.telegraph.co.uk/global-health/climate-and-people/plastics-killing-million-people-year-warns-sir-david-attenborough/>.

Sir David Attenborough has warned that **the growing tide of plastic pollution is killing up to a million people as year as well as having devastating consequences on the environment.** A report on the impact of plastic pollution, one of the first to document the impact of discarded plastic on the health of the poorest people in the world, estimates that **between 400,000 and one million people die every year because of diseases and accidents linked to poorly managed waste** in developing countries.

Analysis: This argument is strategic due to the high quality of the evidence and research studies. Empirically, research studies have proven that chemicals found in single-use plastics are linked to different diseases. It will be hard for the negative to disprove this and negate the idea that a single-use plastic ban would help reduce these health problems.

PRO: Banning single-use plastics forces companies to innovate.

Argument: As evidenced by other countries and smaller plastic bans, environmental policies force companies to change their business practices and become more sustainable. A single-use plastic ban would significantly incentivize/force companies to cut back on their harmful environmental impacts, decreasing pollution and boosting the economy.

Claim: A single-use plastic ban would force companies to innovate plastic alternatives.

Lindwall, Courtney. "Single-Use Plastics 101", NRDC, 9 Jan 2020,
<https://www.nrdc.org/stories/single-use-plastics-101#what>.

What do the bans accomplish? They prevent millions of tons of plastic from entering the waste stream each year. And when it comes to waste that lasts forever, every ton counts. In New York, 23 billion plastic bags are used by residents each year. **Not only does banning single-use plastic reduce pollution, but it also reduces demand for plastic production that's contributing to global climate change. But beyond these impacts, the bans have cultural effects. Companies are forced to innovate, rethinking their designs and sourcing sustainable materials.** And they help shift consumer mind-sets, as people begin to recognize that exorbitant and avoidable waste is not sustainable.

Warrant: Plastic bans have already encouraged companies to innovate and adopt more climate-friendly practices.

Beyo. "The War on Plastic: How have companies adapted globally?", Beyo Global Limited, 27 Aug 2019, <https://beyo.global/thinking/the-war-on-plastic-how-have-companies-adapted>.

These laws will impact differently on different industries. For example, **plastic bans will affect how e-commerce sites package their products. Hotel companies and airlines have started to reduce their single-use plastic consumption too.** While many hotels and airlines have already reduced, or completely stopped, their plastic straw usage, **hotel chain Marriott International has started to introduce shower-product dispensers in their bathrooms to cut down on plastic shampoo and conditioner bottles.** Anticipating change: On top of knowing the current laws on plastics within countries, **companies should be aware of the potential laws or bans in their current and potential markets, so they can anticipate change and adapt quickly.** For example, countries such as **Sweden, one of the most sustainable countries in the world, already has strict rules and views on plastics.** In July 2018 they banned microplastics/ microbeads which were found in products such as toothpaste and exfoliant. This ban allowed the cosmetic industry until January 2019, five months, to sell off their existing microplastic based products. **Although bans like this have forced companies to redesign their products, business strategy and shape, they have also opened gaps in markets allowing new companies to grow and be innovative.** Companies such as Boots banned microplastics in their products and any products they sold back in 2017, meaning they weren't impacted by the ban to the extent of companies who weren't prepared for the. **Boots have also recently gained a lot of positive media attention by aiming to swap plastic carrier bags for brown paper bags by early 2020. This will stop over forty million Boots plastic bags going to landfill per year, reducing over 900 tonnes of single-use plastic.**

Warrant: Climate policies push companies to be more sustainable, benefiting the economy--EU proves.

Hockenos, Paul. "Bold single-use plastic ban kicks Europe's plastic purge into high gear", PBS News, 11 June 2021, <https://www.pbs.org/newshour/science/bold-single-use-plastic-ban-kicks-europes-plastic-purge-into-high-gear>.

Since January 1 plastic producers in the EU have had to pay a levy of 800 euros per metric ton of non-recycled plastic packaging waste. Pressure from Brussels has also resulted in voluntary measures in the private sector: Coca-Cola Europe, for example, is well on its way to manufacturing 50 percent of its plastic bottles and cans from recycled content. According to EU, only 5 percent of plastic packaging's value currently remains in the economy after first use. This, it estimates, costs the European economy between 70 and 105 billion euros a year. "A closed loop," Löw said, "is when every material, every product and its components will be used as long as possible, repaired or refurbished if broken, [and] recycled into secondary raw material several times without losing material quality."

Warrant: Companies have the potential to lead the way on more sustainable plastic alternatives; solutions are possible.

Zhang, Alex. "The Plastic Alternative The World Needs", Forbes, 17 Mar 2022, <https://www.forbes.com/sites/columbiabusinessschool/2022/05/17/the-plastic-alternative-the-world-needs/?sh=330c2a711461>.

In recent years, a handful of startups have emerged to address the single-use plastic pollution problem. Companies like Full Cycle and Genecis focus on using food waste and agricultural byproducts to make PHA raw material. Refork developed a single-use fork by blending wood flour, PHA polymer, and minerals. Even more, OMAO leads in the development of naturally biodegradable tableware made from PHA. OMAO has replaced over 5,000 pounds of traditional plastics by offering PHA straws. The company is also working on other single-use tableware products in an effort to make sustainability even easier for everyone. The plastic pollution problem looms, and it can often feel unaddressable because of its size and complexity. **But it's important to**

recognize that there are solutions out there for cleaning up our plastic use—and there are surely many more to come.

Impact: Companies are responsible for the largest amount of plastic pollution.

WEKA. “The top plastic polluters 2022”, International Solid Waste Association, 7 Nov 2023, <https://www.forbes.com/sites/columbiabusinessschool/2022/05/17/the-plastic-alternative-the-world-needs/?sh=330c2a711461>.

The Coca-Cola Company, PepsiCo and Nestlé are ranked as the world’s top plastic polluters for the 5th consecutive year according to Break Free From Plastic, whose latest global Brand Audit report also charges the same leading plastic polluters for fueling the climate crisis. Since 2018 the NGO has collected data via citizen science waste collection. According to the non-profit organisation, 14,760 volunteers in 44 countries conducted 397 brand audits across six continents in 2022. A brand audit is a participatory initiative that involves citizen scientists counting and documenting the brands found on plastic waste to help determine which companies are responsible for plastic pollution. Overall, 429,994 pieces of plastic waste were collected and analysed to identify the companies polluting the most places with the most plastic waste. The participants documented the brands of 4,645 parent companies this year. In 2022, Break Free from Plastic also analysed the longitudinal data trends from every five years of its worldwide brand audits (2018-2022). These reveal a remarkable consistency of results: **year after year, the same multinational fast-moving consumer goods (FMCG) companies - which have the largest market share and generate the most plastic - are the top plastic polluters.** Most notably, **The Coca-Cola Company has been the world's top plastic polluter by a significant margin every year since the global brand audit began in 2018. The 2022 brand audit found more than 31,000 Coca-Cola branded products, a 63% increase from 2021. The brand audit has found more and more Coca-**

Cola products each year, with the 2022 results representing more than three times the number found in 2018.

Impact: Sustainable practices are good for business and the environment.

Fausser, Sjoerd. “How Companies Can Help Solve The World’s Plastic Problem”, Forbes, 6 July 2023,
<https://www.forbes.com/sites/forbesbusinesscouncil/2023/07/06/how-companies-can-help-solve-the-worlds-plastic-problem/?sh=56c5a7e7854d>.

A study from 2014 estimated that there were 5.25 trillion plastic particles in our oceans. **Plastics have already negatively impacted almost 90% of marine species. Microplastics are making their way into the human bloodstream. Add on the disposable plastic used during the pandemic—estimated at over 8.4 million tons—and the task risks growing too big to tackle.** This is a problem that is important for everyone to address, and honestly, **it makes good business sense to address it now. Consumers and employees are increasingly gravitating toward businesses that care about the environment.** And taxes on plastic waste are going up. Here’s what **business leaders can do to make a difference.**

Analysis: The reasoning behind this argument is simple to explain: with a single-use plastic ban, companies will be forced to adopt more sustainable practices. Because companies are responsible for the most plastic pollution, forcing them to come up with plastic alternatives will serve as a major step against combating climate change.

PRO: Banning single-use plastics creates consumer behavioral changes

Argument: A single-use plastic ban can help educate and encourage the public to think in more sustainable and environmentally-conscious ways. Individual consumers can help combat climate change by making sustainable choices, and a single-use plastic ban has the potential to change the societal mindset.

Claim: A single-use plastic ban would encourage consumers to act more sustainably and be more environmentally conscious.

Lindwall, Courtney. "Single-Use Plastics 101", NRDC, 9 Jan 2020,
<https://www.nrdc.org/stories/single-use-plastics-101#what>.

What do the bans accomplish? They prevent millions of tons of plastic from entering the waste stream each year. And when it comes to waste that lasts forever, every ton counts. In New York, 23 billion plastic bags are used by residents each year. **Not only does banning single-use plastic reduce pollution, but it also reduces demand for plastic production that's contributing to global climate change. But beyond these impacts, the bans have cultural effects.** Companies are forced to innovate, rethinking their designs and sourcing sustainable materials. And **they help shift consumer mind-sets, as people begin to recognize that exorbitant and avoidable waste is not sustainable.**

Warrant: Implementing reusable bag policies will encourage consumers to make more environmentally-friendly decisions.

Wang, Bairong, et al. "The implementation effects of different plastic bag ban policies in China: the role of consumers' involvement", Environmental Research

Communications, 19 Apr 2023, <https://iopscience.iop.org/article/10.1088/2515-7620/accc11>.

This study selects three cities in China that implement plastic bag ban policies with different levels of consumer involvement to compare the effects of policy implementation. **In general, consumer plastic bag usage behaviour becomes more environmentally friendly when plastic bag ban policies became more stringent. High consumer involvement policies induces changes in pro-environmental bag use;** however, their plastic-reducing effects are uncertain and compounded. In contrast, low-consumer-involvement policies could reduce plastic waste damage but could not make consumers' more environmentally conscious with regard to bag usage. Moreover, this study confirms robust bag usage differences across different groups of consumers. These findings provide valuable insights into the patterns of influence of different types of plastic bag bans. **Based on these insights, plastic crisis managers can create more effective and targeted policies to combat the growing plastic crisis**

Warrant: Positive encouragement will decrease consumer use of single-use plastics

He, Haonan and Ying Sun. "Understanding consumers' purchase intentions of single-use plastic products", *Frontiers*, 21 Feb 2023, <https://www.frontiersin.org/articles/10.3389/fpsyg.2023.1105959/full>.

The interaction between NSI and ISI and positive anticipated emotions presents a completely opposite relationship to consumers' purchase behaviors of single-use plastic products. Therefore, **public authorities should understand the importance of emotions to different consumers in order to tailor strategies to reduce the purchase behaviors of single-use plastic products accordingly. For a given level of normative social influence, consumers with higher positive anticipated emotions will be more willing to adopt single-use plastic products. Therefore, public authorities should remind consumers of**

the adverse effects of single-use plastic products on environmental pollution when shopping in groups, so as to reduce consumer emotions and thereby reduce consumers' purchase behaviors of single-use plastic products. For a given level of informational social influence, consumers with higher positive anticipated emotions will be more opposed to purchasing single-use plastic products. Therefore, public authorities should encourage consumers to spread the environmental pollution behaviors of single-use plastic products through word of mouth through social media, channels, etc., praise the consumers for not purchasing single-use plastic products for environmental protection, and thank them for their efforts in environmental protection. Hence, **these positive anticipated emotions will encourage consumers to resist the purchase behaviors of single-use plastic products.**

Warrant: When implemented in cooperation with the public, single-use plastic bans can inspire society-wide mindset changes.

March, Antaya, et al. "Single-use plastic bans: research shows three ways to make them effective", The Conversation, 13 Jan 2023, <https://theconversation.com/single-use-plastic-bans-research-shows-three-ways-to-make-them-effective-197449>.

Working closely with the public like this can also encourage innovation. For example, in Vanuatu in 2018, weavers and crafting communities filled the gap left by banned plastic bags and polystyrene takeaway containers with natural alternatives made locally, including bags and food containers woven from palm leaves. **Single-use plastic bans can inspire wider changes to social systems and the relationship each person has with plastic.** But without planned access to alternatives, a phased introduction, efforts to nurture public support and broader consideration of the entire life cycle of plastic, product bans have a limited effect on plastic pollution, and can even give the false impression of progress.

Impact: In combination with federal policies, consumers have the ability to help combat climate change.

Del Valle, Gaby. "Can consumer choices ward off the worst effects of climate change? An expert explains.", Vox, 12 Oct 2018, <https://www.vox.com/the-goods/2018/10/12/17967738/climate-change-consumer-choices-green-renewable-energy>.

Neither is sufficient. **Most of us need to contribute, and policy solutions are extremely important.** Congress needs to get its act together. **The American leadership needs to understand that climate change threatens our security and our livelihoods, as well as the safety and happiness of future generations. But we all need to participate.** We can't just screw in an energy-efficient lightbulb and say, "That's all I'm doing." We need to make the right voting choices. **The household sector and personal consumption are big components, globally, but it won't solve the problem to the degree that we need.** We need leadership that puts a price on carbon. We need leadership that supports sane energy policies. I think it's better to be hopeful and optimistic about our future than pessimistic and gloomy about it. **We have the most innovative, intelligent, compassionate humans on this planet that we all share. If we exercise intelligence and compassion, we will collectively help solve this problem — or at least avoid the worst of what climate change has to offer.**

Analysis: This argument is interesting because it has a broad, long-term impact. Not only will a single-use plastic ban physically reduce the amount of plastic pollution, it has the intangible benefit of changing the societal mindset around the need for environmental action. An appeal to the judge might be that we as individuals should play an active role in supporting policies like a single-use plastic ban and preventing adverse climate change impacts.

PRO: Single-use plastics worsen wildfires

Argument: Single-use plastics worsen wildfires due to their increased flammability and propensity to start fires at recycling plants. Climate change has increased the chance for extinction-level wildfires, and fumes from single-use plastics are particularly toxic to human health.

Warrant: Single-use plastics contribute to and worsen wildfires.

DeGracia, Kim. "How Can Forest Fires Be Helpful For Ecosystems?", Ocean Blue Project, 2020, <https://oceanblueproject.org/forest-fires-be-helpful-for-ecosystems/#:~:text=Eliminate%20single%2Duse%20plastics%20from%20your%20lifesty le.&text=But%20when%20humans%20leave%20plastic,help%20contribute%20to%20balanced%20ecosystems.>

Eliminate single-use plastics from your lifestyle. We want to enjoy the benefits nature brings to our lives. But **when humans leave plastic debris in forests, oceans, rivers, and streams, they provide flammable materials that can intensify fires. By eliminating single-use plastics, you can help contribute to balanced ecosystems.**

Warrant: Plastic bottles increase the risk of recycling plant fires due to their difficulty in being recycled.

Holland, Kate and Dara Elasfar. "Why plastic is building up at recycling centers and catching fire", ABC News, 15 Sep 2022, [https://abcnews.go.com/Technology/plastic-building-recycling-centers-catching-fire/story?id=89125707.](https://abcnews.go.com/Technology/plastic-building-recycling-centers-catching-fire/story?id=89125707)

Recycling plants are amassing millions of tons of plastic bottles, the Environmental Protection Agency says, **with some becoming part of a growing problem of toxic fires at**

these plants, according to data provided by environmental advocates. Critics say beverage companies should be doing more to make their products more recyclable. **The majority of the combustible build-up at facilities is polyethylene terephthalate plastic, better known as PET, a clear, strong plastic typically used to make single-use beverage bottles**, packaging, clothing and carpets. Most consumers believe this type of plastic can be recycled, but **the majority of it is sitting in recycling facilities where experts say it is at risk of catching fire. The problem of PET trash has been made worse because so much of it is not recycled. In the U.S., plastic bottles are sold to reprocessing plants where about 29% of them are recycled**, according to the National Association for PET Container Resources. **The rest end up in landfills**, or often pile up until they can be sold and exported to other countries. Previously, the primary buyer for PET plastic was China, but it issued an import ban on plastic waste in early 2018.

Warrant: Fires caused by plastic buildup are on the rise.

Holland, Kate and Dara Elasfar. "Why plastic is building up at recycling centers and catching fire", ABC News, 15 Sep 2022,
<https://abcnews.go.com/Technology/plastic-building-recycling-centers-catching-fire/story?id=89125707>.

Experts say the number of reported fires has steadily increased over the last five years and they believe this is due to a buildup of a combination of combustible materials like paper and plastic, sparks from discarded lithium-ion batteries and increasing temperatures as the climate warms. Fogelman, who is part of a company that promotes fire prevention systems, began collecting data on waste and recycling facility fires in 2016 when he noticed a gap in data reporting on those type of fires. **"There was absolutely no data anywhere," he told ABC News, "and if you look at the U.S. there's no regulation."**

Warrant: Fires at recycling plants increase the risk of wildfires.

Nugent, Ciara. “Why Recycling Plants Keep Catching on Fire”, Time, 13 Apr 2023,
<https://time.com/6271576/recycling-plant-fire-indiana/>.

Recycling fires are increasingly common in North America. **The number of major fires reported at plants in the U.S. and Canada has increased by more than a third since 2017, hitting 390 in 2022. By the end of March this year, 75 more had taken place.** Those figures come from Ryan Fogelman, an entrepreneur who works with fire prevention company Fire Rover and began tracking media coverage of recycling fires in 2016 in the absence of official data. **With smaller fires going unreported, he estimates that the real number is closer to 2,400. The blazes killed three people and injured 63 last year. They also release toxic fumes, increase the risk of wildfires, and cause millions of dollars in damage** for a sector under pressure to scale up as part of cities’ green goals. Experts say the recycling industry is facing a cocktail of factors that increase the risk of fires, from a growing number of new plants opening to deal with growing demand, to major new hazards in the products people recycle, to global shifts in the management of waste. On top of that, **a hotter, drier climate is making it easier for fires to spread inside plants, with blazes starting earlier each year.**

Impact: Wildfires have the potential to cause mass extinction.

Elbein, Saul and Sharon Udasin. “Equilibrium/Sustainability — Wildfires and mass extinction events”, The Hill, 30 June 2022,
<https://thehill.com/policy/equilibrium-sustainability/3543438-equilibrium-sustainability-wildfires-and-mass-extinction-events/>.

An ancient mass extinction that nearly wiped out life on Earth was accompanied by continent-spanning wildfires, a new study has found. **The study,** published on Thursday

in the journal *Palaios*, **raises the unsettling possibility that wildfires could become a powerful driver of extinction under climate change, rather than simply another symptom of changing weather.** The research team, based at the University College of Cork, found increasingly thick layers of charcoal — a sign of high-temperature wildfires in ancient forests — at the end of the Permian Period, about 251 million years ago. “It was an end-Permian burnout,” lead author Chris Mays said in a statement. **The fires turned carbon sinks — areas like forests, which pull down carbon dioxide — into major sources of the planet-warming gas, which drove the firestorm on,** according to Mays. During the Permian, runaway global warming — caused in large measure by enormous releases of carbon dioxide from volcanic eruptions — powered a global feedback loop of destructive fire that raged across once-wet forests and overcame plant defenses, the team found. **“Unlike the species that suffered the mass extinctions of the past, we have the opportunity to prevent the burning of the world’s carbon sinks and help avoid the worst effects of modern warming,”** Mays added.

Impact: Fumes released from burning plastic are more toxic than any other material.

EPA. “Study Shows Some Household Materials Burned in Wildfires Can be More Toxic Than Others”, United States Environmental Protection Agency, 1 Mar 2022, <https://www.epa.gov/sciencematters/study-shows-some-household-materials-burned-wildfires-can-be-more-toxic-others>.

Researchers analyzed the emissions and condensed the PM into liquid form called condensate. They then used the condensate in two tests – one to evaluate potential toxic effects in the lungs of mice and the other to determine if the condensate caused DNA mutations in salmonella bacteria, a precursor to cancer. “The health effects of the synthetic materials varied depending on the fuel type and the combustion temperatures (flaming versus smoldering), with **the plastic burning in flaming conditions being the most toxic condition,**” Kim says. Specifically, **smoke from flaming combustion of plastic**

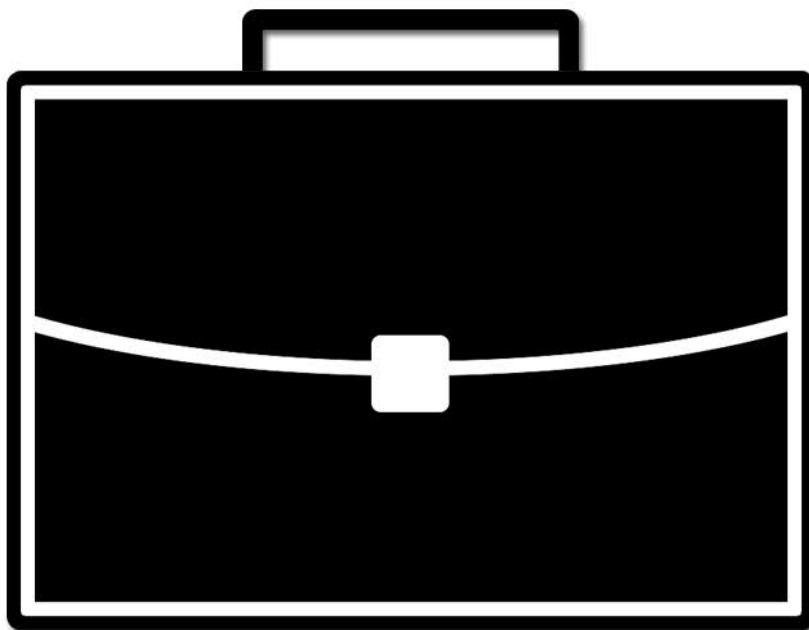
caused more inflammation and lung injury and was more mutagenic than other samples. The burning plastic waste also generated 20 times higher PM than other burned materials under flaming conditions. The research has been published in the journal Particle and Fibre Toxicology.

Analysis: This argument is relatively unique and has multiple warrants/links. Opponents must answer the warrants that single-use plastic pollution both intensifies wildfires and contributes to increased fires at recycling plants. The magnitude of the impact also makes this argument good for outweighing strategies.

Champion Briefs

February 2024

Public Forum Brief



Pro Responses to
Con Arguments

A/2: Alternatives to single-use plastics are bad

Response: Alternatives are still better than single-use plastics

Warrant: Alternatives break down faster in the ecosystem.

Plumer, Brad. "Plastic Bags, or Paper? Here's What to Consider When You Hit the Grocery Store." New York Times. Mar. 2019.
<https://www.nytimes.com/2019/03/29/climate/plastic-paper-shopping-bags.html>

American shoppers use more than 100 billion lightweight polyethylene plastic bags each year, and only a small portion are ever recycled. Most recycling centers can't deal with them — they just clog up the machinery — and so the majority of plastic bags end up in landfills, where they can take up to 1,000 years to degrade. To be fair, a plastic bag doesn't cause too much harm sitting in a landfill. The bigger problem arises when people don't dispose of their bags properly, and the plastic ends up fluttering around in the wild, clogging up waterways and threatening wildlife.

Warrant: Plastic bags form a substantial volume of litter.

Plumer, Brad. "Plastic Bags, or Paper? Here's What to Consider When You Hit the Grocery Store." New York Times. Mar. 2019.
<https://www.nytimes.com/2019/03/29/climate/plastic-paper-shopping-bags.html>

San Jose, Calif., for instance, found that plastic bags made up about 12 percent of the litter in its creeks before implementing a local bag ban in 2012. And, just last week, a dead sperm whale washed ashore in Indonesia with two dozen plastic bags in its gut,

along with other trash. So, even though plastic bags are only a small fraction of America's overall plastic trash, they've become a highly visible sign of waste.

Warrant: Reusable bags only need to be used 11 time to break even with plastic in terms of environmental harms.

Thompson, Claire. "Paper, Plastic, or Reusable?." Stanford Magazine. Sept. 2017.

<https://stanfordmag.org/contents/paper-plastic-or-reusable>

Non-woven PP, on the other hand, is less costly than cotton. These bags need to be reused only 11 times to break even with the conventional plastic (according to the same U.K. study). Remember — not all bags are created equal! If you do opt for a reusable, be sure to consider the material, its origins and how much you will reuse the bag. Of course, the best option is to use a tote you already have (or buy one secondhand). In the end, your actions will make the greatest difference — not the bag itself. The most sustainable choice is one that's sustainable for you. What are your preferences? Which considerations, environmental or otherwise, are most important to you? And which lifestyle changes will you make for the long-term?

Warrant: Paper bags are better from a waste perspective than plastic.

Thompson, Claire. "Paper, Plastic, or Reusable?." Stanford Magazine. Sept. 2017.

<https://stanfordmag.org/contents/paper-plastic-or-reusable>

Paper may not be the first choice for your reusable grocery bag, since it tears easily and doesn't hold up in the rain. However, paper bags can be repurposed once they've been carted home — for bagging lunches; making arts and crafts; or collecting compost, trash or recyclables. **In terms of disposal, paper bags are better than their plastic counterparts. Paper is compostable. If you have access to composting, just tear it up**

and toss it in. Or if, like me, you've grown pots of mold in your kitchen too many times and are now a little compost-shy, recycling is the next best option. As long as they're not overly contaminated with food, paper shopping bags can go in any municipal recycling bin.

Analysis: Use this response to demonstrate that alternatives to plastic have meaningful upsides that make them worth implementing. Stress the biodegradability of paper as a reason that those bags would not cause as much harm to ecosystems.

A/2: Banning single-use plastics hurts small businesses

De-link: Banning single-use plastics would be good for the economy

Warrant: Plastic disposal is costly.

Pecci, Kirstie. "Proposed Plastic Bag Ban Would Benefit Environment and Economy."

Harvard Law Review, July 2018, <https://www.clf.org/blog/proposed-plastic-bag-ban-would-benefit-environment-and-economy/#gsc.tab=0>

Plastic bags inevitably end up in landfills, where they are either buried or burned in incinerators. Cities, towns, and businesses pay about \$80 a ton for them to go there.

Plastic bags harm our oceans and the creatures living in them. Fish and other marine animals will eat plastic bags thinking they're food. A recent study found that a quarter of all fish sold in supermarkets contains some plastic debris. On the smaller scale, as plastic breaks down into tiny particles, it displaces plankton, the main food sources for large marine mammals like whales. **Plastic bags aren't free. Retailers pay for the bags, and they pass that cost on to consumers. The plastic bag industry collects \$4 billion per year in profits from U.S.-retailers.**

Warrant: Many municipalities have already banned single-use plastics without catastrophic economic consequences.

Pecci, Kirstie. "Proposed Plastic Bag Ban Would Benefit Environment and Economy."

Harvard Law Review, July 2018, <https://www.clf.org/blog/proposed-plastic-bag-ban-would-benefit-environment-and-economy/#gsc.tab=0>

There's no reason why single-use plastic bags need to be a part of our daily lives, especially because there are other reusable alternatives. And more than 80 cities and

towns in Massachusetts – more than a third of the state’s population – have banned plastic bags already. When Cambridge instituted its city-wide plastic bag ban in 2016, it became the largest city in Massachusetts to do so. To make the transition smoother for everyone, the city distributed 8,000 reusable bags to low-income and senior residents. **Within five months of the ban taking effect, more than 1,000 businesses had eliminated the single-use plastic bags and their use overall decreased by 50–80 percent.** When Boston’s plastic bag ban goes into effect this fall ,the City will be able to look across the river for guidance.

Warrant: Plastic bans do not negatively impact local economies

Staff. “Plastic Bag Bans: Analysis of Economic and Environmental Impacts.” Equinox Energy Center, 2013, <https://energycenter.org/sites/default/files/Plastic-Bag-Ban-Web-Version-10-22-13-CK.pdf>

Local economies, comprised of affected retailers and their customers, are not negatively impacted in the long-term. Retailers: short-term increase in baggage costs due to increased paper bag usage. These costs should be mitigated over time as consumers transition to reusable bags. San Jose and San Francisco have reported “no sustained negative impact to retailers.” Consumers: estimated cost of \$7.70 per household in the first year after the ban to purchase reusable bags and to account for any fees associated with paper bag usage. Recurring costs should decrease over time due to the long lifespan of reusable bags.

Warrant: Plastic bans do not hurt cities

Staff. “Plastic Bag Bans: Analysis of Economic and Environmental Impacts.” Equinox Energy Center, 2013, <https://energycenter.org/sites/default/files/Plastic-Bag-Ban-Web-Version-10-22-13-CK.pdf>

Cities: the City of San Diego will most likely experience savings through litter abatement. The City spends approximately \$160,000 per year cleaning up plastic bag litter. **Plastics manufacturers:** Although it is possible that job losses may occur in this sector, Equinox Center was unable to find studies that quantify job loss in the plastics industry due to PBBs. If plastics manufacturers are negatively impacted, they have opportunities to expand production to reusable bags, since most reusable bags use a polyethylene derivative. **Despite some claims that a PBB would have only a negligible positive impact, the precedent set by an ordinance in San Diego could pave the way for additional waste reduction measures aimed at other trash types, and to alert residents that the region is taking active measures to reduce the environmental impacts of SUPBs.**

Analysis: Use this response to dispel the notion that plastic bans are bad for the economy. Rather, by freeing us from dependency on such a wasteful, inefficient mode of production, we set ourselves up for green, sustainable economic growth.

A/2: Banning single-use plastics hurts manufacturing

Turn: Banning single-use plastics will spur innovation.

Warrant: Banning single-use plastics creates an incentive to innovate alternatives.

Staff. "Single-Use Plastic Ban: Innovation In Plastic Has More Than Tripled Globally, Report Reveals." Caterer Licensee Hotelier. <https://catererlicensee.com/single-use-plastic-ban-innovation-in-plastic-has-more-than-tripled-globally-report-reveals/>

'Policy initiatives, alongside innovation, play a role in reducing the impact of plastic waste globally. The increased policy measures to curb avoidable plastic waste, coupled with the increase in innovative activity in this area, suggests that there is political and societal pressure for novel solutions. The increase in innovative activity also suggests that this is becoming an increasingly competitive market and one that is still developing. The UK has a role to play in advancing plastic innovation. We are already world leading at policy implementation to influence consumer behaviour, however, there is work to do on incentivising plastic innovation. For example, the UK omitted plastic innovation from its 10-point plan for a Green Industrial Revolution in 2020. If the UK wants to be serious about plastic innovation, it needs to set a plan. "I believe that plastic production is here to stay, however, improving the way we manage plastic waste is the key to achieving a circular economy and sustainability."

Warrant: In the UK, announcements of a ban sparked innovation

Staff. "Single-Use Plastic Ban: Innovation In Plastic Has More Than Tripled Globally, Report Reveals." Caterer Licensee Hotelier. <https://catererlicensee.com/single-use-plastic-ban-innovation-in-plastic-has-more-than-tripled-globally-report-reveals/>

use-plastic-ban-innovation-in-plastic-has-more-than-tripled-globally-report-reveals/

The UK market is taking steps to grow influence in the area, following recent announcements of banning single-use plastic items including plastic cutlery, balloon sticks, polystyrene cups and food containers in England. Rubber composition is the leading technology in the UK, with over 30 filed technologies, followed by particles and flexible containers. These technologies all attempt to reduce the persistence of plastic products, enabling plastics to better decompose or be recycled. In recent years, several policies have been implemented by the UK government in a bid to improve the use and management of plastic packaging, including the mandatory charge for single-use plastic bags and the plastic packaging tax. Later this year, a range of polluting single-use plastics will be banned in England. It is expected that this ban will have a significant impact in reducing plastic waste.

Warrant: In Europe, a plastics ban is designed to create a comprehensive system for reuse.

Hockenos, Paul. "Bold single-use plastic ban kicks Europe's plastic purge into high gear." PBS. March 25, 2021, <https://www.pbs.org/newshour/science/bold-single-use-plastic-ban-kicks-europes-plastic-purge-into-high-gear>

In an all-out push to clean up Europe's beaches — one plank in the European Union's trailblazing efforts to address the almost 28 million U.S. tons of plastic waste it generates annually — a ban comes into effect July 3 that halts the sale in EU markets of the 10 plastic products that most commonly wash up on the continent's shores. These include, among other items, plastic bottle caps, cutlery, straws and plates, as well as Styrofoam food and beverage containers. **The ban is the most visible sign of Europe's efforts to curtail plastics pollution by creating the world's first-ever circular plastics regime. By the end of this decade, this will lead to a ban on throwaway plastics, the**

creation of a comprehensive reuse system for all other plastics, and the establishment of an expansive and potentially lucrative European market for recycled plastics.

Warrant: In Europe, a plastics ban has driven increased investment towards new plastics

Hockenos, Paul. "Bold single-use plastic ban kicks Europe's plastic purge into high gear."

PBS. March 25, 2021, <https://www.pbs.org/newshour/science/bold-single-use-plastic-ban-kicks-europes-plastic-purge-into-high-gear>

A raft of EU measures is now driving investments and innovation toward circular solutions that, according to experts and EU officials, will come to define Europe's low-carbon economy and enhance its global competitiveness. A circular economy is one in which products and materials are kept in use along their entire life cycle, from design and manufacturing to reuse or recycling. In contrast to the current, linear system, products don't end up in the rubbish bin, but rather are reintroduced into the production process. Under the EU Plastics Strategy, put forward in 2018, waste guidelines will overhaul the way plastic products are designed, used and recycled. All plastic packaging on the EU market must be recyclable by 2030, and the use of microplastics circumscribed.

Analysis: This response shows that new systems of consumption will drive innovation and investment. Of course a single-use plastics ban will hurt some types of investment, but make the case that like any economic initiative, a plastics ban will drive innovation in new and productive directions.

A/2: Banning single-use plastics stifles innovation.

Turn: Banning single-use plastics accelerates innovation

Warrant: Consumers are willing to spend more for non-single-use plastics

Flower, Chloe. "Innovation in plastics packaging – driving the transition to a circular economy." Carpeals & Ransford, Oct. 2023, <https://www.carpmaels.com/innovation-in-plastics-packaging-driving-the-transition-to-a-circular-economy/>

The UK government has also launched a range of funding schemes to incentivise development into sustainable plastic packaging, such as grant schemes from the UK Research and Innovation's Engineering and Physical Sciences Research Council and Biotechnology and Biological Sciences Research Council. On top of this, the UK government recently announced a further £3.2 million investment in the UKRI's Smart Sustainable Plastic Packaging (SSPP) challenge. With a budget of £60 million for spending from 2019 to 2025, the SSPP has received the largest investment in sustainable packaging initiatives to date. Interestingly, nearly 50% of this funding is directed at mechanical recycling projects, with 30% of the funding being split between refill/re-use, chemical recycling schemes and prevention and reduction projects.

Governmental drive has been reinforced by consumers with 8 in 10 consumers in the UK supporting a ban on single-use plastics. A recent report from Trivium Packaging and Euromonitor International showed that of nearly 10,000 respondents, 82% of respondents would be willing to pay more for sustainable packaging, while 63% of consumers are now less likely to buy products with environmentally harmful packaging. These regulatory, financial, and consumer-backed incentives seem to be working. Since 2006, recycling and energy recovery have overtaken landfill as the largest waste treatment options.

Warrant: Innovation is accelerating.

Flower, Chloe. “Innovation in plastics packaging – driving the transition to a circular economy.” Carpeals & Ransford, Oct. 2023, <https://www.carpmaels.com/innovation-in-plastics-packaging-driving-the-transition-to-a-circular-economy/>

Innovation in plastic technology has more than tripled since 2015. A recent report by GovGrant reveals that the number of patents related to plastic alternatives that were filed globally in 2021 was 1.84k compared to 605 in 2015. This has likely been encouraged by a combination of legislative changes, policy initiatives and new grants discussed above, as well as patent-based incentives like the Green Channel which offers an accelerated patent application process for inventions with environmental benefit. A study by the European Patent Office shows that the US and Europe are the leading global innovators driving efforts to make the plastics industry circular, responsible for two thirds of the international patent filings related to the circular plastics industry between 2010 and 2019. Innovation in this area typically falls within three categories

Warrant: Shifting consumer behavior will change investment patterns as well.

Murphy, Claire. “The rise of single-use plastic packaging avoiders.” Ellen Macarthur Foundation. July 2022. <https://www.ellenmacarthurfoundation.org/articles/the-rise-of-single-use-plastic-packaging-avoiders>

Between 2019 and 2021, people altered their shopping habits to actively avoid plastic packaging, according to a study by consultancy GlobeScan. The statistics can serve as a catalyst to businesses exploring packaging innovations, indicating that people are

motivated to change their buying behaviour in order to eliminate plastic waste. The Healthy & Sustainable Living survey asked 24,000 people across 24 countries over the summer of 2021 about the variety of ways they try to minimise waste and environmental impact in the way they shop. 44% said they avoided buying products with ‘a lot’ of packaging ‘most’ or ‘all’ of the time, up from 39% when the survey was conducted in 2019.

Warrant: There is a massive market of customers who reject single-use plastics.

Murphy, Claire. “The rise of single-use plastic packaging avoiders.” Ellen Macarthur Foundation. July 2022. <https://www.ellenmacarthurfoundation.org/articles/the-rise-of-single-use-plastic-packaging-avoiders>

The most enthusiastic plastic packaging avoiders were those from China and Italy with 59% of people surveyed saying they rejected products with a lot of packaging ‘most’ or ‘all’ of the time. It may be that this figure is elevated in these countries because food is available unpackaged more often than in some other countries. In China in particular, the rise in popularity of community-supported agriculture can be viewed as accelerating this trend. In the UK, 44% of shoppers said they rejected excessive plastic packaging, while 47% of those in France said the same. The data also echoes other research that has shown growing public concern about plastic packaging. A survey of 2,518 Australians in 2018 found that nearly a quarter (23.2%) of shoppers take action to reduce their use of plastic packaging at least 70% of the time.

Analysis: Use this response to show the judge that a plastics ban creates massive incentives to innovate because firms will be able to make tons of money off of developing alternatives to single-use plastics quickly.

A/2: Banning plastics causes leakage

Response: A nationwide ban would be effective at stopping plastics usage.

Warrant: Plastic bag bans work.

Staff. "A New Study on Plastic Bag Bans." LA County. 2016,

<https://dpw.lacounty.gov/epd/SBR/pdfs/PlasticBagsBannedAroundWorld.pdf>

Over 200 counties and municipalities have enacted ordinances either imposing a fee on plastic bags or banning them outright, including all counties in Hawaii.

In San Jose, California, for instance, a ban was put into place in 2012 — and since then, there has been an 89% reduction in plastic bags in storm drains, a 60% reduction in creeks and rivers, and a 59% drop in residential plastic waste.

In nearby San Francisco (ban enacted in 2007), the city has saved a reported \$600,000 per year in plastic processing fees alone. And in Seattle, where bags were banned 5 years ago, residents have seen in 48% drop in residential plastic bag waste, and a 76% decline in commercial plastic bag waste. In 2010, there were 262 tons' worth of plastic bags in landfills; by 2014, that dropped to 136 tons.

Warrant: Restrictions on plastics in other countries work as well.

Staff. "A New Study on Plastic Bag Bans." LA County. 2016,

<https://dpw.lacounty.gov/epd/SBR/pdfs/PlasticBagsBannedAroundWorld.pdf>

Some 18 countries also have taxes in place, which have proved to be a viable alternative to a full ban. In Ireland, a 22c plastic bag tax has reduced usage by as much

as 90%. Portugal has seen a drop in excess of 85%. And since imposing a tax in 2003, Denmark has seen the lowest plastic usage in Europe. Averaging just 4 bags per person, per year.

It's crucial that America, and the rest of the world, follow the lead of countries and states that have taken action against plastic bags. Globally, as many as 160,000 plastic bags are used every second — and currently, only 1 to 3% of them are recycled. This simply isn't sustainable behavior.

Warrant: Plastic bans worked in Philadelphia

Staff. "City Releases Efficacy Study of Philadelphia's Plastic Bag Ban." City of Philadelphia. April 2023. <https://www.phila.gov/2023-04-27-city-releases-efficacy-study-of-philadelphias-plastic-bag-ban/>

Mayor Jim Kenney released today Philadelphia's Plastic Bag Ban and Changes in Bag Usage in the City, a new efficacy study conducted by Daniel Banko-Ferran, a PhD student at the University of Pittsburgh, with the support of Dr. Syon Bhanot, a professor at Swarthmore College, and in partnership with the Mayor's Office. The study demonstrates that in the year since the City began enforcement of the single-use plastic bag ordinance, there has been a measurable change in shopper behavior as well as a decrease in plastic bag usage in the city after the ban was implemented. The following additional impacts were found: **Prior to the ban, 64 percent of shoppers used at least one plastic bag while grocery shopping at stores in the study. After the ban was fully implemented, this percentage dropped to near zero. There was an increase in the number of shoppers using paper bags, reusable bags, or choosing not to use a bag at all. The proportion of consumers using a reusable bag almost doubled from 22 percent to 42 percent.**

Warrant: The ban has sustained effects

Staff. "City Releases Efficacy Study of Philadelphia's Plastic Bag Ban." City of Philadelphia. April 2023. <https://www.phila.gov/2023-04-27-city-releases-efficacy-study-of-philadelphias-plastic-bag-ban/>

The study estimates that the ban prevented over 200 million disposable plastic bags from being distributed in the city in its first year. According to the study, adoption took time to accelerate, but the ban has had sustained effects. The authors cite, "It took three months for plastic bag usage to decrease in the city and remained steady near zero for the remainder of the study. The likelihood of using reusable bags gradually increased over the first year of the ban's implementation. Paper bag usage peaked six months after the ban was implemented before receding slightly." This sustained shift in consumption patterns at sample stores shows how after an adjustment period, new policies can encourage long term changes in consumer behavior with substantial impacts.

Analysis: Use this response to show the judge that plastic bans do work. Leakage cannot happen on a nationwide scale because we eliminate opportunities for leakage by doing a ban so large.

A/2: Banning single-use plastics hurts marginalized groups

Turn: Banning single-use plastics helps marginalized groups

Warrant: Plastic bans can be augmented to accommodate disabled people

Hewitt, Michelle. “Disability rights don’t have to clash with environmental responsibility.” *The Conversation*, July 2022.

<https://theconversation.com/disability-rights-dont-have-to-clash-with-environmental-responsibility-186810>

We have set up an unnecessary division — environmentalism versus the needs of disabled people — creating eco-ableism. Compromise is the way forward, and already exists in our approach to single-use plastics. For example, plastic tops for take-out drinks like coffee and pop are not banned, because there is no reliable alternative. The environmental cost of keeping those plastics has been balanced with the need to carry drinks safely. There are compromises available for flexible plastic straws too. The City of Vancouver has had a bylaw in place since 2020 that was developed in consultation with disabled people who use straws to drink. It allows for flexible plastic straws in restaurants, including the design of a logo to tell disabled people that these straws are available.

Warrant: Bans can be implemented in consultation with disabled groups.

Hewitt, Michelle. “Disability rights don’t have to clash with environmental responsibility.” *The Conversation*, July 2022.

<https://theconversation.com/disability-rights-dont-have-to-clash-with-environmental-responsibility-186810>

In contrast, the social model of disability believes that disability is society's problem. It believes that we need to remove barriers to allow disabled people's full inclusion into society. In 2019, the Accessible Canada Act became law, and is built on these principles of barrier removal. It talks of disabled people being involved in the design of laws and policies, and the need for barrier-free access to full and equal participation in society — this is missing from the single-use plastics regulations.

Warrant: Plastic bans can include waivers

Godoy, Maria. "Why People With Disabilities Want Bans On Plastic Straws To Be More Flexible." July 11, 2018,
<https://www.npr.org/sections/thesalt/2018/07/11/627773979/why-people-with-disabilities-want-bans-on-plastic-straws-to-be-more-flexible>

Carter-Long says he is sympathetic to environmental concerns about plastic pollution, but any public policy aiming to reduce the use of straws needs to make accommodations for people who might need them. Ideally, he says, "each restaurant owner [would] follow their own conscience, maybe keep a stockpile of plastic straws in their storerooms for people to use who need them." **A spokesman for Seattle Public Utilities confirmed to NPR that the city's new plastic straw ban does include a waiver allowing restaurants to give disposable, flexible plastic straws to customers who need them for physical or medical reasons. But Carter-Long and Bickley say there doesn't seem to be widespread awareness of the exemption. Bickley says he asked over a dozen Seattle chain restaurants — including McDonald's and Chipotle — "if they had plastic straws available for people with allergies or need, and they told me no."**

Warrant: Banning plastics is important, even with accommodations.

Godoy, Maria. "Why People With Disabilities Want Bans On Plastic Straws To Be More Flexible." July 11, 2018,
<https://www.npr.org/sections/thesalt/2018/07/11/627773979/why-people-with-disabilities-want-bans-on-plastic-straws-to-be-more-flexible>

Most of the plastic in the ocean does come from land, says Darby Hoover, senior resource specialist for the Natural Resources Defense Council. She notes that because plastic breaks up into smaller and smaller particles, it can be hard to tell what it used to be in some cases. "Straws are maybe not the biggest source of either plastic pollution or disposable plastic we consume, but they're in there," Hoover says. And for many people who want to consume less plastic, she says, straws are low-hanging fruit. Yet in general Hoover says that she is wary of outright bans on things. "I personally think we as a country use way too many disposable water bottles. That said, there are times when I'm caught somewhere, don't have a reusable bottle, and want the option to have water and not a sugary drink."

Analysis: Deploy this response to demonstrate that banning single-use plastics can be compatible with disability rights. Every public policy involves exceptions and implementation guidance, this one is no different.

A/2: Banning single-use plastics is economically inefficient

Turn: Banning single-use plastics is good for the economy

Warrant: Bag bans stimulate demand for new products

Staff. "What Are The Positives to Banning Plastic Bags?," Factory Direct March 22, 2018, <https://www.factorydirectpromos.com/blog/what-are-the-positives-to-banning-plastic-bags/>

By reducing the need for plastic bags, bag bans create a need for reusable shopping bags. This increased demand creates a market for manufacturers to create more durable alternatives shoppers can use in place of disposable bags. Many consumers think plastic bags are free because they are handed out at the checkout and shoppers are not directly charged. Retailers pay for single-use bags and work this expense into the prices they charge along with all of their other operating costs. Single-use plastic bags do not appear as a line item on your receipt, but you are still paying for them. When plastic bag bans go into action retailers no longer have the expense of purchasing disposable bags. This may translate into lower prices, or it may prevent a retailer from increasing prices since this savings may offset other expenses.

Warrant: Single-use plastics have costly externalities

Staff. "What Are The Positives to Banning Plastic Bags?," Factory Direct March 22, 2018, <https://www.factorydirectpromos.com/blog/what-are-the-positives-to-banning-plastic-bags/>

Disposable plastic bag litter can also clog drainage systems and lead to flooding. In turn, the flooding can cause damage and end up being a hassle. To prevent flooding

and the resulting mess many municipalities routinely clean storm drains. This costs time and tax money. Plastic bag bans eliminate the mess and trouble caused by plastic bags and means tax money can be used for other important purposes. Disposable plastic bags are made from natural gas and petroleum; both of these materials are nonrenewable resources. Enough of these resources exist to continue to produce single-use plastic bags, but this will not always be the case. Plastic bag bans cause shoppers to find alternative shopping bags and conserve these nonrenewable resources.

Warrant: Plastic bans incentivize conscientious consumption

Staff. "Are Plastic Bag Bans Destroying the Economy?" Total Environment Centre. December 2019. https://www.tec.org.au/plastic_bag_bans_economy

Fortunately sensible economists and the National Retail Association which has strongly supported the bag bans have put some balance into the debate. **"UNSW Business School professor of economics Richard Holden said if there was a shift towards consumers buying fewer groceries it was likely they were forgoing purchases of unnecessary items. This would benefit workers by leaving them with more money to spend on things they actually need while not adding to the growing amount of food waste across the nation, he said."** "Professor Holden also said the inclusion of the claims in the Treasury submission raised questions as to how trusting public servants were of arguments put forward by industry representatives in forums such as business liaison programs."

Warrant: Short term economic costs are unavoidable for long-term sustainability

Staff. "Are Plastic Bag Bans Destroying the Economy?" Total Environment Centre. December 2019. https://www.tec.org.au/plastic_bag_bans_economy

“If you ask anybody what they think about policy A or policy B, they’re going to tell you something that’s both from their own perspective and that’s in their interest. If anything, we ought to treat those messages in these programs critically, rather than just taking it as gospel or something businesses are telling us in good faith.” Dominique Lamb the CEO of the National Retailers Association countered in an ABC radio interview this morning that the downturn in sales has been occurring for sometime and there are many others factors impacting on retail sales. **Australian Prudential Regulation Authority member Geoff Summerhayes on Friday said there was an unavoidable short-term economic cost involved with the transition to a more environmentally friendly economy, but that avoiding any sort of mitigation would also carry longer-term costs.**

Analysis: Use this response to show how the benefits of plastic bans far outweigh the costs. Make the analysis that short term economic harms are well worth long term environmental benefits.

A/2: Banning single-use plastics is government overreach

Response: Big government can be good

Warrant: There is nothing inherently wrong with a large state

Oreskes, Naomi. "We Need Big Government to Save Us From the Pandemic." Time Magazine. April 2020. <https://time.com/5823063/we-need-big-government-pandemic/>

To be sure, governments can be oppressive and autocrats will exploit a crisis to grab power. (Already in the U.S. three states have passed laws to criminalize political protests against fossil fuels.) And it stands to reason that the larger the government the more oppressive it can become. But **history reveals no necessary correlation between the scale of a national government and the coercion of its citizens. Most western European governments are by many measures "bigger" than the American government (for example, in levels of taxation and provision of social services) but they are at least as democratic.** Nor is there a necessary correlation between economic and political freedom. Since the death of Mao Zedong, China has radically liberalized its markets, but political liberalization has not followed.

Warrant: Big government is necessary to deal with big problems

Oreskes, Naomi. "We Need Big Government to Save Us From the Pandemic." Time Magazine. April 2020. <https://time.com/5823063/we-need-big-government-pandemic/>

There's an obvious lesson here for the impending climate crisis. For three decades, conservatives have downplayed or denied its reality, in large part for fear of "big

government” solutions. It’s too late for early action on climate change, but it is not too late to be organized and take action. It will require government, and some of that government will necessarily be big. In the U.S., we may have missed the boat on the pandemic, but there’s still time to get on board on climate change. Government is not the solution to all our problems, but it is the solution to many of our biggest ones.

Warrant: Big government is important for the economy.

Guerrera, Fancesco, “Big government will drive the next market cycle,” Reuters, October 2023., <https://www.reuters.com/breakingviews/big-government-will-drive-next-market-cycle-2023-10-31/>

The period when monetary authorities were the only game in town came to an abrupt end with the arrival of Covid-19 in 2020. That shock prompted governments around the world to step in to protect consumers and businesses. From employment support across Europe to cheques mailed to every single American, the state asserted its influence. Just as the health emergency was waning, Russia’s invasion of Ukraine in February 2022 caused new turmoil to global energy markets and international commerce. That required further government intervention. The pandemic and war, combined with deepening geopolitical fissures between east and west, pushed globalisation backwards. Governments focused on securing energy sources and vital components. Companies prioritised security over price when locating supplies of raw materials and manufactured goods.

Warrant: Important public policies are expensive

Guerrera, Fancesco, “Big government will drive the next market cycle,” Reuters, October 2023., <https://www.reuters.com/breakingviews/big-government-will-drive-next-market-cycle-2023-10-31/>

A more interventionist government doesn't come cheap. Recent public spending, when combined with the cost of looking after ageing citizens and the ongoing struggle against climate disasters, is inflating debt burdens. The International Monetary Fund predicts the U.S. government's cyclically adjusted budget deficit – excluding the effects of economic gyrations on expenditures and revenues – will remain above 7% of GDP until 2028. As recently as 2014, it was 2.7%. On average, spending in advanced economies will exceed income by more than 4% of GDP for the next five years, double the level a decade ago. These expenditures, combined with workers' efforts to push wages up in line with consumer prices, are likely to keep inflation above the 2% target of major central banks. That means interest rates will struggle to return to the ultra-low levels seen after 2008.

Analysis: This response demonstrates that “big government” is just a phrase used to scare people. In reality, a large state is necessary for important economic and public policy initiatives.

A/2: Banning single-use plastics hurts medical applications

Answer: Medical applications must shift away from plastics as well

Warrant: Many single-use plastics can be replaced with reusables.

Wen, Leana. "Plastics are everywhere in health care. That must change." Washington Post, June 2023.

<https://www.washingtonpost.com/opinions/2023/06/15/health-care-hospitals-plastics-reusable-environment/>

Some hospital leaders are showing that cutting single-use plastic use is possible. One bright spot is the switch from disposable plastic gowns to those that can be laundered and reused 75 to 100 times. One study found reusable gowns reduced solid-waste generation by 84 percent and cut greenhouse gas emissions by 66 percent. Another found that these gowns are clinically superior to disposable ones; they are less likely to break and tear and increase infection protection for the wearer. Many hospitals are making this switch. UCLA Health was using 2.6 million disposable isolation gowns every year, generating more than 230 tons of landfill waste. By switching to reusable ones, it dramatically reduced waste and saved an estimated \$450,000 annually.

Warrant: Avoiding single-use plastics reduces risks

Wen, Leana. "Plastics are everywhere in health care. That must change." Washington Post, June 2023.

<https://www.washingtonpost.com/opinions/2023/06/15/health-care-hospitals-plastics-reusable-environment/>

The Virginia-based Carilion Clinic similarly avoided shortages by stopping its dependence on single-use gowns. Over the first three years after the switch in 2011, it eliminated nearly 515,000 pounds of waste and saved more than \$850,000. Another set of Virginia hospitals, the Inova Health System, partnered with a sports apparel company to design and produce custom reusable gowns that are reportedly better fitting, more comfortable temperature-wise and easier to put on and take off.

If such changes are better for the environment and reduce costs without negative impacts on patient care, what's preventing more widespread adoption? One reason is the misconception that reverting to reusable materials will incur more costs or result in greater inefficiencies. Providers and administrators from institutions that have successfully implemented changes should widely share their stories and best practices.

Warrant: Medical innovation is happening now.

Staff. "Single-Use Plastics And Their Alternatives In Modern Healthcare." NewGen Surgical, November 2020. <https://newgensurgical.com/single-use-plastics-and-their-alternatives-in-modern-healthcare-2/>

Various corporations have initiated research into how to meet these challenges. In 2019, the FDA approved the Enviropouch, which is a reusable steam sterilization pouch meant to replace single-use plastics used to maintain sanitation standards. A separate company called ecoMedSupply has released an array of biodegradable and compostable hospital materials including patient gowns, gloves, sharps, gauze, bedpans, and various medical containers to stock hospitals with sustainable products. NewGen Surgical, a company that specializes in biomedical engineering, has proved to be another pioneer in the manufacturing of sustainable medical equipment with the development of a plant-based skin stapler. For every 10,000 staplers used, 500 pounds of plastic waste is saved. Other sustainable NewGen Surgical developments include a

needle counter box that reduces plastic waste by approximately 93% in comparison to the non-sustainable counter box that it would be replacing. While still not in use on a large scale, these innovations have served as remarkable steps towards sustainability in modern healthcare products.

Warrant: Hospitals are implementing solutions now.

Staff. "Single-Use Plastics And Their Alternatives In Modern Healthcare." NewGen Surgical, November 2020. <https://newgensurgical.com/single-use-plastics-and-their-alternatives-in-modern-healthcare-2/>

While various companies strive towards making technological developments, other organizations have focused on systematic healthcare revisions through the provision of environmental solutions and funding. Practice Greenhealth, a nonprofit health organization, has been pivotal in the growth and guidance of medical centers towards sustainability. This organization provides resources and strategies for healthcare facilities to help reduce the amount of waste generated per facility. **The integration of sustainability offices in hospitals has been able to establish meaningful change in the production of plastic waste in healthcare. Many such hospitals reported that they were able to avoid the generation of over 140,000 tons of waste and 180,000 metric tons of carbon emissions through environmental intervention.**

Analysis: This argument is a powerful response to the idea that the medical industry is locked into single-use plastics. Remind the judge that innovation is possible and will only happen if incumments are pushed to make changes.

A/2: Single-use plastics are better than paper

Turn: Paper bags are far better for the environment.

Warrant: Paper bags can be reused multiple times and converted to biofuel.

Patel, Prachi. "Stronger paper bags could be the answer to throwaway plastic." Social Anthropocene, May 2023,
<https://www.anthropocenemagazine.org/2023/05/could-stronger-paper-bags-be-the-answer-to-throwaway-plastic-bags/>

With a simple, inexpensive treatment, researchers have found a way to make paper bags strong enough to be reused multiple times, even when they get wet. The bags could be a true ecofriendly alternative to single-use plastic bags. At the end of their lives, the durable paper bags can be broken down to be used as biofuel. "The implications of a technology like the one we demonstrated in this research... including using the worn-out bags as a substrate for biofuel production, would be huge," said lead researcher Jaya Tripathi in a press release. Tripathi and her colleagues at Penn State University presented their work in the journal Resources, Conservation and Recycling..

Warrant: Unlike plastic bags, paper bags can decompose.

Patel, Prachi. "Stronger paper bags could be the answer to throwaway plastic." Social Anthropocene, May 2023,
<https://www.anthropocenemagazine.org/2023/05/could-stronger-paper-bags-be-the-answer-to-throwaway-plastic-bags/>

The world makes five trillion plastic bags a year. Each bag takes over 1,000 years to decompose. A significant share of these wind up in waterways and oceans, littering

the environment and harming wildlife. And even if they get to landfills, they can harm the environment because they eventually break down to produce harmful microplastics and toxic chemicals. Paper bags are not only made from a renewable resource, they also decompose much faster than plastic bags, and present less danger to animals. But that does not necessarily give them an entirely clean environment bill.

Warrant: Innovation means that in the future, paper bags will be far more durable and reusable than plastic.

Mulhollem, Jeff. "Stronger paper bags, reused repeatedly then recycled for biofuel could be future." Penn State, 15 Nov. 2023,
<https://www.psu.edu/news/research/story/stronger-paper-bags-reused-repeatedly-then-recycled-biofuel-could-be-future/>

Because torrefaction decreased the glucose yield in the paper, she then treated the paper with a solution of sodium hydroxide, also known as lye or caustic soda, that increased its glucose yield, making it a better source for biofuel production. In findings recently published in *Resources, Conservation and Recycling*, using filter paper as the medium, the researchers reported that the wet-tensile strength of the paper increased by 1,533%, 2,233%, 1,567% and 557% after torrefaction for 40 minutes at 392 degrees Fahrenheit, 428 F, 464 F and 500 F, respectively. Glucose yield decreased with increased torrefaction severity, but after treating torrefied paper samples with an alkaline sodium hydroxide solution, glucose yield increased, the researchers noted. For instance, the glucose yield of raw filter paper was 955 mg/g of substrate, whereas it was 690 mg/g of substrate for the same paper sample torrefied at 392 F. The glucose yield increased to 808 and 933 mg/g of substrate with 1% and 10% alkaline treatment, respectively.

Warrant: Converting to paper bags would reduce the amount of waste generated.

Mulhollem, Jeff. “Stronger paper bags, reused repeatedly then recycled for biofuel could be future.” Penn State, 15 Nov. 2023,
<https://www.psu.edu/news/research/story/stronger-paper-bags-reused-repeatedly-then-recycled-biofuel-could-be-future/>

The need for a concept like the one demonstrated by the researchers to replace plastic bags is obvious, Tripathi pointed out. According to the U.N. Environment Programme, 5 trillion plastic bags are produced worldwide annually. It can take up to 1,000 years for these bags to disintegrate completely. Americans throw away 100 billion bags annually — the equivalent to dumping nearly 12 million barrels of crude oil. “By switching to stronger, reusable paper shopping bags, we could eliminate much of that waste,” Tripathi said. “The implications of a technology like the one we demonstrated in this research — if it can be perfected — including using the worn-out bags as a substrate for biofuel production, would be huge.”

Analysis: Use this response to show the judge that paper is a preferable alternative to plastic. Weigh the long term potential of enhanced paper as a substitute for plastic against any arguments your opponents have about the energy intensity of paper production.

A/2: Single-use plastic decreases food waste

Answer: Single-use plastic increases food waste.

Warrant: Plastic packaging causes people to buy more than they need.

Wood, Zoe. "Plastic packaging increases fresh food waste, study finds." The Guardian, 23 Feb. 2022, <https://www.theguardian.com/environment/2022/feb/24/plastic-packaging-increases-fresh-food-waste-study-finds>.

Supermarkets should stop selling fresh produce such as apples and potatoes in plastic packaging, research suggests, because it does not make them last longer and adds to pollution and food waste. **The 18-month study by the sustainability charity Wrap, which also looked at sales of bananas, broccoli and cucumbers, debunks the idea that single-use plastic wrappers help prevent waste. Instead, this packaging often forces people to buy more than they need, increasing the problem of wasted food.** Marcus Gover, Wrap's chief executive, said that while packaging was important and often carried out a critical role to protect food, its research had found that plastic wrap "doesn't necessarily prolong the life of uncut fresh produce", adding: "It can in fact increase food waste in this case."

Warrant: Plastic packaging leads people to throw away food before they need to.

Smolokoff, Alex. "Study shows single-use plastic packaging increases food waste." Food & Beverage Insider, 28 Feb. 2022, <https://www.foodbeverageinsider.com/sustainability/study-shows-single-use-plastic-packaging-increases-food-waste>

In its study, Wrap notes that in the UK, nearly \$3 billion worth of produce is thrown away annually because it has either gone moldy or its date label has expired. **The group noted the plastic wrapping on produce in-store made “little or no difference” in shelf life, but did force consumers to often purchase more of a product than they needed, leading to waste. Additionally, the presence of a “Best before” date often leads to the disposal of produce before it is necessary; according to WRAP, 1 in 10 people throw food away if it has passed its label date, even if their judgment says the food is still good. Not only would the elimination of plastic packaging from produce save more than 10,000 tons of plastic, the group found, but more than 100,000 tons of food annually.** “For apples, potatoes and bananas, enabling people to buy the right amount is the most impactful way in which selling loose will help to reduce food waste, the report reads. “While most supermarkets sell some of these items loose already, the research shows a compelling case that this should be significantly increased, not just across these three products, but a wider range of fresh fruit and vegetables. While the study focused on five commonly wasted items, there are many more products that are currently sometimes sold loose where the research could also be applied.”

Analysis: This is a good response because it consists of two link turns, which many debaters find challenging to frontline. At worst, this response allows you to kill your opponent’s impact. At best, you gain access to offense.

Answer: Food waste is not a huge environmental concern.

Warrant: Even environmentalists admit, food waste is a very small part of total emissions.

“Fight climate change by preventing food waste.” WWF,

<https://www.worldwildlife.org/stories/fight-climate-change-by-preventing-food-waste#:~:text=And%20if%20food%20goes%20to,if%20we%20stop%20wasting%20food.>

Today, an estimated one-third of all the food produced in the world goes to waste. That's equal to about 1.3 billion tons of fruits, vegetables, meat, dairy, seafood, and grains that either never leave the farm, get lost or spoiled during distribution, or are thrown away in hotels, grocery stores, restaurants, schools, or home kitchens. It could be enough calories to feed every undernourished person on the planet. But wasted food isn't just a social or humanitarian concern—it's an environmental one. When we waste food, we also waste all the energy and water it takes to grow, harvest, transport, and package it. And if food goes to the landfill and rots, it produces methane—a greenhouse gas even more potent than carbon dioxide. **About 6%-8% of all human-caused greenhouse gas emissions could be reduced if we stop wasting food.** In the US alone, the production of lost or wasted food generates the equivalent of 32.6 million cars' worth of greenhouse gas emissions.

Warrant: It would be more impactful to focus on regulating the burning of fossil fuels.

“Sources of Greenhouse Gas Emissions.” United States Environmental Protection Agency, 16 Nov. 2023, <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions#:~:text=The%20largest%20source%20of%20greenhouse,electricity%2C%20heat%2C%20and%20transportation.>

Greenhouse gases trap heat and make the planet warmer. Human activities are responsible for almost all of the increase in greenhouse gases in the atmosphere over the last 150 years. **The largest source of greenhouse gas emissions from human activities in the United States is from burning fossil fuels for electricity, heat, and transportation.** EPA tracks total U.S. emissions by publishing the Inventory of U.S. Greenhouse Gas Emissions and Sinks. This annual report estimates the total national

greenhouse gas emissions and removals associated with human activities across the United States by source, gas, and economic sector.

Analysis: This is a good mitigatory response, so it can be used if you are low on time. Beware though because this shouldn't be used with a turn; otherwise, you are killing any offense you gain from making the turn.

A/2: Single-use plastics are better than glass

Answer: Glass is better for the environment.

Warrant: Glass can be reused indefinitely.

“Glass vs Plastic: 7 Factors to Consider for Packaging your Product.” The Cary Company, <https://www.thecarycompany.com/insights/articles/glass-vs-plastic-packaging#:~:text=Although%20glass%20may%20take%20more,can%20degrade%20with%20each%20cycle.>

Although glass may take more energy to produce and ship, it is 100% recyclable meaning that each time glass is recycled, the resulting product has no loss of quality.

Glass can also be reused as it can be washed and sterilized. Most plastic can be recycled, but it can degrade with each cycle. This means that when you recycle a plastic bottle, it typically is not used to make another bottle and instead is used for synthetic clothing or carpets. This process is often called “downcycling.” The environmental effects of glass and plastic are not clear cut. Glass makes up 5% of the garbage in the U.S, meaning that even though it is recyclable it often finds its way to the landfill anyway. Producing a single-use glass vs plastic container has a larger environmental impact due to the energy required. However, even though glass is long-lasting it is made from natural material. While plastic is relatively new compared to glass, plastic makes up 20% of garbage in landfills.

Warrant: Reuse of glass is safe.

Ho, Sally. “Glass Or Plastic: Which Is Better For The Planet?” Green Queen, 15 July 2023, <https://www.greenqueen.com.hk/glass-or-plastic-which-is-better-for-the-planet/>.

Despite some of the cons, we're not saying you should ditch glass. **Crucially, glass does not leach toxic chemicals, making it a great option for you to continually use and repurpose it.** Use it to fill up a soy wax candle, for your bulk food shopping, keep leftovers in the fridge or to store your DIY cleaning products/beauty/skincare creams. We love glass we're just saying: 1. Reuse as much as possible what you already have rather than buying new and 2. If you have to dispose of glass, clean it properly and ensure it is being properly recycled.

Warrant: Reuse of single-use plastic is not safe.

Earth Talk. "This is why you should never reuse single use bottles." One Green Bottle, 5 Feb. 2022, <https://www.onegreenbottle.com/this-is-why-you-should-never-reuse-single-use-bottles/>.

Why Plastic Water and Soda Bottles Shouldn't Be Reused. **Health advocates advise against reusing bottles made from plastic #1 (polyethylene terephthalate, also known as PET or PETE), including most disposable water, soda, and juice bottles. Such bottles may be safe for one-time use but reuse should be avoided. Studies also indicate that the containers may leach DEHP—another probable human carcinogen—when they are structurally compromised and in less than perfect condition.**

Analysis: This is a good response to use if you are arguing that the long-term is more important than the short-term. By focusing on the long-term reuse of glass, you can overlook some of the manufacturing issues that are commonly brought up by the neg.

Answer: Consumers prefer glass to plastic.

Warrant: Consumers think glass is better for the environment.

“Glass packaging finds favor with eco-conscious consumers for circular economy credentials.” Packaging Insights, 26 May 2023, <https://www.packaginginsights.com/news/glass-packaging-finds-favor-with-eco-conscious-consumers-for-circular-economy-credentials.html#:~:text=Glass%20and%20consumers&text=Innova%20Market%20Insights%20found%20that,aspects%20compared%20to%20other%20materials>

Consumers are taking a more proactive approach to health and wellness. Retailers are rethinking product selection to target health-conscious shoppers, explains the O-I spokesperson. **Innova Market Insights found that consumers perceive glass to be the most reusable material compared to other conventional packaging materials, and third place for recyclability.** “Data shows that glass stands out in both food safety and product protection aspects compared to other materials. Consumers primarily look for product protection and containment when talking about packaging functions,” Xihan Ma, consumer insights analyst at Innova Market Insights, tells us. “Ensuring the safety and quality of food through the food chain to the end-consumer simply helps minimize food waste and makes a significant contribution to sustainability.” O-I adds: **“According to a recent EcoFocus Consumer Trends Survey, 70% of grocery shoppers trust glass as a healthy packaging choice for their food and beverages. This same study shows that more than half of consumers actively seek products packaged in glass because they believe it protects the integrity of their foods and beverages.”**

Warrant: Consumers see glass as a sign of quality.

“Glass vs Plastic: 7 Factors to Consider for Packaging your Product.” The Cary Company, <https://www.thecarycompany.com/insights/articles/glass-vs-plastic->

packaging#:~:text=Although%20glass%20may%20take%20more,can%20degrade%20with%20each%20cycle.

Consumers perceive a difference of quality in glass vs plastic. **A 2015 study found that participants believed food products packaged in glass had a higher level of pleasantness than the same product stored in plastic.** As it tends to be more expensive, glass offers a premium experience in look, feel and weight that can be essential for luxury fruit juices, craft cold brew or other products that want to promote a sophisticated image for marketing. On the other hand, glass breaks. Plastic offers durability and ease of use. It could be dangerous if you gave a child or baby a glass bottle that he/she could easily drop. Plastic tends to be less slippery than glass, and it can be molded into a variety of shapes and sizes such as a neck with ergonomic finger molds for better grip and easy handling.

Answer: This is a good response because it will be hard for the neg to frontline since it is not very obvious. It could probably be turned into a turn if you wanted to find something about how sales of glass packaged items are higher, which increases revenues for businesses.

A/2: Single-use plastic bans failed in Ottawa

Answer: Ottawa and the US do not have comparable recycling habits.

Warrant: Canada recycles about 20% of their plastic.

“Canada Plastics Pact releases 2022 Annual Report showcasing industry momentum towards a circular plastics economy.” Yahoo! Finance, 9 Jan. 2024, <https://finance.yahoo.com/news/canada-plastics-pact-releases-2022-140000859.html>

The CPP today published its 2022 Annual Report, presenting an aggregated overview of the reporting data from 90 CPP Partners during its second year. This report has highlighted some of the challenges in achieving CPP targets, while also showcasing areas of strength and opportunities for CPP Partners to work collectively and boldly to address plastic waste and pollution. **Based on the most current and reliable data available, in 2022 it is estimated that Canada generated 978,743 tonnes of plastic packaging. Of this amount, 20% of plastic packaging was recycled, up from 12% in 2019.** Flexible packaging saw its recycling rate increase from 1% in 2019 to 4% in 2022. Moreover, there has been a surge in PCR use among CPP Signatories, marking a 32% increase in PCR compared to 2020.

Warrant: The US recycles significantly less, and rates are on the decline.

Budryk, Zack. “US only recycled 5 percent of plastic waste in 2021: Greenpeace report.” The Hill, 24 Oct. 2022, <https://thehill.com/policy/energy-environment/3702187-us-only-recycled-5-percent-of-plastic-waste-in-2021-greenpeace-report/#:~:text=Only%20about%205%20percent%20of,from%20environmental%20advocacy%20group%20Greenpeace.>

Only about 5 percent of 51 million tons of U.S. plastic waste was recycled in 2021, according to a study from environmental advocacy group Greenpeace. The report, issued Monday, determined that only a little more than 2 million tons of plastic waste was recycled last year. **Moreover, after reaching a high of 9.5 percent in 2014 and an only slightly lower 8.7 percent in 2018, the number has been steadily declining in the last few years.** The level had reached the 5 percent to 6 percent range by last year. The research also found that no American type of plastic packaging met the Ellen MacArthur Foundation’s New Plastics Economy initiative’s definition of “recyclable” — that is, having a 30 percent recycling rate.

Analysis: This is a good response because it shows that this case study is inapplicable to a US ban of single-use plastic since the countries would have started at such different places. It can also be cross-applied to any evidence that originates from studies in Canada.

Answer: Americans know about Ottawa, and they still want a ban.

Warrant: A vast majority of Americans support a ban.

Lohr, Annalise Azevedo. “Three in four Americans support national policies to reduce single-use plastic.” Ipsos, 23 Feb. 2023, <https://www.ipsos.com/en-us/three-four-americans-support-national-policies-reduce-single-use-plastic>.

A new public opinion survey, conducted by Ipsos on behalf of Oceana, shows broad bipartisan support for national and local policies that would reduce single-use plastics.

The poll also shows many Americans are concerned about plastic pollution and its impact on the environment and the ocean. Three-quarters of Americans (76%) are concerned about plastic pollution and its impact on the environment and the ocean. This includes 79% of registered voters, 90% of Democratic registered voters and 69% of

Republican registered voters. Seven in ten Americans say that elected officials should support policies that reduce plastic pollution, including 82% of Democratic registered voters and 67% of Republican registered voters. **Three-quarters of Americans (77%) and 79% of registered voters support local and state policies that reduce single-use plastics, and 75% of Americans and 77% of registered voters support national policies that reduce single-use plastics.** Seventy-one percent of Americans support a pause in allowing new plastic production facilities to be built.

Warrant: The ban has had unwavering bipartisan support over the last two years.

Guzman, Joseph. "Most Americans want national action to reduce use of plastics, poll finds." The Hill, 10 Feb. 2022, <https://thehill.com/changing-america/sustainability/environment/593733-most-americans-want-national-action-to-reduce-use/>.

A new poll suggests the majority of Americans back policies to roll back the use of single-use plastics, which typically come in the form of plastic cutlery, shopping bags, take out containers, water bottles and more. **A national poll conducted by the nonprofit ocean conservation organization Oceana found 81 percent of American voters are in favor of national, state and local policies to draw down on the use of single-use plastics.** Meanwhile, the poll found 84 percent of respondents are worried about plastic pollution and its impact on the environment and oceans, while 77 percent said companies need to take action to stop producing single-use plastics. Nearly 80 percent agreed the U.S. has a responsibility to cut back on its contribution to the "global plastic pollution problem," as the nation generates more plastic waste than any other country in the world. **Along party lines, 91 percent of Democrats supported policy changes to do so, and 71 percent of Republicans agreed.**

Analysis: This is a good response because it shows that even following Ottawa's overturned ban, Americans are interested in a ban in the US. This can be coupled with an analysis of the actor, the USFG, having an obligation to work for its people.

A/2: Banning single-use plastics does not stop the problem

Answer: Single-use plastic should not be reused.

Warrant: Single-use plastics release toxic chemicals when reused.

Earth Talk. “This is why you should never reuse single use bottles.” One Green Bottle, 5 Feb. 2022, <https://www.onegreenbottle.com/this-is-why-you-should-never-reuse-single-use-bottles/>.

Studies suggest that food and drinks stored in such containers – including those ubiquitous clear water bottles hanging from just about every hikers backpack – can contain trace amounts of Bisphenol A (BPA), a synthetic chemical that may interfere with the body’s natural hormone messaging system. Onegreenbottle from Sussex, UK, was established over 15 years ago by an industrial chemist because of these concerns and because of the massive growth in plastic single use bottles on supermarket shelves containing water and fruit juices. They supply a large range of reusable bottles made from highest grade stainless steel – inert and 100% safe for repeated prolonged use. This award winning company has gone further than others to develop the most sustainable possible supply chain to deliver a product with zero plastic packaging that has been ethically and responsibly made. **Repeated re-use of plastic bottles—which get dinged up through normal wear and tear while being washed—increases the chance that chemicals will leak out of the tiny cracks and crevices that develop in the containers over time. According to the Environment California Research & Policy Center, which reviewed 130 studies on the topic, BPA has been linked to breast and uterine cancer, increased risk of miscarriage, and decreased testosterone levels. BPA can also wreak havoc on children’s developing systems.** (Parents beware: Some baby bottles and sippy cups are made with plastics containing BPA.) Most experts agree that the amount of BPA that could potentially leach into food and drinks through normal

handling is probably very small. Nevertheless, there are concerns about the cumulative effect of these small doses over time.

Warrant: Reuse of single-use plastic is not safe.

Earth Talk. “This is why you should never reuse single use bottles.” One Green Bottle, 5 Feb. 2022, <https://www.onegreenbottle.com/this-is-why-you-should-never-reuse-single-use-bottles/>.

Why Plastic Water and Soda Bottles Shouldn’t Be Reused. **Health advocates advise against reusing bottles made from plastic #1 (polyethylene terephthalate, also known as PET or PETE), including most disposable water, soda, and juice bottles. Such bottles may be safe for one-time use but reuse should be avoided. Studies also indicate that the containers may leach DEHP—another probable human carcinogen—when they are structurally compromised and in less than perfect condition.**

Warrant: Carcinogens cause cancer.

“Carcinogens.” Cleveland Clinic, <https://my.clevelandclinic.org/health/articles/25081-carcinogens>.

Carcinogens (pronounced “kahr-sin-o-jens”) are substances that may increase your risk of developing cancer. Experts have identified more than 100 carcinogens. Carcinogens may be physical, such as ultraviolet rays from the sun; chemical, like asbestos; or biological, such as infections caused by certain viruses. Simply having contact with a carcinogen doesn’t mean you’ll develop cancer. While you may not be able to avoid some carcinogens, there are steps you can take to reduce your risk of developing cancer from carcinogen exposure. To understand how carcinogens cause cancer, it may help to know more about the relationship between carcinogens and your

genetic makeup. Your DNA is in your genes. Your genes contain instruction manuals for making proteins. Proteins control millions of actions, including how cells grow and multiply. **When a carcinogen changes your DNA, it triggers a chain reaction that turns normal cells into cancerous cells.** Sometimes, carcinogens do direct damage to your DNA so it stops working as it should. Other times, cells that typically repair DNA damage from carcinogens can't take care of the issue. Left unrepaired, damaged DNA may lead to changes (mutations) in certain genes. Depending on the specific mutation or change, your genes may start giving cells instructions to multiply uncontrollably, becoming cancerous tumors or blood cancer. But cancer doesn't develop right away. Carcinogens build up over time. It may take years before a carcinogen in your body begins the chain reaction that leads to cancer.

Analysis: This is a good response because it can help you gain offense on your opponent's case. You can read the first card alone, the first and second cards alone, or all three depending on your time constraints, and this response will work.

Argument: Just because it can be reused doesn't mean people are reusing it.

Warrant: Most plastic doesn't get reused.

Main, Douglas. "Think that your plastic is being recycled? Think again." MIT Technology Review, 12 Oct. 2023,
<https://www.technologyreview.com/2023/10/12/1081129/plastic-recycling-climate-change-microplastics/>.

Currently, about 430 million tons of plastic is produced yearly, according to the United Nations Environment Programme (UNEP)—significantly more than the weight of all human beings combined. One-third of this total takes the form of single-use plastics, which humans interact with for seconds or minutes before discarding. **A total of 95% of**

the plastic used in packaging is disposed of after one use, a loss to the economy of up to \$120 billion annually, concludes a report by McKinsey. (Just over a quarter of all plastics are used for packaging.) One-third of this packaging is not collected, becoming pollution that generates “significant economic costs by reducing the productivity of vital natural systems such as the ocean.” This causes at least \$40 billion in damages, the report states, which exceeds the “profit pool” of the packaging industry. These numbers are understandably hard to make concrete sense of, even at the scale of specific companies, such as Coca-Cola, which produced 3 million tons of plastic packaging in 2017. That’s the equivalent of making 200,000 bottles per minute. Notably, what doesn’t get reused or recycled does not chemically degrade but rather becomes a fixture of our world; it breaks apart to form microplastics, pieces smaller than five millimeters in diameter. In the past few years, scientists have found significant quantities of microplastics in the further reaches of the ocean; in snow and rainfall in seemingly pristine places worldwide; in the air we breathe; and in human blood, colons, lungs, veins, breast milk, placentas, and fetuses.

Warrant: The US recycles just 5% of its plastics.

Budryk, Zack. “US only recycled 5 percent of plastic waste in 2021: Greenpeace report.” The Hill, 24 Oct. 2022, <https://thehill.com/policy/energy-environment/3702187-us-only-recycled-5-percent-of-plastic-waste-in-2021-greenpeace-report/#:~:text=Only%20about%205%20percent%20of,from%20environmental%20advocacy%20group%20Greenpeace>.

Only about 5 percent of 51 million tons of U.S. plastic waste was recycled in 2021, according to a study from environmental advocacy group Greenpeace. The report, issued Monday, determined that only a little more than 2 million tons of plastic waste was recycled last year. **Moreover, after reaching a high of 9.5 percent in 2014 and an only slightly lower 8.7 percent in 2018, the number has been steadily declining in the**

last few years. The level had reached the 5 percent to 6 percent range by last year. The research also found that no American type of plastic packaging met the Ellen MacArthur Foundation’s New Plastics Economy initiative’s definition of “recyclable” — that is, having a 30 percent recycling rate.

Analysis: This is a good response because it shows that even though theoretically plastic can be reused, it realistically does not get reused. That means the aff can access just 5% of their impact, since only 5% of plastic gets recycled for reuse.

A/2: Banning proliferates pandemics

Answer: Pandemics aren't a risk.

Warrant: We have the tools to prepare for a pandemic.

Phumapi, Joy. "How prepared are we to face a future pandemic?" CEPI, 27 Oct. 2023, https://cepi.net/news_cepi/how-prepared-are-we-to-face-a-future-pandemic/.

As the world rebounds from the COVID-19 pandemic, one undeniable truth remains: another pandemic threat is not a matter of if, but when. While there is global acknowledgement that COVID-19 was a tragedy, this recognition has not yet translated into action with the scale, unity of purpose and agency that is required to prevent it from happening again. **Despite this outlook, there is room for cautious optimism. For the first time in history, we have the tools and resources needed to intercept a future outbreak before it spirals into a global pandemic, but only if we urgently secure the appropriate level of preparedness in advance.**

Warrant: We are using the tools at our disposal.

Callaway, Ewen. "How AlphaFold and other AI tools could help us prepare for the next pandemic" Nature, 11 Oct. 2023, <https://www.nature.com/articles/d41586-023-03201-4>.

The research, which has not yet been peer reviewed, is part of nascent efforts to use groundbreaking advances in AI, such as AlphaFold and large language models, to prepare for future pandemics. Funders are pouring money into this approach, which is already bearing fruit. **In a Nature paper published on 11 October, researchers report a machine-learning tool that can predict the evolution of viruses with the potential to**

cause a pandemic. This information could improve the resilience of vaccines, including those against COVID-19, and could give the world a head start when the next pandemic threat appears. “Does machine learning give us new arrows in our quivers? Yes, absolutely,” says Neil King, a biochemist at UW. “But it’s still early days.”

Warrant: The US has a pandemic preparedness plan.

Gallagher, Gerard et al. “Is the US prepared for the next pandemic?” Heallo, 5 Jan. 2024, <https://www.heallo.com/news/infectious-disease/20240105/is-the-us-prepared-for-the-next-pandemic>.

In September 2021, the Biden administration introduced the American Pandemic Preparedness Plan, a proposal to transform the country’s capabilities to respond to future pandemics. In it, the administration likened the danger posed by biological threats to the dangers posed by traditional weapons, terrorism and cyberattacks, and called for an effort to address pandemic preparedness on the level of the Apollo program that sent humans to the moon. **Noting that the next pandemic “will likely be substantially different” from COVID-19, the new plan — also known as AP3 — outlined dozens of goals, including upgrading the country’s medical defenses by improving vaccines, therapeutics and diagnostics and strengthening relevant stockpiles and supply chains. It also called for improving public health systems in the United States and internationally.** “It really outlined this very bold agenda of not just research, but the whole gamut of what is needed to prepare for and respond to potential pandemic threats,” Jane Knisely, PhD, pandemic preparedness strategy coordinator at the National Institute of Allergy and Infectious Diseases’ Division of Microbiology and Infectious Diseases, said in an interview. “Unfortunately, it was not resourced.”

Analysis: This is a good response because you don't have to argue that pandemics won't happen – that would be hard to win. This response just helps you mitigate the impacts and helps prove that extinction won't occur.

Answer: PPE doesn't have to be single-use.

Warrant: PPE can be disinfected.

“Cleaning and Disinfection of Personal Protective Equipment (PPE) Tips for Non-Healthcare Workplaces.” 3M, Nov. 2020,
<https://multimedia.3m.com/mws/media/19216770/cleaning-and-disinfection-of-personal-protective-equipment-ppe-tips-for-non-healthcare-workplaces.pdf>.

Note this document contains general information for non-healthcare workplaces. Some workplaces may have additional considerations beyond what is covered in this bulletin such as product contamination considerations (e.g. pharmaceutical and food and beverage) which may trigger special cleaning and disinfection needs. **When PPE is intended to be reused, equipment cleaning and disinfection may be required by regulations, needed for hygiene, and/or implemented to help prevent transmission of infectious disease.** As a best practice, it is recommended that each employee be provided their own set of PPE, but where disinfection is desired it is important to follow both cleaning and PPE product manufacturer's instructions. Following are some general considerations for cleaning and disinfection of 3M PPE.

Warrant: Innovations in PPE make it reusable.

Emily Newton. “How to embrace the next-generation advances in PPE materials.”
Industrial Safety & Hygiene News, 29 Oct. 2023,

<https://www.ishn.com/articles/113930-how-to-embrace-the-next-generation-advances-in-ppe-materials>.

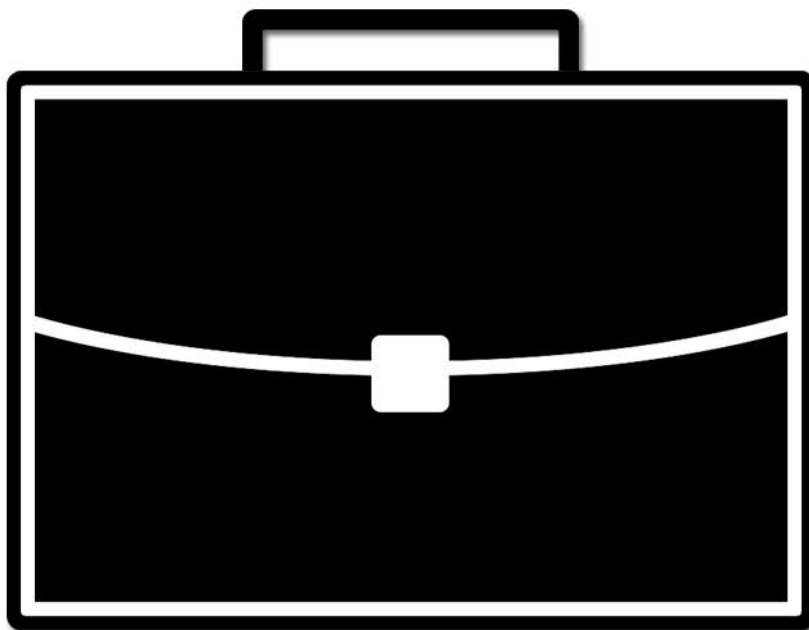
The main issue is PPE is often disposable. Relatedly, once medical professionals learned COVID-19 is highly contagious and airborne, safety specialists at hospitals and similar facilities developed procedures that discouraged the reuse of masks. People only used them more than once while coping with shortages. Even then, individuals developed systems of rotating through their mask supplies and never wearing the same one two days in a row. **Many people in the food and beverage and construction industries already have reusable PPE — most commonly, gloves. However, some masks are reusable, too, provided they're the elastomeric type. Researchers explored how well these personal protective equipment materials worked for medical professionals, providing them with reusable options.**

Analysis: This is a good response because it delinks the argument by proving that there is a 100% probability that a ban of single-use plastic would not cause the proliferation of pandemics since there are ways to still use PPE.

Champion Briefs

February 2024

Public Forum Brief



Con Arguments

CON: Alternatives to single-use plastics are bad

Argument: Single-use plastics may be bad but they must be evaluated in the context of their alternatives. Alternative fibers and materials pose similar environmental risks and are energy intense.

Warrant: “Reusable” materials are not actually reused.

Wirtz, Bill. “Would a single-use plastic ban be counterproductive?” The Hill, Nov. 2022
<https://thehill.com/opinion/energy-environment/3620887-would-a-single-use-plastic-ban-be-counterproductive>

A petition filed by a number of environmental organizations calls on the General Services Administration to halt the acquisition of single-use plastics across the entire federal government. According to these groups, plastic packaging harms the environment, and with the U.S government being the largest consumer of goods and services in the world (spending more than \$650 billion on products and services each year), it should uphold a standard of abandoning plastic. **However, contrary to the idealism of the campaigners, banning the federal government from using single-use plastic goods would not benefit the environment. In fact, life-cycle assessments on items such as single-use plastic bags have shown that there is a discrepancy between actual re-use rates of alternative bags and the re-use rate to break even on environmental grounds. Paper bags need to be re-used four times, LDPE bags five times, non-woven PP bags 14 times and cotton bags 173 times. Their actual re-use rates are about half that, making them less sustainable than single-use plastic bags, which may also be used by consumers as bin liners. A 2020 study by University of Michigan Professor Shelie Miller displayed how alternatives to single-use plastic items are dependent on high re-use rates. Those rates are often not achieved.**

Warrant: Reusable materials are carbon intensive.

Wirtz, Bill. "Would a single-use plastic ban be counterproductive?" The Hill, Nov. 2022
<https://thehill.com/opinion/energy-environment/3620887-would-a-single-use-plastic-ban-be-counterproductive>

The same effects appear when we compare glass bottles to plastic bottles. As glass bottles are much heavier, their carbon footprint for transport is also higher. Whoever substitutes a plastic straw with a bamboo straw should also probably be aware of their significant carbon footprint. Further than that, the federal government doesn't only purchase plastic straws or plastic-bottled water. In fact, a ban on plastic would impact a plethora of products the government acquires for vital services, ranging from national parks and wildlife to construction and shipping logistics. If the GSA were to consider a ban, the least it should do is conduct an impact assessment on the effect it would have on sustaining those services. However, as a general measure, a ban is no strategy for transition: It prevents government departments from using plastic where necessary and does not guarantee a path forward for substitution. For instance, the GSA is transitioning to electrify its fleet of vehicles, yet without banning gasoline-powered vehicles.

Warrant: Heavier alternatives and pesticides account for a larger environmental footprint

Giguere, Gabel. "Banning Plastic Products Will Not Protect the Environment." Montreal Economic Institute, May 2022, <https://www.iedm.org/banning-plastic-products-will-not-protect-the-environment/>

Moreover, other reusable products are not automatically better for the environment.(18) For a reusable bag to have a smaller environmental impact than a plastic shopping bag, it must be used many times. **For certain types of reusable cotton**

bags to be less harmful to human health and to the quality of ecosystems and use less fossil fuels than single-use plastic bags, for instance, they must be reused between 100 and 3,657 times,(19) which represents from 2 to 70 years of weekly use. This can be explained, in part, by the fact that cotton requires 680 times more water per kilogram for the production of fibres than plastic shopping bags, not to mention the emission of pesticides into the ground during its production.(20)

Warrant: Banning single-use plastics would increase the use of thicker plastics.

Giguere, Gabiel. "Banning Plastic Products Will Not Protect the Environment." Montreal Economic Institute, May 2022, <https://www.iedm.org/banning-plastic-products-will-not-protect-the-environment/>

California's ban on plastic shopping bags also had some unexpected effects. The reduction of 40 million tonnes of shopping bag waste was offset by an increase of 12 million tonnes of thicker garbage bags.(21) Banning plastic shopping bags therefore does not guarantee a reduced carbon footprint; if this were the only criterion used to measure environmental impact, the ban in California would instead have had the opposite effect of the one policy-makers expected.(22) In another case, following the ban of single-use plastic bags in the Australian Capital Territory, the use of other types of bags also increased,(23) and the beneficial effects of this policy were therefore limited.

Analysis: Use this argument to demonstrate that even if single-use plastics are bad for the environment, the alternatives are bad as well. Force your opponents to do a comparative analysis in order to win their impacts.

CON: Banning single-use plastics hurts small businesses

Argument: Single-use plastics are used because of their low cost and versatility. Banning them would hurt the small businesses that rely on these.

Warrant: Bag costs will be passed on to consumers.

Taylor, Zachary. “Bag ban would hurt small businesses.” The Denver Gazette, July 2022, https://gazette.com/denver-gazette/bag-ban-would-hurt-small-businesses/article_256f5308-beff-11eb-b24b-8f7c80638399.html

These challenges, which are likely to outlast the pandemic, caused several states and localities — including Maine, Oregon, and Washington — to either suspend or delay plastic bag policies to provide additional flexibility to businesses as they try to cope with the pandemic’s economic fallout. **When costs for things like food, commodities, and bags go up, businesses will inevitably pass these increased costs on to consumers, who are already fighting against rapidly increasing prices for food and other necessities. While one or two dollars per bag may not mean much to some consumers, these costs can quickly add up for individuals and families on fixed incomes.**

Warrant: Additional costs will hurt those struggling economically.

Taylor, Zachary. “Bag ban would hurt small businesses.” The Denver Gazette, July 2022, https://gazette.com/denver-gazette/bag-ban-would-hurt-small-businesses/article_256f5308-beff-11eb-b24b-8f7c80638399.html

In fact, a University of Ottawa study on Toronto’s bag tax found that families at the lower end of the socioeconomic spectrum feel the burden of these policies the most.

Even in the midst of this economic certainty, proponents claim that Colorado must act on plastics, plastic bags in particular, to avert looming consequences for the environment arguing that bags are filling up landfills and littering our communities.

Despite their well-intentioned concerns, the data does not support the allegations that underpin their rationale for this bill. The U.S. Environmental Protection Agency's official data reveals that all plastic "bags and sacks" combined account for a meager 0.3% of municipal solid waste. The plastic retail bags banned under HB 1162 account for a small fraction of this number.

Warrant: Bans hurt takeout focused restaurants.

Graham, Hather. "Plastic ban bill will hurt small business." The Pueblo Chieftain, December 20, 2021.

<https://www.chieftain.com/story/opinion/columns/guest/2021/05/14/op-ed-plastic-ban-bill-hurt-small-business/5091420001/>

One of the most puzzling, and potentially fatal, pieces of legislation this year is House Bill 21-1162, which would tax, and ultimately eliminate, plastic grocery bags, and outright ban polystyrene take-out containers. This bill represents one of those times where intent and effect do not mesh. The intent, of course, is to reduce the accumulation of plastics in landfills, and that is a laudable goal. **Unfortunately, the effect will be to add costs onto already-struggling small businesses, while producing little real environmental benefit. It is no secret that restaurants were some of the hardest hit businesses during the past year – we rely on people going out, and when public health orders told people not to do that, and limited our seating capacity, restaurant owners had to adjust, quickly, if they had any hope of surviving. The way most did that was to pivot their business models to accommodate greater volumes of take-out. Take-out and delivery literally saved dozens of small restaurants in Pueblo,**

and hundreds around the state. The fact is that take-out and delivery depend on the availability of inexpensive, effective containers.

Warrant: Bans will hurt industries that operate on razor thin margins

Graham, Hather. "Plastic ban bill will hurt small business." The Pueblo Chieftain, December 20, 2021.

<https://www.chieftain.com/story/opinion/columns/guest/2021/05/14/op-ed-plastic-ban-bill-hurt-small-business/5091420001/>

And yet, because it is politically trendy at the moment, this miracle of modern science, which kept so many smaller restaurants in business during the worst year ever, is now a target of Denver politicians who want to make points back home telling restaurants around the state what kind of take-out containers we need to stock. As any business owner knows, it is not that simple. Not only are the alternative containers they propose we use more expensive – and for an industry that is operating on margins so razor-thin that they are cutting to the bone, even a few cents of added expense can be cripplingly significant – but they are also becoming increasingly difficult to find and stock in sufficient amounts. Manufacturers are facing many of the same issues restaurants are in terms of employees; a combination of factors, including lingering uncertainty and overly-generous unemployment benefits, are making it exceedingly difficult to find people to hire. This is creating backlogs, especially for the more-expensive products, which make things even more difficult for restaurant owners; especially smaller independent ones which can least afford added costs, delays and limited options. It makes no sense to limit the choices restaurants have available to them.

Analysis: Use this argument to show that small businesses, the engine of American economic prosperity, will be severely damaged by bans on plastic bags. Make the analysis that there are alternatives to bans that will not be so economically damaging.

CON: Banning single-use plastics hurts manufacturing

Argument: Plastics constitute a billion-dollar industry. Banning single use plastics would unnecessarily cramp economic activity.

Warrant: Banning plastics threatens jobs in the plastics industry.

Staff. "Plastic Bag Recycling and Manufacturing Supports Thousands of Jobs." Bag the Ban. Feb. 22, 2023. <https://www.bagtheban.com/learn-the-facts/jobs-and-economy/>

Food prices continue to skyrocket, and people don't need their grocery bills increased with an extra tax. The USDA reported that in 2018 there were 14.3 million U.S. households that were food insecure. The focus of our elected officials should be on solving the issue of food insecurity — not hurting the economy and making groceries more expensive by banning or taxing bags. **Banning and taxing plastic bags threatens American jobs. Nationwide, thousands of hardworking men and women are employed and supported by the plastic bag manufacturing and recycling industry. At a time when many communities around the nation suffer from unemployment and a struggling economy, we can't afford to implement misguided policies that threaten jobs, economic recovery and American competitiveness. Bag bans and taxes also hurt local businesses and struggling families by adding another cost to every grocery trip. Bans and taxes on plastic bags hurt America's working class and kill jobs.**

Warrant: Banning plastics threatens both manufacturing and recycling workers.

Staff. "Plastic Bag Recycling and Manufacturing Supports Thousands of Jobs." Bag the Ban. Feb. 22, 2023. <https://www.bagtheban.com/learn-the-facts/jobs-and-economy/>

Proposed ordinances to ban and tax plastic bags threaten nearly 30,000 American manufacturing and recycling jobs in 344 plants across the country. Low-income workers have complained publicly that such policies are “discriminatory,” especially for those who rely on public transportation to get to low-wage jobs, and there has even been a lawsuit⁴ filed saying a ban discriminates against the disabled.

American plastic bag manufacturers provide jobs with competitive salaries and benefits. In addition, manufacturers invest in innovative green technologies that are revolutionizing the plastics recycling industry. Plastic bag bans and taxes threaten this industry and its workers and stymie technology investments that impact America’s global competitiveness. Plastic bag bans and taxes hurt small businesses. A 2012 study by the National Center for Policy Analysis (NCPA) found that banning plastic bags negatively impacted retail sales and employment in the ban area, shifting business to stores just outside the bag ban region. Connecticut’s 2019 plastic bag tax resulted in shoppers crossing state lines to avoid the fee.

Warrant: The plastics industry creates jobs.

Pineda, Perc. “Here to Stay: Three Ways the U.S. Plastic Industry Vitally Impacts the Economy.” Real Clear Energy. July 1, 2023.

https://www.realclearenergy.org/articles/2023/09/08/here_to_stay_three_ways_the_us_plastic_industry_vitally_impacts_the_economy_977819.html#:~:text=The%20U.S.%20plastics%20industry%20sustains,to%20over%201.59%20million%20jobs.

The U.S. plastics industry not only provides substantial income for a significant number of Americans but also continues to create jobs. The U.S. plastics industry sustains employment for over one million individuals, encompassing diverse skills and

backgrounds, from factory workers to corporate executives. When suppliers of the plastics industry are considered, this number increases to over 1.59 million jobs. These industries include those that supply fuel, spare parts, and transportation services. Remarkably, every two jobs created by the plastics industry supports another job elsewhere in the economy. The U.S. plastics industry continues to grow. Over the last 10 years, employment, real shipments and real value added fared better than manufacturing as a whole. Between 2012 and 2022 employment in plastics manufacturing grew 1.3% per year while manufacturing as a whole grew only 0.7% per year during that same period. Real plastics manufacturing shipments grew at a 0.4% annual rate from 2012 to 2022, while real value added grew 3.0% annually despite the pandemic recession. Currently, the plastics industry is the 7th largest manufacturing industry in the U.S.

Warrant: The plastics industry supports innovation.

Pineda, Perc. "Here to Stay: Three Ways the U.S. Plastic Industry Vitaly Impacts the Economy." Real Clear Energy. July 1, 2023.

https://www.realclearenergy.org/articles/2023/09/08/here_to_stay_three_ways_the_us_plastic_industry_vitaly_impacts_the_economy_977819.html#:~:text=The%20U.S.%20plastics%20industry%20sustains,to%20over%201.59%20million%20jobs.

Capital expenditures have surged in the plastics industry. These include spending on nonresidential structures, such as factories or warehouses, equipment, and intellectual property. Between 2010 and 2022, capital expenditures in the industry soared by 7%, reaching a staggering \$15 billion in the past year. Additionally, and importantly, as a continuously innovating industry, this includes research and development spending that enables the industry to create new sustainable manufacturing processes and products. This data does not paint a picture of an

industry that's going away. Rather, it unequivocally underscores the enduring strength of the industry. Any potential threat to the plastics industry would have severe repercussions for our country's economy, potentially contributing to collapse. The industry's growth hinges on our ability to produce sustainable materials and products, which is why the plastics supply chain is committed to tirelessly enhancing recyclability and investing billions into recycling technologies. It is a collective responsibility for all to increase recycling efforts, and the plastics industry recognizes that this is imperative. Sustaining plastics production in the U.S. is not just beneficial; it is crucial.

Analysis: This is strong because the link is so clear. If we ban plastic bags then the plastics industry will suffer. Force your opponents to weigh their nebulous impact against this concrete harm.

CON: Banning single-use plastics stifles innovation

Argument: Banning single-use plastics hurts innovation by damaging the plastics industry which is a leader in cutting-edge materials science.

Warrant: The plastics industry innovates.

Staff. "Plastics Recycling: Innovation and Automation Enable a Circular Economy." Reuters, April 7, 2021, <https://www.reuters.com/plus/roadmap-to-industrial-sustainability/plastics-recycling-innovation-and-automation-enable-a-circular-economy>

Widespread use of recycling innovation technologies could promote a closed-loop circular economy from material design, to separation, to reprocessing—and bring new life to old plastics. Chemical recycling technologies, for one, can enhance or replace the currently used mechanical processing. In this, high heat, chemical reactions or both are used to turn used plastics into new virgin-like plastics, fuel, or other new chemicals or products. These technologies reduce the overwhelming amounts of unrecoverable plastics that could potentially leak into the environment. **Advanced technology is needed to remove color, odors and other contaminants from the used plastic. In addition, automation—like those services provided by Emerson—can play an integral role in turning end-of-life plastics into new products to reduce waste and pollution and to lower plastic production costs. Two companies exemplify the potential of plastics recycling by introducing new ways to work with polypropylene. PureCycle returns the plastics to pure, near-virgin polypropylene, reintroducing them to the plastics economy in like-new form, whereas ReNew ELP reduces mixed plastics down to high-grade chemicals and oils ... feedstock for new use cases and applications.**

Warrant: New technologies can reduce the waste involved in plastics.

Staff. "Plastics Recycling: Innovation and Automation Enable a Circular Economy." Reuters, April 7, 2021, <https://www.reuters.com/plus/roadmap-to-industrial-sustainability/plastics-recycling-innovation-and-automation-enable-a-circular-economy>

Orlando, Fla.-based PureCycle Technologies uses an innovative technology to turn waste into nearly new polypropylene that can be reintroduced back into the same use case. Developed by Procter & Gamble, the process removes color, odor and contaminants, turning the recycled material into ultra-pure recycled polypropylene resin with virgin-like properties that can be used to make new plastic products.

"Recycled plastics are typically gray in color, have a malodor and have contaminants that present regulatory concerns," says John Layman, senior R&D director of sustainable materials development at Procter & Gamble and inventor of the solvent purification process used by PureCycle. According to Layman, this is currently the only technology able to meet the demand for better-recycled polypropylene, making it a win for both PureCycle and the environment. **"Today, consumers are increasingly expecting that the products they buy are environmentally responsible," he says. "This new technology delivers a win-win—advancing our innovative capabilities while also providing an environmental benefit."**

Warrant: Innovation is the key to solving plastic waste

Stanislaus, Mathy. "Banning Straws and Bags Won't Solve our Plastic Problem" World Resources Institute, Feb. 2018, <https://www.wri.org/insights/banning-straws-and-bags-wont-solve-our-plastic-problem>

Governments at the state and federal levels need to team up with private industry to address more systemic issues. We need to invest in redesigning plastics so that they

can be readily broken down into their molecular units and remanufactured into new plastics of the same quality, the essence of a closed loop system. We need better recycling technology that can address the major obstacle of recycling plastics: about 25 percent of plastics collected are contaminated and therefore unusable. We need to reinvest government budgets in the infrastructure and associated policies needed for these systemic solutions. Once these technologies are deployed at a large scale, we can start recapturing the economic value of plastics, incentivizing their recovery and recycling, while minimizing plastic pollution and overconsumption of natural resources.

Warrant: Historically, we have underinvested in recycling and optimizing plastics.

Stanislaus, Mathy. "Banning Straws and Bags Won't Solve our Plastic Problem" World Resources Institute, Feb. 2018, <https://www.wri.org/insights/banning-straws-and-bags-wont-solve-our-plastic-problem>

That same Danish study suggests that the most eco-friendly bag option for consumers is polyester, reused at least 35 times. This keeps plastic pollution out of our natural spaces and reduces the per-use environmental impacts of the bag to the lowest-possible levels. **However, it will take a lot more than reusable bags to solve the plastics pollution problem. Right now, only about 9 percent of plastics are recycled globally. As of January 1, China refused to import most recyclable materials from the United States and other developed countries, claiming the materials exceeded acceptable contamination levels. This has backed up the flow of disposed paper and plastic, causing serious problems for local waste management companies. However, there may be an ironic upside to China's decision. For too long, the easy option of shipping excess recyclables to China has resulted in underinvestment in optimizing plastics, maximizing their recovery and reducing waste.**

Analysis: Use this argument to demonstrate how the long term solution must involve increased investment in recycling. Banning single-use plastics only solves a small part of the problem, at the cost of reducing investment in the long-term solution.

CON: Banning plastics causes leakage

Argument: Although well intentioned, plastic bans have perverse consequences because they result in consumers purchasing more non-single-use plastics to make up for the disposable bags they once used.

Warrant: Banning single-use bags causes leakage.

Stropoli, Rebecca. “Why Banning Plastic Bags Doesn’t Work as Intended” The Chicago Booth Review, June 2019, <https://www.chicagobooth.edu/review/why-banning-plastic-bags-doesnt-work-intended>

As well-intentioned bans on plastic shopping bags roll out across the United States, there’s an unintended consequence that policy makers should take into account. It turns out that when shoppers stop receiving free bags from supermarkets and other retailers, they make up for it by buying more plastic trash bags, significantly reducing the environmental effectiveness of bag bans by substituting one form of plastic film for another, according to University of Sydney’s Rebecca L. C. Taylor. **Economists call this phenomenon “leakage”—when partial regulation of a product results in increased consumption of unregulated goods,** Taylor writes. But her research focusing on the rollout of bag bans across 139 California cities and counties from 2007 to 2015 puts a figure on the leakage and develops an estimate for how much consumers already reuse those flimsy plastic shopping bags. This is a live issue. After all those localities banned disposable bags, California outlawed them statewide, in 2016. In April 2019, New York became the second US state to impose a broad ban on single-use plastic bags. Since 2007, more than 240 local governments in the US have enacted similar policies.

Impact: Leakage offsets much of the benefit in reduced plastic usage while resulting in heavier, more energy intense plastic usage.

Stropoli, Rebecca. “Why Banning Plastic Bags Doesn’t Work as Intended” The Chicago Booth Review, June 2019, <https://www.chicagobooth.edu/review/why-banning-plastic-bags-doesnt-work-intended>

She finds that the bag bans reduced the use of disposable shopping bags by 40 million pounds a year. But purchases of trash bags increased by almost 12 million pounds annually, offsetting about 29 percent of the benefit, her model demonstrates. Sales of small trash bags jumped 120 percent, of medium bags, 64 percent, and of tall kitchen garbage bags, 6 percent. Moreover, use of paper bags rose by more than 80 million pounds, or 652 million sacks, she finds. In addition, Taylor’s research suggests that, before the bag bans, consumers were reusing 12–22 percent of them as bin liners. Thus, the bans on disposable bags actually—and unintentionally—discouraged some environmentally responsible behavior. The labeling of such bags as strictly “single use” is also questionable, Taylor writes. What are the broader implications for the environment? Thin, disposable plastic bags are nonbiodegradable and can easily exit waste streams and enter waterways and the environment, causing enormous damage to marine ecosystems and wildlife, Taylor writes. On the other hand, **heavier plastic and paper bags take more energy and water to produce and transport, emitting more greenhouse gases and taking up more landfill space..**

Warrent: Bans incentivize consumers to change their behaviors.

Taylor, Becca. “Plastic & Waste Policy Research.” Becca Taylor Social Science Research, July 2018, https://www.rebeccataylor.site/research/pub_abstracts

This paper examines how banning the use of plastic carryout bags at grocery stores affects where and what people purchase to eat. Using quasi-random variation in local bag ban adoption across California and two data sources (retail scanner data and

consumer survey data), I show that **banning plastic carryout bags shifted some food sales away from regulated grocery stores towards unregulated grocery stores and restaurants. Specifically, I find that bag bans cause a 1.8% decline in food-at-home sales and a 1.9 percentage point increase in consumers' food-away-from-home expenditure share. The decline in food-at-home sales is larger in jurisdictions more likely to experience cross-border shopping whereas the increase in food-away-from-home expenditures is larger farther from jurisdiction borders. Together these results suggest that a small share of consumers find a way to bypass the bag bans, either by cross-border shopping if near a border or by shifting to restaurants if not near a border.** Heterogeneity analyses reveal the policy effects are strongest for those with higher incomes, those under 65 years, and those with young children, suggesting both income effects and time constraints as mechanisms behind the behavioral change. By quantifying consumer avoidance behaviors, these results enable policymakers to more accurately measure the impacts of their regulations and to understand the potential trade-offs between their environmental and public health objectives.

Warrent: Bans prevent consumers from re-using their single-use plastic bags as garbage disposal.

Taylor, Becca. "Plastic & Waste Policy Research." Becca Taylor Social Science Research, July 2018, https://www.rebeccataylor.site/research/pub_abstracts

Leakage occurs when partial regulation of consumer products results in increased consumption of these products in unregulated domains. This article quantifies plastic leakage from the banning of plastic carryout bags. Using quasi-random policy variation in California, I find the elimination of 40 million pounds of plastic carryout bags is offset by a 12 million pound increase in trash bag purchases—with small, medium, and tall trash bag sales increasing by 120%, 64%, and 6%, respectively. **The results further reveal 12–22% of plastic carryout bags were reused as trash bags pre-regulation and**

show bag bans shift consumers towards fewer but heavier bags. With a substantial proportion of carryout bags already reused in a way that avoided the manufacture and purchase of another plastic bag, policy evaluations that ignore leakage effects overstate the regulation's welfare gains.

Analysis: This argument uses economic concepts and frameworks to demonstrate that banning plastic bags has perverse consequences. Use this analysis to demonstrate that the affirmative creates a new problem for the one that it solves.

CON: Banning single-use plastics hurts marginalized groups

Argument: Single use plastics are important for various marginalized groups including people living with disabilities.

Warrant: Disabled people are left out of conversations about single-use plastics.

Jenks, A. B., & Obringer, K. M. (2020). The poverty of plastics bans: Environmentalism's win is a loss for disabled people. *Critical Social Policy*, 40(1), 151-161.
<https://doi.org/10.1177/0261018319868362>

Recent proposals in US cities to ban single-use plastic straws have been adopted quickly and met with little resistance. Environmentalists consider this a small but important win for reducing the harmful impact of single-use plastics on our planet overall. Yet **there remains a critical mass of people who are systematically left out of the conversation: disabled people.** These people are not only overlooked, they are othered for being poor or disabled or both. We argue that while drastically curtailing plastics production, use, and improper disposal is vital, **single-use plastics bans, while just for the planet, are not equally just for all humans. Drawing on disability studies and environmental justice literatures, we problematise existing debates surrounding plastics bans, and recast these bans, and their effects, as an unnecessary othering of poor people and disabled people.**

Warrant: Banning plastic straws can disadvantage disabled people.

Jenks, A. B., & Obringer, K. M. (2020). The poverty of plastics bans: Environmentalism's win is a loss for disabled people. *Critical Social Policy*, 40(1), 151-161.
<https://doi.org/10.1177/0261018319868362>

As noted earlier, the most significant critique of the straw ban craze has come from the disability community, which publicly decried straw bans as being ableist, though such views have been relegated as a fringe issue. The common and repeated narrative of, ‘well, can’t they just use paper/glass/silicone/metal straws’, makes three key assumptions. The first is that disabled people can easily use alternatives. With help from writer and artist sb. smith in recreating a graphic they created in 2018, we show in Figure 1 the myriad complications ‘just using a ____ straw’ presents to disabled people. Disabled people’s inability to position certain straws, their risk as choking hazards, the inability to use them for hot liquids, and possible injury from the poking of one’s mouth are just some problems disabled people face when presented with plastic straw alternatives.

Warrant: Banning single use plastics hurts economically marginalized people.

Harris, Cynthia. “Single-Use Plastic Bans Bring Unintended Consequences for People Experiencing Homelessness and Developing Countries” Environmental Law Institute, 2021, <https://www.eli.org/vibrant-environment-blog/single-use-plastic-bans-bring-unintended-consequences-people-experiencing>

This marks another victory in the war against single-use plastics! But what of the collateral damage? **The trend could adversely affect our nation’s homeless population when it comes to accessing hygiene products. Unsheltered homeless, who rely on public facilities, benefit from these easily transportable miniature toiletries. Consider first the numbers involved—according to the U.S. Department of Housing and Urban Development’s Annual Homeless Assessment Report, as of 2018, there were around 553,000 homeless people in the United States on a given night. In California, where AB 1162 is pending, close to 130,000 people experience homelessness. These Point-in-Time counts also dramatically undercount the number of people experiencing homelessness by a significant margin. Access to adequate sanitation is an ongoing**

challenge homeless individuals face each and every day. A lack of shelter often translates into lack of access to water and sanitation. One recent study found that individuals who sleep on the street reported fewer hygiene-related self-care practices. Berkeley Law's 2018 Basic & Urgent report, examining access to water and toilets for California's unsheltered residents, inventoried publicly available potable water, toilets, and showers in Berkeley, Oakland, and Sacramento. Access, unsurprisingly, was very limited, and public shower facilities are even rarer than toilets and drinking fountains in terms of number of facilities available and hours of operation. Ironically, California, which codified in 2012 a human right to "safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes," did not recognize access to adequate sanitation and hygiene supplies as a right on its own. Nor has the state enacted a homeless person's bill of rights.

Impact: Plastics provide crucial sanitation products for the economically marginalized

Harris, Cynthia. "Single-Use Plastic Bans Bring Unintended Consequences for People Experiencing Homelessness and Developing Countries" Environmental Law Institute, 2021, <https://www.eli.org/vibrant-environment-blog/single-use-plastic-bans-bring-unintended-consequences-people-experiencing>

Charities and nonprofits that work with our nation's homeless solicit donations of hygiene products, such as soap, shampoo, conditioners, and lotion, which they distribute at homeless and domestic violence shelters and soup kitchens. For example, ThriveDC holds toiletry donation drives to assist the homeless in the District of Columbia, and San Diego's Third Avenue Charitable Organization hands out over 3,000 hygiene kits every year. And these considerations intersect with the global issue of the availability of hygiene products to people in developing countries. United Nations Sustainable Development Goal Target 6.2 calls for adequate and equitable sanitation and hygiene for all, noting that 2.4 billion people lack access to basic sanitation services,

such as toilets or latrines. The U.N. also recognizes a human right to safe and clean drinking water and sanitation. Yet, the World Health Organization estimates unsafe water and poor sanitation and hygiene kill 1.7 million people annually.

Just like homelessness and miniature toiletries, this international travesty has a nexus to yet another generator of plastic waste: single-use plastic sachets in the developing world..”.

Analysis: In round, weigh this argument by emphasizing the harm that bans create for marginalized people. Marginalized people have the hardest time using economic resources to adapt to changes in public policy. As such, their interests should come first.

CON: Banning single-use plastics is economically inefficient

Argument: Banning plastic bags forces consumers to use other bags. But these decisions are economically inefficient because consumers do not get the same value out of alternative bags than they do plastic.

Warrant: Alternatives to plastic bags are used less.

Mejia, Julia. "Ottawa's plastics ban is bad for the environment." Fraser Institute, March 2023, <https://www.fraserinstitute.org/article/ottawas-plastics-ban-is-bad-for-the-environment>

In fact, as acknowledged by the federal government's own analysis, **banning single-use plastics will actually increase waste generation rather than reduce it. According to the analysis, while the ban will remove 1.5 million tonnes of plastics from 2023 to 2032, it will almost double that tonnage in substitutes such as paper, wood and aluminum over the same period. In other words, the ban will increase, not decrease, the amount of net garbage in Canada. To make matters worse, according to the government's Strategic Environmental Assessment, plastic substitutes "typically have higher climate change impacts" including higher greenhouse gases (GHG) and lower air quality. Indeed, according to multiple studies, single-use plastic substitutes such as paper require more energy to transport, feature higher smog formation and ozone depletion potential, demand more water and energy to be produced, and result in higher GHG emissions.** Simply put, the plastic ban harms, not helps, the environment.

Warrant: In Canada, practical considerations like the enforcement of the ban mean that it will cost more money than it saves.

Mejia, Julia. "Ottawa's plastics ban is bad for the environment." Fraser Institute, March 2023, <https://www.fraserinstitute.org/article/ottawas-plastics-ban-is-bad-for-the-environment>

And that's not all. **According to the federal government's own estimates, the plastic ban will save \$616 million in avoided clean-up expenses over the next 10 years but will cost around \$2 billion over the same period, due to the management of additional waste discussed above, ban enforcement and the forgone profit opportunity for manufacturers. The cost of the ban surpasses the benefit by a 3-to-1 ratio.** Overall, the plastic ban is a costly measure that turns a small environmental problem into a bigger one. If the Trudeau government wants to do something about the small percentage of plastic that escapes into the environment, it should improve coordination with municipal waste-handling systems rather than impose and enforce a costly nationwide ban, which literally hurts more than it helps.

Warrant: Alternatives are far more energy intense than plastic

Sussman, David. "Three reasons why banning plastic bags is problematic", The Conversation, July 2020, <https://theconversation.com/three-reasons-why-banning-plastic-bags-is-problematic-142671>

Evidence from previous plastic bag restrictions shows this does reduce their use, but sometimes leads to more environmental harm if customers switch to other materials with larger resource footprints. **Paper bags can require 400% more energy to make, not to mention the harvesting of trees and use of noxious chemicals in production. Growing cotton "requires land, huge quantities of water, chemical fertilisers and pesticides". Plastic bags use fossil fuels, a nonrenewable resource, and are permanent, entering the waste stream forever. They may cause more pollution on land and in waterways, but have less effect on climate change and land use than other types of bags. Biodegradable bags, perhaps surprisingly, could be "the worst option" in terms**

of their impact on climate, harm to soil, water pollution and toxic emissions. In the end, a decision on the type of bag becomes about which particular environmental issue takes priority.

Warrant: Switching away from single-use plastics may have knock-on harmful effects

Sussman, David. “Three reasons why banning plastic bags is problematic”, The Conversation, July 2020, <https://theconversation.com/three-reasons-why-banning-plastic-bags-is-problematic-142671>

Researchers in psychology have observed people often harm the environment when they try to save the planet. For example, they might buy more of a product, like groceries, because they are labeled as eco-friendly. This is related to the concept of compensatory behaviour. For example, people may feel that, since they recycle, they don't need to consider the extra meat they ate that week. Or because they walked instead of driving to the store, they deserve to buy an extra piece of clothing.

Sometimes compensatory action takes the form of attempts to account for previous harms. For example, buying carbon offsets for flying might make a passenger feel good, but from an environmental perspective it's less desirable than not boarding in the first place.

Analysis: Frame this argument as a burden that your opponent must overcome to reach their impacts. They need to show that whatever positive impacts they display overwhelms the various negative collateral consequences of switching away from plastics.

CON: Banning single-use plastics is government overreach

Argument: The government should not be in the business of regulating consumer choices. People can make informed decisions for themselves without excessive interventionism diminishing their economic liberty.

Warrant: Plastic bans implicate a vision of government that interferes with individual liberty.

Montelbano, Sarah. "The Problems with Plastic Bag Bans: A Policy Brief." Alaska Policy Forum Institute. Feb. 2021. <https://alaskapolicyforum.org/2019/09/problems-bag-bans-brief/>

Though policy debates primarily focus on the question of practicality and effectiveness, it is important to evaluate the ethics of any government policy before it is implemented. Policies should not violate the freedoms of citizens and overstep the role of government, whether at the local, state, or national level. A plastic bag ban interferes with the consumer's freedoms and best judgment, which is an important component to a functioning free market. Wasilla Councilmember Tim Burney put it best when explaining his vote against the ban: "I don't think it's appropriate for me to dictate to someone who wants to use a plastic bag that they can't ... in a lot of ways that's the government telling the citizen what to do — again." [21] It is not the government's role to dictate what products a citizen can use. Plastic bag bans and bag taxes are only a symptom of greater government overreach into private freedoms and decisions, which must be halted wherever possible.

Warrant: The scope of the plastic waste issue does not justify government intervention

Montelbano, Sarah. "The Problems with Plastic Bag Bans: A Policy Brief." Alaska Policy Forum Institute. Feb. 2021. <https://alaskapolicyforum.org/2019/09/problems-bag-bans-brief/>

Plastic bag bans have been implemented in many cities and states around the country, but there is no convincing evidence that the policy has significantly reduced landfill waste. Plastic bag litter composes less than 2 percent of all litter and only 0.5 percent of landfill waste.[8],[9] Surely if plastic waste needs to be reduced, there are targets with more potential that comprise a larger component of plastic waste. In California, where a statewide ban on single-use plastic bags was imposed in 2016, there was a negligible 0.2 percent decrease in plastic bag litter as a percentage of overall litter. Plastic bag bans may even increase landfill waste in the long run.[11],[12] When plastic retail bags are banned, consumers need to purchase larger, thicker plastic bags for garbage disposal and animal waste. When these bags are disposed, they take up more room in the landfill and biodegrade less quickly than plastic retail bags.

Warrant: Excessive interventionism has caused legal backlash to plastic bans

Povich, Elaine. "Pandemic-Paused Plastic Bag Bans Ripped Anew by Critics", Stateline, November 21, 2021, <https://stateline.org/2021/03/30/pandemic-paused-plastic-bag-bans-ripped-anew-by-critics/>

"There are multiple actions that need to be taken to slow things down and avert the worst impacts, and one of them is reducing the amount of throwaway plastics that are not only a major pollution source but also a financial anchor to the fossil fuel industry." A similar situation is playing out in Philadelphia, where it took more than a decade to implement a ban on plastic grocery bags. **Philadelphia's ban, approved in 2019, was to begin July 1, 2020. But with businesses under tight restrictions and restaurants relying on takeout to stay afloat, city officials first pushed it to Jan. 1, 2021, and then to July 1.**

Spurred by the pandemic-induced delay, some state lawmakers want to crush the ban altogether. The Pennsylvania legislature slipped a provision into an unrelated bill last summer prohibiting cities from unilaterally enacting a bag ban.

Warrant: Developments like the COVID pandemic have pushed back plastic bag bans

Povich, Elaine. "Pandemic-Paused Plastic Bag Bans Ripped Anew by Critics", Stateline, November 21, 2021, <https://stateline.org/2021/03/30/pandemic-paused-plastic-bag-bans-ripped-anew-by-critics/>

Washington state's ban was scheduled to take effect this past January, but Democratic Gov. Jay Inslee delayed implementation until the state of emergency ended, noting "there is a significant increase in consumer demand for takeout food and grocers, both of which have increased the use of paper and plastic bags, and other alternatives to single-use bags are not available in ample quantities." A bill moving through the Washington legislature would push the ban back until July 1. Democratic state Rep. Strom Peterson, who has been championing plastic bag bans for a decade, said in a phone interview that the bill stung. But he said he understands the problems the grocery and takeout food industries are facing, partially because he has operated the Cheesemonger's Table, a soup and sandwich restaurant in Edmonds, Washington, for 20 years.

Analysis: Use this argument to show the judge that plastic bans face regional backlash. A lack of popular consensus in favor of plastic bans means that the federal government should not unilaterally act and impose the policy on the entire country.

CON: Banning single-use plastics hurts medical applications

Argument: Single-use plastics are everywhere in healthcare and should not be banned in that context.

Warrant: Plastics are vital in the healthcare industry.

Blessy Joseph, Jemy James, Nandakumar Kalarikkal, Sabu Thomas. Recycling of medical plastics. *Advanced Industrial and Engineering Polymer Research*. Volume 4, Issue 3, 2021, <https://doi.org/10.1016/j.aiepr.2021.06.003>.

A large amount of non-infected plastic wastes are being generated at the healthcare facilities all over the world. However, only a small fraction is recycled. Conventionally, the used plastics are either disposed in landfills or inadequately incinerated. These practices impart an adverse effect on our environment. Plastics are indispensable part of the medical sector owing to their high versatility. The outbreak of COVID-19 clearly showed the growing demand for single use plastics. Hence, completely avoiding plastics can be challenging at this point of time. Recycling of plastics is undoubtedly a solution to solve the crisis of plastic pollution. Medical plastic recycling is limited mainly due to difficulties involved in sorting or cleaning. Recycling medical plastic wastes is possible only through proper coordination between healthcare sector and recycling industries. New recycling technologies are to be adopted in a sustainable manner. Moreover, the plastics used in medical applications should be designed such that recycling is possible. This review highlights the downside of medical wastes and discusses the recycling potential of commonly used medical plastics.

Warrant: Plastics are superior to other materials for medical applications

Blessy Joseph, Jemy James, Nandakumar Kalarikkal, Sabu Thomas. Recycling of medical plastics. *Advanced Industrial and Engineering Polymer Research*. Volume 4, Issue 3, 2021, <https://doi.org/10.1016/j.aiepr.2021.06.003>.

Removing or reducing plastic is a challenge; for instance this can be done from our house hold applications. **Regarding medical industry, removal of plastic is still a herculean task to achieve. The unprecedented outbreak of COVID -19 resulted in tons of medical plastic wastes. Single use plastics offer immense health benefits in terms of maintaining a sterile environment, thus have become part of our daily life especially during this pandemic. There has been a dramatic demand for personal protective equipment (PPE). PPE which includes masks, safety goggles, face shields, hair covers etc. are all made of plastics like polyethylene terephthalate (PET), polycarbonate, low density polyethylene etc. [3].** The commonly used respirators contain PP non-woven fibres. Although, plastics provides great sort of protection against deadly virus, single use plastics can cause detrimental impacts on the environment. According to World Health Organization (WHO), 89 million masks, 30 million gowns, 1.59 million goggles and 76 million gloves are required every month due to the pandemic condition. The pandemic outbreak has also led to large number of medical waste generation which also include plastics.

Warrant: Single-use plastics are particularly important for medical applications.

Staff. "Uses for Medical Plastic Materials." A&C Plastics. 7 Feb. 2023,
<https://www.acplasticsinc.com/informationcenter/r/medical-uses-for-plastic-materials>

Packaging. It's crucial to protect items like needles or medication from possible cross-contamination. Medical plastic is ideal for packaging. It's possible to seal plastic pouches to protect single-use items and eliminate the need to sterilize them before use. You'll

also find plastic bottles and containers that protect prescriptions from UV rays, humidity and other elements that could damage them. Single-Use Items. **Single-use items make up some of the most common uses of plastic in the medical field. A wide range of single-use items use plastic because it's inexpensive and because throwing away these items is safer than sanitizing equipment. For instance, reusing a catheter isn't safe since E. coli bacteria can develop regardless of the sanitation method used. You can find plastic single-use tubes, syringes, catheters, lancets, bandages, gloves and more. The research field also uses medical plastic for single-use items like vials and sample bags.**

Warrant: Plastic is necessary for tubing and fluid bags.

Staff. "Uses for Medical Plastic Materials." A&C Plastics. 7 Feb. 2023,
<https://www.acplasticsinc.com/informationcenter/r/medical-uses-for-plastic-materials>

Medical plastic is a common material for items like intravenous blood bags. Other uses of plastics include IV bags and containers for medical waste. Plastic is a safe material for storing fluids. It keeps blood and other solutions in a stable state, and it's an inexpensive solution for an item that healthcare providers throw away after use. Tubing. Medical tubing is a necessity for fluid management and drainage. You'll find plastic tubing on respiratory equipment, pumps, catheters, pharmaceutical equipment and more. The flexible properties of plastics make these materials ideal for manufacturing durable tubing. Some tubing is for single-use, and most tubing gets replaced after a while, which means it's important to find an inexpensive material for these items. Implants. Polyethylene is a common medical plastic for implants. Ultra-high-molecular-weight polyethylene is a durable medical-grade material that doesn't degrade over time. It's a lightweight and cost-efficient way to make implants. Plastic implants allow for more movement and feel more comfortable than other materials.

Medical plastics are common for medical devices such as heart valves, knee and hip replacements, and surgical items like facial augmentation implants.

Analysis: This argument is strong because disruptions to medical practice have an intuitive high impacts—jeopardizing lives. Stress the importance of avoiding policies with medical harms.

CON: Single-use plastics are better than paper

Argument: Paper bags have a larger energy and environmental footprint than plastic bags and should not be used.

Warrant: Paper bags have serious environmental consequences.

Bailey, Ronald. "Are Paper Bags Really Better for the Environment Than Plastic Bags?" Reason. October 2022. <https://reason.com/2022/09/08/paper-vs-plastic/>

In May, New Jersey became the first state to ban single-use bags made from plastic or paper in large grocery stores. The new ban lumps both types of totes together, but one is actually worse for the environment than the other. Which one? Paper bags. Surprised? Let's delve into the data underlying the case for plastic over paper. **A 2005 life-cycle analysis commissioned by the Scottish government found that manufacturing paper bags consumes 10 percent more energy than manufacturing conventional plastic bags, uses four times more water, emits more than three times the amount of greenhouse gases, generates 14 times more water pollution, and results in nearly three times more solid waste. A 2007 study commissioned by what is now the American Recyclable Plastic Bag Alliance, an industry group, found that, compared to making plastic bags, making paper bags takes 3.4 times as much energy, produces five times as much solid waste, emits twice as much greenhouse gases, and uses 17 times more water.**

Warrant: Paper bags contribute more to global warming than plastic

Bailey, Ronald. "Are Paper Bags Really Better for the Environment Than Plastic Bags?" Reason. October 2022. <https://reason.com/2022/09/08/paper-vs-plastic/>

A 2011 study commissioned by the U.K.'s Environment Agency found that “the paper bag has to be used four or more times to reduce its global warming potential to below that of the conventional [plastic] bag.” The report noted that “it is unlikely the paper bag can be regularly reused the required number of times due to its low durability.” The report added that paper bags were “significantly worse” than plastic bags “for human toxicity and terrestrial ecotoxicity due to the effect of paper production.” Other factors include transportation and disposal. Two thousand single-use plastic bags weigh about 30 pounds, while 2,000 paper bags weigh 280 pounds. By one estimate, it takes seven trucks to transport the same number of paper bags as one truck loaded with plastic bags. Paper bags also take up more space in landfills.

Warrant: The paper bag production process is bad for the environment

Pope, Samantha. “Paper bags just as environmentally damaging as plastic bags, experts say.” Capital Current. <https://capitalcurrent.ca/paper-bags-just-as-environmentally-damaging-as-plastic-bags-experts-say/>

But since plastic grocery bags are thin and light, their production actually generates less environmental impact compared to paper bags, according to a 2017 study by Recyc-Québec, a Quebec recycling group. The use of fossil fuels and the emission of fine particles and chemicals during paper bag production is of particular concern, the authors wrote. It also takes more than four times as much energy to manufacture a paper bag than a plastic bag, according to a widely-cited 2011 research paper by the Northern Ireland Assembly. “For paper bag production, forests must be cut down and then the subsequent manufacturing of bags produces greenhouse gases,” the authors explained, adding that the majority of paper bags are made by heating wood chips. “The use of these toxic chemicals contributes to both air pollution, such as acid rain, and water pollution.”

Impact: It is harder to recycle paper than plastic

Pope, Samantha. "Paper bags just as environmentally damaging as plastic bags, experts say." Capital Current. <https://capitalcurrent.ca/paper-bags-just-as-environmentally-damaging-as-plastic-bags-experts-say/>

Though paper does break down and can be recycled and composted, it takes 91 percent less energy to recycle a plastic bag than a paper bag, the researchers noted. When the Canadian government announced its plastic waste plan, it did so with the intention of protecting wildlife and our waters, reducing greenhouse gas emissions and creating jobs, according to Environment and Climate Change Canada spokesperson Chelsea Steacy. But the department acknowledges that people still need bags to pack groceries. "The (government) will work to ensure that items identified for a ban or restriction can be replaced by readily available alternatives that can serve the same function," she said, specifying that this could include single-use alternatives like paper bags and reusable alternatives, like durable plastic or canvass. "Differences in cost are an important factor to consider in developing regulations and analyzing (their) potential impact on Canadians and businesses," said Steacy, referring to the potential rules on both single-use plastics and their alternatives.

Analysis: Use this argument to demonstrate that the most likely alternative to plastic bags, paper bags, is no better for the environment. Make the opponents justify their impacts not just in the abstract but in comparison to the harms of paper bags.

CON: Single-use plastic decreases food waste

Argument: The US has an abundance of food waste. Single-use plastic preserves food, helping to prevent some of this waste. Both the use of other materials to preserve food and wasting food are worse for the environment than using plastic packaging. Thus, banning single-use plastic would harm the environment.

Warrant: Food waste in the US is rampant.

“Food waste and food rescue.” Feeding America, <https://www.feedingamerica.org/our-work/reduce-food-waste#:~:text=How%20much%20food%20goes%20to,all%20the%20food%20in%20America..>

The United States produces more than enough food to feed everyone, but it wastes millions of pounds of perfectly good food yearly while 44 million people in the country face hunger. To fix this problem, we need better solutions to reduce food waste. Feeding America, the country’s largest food rescue organization, partners with food manufacturers, grocery stores, restaurants, and farmers to rescue food and deliver it to food banks. What is food waste? Food waste is safe; high-quality food is thrown away instead of eaten. Here are some common reasons food waste happens: • People throw away uneaten food at home, stores, and restaurants. • Farmers leave unharvested crops in fields due to low prices or overproduction. • Problems occur during the transportation and manufacturing of food. • Retailers reject food that doesn't meet appearance or color standards. How much food goes to waste? **In the United States, people waste 80 million tons of food every year, which equals 149 billion meals. They throw away over \$444 billion worth of food annually. Shockingly, they waste 38% of all the food in America.**

Warrant: Plastic packaging prevents food waste.

American Chemistry Council. "How Can Plastics Help Curb Food Waste?" *Plastics Engineering*, Sept. 2015, <https://read.nxtbook.com/wiley/plasticsengineering/september2015/howcanplastics.html>

Those of us in the packaging world understand that proper plastic (and other) packaging plays a huge role before and after we buy groceries. **For example, packaging made with plastic helps prevent food waste by providing barriers to oxygen, light, temperatures, moisture, microbes, and other factors that lead to spoilage. In addition, it can contribute to important consumer benefits such as appearance, freshness, convenience, and portion control, which also can help reduce wasted food. And these advances keep coming, like plastic vacuum packaging for meat that can result in 75% less food waste than store-wrapped meat, active packaging that incorporates antimicrobials to help fend off spoilage, and plastic sensors under development that could monitor a food's actual freshness.** Beyond cutting down on wasted food, proper packaging is a wise investment because it can save all those wasted resources mentioned above. The Industry Council for Research on Packaging and the Environment calculates that "ten times more resources—materials, energy, water—are used to make and distribute food than are used to make the packaging to protect it." So wasting food can squander ten times more resources than those used to make the packaging that protects it.

Warrant: Other materials are worse for the environment than plastic waste.

Kamhi, Leon. "Packaging puzzles: Plastic pollutes but can also reduce food waste." *ESG Clarity*, 3 Feb. 2023, <https://esgclarity.com/packaging-puzzles-plastic-pollutes-but-can-also-reduce-food-waste/>.

Plastic packaging plays a significant role in conserving perishable goods and extending the shelf life of fresh produce. But at the same time it intensifies the issue of plastic pollution, as progress in reducing plastic waste is mostly driven by recycling rather than the banning of single-use plastic. **Although the issue of single-use plastic packaging is becoming more widely recognised, a thorough approach to packaging and product design must include an evaluation of alternatives' life cycles. For instance, glass has a greater carbon footprint due to transportation because it is roughly twice as heavy as most varieties of plastic. Making the switch to paper cartons and packaging may increase the risk of deforestation. There is no obvious fix.** It is estimated that a third of all the food produced globally is wasted. According to the UNEP Food Waste Index 2021, about 931 million tonnes of food waste was generated globally in 2019 – 61% from households, 26% from food services and 13% from retail. The Intergovernmental Panel on Climate Change's special report estimates that food loss and waste accounted for 8-10% of the greenhouse gas emissions responsible for global warming between 2010 and 2016. So we can see that packaging plays a key role in reducing food waste and its associated greenhouse gas emissions, particularly for items where the environmental impact of the food is high relative to the packaging.

Warrant: Food waste is worse for the environment than plastic waste.

“Why do we need plastic packaging?” British Plastics Federation,

<https://www.bpf.co.uk/packaging/why-do-we-need-plastic-packaging.aspx>.

Plastic packaging is one of the most important contributors to protecting food from spoiling. Food waste has a significantly higher environmental impact, particularly in the form of its carbon footprint, than packaging waste. **Plastic packaging allows food to travel further distances, stay longer on the shelves, and ensures that large amounts of food do not go to waste. Because it takes considerably more resources to create the**

food itself, it often makes environmental sense to protect it for as long as possible so the resources invested in its growth are not invested in vain. As well as helping to deliver food around our global economy, liquids, gels, powders, out-of-season fruit, and other specialist items are all safely protected by the material. There are many types of plastic that have different functional properties such as being safe for food, flexible, transparent, opaque, and chemical and heat resistant. Plastics thus are the ideal packaging material for a variety of modern requirements. Without plastic packaging to serve all these needs, it becomes very difficult (and often impossible) to transport and utilise a wide range of products people rely on every day.

Warrant: Not using plastic packaging increases CO2 emissions.

Geronimo. "Plastic Packaging vs Food Waste Prevention: Let's Take a Look."

Earthbuddies, 4 May 2022, <https://earthbuddies.net/plastic-packaging-food-waste/>.

After conducting the research and comparing the scenarios of using/ditching plastic wrap for cucumbers, the researchers found that the wrapping reduces the overall climate change impact. **"This is primarily because the benefit of a reduction in food waste is much more than the additional impact caused by the plastic wrapping," the authors stated. To be more specific, when the researchers compared impacts caused by food waste and plastic wrapping, they discovered that the wrapping lowers impact by 157 kg CO2-eq per ton, which is 4.9 times higher than the negative environmental impact due to the packaging itself.** Moreover, the team found that every single cucumber that goes into the garbage pile equals the impacts of the plastic packaging needed to wrap 93 cucumbers. Previous study suggests that environmental impact of plastic and packaging is highly overestimated by consumers. Compared to the impact of personal actions like air travels, plastic impact is actually much lower. That's why, the authors said, it's important to explain and educate the benefit of plastic packaging to

consumers; that food waste is also a problem, and plastic can in fact play a role in sustainability in terms of food waste.

Warrant: Increased CO2 emissions are dangerous.

Lindsey, Rebecca. "Climate Change: Atmospheric Carbon Dioxide." Climate.gov, 12 May 2023, <https://www.climate.gov/news-features/understanding-climate/climate-change-atmospheric-carbon-dioxide#:~:text=Without%20carbon%20dioxide%2C%20Earth's%20natural,causing%20global%20temperature%20to%20rise.>

Carbon dioxide is Earth's most important greenhouse gas: a gas that absorbs and radiates heat. Unlike oxygen or nitrogen (which make up most of our atmosphere), greenhouse gases absorb heat radiating from the Earth's surface and re-release it in all directions—including back toward Earth's surface. Without carbon dioxide, Earth's natural greenhouse effect would be too weak to keep the average global surface temperature above freezing. **By adding more carbon dioxide to the atmosphere, people are supercharging the natural greenhouse effect, causing global temperature to rise.** According to observations by the NOAA Global Monitoring Lab, in 2021 carbon dioxide alone was responsible for about two-thirds of the total heating influence of all human-produced greenhouse gases.

Impact: Increased temperatures put millions at risk.

Fallon, Patrick T. "Global heat deaths could quadruple if action is not taken on climate change, study finds." NBC News, <https://www.nbcnews.com/science/environment/global-heat-deaths-quadruple-action-not-taken-climate-change-study-fin-rcna125187>

Global heat deaths are projected to increase by 370% if action is not taken to limit the effects of global warming, according to a study published Tuesday in *The Lancet*, a medical journal. If average global temperatures reach 2 degrees Celsius above pre-industrial levels — as is expected without drastic action — an additional 524.9 million people are also expected to experience food insecurity, aggravating the global risk of malnutrition. “Any further delays in climate change action will increasingly threaten the health and survival of billions of people alive today,” the report said. The study monitors the evolving impacts of climate change on health and the direct impact of climate action. It pointed to four main risk areas: rising temperatures that can put health at risk; extreme weather events that lead to food insecurity; the broader pressure on health care systems; and growing transmission of life-threatening diseases. “Every heat-related death in my mind is avoidable,” said Dr. Renee Salas, an emergency medicine physician at Massachusetts General Hospital and Harvard Medical School who served as a senior author of the study. “And it is on us within the health sector to protect those people while simultaneously working upstream to get to the root cause and to transition away from fossil fuels.”

Impact: Increased CO2 emissions are costly.

Schwartz, John. “A Carbon Calculation: How Many Deaths Do Emissions Cause?” *The New York Times*, 29 July 2021, <https://www.nytimes.com/2021/07/29/climate/carbon-emissions-death.html>.

In his paper, Mr. Bressler incorporated recent public health research that estimates the number of excess deaths attributable to rising temperatures into the latest version of the DICE model. **The resulting extended model produced a startlingly high figure for the social cost of carbon: \$258 per metric ton.** He coined a term for the relationship between the increased emissions and excess heat deaths: the “mortality cost of carbon.”

Analysis: This argument is good because it links into climate change, which is a primary argument on the aff. This will create strong clash in the round and allow you to win a round based on weighing.

CON: Single-use plastics are better than glass

Argument: If single-use plastic is banned, alternatives will have to be used. Glass is a likely alternative, but it is actually worse for the environment than single-use plastic. Thus, increasing its use will cause a series of negative environmental impacts.

Warrant: The US suggests using glass as an alternative to single-use plastic.

Haaland, Deb. "ORDER NO. 3407." The Secretary of the Interior, 8 June 2022,
<https://www.doi.gov/sites/doi.gov/files/elips/documents/so-3407.pdf>.

As documented by the United Nations Environment Program, additional nonhazardous, environmentally-preferable alternatives to single-use plastic products have been developed in recent years and are readily available. **Bags made of paper, bioplastics, and composite can replace single use plastic bags, as can reusable cloth or thicker plastic alternatives. Bottles made of bioplastics, glass, and aluminum, and laminated cartons can replace single-use plastic bottles, as can reusable bottles made of glass, aluminum, or stainless steel.** Similar materials can replace single-use plastic in food packaging, beverage cups, tableware, and other products, giving the Department a range of options to consider in this effort to account for the variety of geographic locations and social contexts in which Departmental facilities operate.

Warrant: Glass is worse for the environment than single-use plastic.

"Glass vs. Plastic – What's the more climate-friendly packaging material?" Ecochain, 19 July 2023, <https://ecochain.com/case-studies/case-study-packaging-plastic-vs-glass/>.

The overall environmental impact per kg is indeed lower for the glass packaging. **However, the weight of the glass makes a big difference.** Transportation is a big factor of this: From the raw material to the bottle, to the finished product – each step of the supply chain includes significantly higher weights for transportation. **In fact, the weight of a glass bottle can be up to 40x the weight of a comparable PET bottle. This leads to PET scoring lower overall life cycle impacts compared to glass. While the depicted comparison is based on CO₂ impacts, the environmental cost indicator (that contains more than just CO₂ impact), shows an even bigger difference: Here, PET is an improvement of up to 80% towards the glass.** Again, the significantly higher weight of the glass jar leads to a much higher impact. The impact of waste management is higher for PET compared to glass, but compensated by lower impacts of the raw material.

Warrant: Glass negatively impacts the environment.

Lee, Claudia. "Glass or plastic: which is better for the environment?" BBC, 27 Apr. 2023, <https://www.bbc.com/future/article/20230427-glass-or-plastic-which-is-better-for-the-environment>.

Because of this, glass is often touted as a more sustainable alternative to plastic. **However, glass bottles have a higher environmental footprint than plastic and other bottled container materials including drinks cartons and aluminum cans. The mining of silica sand can cause significant environmental damage, ranging from land deterioration to the loss of biodiversity.** Violations of basic workers' rights have also been found in Shankargarh, India, which is the biggest supplier of silica sand to the country's glass industry. Some studies have also shown that extended exposure to silica dust can pose a public health risk, as it can lead to acute silicosis, an irreversible, long-term lung disease caused by the inhalation of silica dust over an extended period of time. Silicosis may first appear as a persistent cough or shortness of breath, and may result in respiratory failure.

Impact: Deforestation leads to the spread of zoonotic diseases.

Kessler, Robert. "What Exactly Is Deforestation Doing to Our Planet?" EcoHealth Alliance, <https://www.ecohealthalliance.org/2017/11/deforestation-impact-planet#:~:text=But%20deforestation%20impacts%20human%20health,zoonotic%20disease%20spillover%20into%20people>.

But deforestation impacts human health in an even more direct way as well. **One Health practitioners have, for years, understood that deforestation drives wild animals out of their natural habitats and closer to human populations, therefore creating a greater frequency of zoonotic disease spillover into people. In fact, EcoHealth Alliance research has shown that 31 percent of outbreaks of new and emerging diseases like Nipah virus, Zika, and Ebola are linked to deforestation.** New research recently published in Nature's online journal Scientific Reports found an almost universal two year link between deforestation and Ebola outbreaks. That is to say, areas which experienced significant forest loss were highly likely to see an Ebola outbreak in humans two years later. It's a striking representation of the One Health concept; destruction of natural forest presents an immediate risk to the people living in that area. Some of those Ebola outbreaks are contained, some, like the West African outbreak which lasted from 2013 to 2016 and killed more than 11,000 people, spread quickly across the region, to the U.S. and Europe.

Impact: A loss of biodiversity puts millions at risks.

"I understand there may be a biodiversity crisis, but how does that affect me?" WWF, https://wwf.panda.org/discover/our_focus/biodiversity/biodiversity_and_you/#:~:text=Put%20simply%2C%20reduced%20biodiversity%20means,in%20irregular%20or%20short%20supply.

Biological diversity is the resource upon which families, communities, nations and future generations depend. It is the link between all organisms on earth, binding each into an interdependent ecosystem, in which all species have their role. It is the web of life. The Earth's natural assets are made up of plants, animals, land, water, the atmosphere AND humans! Together we all form part of the planet's ecosystems, which means if there is a biodiversity crisis, our health and livelihoods are at risk too. But we are currently using 25% more natural resources than the planet can sustain. As a result species, habitats and local communities are under pressure or direct threats (for example from loss of access to fresh water). **Biodiversity underpins the health of the planet and has a direct impact on all our lives. Put simply, reduced biodiversity means millions of people face a future where food supplies are more vulnerable to pests and disease, and where fresh water is in irregular or short supply.** For humans that is worrying. Very worrying indeed.

Warrant: Increased CO2 emissions are dangerous.

Lindsey, Rebecca. "Climate Change: Atmospheric Carbon Dioxide." Climate.gov, 12 May 2023, <https://www.climate.gov/news-features/understanding-climate/climate-change-atmospheric-carbon-dioxide#:~:text=Without%20carbon%20dioxide%2C%20Earth's%20natural,causing%20global%20temperature%20to%20rise.>

Carbon dioxide is Earth's most important greenhouse gas: a gas that absorbs and radiates heat. Unlike oxygen or nitrogen (which make up most of our atmosphere), greenhouse gases absorb heat radiating from the Earth's surface and re-release it in all directions—including back toward Earth's surface. Without carbon dioxide, Earth's natural greenhouse effect would be too weak to keep the average global surface temperature above freezing. **By adding more carbon dioxide to the atmosphere,**

people are supercharging the natural greenhouse effect, causing global temperature to rise. According to observations by the NOAA Global Monitoring Lab, in 2021 carbon dioxide alone was responsible for about two-thirds of the total heating influence of all human-produced greenhouse gases.

Impact: Increased temperatures put millions at risk.

Fallon, Patrick T. "Global heat deaths could quadruple if action is not taken on climate change, study finds." NBC News, <https://www.nbcnews.com/science/environment/global-heat-deaths-quadruple-action-not-taken-climate-change-study-fin-rcna125187>

Global heat deaths are projected to increase by 370% if action is not taken to limit the effects of global warming, according to a study published Tuesday in The Lancet, a medical journal. If average global temperatures reach 2 degrees Celsius above pre-industrial levels — as is expected without drastic action — an additional 524.9 million people are also expected to experience food insecurity, aggravating the global risk of malnutrition. "Any further delays in climate change action will increasingly threaten the health and survival of billions of people alive today," the report said. The study monitors the evolving impacts of climate change on health and the direct impact of climate action. It pointed to four main risk areas: rising temperatures that can put health at risk; extreme weather events that lead to food insecurity; the broader pressure on health care systems; and growing transmission of life-threatening diseases. "Every heat-related death in my mind is avoidable," said Dr. Renee Salas, an emergency medicine physician at Massachusetts General Hospital and Harvard Medical School who served as a senior author of the study. "And it is on us within the health sector to protect those people while simultaneously working upstream to get to the root cause and to transition away from fossil fuels."

Analysis: This argument can be used on its own if used with probability weighing that explains why glass is the most likely or prevalent alternative, but it can also be used as part of a larger argument about alternatives to single-use plastic. Additionally, the impacts can really be taken in any direction, making the argument very versatile.

CON: Single-use plastic bans failed in Ottawa

Argument: A federal ban of all single-use plastics is too broad. Ottawa’s blanket single-use plastic ban can be used as a case study. The state experienced a plethora of negative impacts following their ban and recently overturned it.

Warrant: Ottawa did the aff in December 2022.

“Canada bids farewell to plastic straws, cutlery and checkout bags.” Phys.org, 21 Dec. 2023, <https://phys.org/news/2023-12-canada-farewell-plastic-straws-cutlery.html>.

Canadian restaurants and cafes were no longer permitted as of Wednesday to offer plastic straws, food containers, checkout bags or cutlery to customers—despite a court ruling that such restrictions are unconstitutional. **The regulation banning single-use plastics was introduced last year and was to be phased in as part of Ottawa's commitment to achieve zero plastic waste by 2030.** But it hit a snag in November when a Canadian court ruled in a case brought by oil and chemical companies that it was “unreasonable and unconstitutional.” **The government went ahead anyway, asking the court to stay an order quashing the ban while it appeals the decision, and the prohibition against the manufacture, sale or in-store distribution of single-use plastics came into force.**

Warrant: It failed almost immediately and was overturned less than a year later.

Stober, Eric. “The Federal Court just overturned Ottawa’s single-use plastic ban.” Global News, 17 Nov. 2023, <https://globalnews.ca/news/10096664/plastic-ban-overturned-court/>.

The Federal Court overturned Canada's ban on single-use plastic on Thursday, **deeming the policy "unreasonable and unconstitutional."** The decision found that the classification of plastics in the cabinet order was too broad to be listed on the List of Toxic Substances in Schedule 1 and the government acted outside of its authority. **"There is no reasonable apprehension that all listed Plastic Manufactured Items are harmful," the decision read.** The decision has essentially quashed a cabinet order that listed plastic manufactured items, such as plastic bags, straws, and takeout containers, as toxic under the Canadian Environmental Protection Act. Environment Minister Steven Guilbeault said in a statement that the federal government is "strongly considering an appeal" of the decision. "Canadians have been loud and clear that they want action to keep plastic out of our environment," he said. "We will have more to say on next steps soon." The decision has implications for the government's ban on six single-use plastic items. The government is only able to regulate substances for environmental protection if they are listed as toxic under CEPA. The decision found that it was not reasonable to say all plastic manufactured items are harmful because the category is too broad.

Warrant: Ottawa's ban caused environmental and economic harms.

Aliakbari, Elmira and Julio Mejía. "Ottawa's plastics ban is bad for the environment."

Fraser Institute, 23 Mar. 2023, <https://www.fraserinstitute.org/article/ottawas-plastics-ban-is-bad-for-the-environment>.

In fact, as acknowledged by the federal government's own analysis, banning single-use plastics will actually increase waste generation rather than reduce it. According to the analysis, while the ban will remove 1.5 million tonnes of plastics from 2023 to 2032, it will almost double that tonnage in substitutes such as paper, wood and aluminum over the same period. In other words, the ban will increase, not decrease, the amount of net garbage in Canada. **To make matters worse, according to the government's Strategic Environmental Assessment, plastic substitutes "typically have higher climate change**

impacts” including higher greenhouse gases (GHG) and lower air quality. Indeed, according to multiple studies, single-use plastic substitutes such as paper require more energy to transport, feature higher smog formation and ozone depletion potential, demand more water and energy to be produced, and result in higher GHG emissions. Simply put, the plastic ban harms, not helps, the environment. And that’s not all.

According to the federal government’s own estimates, the plastic ban will save \$616 million in avoided clean-up expenses over the next 10 years but will cost around \$2 billion over the same period, due to the management of additional waste discussed above, ban enforcement and the forgone profit opportunity for manufacturers. The cost of the ban surpasses the benefit by a 3-to-1 ratio. And that’s not all. According to the federal government’s own estimates, the plastic ban will save \$616 million in avoided clean-up expenses over the next 10 years but will cost around \$2 billion over the same period, due to the management of additional waste discussed above, ban enforcement and the forgone profit opportunity for manufacturers. The cost of the ban surpasses the benefit by a 3-to-1 ratio.

Impact: A policy that is doomed to fail wastes finite political capital.

Beatty, Andrea & Julian Scoffield. “Big Tech’s Old Friend Helms Key Biden Administration Role.” *The American Prospect*, 5 Dec. 2022, <https://prospect.org/power/big-techs-old-friend-helms-key-biden-administration-role/>.

One of the legislative priorities that’s been apparently left by the wayside is the massively popular, bipartisan antitrust reform legislation. While the White House has reiterated its commitment to passing antitrust reform bills, **the Biden administration has finite political capital and Congress has limited floor time. Every priority is in competition right now.** But it would be easier to give the Biden administration the benefit of the doubt and see them as forthright in pushing for the antitrust bills if the

key White House figure in charge of the White House's agenda in Congress wasn't a former Facebook lobbyist.

Impact: Other important policies get put on the back burner.

"Economy Remains the Public's Top Policy Priority; COVID-19 Concerns Decline Again."

Pew Research Center, 6 Feb. 2023,

<https://www.pewresearch.org/politics/2023/02/06/economy-remains-the-publics-top-policy-priority-covid-19-concerns-decline-again/>.

Overall, 75% of Americans say strengthening the economy should be a top priority this year, according to a new Pew Research Center survey conducted Jan. 18-24, 2023, among 5,152 U.S. adults. The public continues to express negative views of national economic conditions, despite continued job growth and signs that inflation may be easing. Just 21% rate economic conditions as excellent or good, which is only a slight increase from October (17%). Aside from the economy, no single policy area stands out. **About six-in-ten rate several issues as top priorities: reducing health care costs (60%), defending against terrorism (60%), reducing the influence of money in politics (59%), reducing the budget deficit (57%), reducing crime (57%) and improving education (57%). About half of Americans (53%) say reducing the availability of illegal drugs, including heroin, fentanyl and cocaine, should be a top priority for the president and Congress. Similar shares say the same about dealing with immigration (53%), improving the energy system (52%) and improving the job situation (49%).** Among the lowest items on the public's agenda for the president and Congress are dealing with climate change (37%), dealing with global trade issues (34%) and addressing issues around race (32%). The public gives the lowest priority to dealing with the challenges facing parents (27%) and dealing with the coronavirus outbreak (26%). (For a closer look at the top policy priorities of partisan and demographic groups, see the detailed tables accompanying this report.)

Analysis: This is a good argument because it acknowledges that the theoretical implications of the aff are great, but the reality is less than desirable. This allows you to cast doubt on pretty much all of the evidence provided by the aff. At that point, all of their impacts either lack probability and severity and probably lessen in magnitude.

CON: Banning single-use plastics does not stop the problem

Argument: Single-use plastic is defined as plastic that is designed to be used once, but that fails to account for people reusing those items. When this reuse is accounted for, single-use plastic bags are actually better for the environment than alternatives.

Warrant: The federal government’s definition of single-use plastic is broad.

“Reducing Single-Use Plastic Pollution.” U.S. Department of the Interior,
<https://www.doi.gov/reducing-single-use-plastic-pollution#:~:text=Single%2Duse%20plastic%20products%20include,be%20used%20once%20and%20discarded.>

Issued on June 8, 2022, Secretary's Order 3407 (SO 3407) aims to reduce the procurement, sale and distribution of single-use plastic products and packaging with a goal of phasing out all single-use plastic products on Department-managed lands by 2032. SO 3407 is part of the implementation of President Biden’s Executive Order 14057, which calls for federal agencies take actions to reduce and phase out procurement of single-use plastic products to the maximum extent practicable. **Single-use plastic products include plastic and polystyrene food and beverage containers, bottles, straws, cups, cutlery and disposable plastic bags that are designed for or intended to be used once and discarded.**

Warrant: Single-use plastic doesn’t mean it’s just used once.

Tierney, John. “The Perverse Panic over Plastic.” City Journal, Winter 2020,
<https://www.city-journal.org/article/the-perverse-panic-over-plastic.>

Single-use plastic bags are the worst environmental choice at the supermarket. Wrong: they're the best choice. These high-density polyethylene bags are a marvel of economic, engineering, and environmental efficiency: cheap and convenient, waterproof, strong enough to hold groceries but so thin and light that they require scant energy, water, or other natural resources to manufacture and transport. **Though they're called single-use, surveys show that most people reuse them, typically as trash-can liners.** Once discarded, these bags take up little room in the landfill, and the fact that they're not biodegradable is a plus, not a minus, because they don't release methane or any other greenhouse gas, as decomposing paper and cotton bags do. The bags' tiny quantity of carbon, extracted from natural gas, goes back underground, where it can be safely sequestered from the atmosphere (and the ocean) in a modern landfill with a sturdy lining.

Warrant: People do not reuse alternatives enough, which is actually worse for the environment.

Tierney, John. "The Perverse Panic over Plastic." City Journal, Winter 2020,
<https://www.city-journal.org/article/the-perverse-panic-over-plastic>.

Every other grocery bag has a bigger environmental impact, as repeatedly demonstrated by environmental life-cycle analyses of the bags and by surveys of consumer behavior. **Paper bags and reusable tote bags require more water to manufacture and more energy to produce and transport, which means a bigger carbon footprint. To compensate for that bigger initial footprint of a paper bag, according to the United Kingdom's environmental agency, you'd have to reuse it at least four times, which virtually no one does.** The typical paper grocery bag is used just once (and takes up 12 times more landfill space than a plastic one). People do reuse tote bags, but not as often as they plan to. One survey found that consumers forget to bring the bags to the supermarket nearly half the time. **To offset the initial carbon footprint of a cotton tote**

bag, you'd have to use it 173 times, but the typical tote is used just 15 times, so the net effect is about nine times more carbon emissions than a thin plastic bag.

Environmentalists who have looked at these numbers advise greens to shun cotton bags (even their beloved organic ones) in favor of plastic tote bags, because a bag of nonwoven polypropylene needs to be used just 14 times to offset its initial carbon footprint. At first glance, that looks like a slight net plus for the atmosphere, given that the typical tote is used 15 times. But that benefit disappears once you consider another consequence observed in places that have banned single-use bags: when consumers are deprived of the bags they were using as bin liners, they start buying plastic substitutes that are thicker than the banned grocery bags—and thus have a bigger carbon footprint.

Warrant: Greater emissions pose a climate change risk.

“Causes and Effects of Climate Change.” United Nations,

<https://www.un.org/en/climatechange/science/causes-effects-climate-change#:~:text=As%20greenhouse%20gas%20emissions%20blanket,the%20usual%20balance%20of%20nature.>

Fossil fuels – coal, oil and gas – are by far the largest contributor to global climate change, accounting for over 75 per cent of global greenhouse gas emissions and nearly 90 per cent of all carbon dioxide emissions. **As greenhouse gas emissions blanket the Earth, they trap the sun's heat. This leads to global warming and climate change. The world is now warming faster than at any point in recorded history. Warmer temperatures over time are changing weather patterns and disrupting the usual balance of nature. This poses many risks to human beings and all other forms of life on Earth.**

Impact: Unchecked global emissions are on track to initiate mass extinction of marine life.

“Unchecked global emissions on track to initiate mass extinction of marine life.” UW News, 28 Apr. 2022,
<https://www.washington.edu/news/2022/04/28/unchecked-global-emissions-on-track-to-initiate-mass-extinction-of-marine-life/>.

As greenhouse gas emissions continue to warm the world’s oceans, marine biodiversity could be on track to plummet within the next few centuries to levels not seen since the extinction of the dinosaurs, according to research from the University of Washington and Princeton University. Oceanographers modeled future marine biodiversity under different projected climate scenarios. **They found that if emissions are not curbed, species losses from warming and oxygen depletion alone could come to mirror the substantial impact humans already have on marine biodiversity by around 2100.** Tropical waters would experience the greatest loss of biodiversity, while polar species are at the highest risk of extinction, according to the April 28 study in the journal Science. “Aggressive and rapid reductions in greenhouse gas emissions are critical for avoiding a major mass extinction of ocean species,” said senior author Curtis Deutsch, who began the research as a professor of oceanography at the UW and is now at Princeton University. **The study found, however, that reversing greenhouse gas emissions now could reduce the risk of extinction by more than 70%.**

Impact: A loss of biodiversity puts millions at risks.

“I understand there may be a biodiversity crisis, but how does that affect me?” WWF,
https://wwf.panda.org/discover/our_focus/biodiversity/biodiversity_and_you/#:~:text=Put%20simply%2C%20reduced%20biodiversity%20means,in%20irregular%20or%20short%20supply.

Biological diversity is the resource upon which families, communities, nations and future generations depend. It is the link between all organisms on earth, binding each into an interdependent ecosystem, in which all species have their role. It is the web of life. The Earth's natural assets are made up of plants, animals, land, water, the atmosphere AND humans! Together we all form part of the planet's ecosystems, which means if there is a biodiversity crisis, our health and livelihoods are at risk too. But we are currently using 25% more natural resources than the planet can sustain. As a result species, habitats and local communities are under pressure or direct threats (for example from loss of access to fresh water). **Biodiversity underpins the health of the planet and has a direct impact on all our lives. Put simply, reduced biodiversity means millions of people face a future where food supplies are more vulnerable to pests and disease, and where fresh water is in irregular or short supply.** For humans that is worrying. Very worrying indeed.

Analysis: This is a good argument because it acknowledges that an aff world would be great, but it gives the reality check that that world will never actually exist. Instead, it presents the reality of a single-use plastic ban, which is a worse environmental climate. This allows for clash with the aff and will bring the back half of your debate round down to weighing.

CON: Banning single-use plastics proliferates pandemics

Argument: Pandemics are one of the largest threats that the globe faces. PPE is imperative for preventing the spread of pandemics. Since PPE is made from single-use plastic, banning single-use plastic would put the US, and the broader global community, at risk.

Warrant: Pandemics are the biggest threat to this generation.

Chasan, Aliza. "Prepare for next pandemic, future pathogens with "even deadlier potential" than COVID, WHO chief warns." CBS News, 23 May 2023, <https://www.cbsnews.com/news/next-pandemic-threat-pathogen-deadlier-than-covid-world-health-organization/>.

The head of the World Health Organization urged countries across the globe to prepare for the next pandemic, warning that future health emergencies could be even worse than the COVID-19 pandemic. WHO director-general Dr. Tedros Adhanom Ghebreyesus's warning comes weeks after the group officially ended the COVID global health emergency. During a meeting of the World Health Assembly in Geneva, Switzerland, Tedros said COVID is still a threat — but not the only one we may have to confront. **"The threat of another variant emerging that causes new surges of disease and death remains, and the threat of another pathogen emerging with even deadlier potential remains," he said.** More than 6.9 million people globally have died of COVID, according to a WHO tally. Tedros noted that the COVID pandemic showed "basically everyone on the planet" needs to be better protected. "We cannot kick this can down the road," he said. "If we do not make the changes that must be made, then who will? And if we do not make them now, then when? When the next pandemic comes knocking — and it will — we must be ready to answer decisively, collectively and equitably."

Warrant: PPE prevents pandemics.

“Healthcare-Associated Infections: Personal Protective Equipment (PPE).” Wisconsin Department of Health Services, 16 Nov. 2023, <https://www.dhs.wisconsin.gov/hai/ppe.htm>.

Personal protective equipment (PPE) is specialized clothing or equipment used to prevent exposure to communicable diseases. **PPE use is an integral infection control and prevention measure that protects health care personnel from exposure to blood, body fluids, and other potentially infectious materials.** PPE, such as gowns, gloves, masks, and goggles, provides a physical barrier that to prevent the hands, skin, clothing, eyes, nose, and mouth from contacting infectious agents. **PPE is used to reduce transmission of communicable diseases when other measures, such as engineering controls and work practices, cannot completely eliminate exposure.**

Warrant: PPE is made from single-use plastics.

Sherman, Jenna. “What are blue surgical masks made of and is the material safe?” Health Desk, 10 Mar. 2021, <https://health-desk.org/articles/what-are-blue-surgical-masks-made-of-and-is-the-material-safe#:~:text=The%20material%20most%20commonly%20used,and%20shape%20at%20high%20temperatures>).

Blue surgical masks are safe and recommended for the public to wear to help prevent the spread of COVID-19. Blue surgical face masks are made with non-woven fabric, which has been shown to have better bacteria filtration and airflow than woven cloth. **The material most commonly used to make these masks is polypropylene—a type of fabric made from a “thermoplastic” polymer (meaning that it’s easy to work with and shape at high temperatures).** Blue surgical masks can also be made of polystyrene,

polycarbonate, polyethylene, or polyester— all of which are types of fabrics derived from thermoplastic polymers.

Warrant: Banning single-use plastics allows pandemics to proliferate.

“Shortage of personal protective equipment endangering health workers worldwide.”

World Health Organization, 3 Mar. 2020, <https://www.who.int/news/item/03-03-2020-shortage-of-personal-protective-equipment-endangering-health-workers-worldwide>.

WHO calls on industry and governments to increase manufacturing by 40 per cent to meet rising global demand. **The World Health Organization has warned that severe and mounting disruption to the global supply of personal protective equipment (PPE) – caused by rising demand, panic buying, hoarding and misuse – is putting lives at risk from the new coronavirus and other infectious diseases. Healthcare workers rely on personal protective equipment to protect themselves and their patients from being infected and infecting others.** But shortages are leaving doctors, nurses and other frontline workers dangerously ill-equipped to care for COVID-19 patients, due to limited access to supplies such as gloves, medical masks, respirators, goggles, face shields, gowns, and aprons. “Without secure supply chains, the risk to healthcare workers around the world is real. Industry and governments must act quickly to boost supply, ease export restrictions and put measures in place to stop speculation and hoarding. We can’t stop COVID-19 without protecting health workers first,” said WHO Director-General Dr Tedros Adhanom Ghebreyesus.

Impact: The next pandemic will kill millions.

“What is Disease X? Here's all we know about the next pandemic that could kill 50 million people.” Economic Times, 27 Sep. 2023,

<https://economictimes.indiatimes.com/news/science/disease-x-the-next-pandemic-could-kill-about-50-million-people/articleshow/103927456.cms?from=mdr>.

COVID-19 claimed approximately 20 million lives worldwide, but if scientists are to be believed, the next pandemic could kill more than twice that figure. In a new book, the former Chair of the UK Vaccine Taskforce, Kate Bingham, has issued a stark warning about the potential for the next pandemic to emerge from a vast pool of unknown viruses, potentially claiming as many lives as the Spanish Flu, which killed an estimated 50 million people. Co-authored with vaccine expert Tim Hames, an excerpt from the book published in the Daily Mail outlines their concerns about the next pandemic and calls for enhanced pandemic preparedness. Recalling the devastating impact of the 1918-19 flu pandemic, Bingham and Hames note, “The 1918-19 flu pandemic killed at least 50 million people worldwide, twice as many as were killed in World War I.” They emphasise that a similar death toll could result from one of the countless viruses already in existence, many of which are constantly replicating and mutating. The experts highlight the potential for thousands of different viruses to evolve into pandemic-causing threats, and they underscore the risk of viruses jumping between species and undergoing significant mutations. “So far, scientists are aware of 25 virus families, each of them comprising hundreds or thousands of different viruses, any of which could evolve to cause a pandemic,” caution Bingham and Hames.

Impact: The next pandemic could lead to extinction.

Supriya, Lakshmi. “Humans versus viruses - Can we avoid extinction in near future?”

News Medical Life Sciences, 19 Apr. 2021, <https://www.news-medical.net/news/20210419/Humans-versus-viruses-Can-we-avoid-extinction-in-near-future.aspx>.

There is evidence that the SARS-CoV-2 can also affect the brain. The virus may enter the brain via the olfactory tract or through the angiotensin-converting enzyme 2 (ACE2) pathway. Viruses can also affect our senses, such as a loss of smell and taste, and there could be other so far unknown neurological effects. The loss of smell seen in COVID-19 could be a new viral syndrome specific to this disease. Many books and movies have described pandemics caused by pathogens that wipe out large populations and cause severe diseases. In the essay, the author provides a hypothetical scenario where a gut bacteria suddenly starts producing viral proteins. Some virions spread through the body and get transmitted through the human population. After a few months, the virus started causing blindness, and within a year, large populations lost their vision.

Pandemics can cause other diseases that can threaten humanity's entire existence.

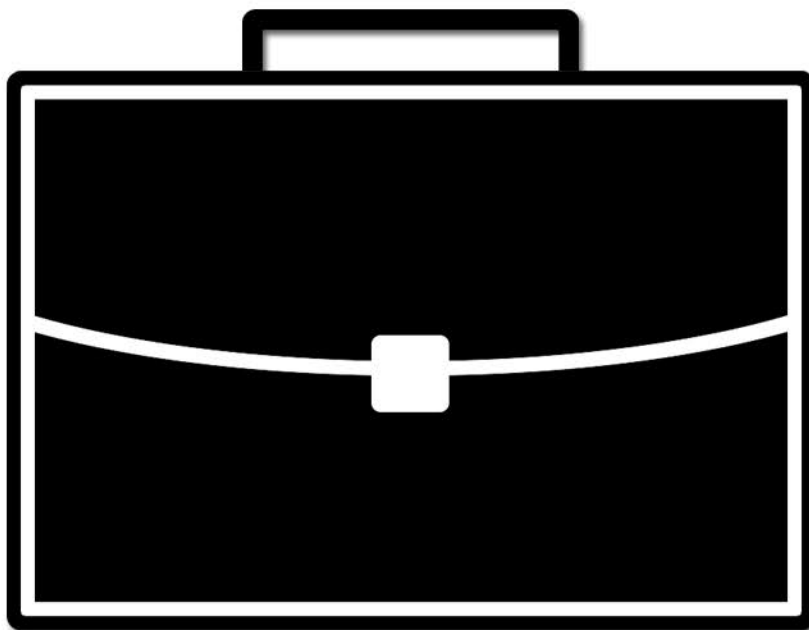
The COVID-19 pandemic brought this possibility to the forefront. If we continue disturbing the equilibrium between us and the environment, we don't know what the consequences may be and the next pandemic could lead us to extinction.

Analysis: This is a good argument because it works for both tech and lay judges. Tech judges will appreciate that this argument can be properly weighed against climate change, and lay judges will remember their experiences during the pandemic and have a personal stake in the argument.

Champion Briefs

February 2024

Public Forum Brief



Con Responses to
Pro Arguments

A/2: Single-use plastics harm marine life

Response: Single-use plastics in the United States are not the primary harm to marine life

Alt cause: Corporations, not consumers, are responsible for marine pollution

Logomasini, Angela. “Five Reasons Banning Plastics May Harm the Environment and Consumers.” *Consumer Enterprise Institute*, July 13, 2018, <https://cei.org/blog/five-reasons-banning-plastics-may-harm-the-environment-and-consumers/>.

Most of the waste is not from consumers. **The primary culprit of ocean pollution is not straws, cups, and plastic bags. According to the nonprofit The Ocean Cleanup, 46 percent of the Pacific patch is made up of fish nets. When combined with ropes and lines, it accounts for 52 percent of the trash. The rest ranges from large plastic crates and bottle caps to small fragments called microplastics. Obviously, this is not simply a consumer waste issue, and the solutions need to address that. Studies show the vast majority of plastic waste is due to poor disposal practices outside of the United States.** Data in a 2015 *Science* magazine report reveals that China and 11 other Asian nations are responsible for 77 to 83 percent of plastic waste entering the oceans because of poor disposal practices. These practices include littering, disposed waste that isn’t managed, and uncontrolled or poorly supervised landfills. This is in contrast to U.S. waste management practices, like controlled landfills and recycling programs, that decreases water and ocean pollution. A 2017 Environmental Sciences and Technology study reported that up to 95 percent of plastic waste enters oceans from one of 10 rivers—eight in Asia and two in Africa.

Alt cause: Other countries, not the United States, are responsible for marine pollution

Ritchie, Hanna. "Where does the plastic in our oceans come from" *Our World in Data*, May 1, 2021, <https://ourworldindata.org/ocean-plastics>.

To tackle plastic pollution we need to know what rivers these plastics are coming from. It also helps if we understand why these rivers emit so much. **Most of the world's largest emitting rivers are in Asia, with some also in East Africa and the Caribbean. In the chart we see the ten largest contributors. This is shown as each river's share of the global total. Seven of the top ten rivers are in the Philippines. Two are in India, and one in Malaysia. The Pasig River in the Philippines alone accounts for 6.4% of global river plastics.** This paints a very different picture to earlier studies where it was Asia's largest rivers – the Yangtze, Xi, and Huangpu rivers in China, and Ganges in India – that were dominant.

Alt cause: China and Indonesia are the primary causes of plastic waste in the ocean

"The countries polluting the oceans the most with plastic waste." *Plastic Ethics*, March 17, 2019, <https://www.plasticethics.com/home/2019/3/17/the-countries-polluting-the-oceans-the-most-with-plastic-waste>.

Jenna Jambeck, environmental engineer at the University of Georgia, analyzed with a team of researchers the releases of plastic waste in the oceans around the world. **They discovered that China and Indonesia are the main sources of plastic pollution for single use: bottles, packaging, main bags polluting the oceans. This study estimates that China and Indonesia alone are responsible for around 5 million tonnes of plastic waste ending up at sea each year.** As the Statista chart shows, they are coastal countries crossed by the largest rivers such as Yangtze, Nile, Amazon, etc. or located on islands that drain the most plastic in marine environments.

Turn: Alternatives such as bioplastics are still damaging to marine life

“Biodegradable plastics still damaging to fish.” *ScienceDaily*, October 18, 2023, <https://www.sciencedaily.com/releases/2023/10/231018194548.htm>.

She says the research is significant as it demonstrates that both petroleum-derived plastics and biodegradable plastics can be damaging to marine fish, should they be exposed to them. **“Biodegradable plastics may not be the silver bullet to plastic pollution as we believe them to be. “Although they are not as bad, they can still cause negative effects to those animals that may be exposed to them -- in the case of this study, populations would decline as their escape behaviours are impaired.”** Co-author Dr Bridie Allan, also of the Department of Marine Science, says more needs to be done at a policy level to protect marine environments.

Turn: Metal alternatives would be just as bad because metal pollutants in the ocean are harmful

Aziz, Kosar et. al. “Heavy metal pollution in the aquatic environment: efficient and low-cost removal approaches to eliminate their toxicity: a review.” *RSC Adv*, Jun 9, 2023, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10258679/>.

Heavy metal contamination of water sources has emerged as a major global environmental concern, threatening both aquatic ecosystems and human health. Heavy metal pollution in the aquatic environment is on the rise due to industrialization, climate change, and urbanization. **Sources of pollution include mining waste, landfill leachates, municipal and industrial wastewater, urban runoff, and natural phenomena such as volcanic eruptions, weathering, and rock abrasion.** Heavy metal ions are toxic, potentially carcinogenic, and can bioaccumulate in biological systems. Heavy metals can cause harm to various organs, including the neurological system, liver, lungs, kidneys, stomach, skin, and reproductive systems, even at low exposure levels. Efforts

to find efficient methods to remove heavy metals from wastewater have increased in recent years. Although some approaches can effectively remove heavy metal contaminants, their high preparation and usage costs may limit their practical applications.

Analysis: This response argues that, while single-use plastics may cause harm to the environment, that harm is less than the harm that could be caused by alternatives. Teams should focus on highlighting specific harms from the AFF's alternatives rather than argue that plastics are good.

A/2: Single-use plastics preclude reusable alternatives

Response: Reusable alternatives are worse than single-use plastics

Turn: Reusable alternatives are worse than plastics when it comes to emissions

Green, Kenneth P. “The government’s bad idea to stop using single-use plastics.” *Reason*, October 24, 2022, <https://reason.org/commentary/the-governments-bad-idea-to-stop-using-single-use-plastics/>.

It doesn’t take much reviewing of the research literature on the topic of plastic material substitutions to reveal that, in fact, plastic substitutes are usually worse for the environment than plastics, as well as worse for human health and safety. I have written about the downsides of plastics substitutions at some length. My recent piece here examines the Canadian context, where they’re even farther ahead of the United States in pursuing “zero plastic waste.” **So why are alternatives to single-use plastics worse for the environment? One of the biggest reasons for this is that the “reusables,” as I’ll call them, consume more energy over their life cycles than their single-use plastic alternatives. More energy in manufacturing, distribution, utilization, and disposal means greater environmental impacts coming out of the soil (oil production); going into the air (conventional pollutants and greenhouse gases); running off into the water, and going back into the land (landfilling).**

Turn: Most reusable alternatives are only better at a surface level

Wirtz, Bill. “Would a single-use plastic ban be counterproductive?” *The Hill*, August 30, 2022, <https://thehill.com/opinion/energy-environment/3620887-would-a-single-use-plastic-ban-be-counterproductive/>.

However, contrary to the idealism of the campaigners, banning the federal government from using single-use plastic goods would not benefit the environment. **In fact, life-cycle assessments on items such as single-use plastic bags have shown that there is a discrepancy between actual re-use rates of alternative bags and the re-use rate to break even on environmental grounds. Paper bags need to be re-used four times, LDPE bags five times, non-woven PP bags 14 times and cotton bags 173 times. Their actual re-use rates are about half that, making them less sustainable than single-use plastic bags, which may also be used by consumers as bin liners.** A 2020 study by University of Michigan Professor Shelie Miller displayed how alternatives to single-use plastic items are dependent on high re-use rates. Those rates are often not achieved. The same effects appear when we compare glass bottles to plastic bottles. As glass bottles are much heavier, their carbon footprint for transport is also higher. Whoever substitutes a plastic straw with a bamboo straw should also probably be aware of their significant carbon footprint.

Mitigation: Banning single-use plastics results in other plastics being purchased more

Taylor, Rebecca L.C. “Bag leakage: The effect of disposable carryout bag regulations on unregulated bags.” *Journal of Environmental Economics and Management*, January 2019, vol. 93, <https://doi.org/10.1016/j.jeem.2019.01.001>.

Leakage occurs when partial regulation of consumer products results in increased consumption of these products in unregulated domains. This article quantifies plastic leakage from the banning of plastic carryout bags. **Using quasi-random policy variation in California, I find the elimination of 40 million pounds of plastic carryout bags is offset by a 12 million pound increase in trash bag purchases—with small, medium, and tall trash bag sales increasing by 120%, 64%, and 6%, respectively. The results further reveal 12–22% of plastic carryout bags were reused as trash bags pre-regulation and show bag bans shift consumers towards fewer but heavier bags.** With a substantial

proportion of carryout bags already reused in a way that avoided the manufacture and purchase of another plastic bag, policy evaluations that ignore leakage effects overstate the regulation's welfare gains.

Mitigation: Reusable plastic bags still end up in landfills instead of being recycled

Waters, Aaron. "Environmental Effects of the Single Use Bag Ordinance in Austin, Texas." *Austin Resource Recovery & The Zero Waste Advisory Commission*, June 10, 2015, <https://services.austintexas.gov/edims/document.cfm?id=232679>.

So, if these plastic bags are not being recycled at our local facilities, what is their fate? More often than not, they make their way into our landfills, taking even longer to degrade than a traditional single use plastic bag as well as taking more space, both due to their thickness which is mandated by the ordinance. The most ideal method for disposal comes from the retail take-back option available at many retail locations. This is the box located near the entrance of a store which accepts plastic films. These materials are then marketed to the buyers⁶⁹ of second hand films as less contaminated product, and can be used more readily than the film coming from a MRF.

Delink: Plastic bags in the United States aren't primarily made from oil in the first place

"How much oil is used to make plastic?" EIA, June 1, 2023, <https://www.eia.gov/tools/faqs/faq.php?id=34&t=6>.

Although crude oil is a source of raw material (feedstock) for making plastics, it is not the major source of feedstock for plastics production in the United States. Plastics are produced from natural gas, feedstocks derived from natural gas processing, and feedstocks derived from crude oil refining. The U.S. Energy Information Administration

(EIA) is unable to determine the specific amounts or origin of the feedstocks that are actually used to manufacture plastics in the United States.

Analysis: This response argues that reusable alternatives are worse for the environment than single-use plastics. Teams should emphasize that many “single-use plastics” are reused, while many “reusable” alternatives are not.

A/2: Single-use plastics' manufacturing process is bad for the environment

Response: Reusable alternatives are worse for the environment than single-use plastics

Warrant: The most common alternative, paper, results in more emissions than plastic

McGrath, Jane. "Which Is More Environmentally Friendly: Paper or Plastic?"

HowStuffWorks, March 29, 2023,

<https://science.howstuffworks.com/environmental/green-science/paper-plastic1.htm>.

Causes pollution: Paper production emits air pollution, specifically 70 percent more pollution than the production of plastic bags. **According to certain studies, manufacturing paper emits 80 percent more greenhouse gases. And consider that making paper uses trees that, instead, could be absorbing carbon dioxide. The paper bag-making process also results in 50 times more water pollutants than making plastic bags. Consumes energy: Even though petroleum goes into making plastic, it turns out that making a paper bag consumes four times as much energy as making a plastic bag,** meaning making paper consumes a good deal of fuel, according to a Northern Ireland Assembly briefing note.

Turn: Reusable alternatives are worse than plastics when it comes to emissions

Green, Kenneth P. "The government's bad idea to stop using single-use plastics." *Reason*, October 24, 2022, <https://reason.org/commentary/the-governments-bad-idea-to-stop-using-single-use-plastics/>.

It doesn't take much reviewing of the research literature on the topic of plastic material substitutions to reveal that, in fact, plastic substitutes are usually worse for the environment than plastics, as well as worse for human health and safety. I have written about the downsides of plastics substitutions at some length. My recent piece here examines the Canadian context, where they're even farther ahead of the United States in pursuing "zero plastic waste." **So why are alternatives to single-use plastics worse for the environment? One of the biggest reasons for this is that the "reusables," as I'll call them, consume more energy over their life cycles than their single-use plastic alternatives. More energy in manufacturing, distribution, utilization, and disposal means greater environmental impacts coming out of the soil (oil production); going into the air (conventional pollutants and greenhouse gases); running off into the water, and going back into the land (landfilling).**

Turn: Most reusable alternatives are only better at a surface level

Wirtz, Bill. "Would a single-use plastic ban be counterproductive?" *The Hill*, August 30, 2022, <https://thehill.com/opinion/energy-environment/3620887-would-a-single-use-plastic-ban-be-counterproductive/>.

However, contrary to the idealism of the campaigners, banning the federal government from using single-use plastic goods would not benefit the environment. **In fact, life-cycle assessments on items such as single-use plastic bags have shown that there is a discrepancy between actual re-use rates of alternative bags and the re-use rate to break even on environmental grounds. Paper bags need to be re-used four times, LDPE bags five times, non-woven PP bags 14 times and cotton bags 173 times. Their actual re-use rates are about half that, making them less sustainable than single-use plastic bags, which may also be used by consumers as bin liners.** A 2020 study by University of Michigan Professor Shelie Miller displayed how alternatives to single-use plastic items are dependent on high re-use rates. Those rates are often not achieved. The same effects

appear when we compare glass bottles to plastic bottles. As glass bottles are much heavier, their carbon footprint for transport is also higher. Whoever substitutes a plastic straw with a bamboo straw should also probably be aware of their significant carbon footprint.

Mitigation: Many single-use plastics are reused multiple times, significantly reducing their lifetime carbon footprint

“So many ways to reuse plastic bags.” *Bag the Ban*, n.d.,
<https://www.bagtheban.com/learn-the-facts/reusing/>.

Plastic bags aren’t just 100% recyclable — they’re reusable, too! **More than 90% of Americans say they reuse their plastic bags at least once, for everything from lining trash cans to packing lunches and picking up after pets. In fact, Recyc-Quebec, a Canadian government agency, found that plastic bags have a 77.7% reuse rate as small trashcan liners.**

Delink: Plastic bags in the United States aren’t primarily made from oil in the first place

“How much oil is used to make plastic?” EIA, June 1, 2023,
<https://www.eia.gov/tools/faqs/faq.php?id=34&t=6>.

Although crude oil is a source of raw material (feedstock) for making plastics, it is not the major source of feedstock for plastics production in the United States. Plastics are produced from natural gas, feedstocks derived from natural gas processing, and feedstocks derived from crude oil refining. The U.S. Energy Information Administration (EIA) is unable to determine the specific amounts or origin of the feedstocks that are actually used to manufacture plastics in the United States.

Analysis: This response argues that while single-use plastics may be harmful to the environment, they are better in the long run than reusable alternatives. Specifically, it argues that the emissions produced in manufacturing are significantly more than emissions produced in plastics manufacturing. Teams can couple this response with an explanation of why reusable alternatives may not be reused for a stronger response.

A/2: Single-use plastics disproportionately harm low-income communities

Response: Banning single-use plastics doesn't solve this issue

Non-unique: Low-income and Black Americans are disproportionately exposed to oil and gas refineries, not just plastic

Lavelle, Marianne and Phil McKenna. "‘This Is an Emergency’: 1 Million African Americans Live Near Oil, Gas Facilities." *Inside Climate News*, November 14, 2017, <https://insideclimatenews.org/news/14112017/african-americans-exposed-oil-gas-wells-refineries-health-risks-naacp-study/>.

A new analysis concludes what many in African-American communities have long experienced: Low-income, black Americans are disproportionately exposed to toxic air pollution from the fossil fuel industry. **More than 1 million African Americans live within a half-mile of oil and natural gas wells, processing, transmission and storage facilities (not including oil refineries), and 6.7 million live in counties with refineries, potentially exposing them to an elevated risk of cancer due to toxic air emissions, according to the study. When the authors looked at proximity to refineries, they found that about 40 percent of all people living in counties with refineries in Michigan, Louisiana and Pennsylvania are African American, and 54 percent in Tennessee are. In three other states—Oklahoma, Ohio and West Virginia—they found that about one in five African-American residents statewide lives within a half-mile of an oil or gas facility.**

Warrant: Low-income families are hurt by single-use plastic bans

“Con: Who + What Doesn’t Benefit From a Ban?” Envs 202: Should Oregon Ban Plastic Bags? 2016, <https://blogs.uoregon.edu/plasticbagban/con/>.

While banning plastic bags will inevitably cost retailers much more (paper bags are usually around 15 to 20 cents more per bag than plastic), it will also hurt small businesses and low-income families by costing them the same amount (Heisters, 2008). Although this may seem like a small price to pay, paying 20 cents more per bag with each grocery trip can really add up for families and individuals. Additionally, shoppers may start to take their business elsewhere (i.e. to stores that are outside a bag-banned region) which could hurt local, small businesses that depend on a steady stream of regular customers.

Warrant: Single-use plastic alternatives are more expensive than plastic

Baker, Aryn. “The Dirty Secret of Alternative Plastics.” *Time*, November 28, 2023, <https://time.com/6339914/plastic-alternatives-pollute/>.

The technology exists—multinational fruit-labeling company Sinclair, among others, has been producing them for years—but the cost is higher given how cheap plastic is. A global ban on plastic stickers would certainly encourage competition and economic incentives, leading to lower prices for compostable versions. But without widespread access to composting facilities, most of those compostable stickers would end up in landfill anyway, where they could cause even more climate damage than conventional plastic. In a well-regulated composting facility, bacteria use oxygen to break organic materials down into carbon. In a landfill’s low-oxygen environment, that material creates methane as it decomposes, a greenhouse gas 25 times more potent than carbon when it comes to trapping heat in the atmosphere.

Delink: Single-use plastic bans have no impact because of globalization

Baker, Aryn. "The Dirty Secret of Alternative Plastics." *Time*, November 28, 2023, <https://time.com/6339914/plastic-alternatives-pollute/>.

That's because, while plastic alternatives show a lot of promise, it won't be realized unless their implementation is accompanied by an upgrade of current waste-collection systems, ongoing scientific research, and policy change. **"Before we do a full switchover, we really need to focus on addressing a number of different challenges, including customer education, waste-recovery infrastructure, and the economic incentives to a full transition,"** says Luu. **"If it's not done thoughtfully, with a whole-system view, it could result in unintended consequences."** France's effort to reduce single-use plastics is a case in point. In 2022, the country banned all non-compostable PLU tags. A win for French environmentalists, however, soon became a sticky problem for produce importers: in a globalized market where produce comes from all corners of the world, one country's ban on plastic PLU tags only really works when every other country opts to do the same.

Mitigation: A sizable portion of plastics are recycled

"Plastic Waste Factsheet." *Center for Sustainable Systems*, 2023, <https://css.umich.edu/plastic-waste-factsheet>.

By 2060, the use of plastic in packaging will more than double compared to 2019. Of the seven commodity plastics, the amount of LDPE (including LLDPE) used in packaging is expected to triple, and PP, HDPE, and PET used in packaging will more than double.

About 30% of all the plastics ever made globally are still in use, and 60% have been discarded in landfills or elsewhere in the environment.

Analysis: This response is two-fold and teams should pick-and-choose evidence based on the specific link chain in the AFF argument. The first response argues that there will always be production facilities in low-income neighborhoods and that banning plastics will not shut down those facilities. The second response argues that reusable alternatives are a higher cost to low-income families than plastics.

A/2: Single-use plastics disproportionately harm communities of color

Response: Banning single-use plastics doesn't solve this issue

Non-unique: Low-income and Black Americans are disproportionately exposed to oil and gas refineries, not just plastic

Lavelle, Marianne and Phil McKenna. "‘This Is an Emergency’: 1 Million African Americans Live Near Oil, Gas Facilities." *Inside Climate News*, November 14, 2017, <https://insideclimatenews.org/news/14112017/african-americans-exposed-oil-gas-wells-refineries-health-risks-naacp-study/>.

A new analysis concludes what many in African-American communities have long experienced: Low-income, black Americans are disproportionately exposed to toxic air pollution from the fossil fuel industry. **More than 1 million African Americans live within a half-mile of oil and natural gas wells, processing, transmission and storage facilities (not including oil refineries), and 6.7 million live in counties with refineries, potentially exposing them to an elevated risk of cancer due to toxic air emissions, according to the study. When the authors looked at proximity to refineries, they found that about 40 percent of all people living in counties with refineries in Michigan, Louisiana and Pennsylvania are African American, and 54 percent in Tennessee are. In three other states—Oklahoma, Ohio and West Virginia—they found that about one in five African-American residents statewide lives within a half-mile of an oil or gas facility.** "We have a real problem with air," said Doris Browne, president of the National Medical Association, a national organization of black physicians and sponsor of the study. "We think it's just a little smog and fog, but we need to worry about the pollutants in the air we're breathing."

Non-unique: Black communities will continue to be harmed by poor water infrastructure regardless of plastics

Montag, Coty. "Our Nation's Water Systems Are Failing and Black Communities are Bearing the Brunt." *Legal Defense Fund*, September 13, 2022, <https://www.naacpldf.org/naacp-publications/ldf-blog/our-nations-water-systems-are-failing-and-black-communities-are-bearing-the-brunt/>.

This emergency has not been felt equally. **While Jackson's population is over 80 percent Black, reports indicate that predominantly white areas of the city have been "relatively unscathed" by the water issues. This crisis echoes the plight of thousands of Detroit residents who have had to live without water in their homes for years due to the city's aggressive water shutoff policy.** Between 2014 and 2019, more than 141,000 households in Detroit had their water service disconnected for non-payment. While water has been restored during the COVID-19 pandemic, many families in Detroit have lived for years without water service in their homes.

Warrant: The pollution communities of color face are driven by other industries, not just plastics

Ward Jr., Ken. "How Black Communities Become 'Sacrifice Zones' for Industrial Air Pollution." *ProPublica*, December 21, 2021, <https://www.propublica.org/article/how-black-communities-become-sacrifice-zones-for-industrial-air-pollution>.

Institute is representative of Black communities across the country that bear a disproportionate health burden from industrial pollution. On average, the level of cancer risk from industrial air pollution in majority-Black census tracts is more than

double that of majority-white tracts, according to an analysis by ProPublica, which examined five years of emissions data. That finding builds on decades of evidence demonstrating that pollution is segregated, with residents of so-called fence-line communities — neighborhoods that border industrial plants — breathing dirtier air than people in more affluent communities farther away from facilities.

Delink: Single-use plastic bans have no impact because of globalization

Baker, Aryn. “The Dirty Secret of Alternative Plastics.” *Time*, November 28, 2023, <https://time.com/6339914/plastic-alternatives-pollute/>.

That’s because, while plastic alternatives show a lot of promise, it won’t be realized unless their implementation is accompanied by an upgrade of current waste-collection systems, ongoing scientific research, and policy change. **“Before we do a full switchover, we really need to focus on addressing a number of different challenges, including customer education, waste-recovery infrastructure, and the economic incentives to a full transition,”** says Luu. **“If it’s not done thoughtfully, with a whole-system view, it could result in unintended consequences.”** France’s effort to reduce single-use plastics is a case in point. In 2022, the country banned all non-compostable PLU tags. A win for French environmentalists, however, soon became a sticky problem for produce importers: in a globalized market where produce comes from all corners of the world, one country’s ban on plastic PLU tags only really works when every other country opts to do the same.

Mitigation: A sizable portion of plastics are recycled

“Plastic Waste Factsheet.” *Center for Sustainable Systems*, 2023, <https://css.umich.edu/plastic-waste-factsheet>.

By 2060, the use of plastic in packaging will more than double compared to 2019. Of the seven commodity plastics, the amount of LDPE (including LLDPE) used in packaging is expected to triple, and PP, HDPE, and PET used in packaging will more than double.

About 30% of all the plastics ever made globally are still in use, and 60% have been discarded in landfills or elsewhere in the environment.

Analysis: This response argues that communities of color are targeted by pollution across many sectors, not just plastics, and that plastics are not a sizable enough portion of that pollution to change things. Teams should couple this evidence with quantification about how prevalent plastics are compared to other industries for a stronger response.

A/2: Single-Use Plastics Damage Ecosystems.

Argument: Single-use plastic is better than existing alternatives.

Warrant: Reusable alternatives require extreme numbers of uses to be as environmentally efficient as single-use plastic.

Stanislaus, Mathy. "Banning Straws and Bags Won't Solve Our Plastic Problem." World Resources Institute, 16 Aug. 2018. <https://www.wri.org/insights/banning-straws-and-bags-wont-solve-our-plastic-problem>.

It's encouraging that local governments are focusing on passing laws to fight plastic litter. Unfortunately, while these laws may reduce the most visible form of plastic pollution, it could be at the expense of other environmental impacts. That's because, somewhat ironically, **disposable plastic bags require fewer resources (land, water, CO₂ emissions, etc.) to produce than paper, cotton or reusable plastic bags—by a wide margin.** For example, **Denmark's Ministry of Environment and Food found that you would need to reuse a paper bag at least 43 times for its per-use environmental impacts to be equal to or less than that of a typical disposable plastic bag used one time. An organic cotton bag must be reused 20,000 times to produce less of an environmental impact than a single-use plastic bag.** That would be like using a cotton bag every day for nearly 55 years. (Note that these figures aggregate the bags' impact on water use, CO₂ emissions, land use and more, but they do not include their impact on plastic pollution.) Banning plastic straws is also increasingly popular. Starbucks recently announced that it would phase out use of plastic straws by the year 2020. Straws don't provide as much utility as bags, so for many this is an easy adjustment. But these bans leave the impression that they solve the plastics pollution problem without much discussion of systematic solutions. As a society, we should think

holistically about the products we use and their impacts. We can't just ban bad products—we must invest in alternatives.

Warrant: Ocean pollution does not come from the US and most of it is not plastic.

Logomasini, Angela. "Counterpoint: Plastic Bans Won't Solve Ocean Plastic Problem."

Competitive Enterprise Institute, 7 May 2018.

https://cei.org/opeds_articles/counterpoint-plastic-bans-wont-solve-ocean-plastic-problem/.

The nonprofit The Ocean Cleanup has taken a closer look at the problem and how to solve it. Recently, they produced the most comprehensive assessment of the problem ever, which they detail in the 5 March 2018 issue of *Scientific Reports*. This ambitious effort deployed 30 ships equipped to collect a wider range of debris sizes than before and repurposed military aircraft equipped with sensors to detect trash. After collecting and counting more than a million pieces of trash, they then characterized the size of the patch and what it contains. Their study **maintains that the Pacific patch is larger than estimated, covering territory three times the size of France with waste larger than previously estimated.** They also estimate that up to 20 percent of the mass may have resulted from the 2011 Tohoku tsunami, which sucked trash out to sea. **Interestingly, the primary culprits weren't straws, cups and plastic bags. In The Ocean Cleanup's Pacific patch sample, 46 percent was fish nets. When combined with ropes and lines, it amounted to 52 percent of the trash.** The rest included hard plastics ranging from large plastic crates and bottle caps to small fragments referred to as microplastics, which comprise 8 percent of the mass. Obviously, this is not simply a consumer waste issue, and the solutions need to address that. **Some of the waste, such as food packaging, included written material that indicated a significant portion came from Asia. Of these, 30 percent were written in Japanese and 30.8 percent were in Chinese. Other studies confirm that Asia is a substantial source of ocean garbage. Data**

in a 2015 Science published study revealed that China and 11 other Asian nations are responsible for 77 percent to 83 percent of plastic waste entering the oceans because of their poor disposal practices. A 2017 Environmental Sciences & Technology study reported that up to 95 percent of plastic waste enters oceans from one of 10 rivers — eight in Asia and two in Africa.

Impact: Reusable plastics will increase emissions, energy use, and water consumption.

Erickson, Jim. “Is Reusable Always Best? Comparing Environmental Impacts of Reusable vs. Single-Use Kitchenware.” University of Michigan News, 6 Jul. 2021.
<https://news.umich.edu/is-reusable-always-best-comparing-environmental-impacts-of-reusable-vs-single-use-kitchenware/>.

The researchers looked at consumer kitchenware products in four categories: drinking straws, sandwich bags and wraps, coffee cups and forks. They calculated the environmental “payback period” for reusables, defined as the number of times a product must be reused before its environmental impacts per use equal those of a comparable single-use plastic product. They found that some reusable alternatives never manage to reach that break-even point because of the energy and water used each time a reusable item is washed. For example, reusable bamboo drinking straws and two reusable sandwich storage options—beeswax wrap and silicone bags—never reached the break-even point in any of the three environmental impact categories assessed in the study: energy use, global warming potential and water consumption. The findings were published July 6 in the International Journal of Life Cycle Assessment. “Reusable alternatives have quickly become a popular solution for replacing single-use products and helping to combat the ubiquity of disposable plastic,” said Shelie Miller, an environmental engineer at U-M’s Center for Sustainable Systems, which is based at the School for Environment and Sustainability. “But don’t always assume that reusable is the best option,” said Miller, the study’s senior author. “Our study showed that **some**

reusable alternatives never break even because it takes more energy, and generates more greenhouse gas emissions, to wash them than it takes to make the single-use plastic item.”

Analysis: Note that the argument about waste primarily coming from Asia and Africa is not very strong because it can be easily answered that that waste is from the United States and other Western countries that export their plastic to developing countries. There are also a significant number of cards critiquing the US for having a disproportionate impact on plastic pollution.

A/2: Single-use plastics create waste buildup

Argument: Reductions in plastic waste would be replaced by food losses and waste.

Warrant: Alternatives to plastic packaging cause more food damage during transport.

Parriaux, Axelle. "Do Single-Use Plastic Bans Work?" BBC, 12 Jul. 2022.

<https://www.bbc.com/future/article/20220711-do-single-use-plastic-bans-work>.

Will other countries follow suit? Personally, I have seen the amount of plastic wrapping in British supermarket decrease rapidly since arriving in London a year and a half ago, but smaller chain supermarkets still tend to offer little to no loose vegetable options. The journey from the field to the supermarket or market stall requires packaging to protect the produce. So **in France, cucumbers, which might once have been wrapped in clear plastic film, are now delivered to supermarkets in containers made of alternative materials. "Plastic is most commonly replaced with cardboard,"** Osadnick says, **"but food can be damaged more easily in cardboard causing more food waste in transport, and it weighs much heavier [which] means in turn that more lorries are needed to carry the same quantity of product. Transport weighs heavily in the life cycle of food. In the end it often turns out to be more polluting to use cardboard wrapping than plastic, when the entire food production chain is taken into account."** Though, to be able to prove in any one particular case that cardboard is more costly, a life cycle assessment would be required.

Warrant: Plastic helps extends the shelf life of goods in retail stores.

Wong, James. "Plastic Food Packaging Gets a Bad Rap, But Does It Always Deserve It"

New Scientist, 1 Dec. 2021. <https://www.newscientist.com/article/mg25233632-400-plastic-food-packaging-gets-a-bad-rap-but-does-it-always-deserve-it/>.

Take, for example, a **study published in 2011 showing that shrink-wrapped cucumbers lost a lot less water in a typical journey from farm to fork than the unwrapped equivalent, extending shelf life by up to 60 per cent. Ditching this wrapping would therefore have a significant impact on food as, much of the time, the crop would go off before being eaten.** The upsides of **plastic packaging** don't stop with shelf life, but can retain the nutritional value of the crops too. **Broccoli is a good example. It can lose up to 80 per cent of its glucosinolates, a group of phytochemicals thought to be responsible for some of the crop's key health benefits, when loose on supermarket shelves, versus the shrink-wrapped version in the chiller. Such effects have been found in a wide range of crops,** which is one of the key reasons retailers go to the extra expense of using wrapping in the first place.

Impact: Preventing food waste and loss is more important in the US.

Helmke, Rob. "Plastics Play a Vital Role in Reducing Food Waste." *Plastic Ingenuity*, 23 Mar. 2021. <https://www.plasticingenuity.com/blog/packaging-reduces-food-waste/>.

According to the United States Department of Agriculture (USDA) approximately 40% of food produced is wasted. The annual amount of this waste is an alarming 36 million tons, worth \$162 billion each year. Much of this waste is due to spoilage and occurs within the retail and household sectors. The consequences of food waste go far beyond the economic impact. **When food spoils, it releases methane – a greenhouse gas even more potent than carbon monoxide. Wasted food also means wasted resources – such as the water that was required to grow the food in the first place and the fuel used in transport. It is in everyone's best interest to minimize food waste – and the type of packaging we choose can play a significant role.**

Analysis: This serves mostly as mitigation against claims about plastic buildup, but it is hard to argue that this food waste or loss will outweigh general plastic pollution.

A/2: Single-use plastics create harmful microplastics

Argument: Microplastic harms to health are overstated and would exist regardless.

Warrant: Microplastic harms are hard to understand for scientists right now.

Lim, XiaoZhi. “Microplastics are Everywhere – but are they harmful?” *Nature*, 4 May 2021. <https://www.nature.com/articles/d41586-021-01143-3>.

Evaluating the effects of tiny specks of plastic on people or animals is the other half of the puzzle. This is easier said than done. **More than 100 laboratory studies have exposed animals, mostly aquatic organisms, to microplastics. But their findings — that exposure might lead some organisms to reproduce less effectively or suffer physical damage — are hard to interpret because microplastics span many shapes, sizes and chemical compositions, and many of the studies used materials that were quite unlike those found in the environment.** The tiniest specks, called **nanoplastics** — smaller than 1 micrometre — **worry researchers most of all** (see ‘Microplastics to scale’). **Some might be able to enter cells, potentially disrupting cellular activity. But most of these particles are too small for scientists even to see;** they were not counted in Koelmans’ diet estimates, for instance, and California will not try to monitor them.

Warrant: There is a fundamental epistemological problem with suggesting that microplastics cause risks to human health.

Leslie, Heather and Michael Depledge. “Where is the evidence that human exposure to microplastics is safe?” *Environment International*, Sept. 2020. <https://doi.org/10.1016/j.envint.2020.105807>.

Both the European Commission's Science Advice for Policy organ, SAPEA, and the World Health Organization (WHO) launched reports (SAPEA, 2019, World Health Organization, 2019) stating that very little published data is available regarding either exposure to, or the toxicity of microplastics and nanoplastics in humans. The reports acknowledge the current challenges facing scientists attempting to gather robust information and recommend proceeding to fill knowledge gaps. **The SAPEA report states on p. 116 that 'the absence of evidence of microplastics risks currently does not allow one to conclude that risk is either present or absent with sufficient certainty'** (SAPEA, 2019). In this absence of evidence, it is then surprising to find statements on SAPEA's homepage that **the final 'verdict' of SAPEA's Evidence Review Report is that 'The best available evidence suggests that microplastics and nanoplastics do not pose widespread risk to humans and the environment'**. Similarly, the WHO (World Health Organization, 2019) concludes that 'humans have ingested microplastics and other particles in the environment for decades with no related indication of adverse health effects' and that there is 'no evidence to indicate a human health concern'. Many mainstream media have picked up the 'no risk' soundbite. These statements raise a fundamental epistemological problem.

Impact: The most significant source of microplastics is tire dust, so banning single-use plastics would have no effect.

Stuchtey, Martin & Tom Dillon. "Breaking the Plastic Wave." The Pew Charitable Trusts and SYSTEMIQ, 23 Jul. 2020. https://www.pewtrusts.org/-/media/assets/2020/07/breakingtheplasticwave_report.pdf.

Eleven per cent of total plastic entering the ocean in 2016 comes from the four key sources of microplastics we selected to model (tyre dust, pellets, textile microfibrils, and microplastics in personal care products). • **The largest contributor to 2016 microplastic leakage into the ocean is tyre dust, contributing 78 per cent of the leakage mass;**

pellets contribute 18 per cent; and textiles and personal care products (PCP) contribute 4 per cent combined. • There is a different pattern in terms of the number of microplastic particles entering the ocean, with tyres and textiles being the main sources of leakage. • In the System Change Scenario, where we implement all significant, known microplastic solutions at scale, microplastic leakage can be reduced by 1.8 million metric tons per year (from 3 million metric tons to 1.2 million metric tons) by 2040, a 59 per cent reduction compared with BAU.

Analysis: The last card is primarily mitigation, but the other ones foist the burden of proof on why microplastics are bad onto the Pro.

A/2: Single-Use Plastics Create Significant Greenhouse Gas Emissions

Argument: Reusable alternatives release more emissions.

Warrant: Life cycle assessments find significantly higher emissions for alternatives to single-use plastic.

Voulvoulis, Nick et al. "Examining Material Evidence: The Carbon Fingerprint." Imperial College London, 8 Oct. 2020. <https://www.imperial.ac.uk/media/imperial-college/faculty-of-natural-sciences/centre-for-environmental-policy/public/Veolia-Plastic-Whitepaper.pdf>.

When considering the production and manufacturing of the main alternatives to plastic for a 500ml bottle, other packaging types (fibre, glass, steel and aluminium) emit more greenhouse gases than plastic bottles, with glass bottles being the highest emitter overall. By way of example, if all plastic bottles used globally were made from glass instead, the additional carbon emissions would be equivalent to powering around 22 large coal-fired power plants. This is equivalent to the electricity consumed by a third of the UK. Life-cycle assessment (LCA) is a useful tool which should be more widely used to evaluate environmental impacts of packaging alternatives over their life-time, from the extraction of raw material to the disposal or recycling of packaging at the end of its life. Undertaking LCAs to compare the environmental performance of alternative materials for different packaging applications is essential if we want to take into account the environmental impacts associated with the whole life-cycle of packaging (mining, manufacturing process, logistics, usage and end-of-life route)

Warrant: Often, the number of reuses necessary for reusable goods to break even on life cycle emissions is extremely high and infeasible or nonexistent.

Ducharme, Jamie. “Reusable Packaging Is the Latest Eco-Friendly Trend. But Does It Actually Make a Difference?” Time, 28 Sept. 2021. <https://time.com/6101846/is-reusable-packaging-sustainable/>.

Shelie Miller, a professor at the University of Michigan’s School for Environment and Sustainability, says **there’s a “payback” period associated with any reusable item—a number of times it must be reused before it’s actually better for the environment than the single-use alternative. Something like reusable sandwich wrap may never break even, according to Miller’s research, because the energy and resources required to make and wash it far exceed what goes into making flimsy disposable bags. (Ditto for many cotton tote bags, as explored recently by the New York Times.)** Refillable replacements for containers that use rigid plastics, like shampoo bottles, are a better bet, Miller says. Making a reusable version of that bottle likely takes only a little more energy than the plastic one, so each time it gets reused, it moves a little closer to paying off its environmental debt—assuming, of course, that buyers refill as directed.

Impact: Increased emissions will worsen the climate crisis.

Ebbs, Stephanie and Julia Jacobo. “Greenhouse gas emissions are continuing to increase, making climate mitigation more challenging: UN report.” ABC News, 20 Mar. 2023. <https://abcnews.go.com/International/greenhouse-gas-emissions-continuing-increase-making-climate-mitigation/story?id=97974833>.

Continued greenhouse gas emissions will lead to increased warming, and every increment of increased warming will intensify hazards, but deep and rapid reductions in emissions would slow warming down within about two decades, the report states. However, some future changes, like sea level rise, are unavoidable or irreversible but can be limited with deep, rapid and sustained cuts in global greenhouse gas emissions,

according to the report. The authors emphasized, again, that **the world must reach net zero by the early 2050s to limit warming to 1.5 degrees Celsius, which means any manmade carbon or greenhouse gas emissions would be eliminated or removed. The report also lays out why that goal is so important, saying that any incremental warming beyond that amount will worsen hazards such as extreme heat and severe precipitation and increase the risks of species loss, more extreme heat days that could be dangerous to human health, and decreased yields from crops or fisheries. “The choices and actions implemented in this decade will have impacts now and for thousands of years,”** the U.N. advised in the report.

Analysis: This is a more essential block than others because it demonstrates the necessity of single-use through comparison with its alternatives.

A/2: Single-use plastics create plastic incineration

Argument: Reduced plastic incineration would come at the cost of ozone depletion through other emissions.

Warrant: Efforts to ban plastics would have created substantially higher emissions.

Green, Kenneth. "Canada's Wasteful Plan to Regulate Plastic Waste." Fraser Institute, 2022. <https://www.fraserinstitute.org/sites/default/files/canadas-wasteful-plan-to-regulate-plastic-waste.pdf>.

Paper bags contribute less to the impacts of littering but in most cases have a larger impact on the climate, eutrophication and acidification, compared to SUPBs [Single Use Plastic Bags]. However, they can be better for the climate if the SUPB is heavy, the paper mills use renewable fuel, the paper bags are reused multiple times, and/ or the waste bags are incinerated rather than deposited at landfills. Single-use polyethylene bags based on renewable resources are better for the climate, compared to conventional SUPBs; however, they cause the same problems related to impacts of littering and are likely to cause more acidification and eutrophication. ^

Biodegradable bags decompose and contribute less to the impacts of littering, compared to conventional SUPBs; however, the LCA results indicate they might be the worst option when it comes to climate impacts, acidification, eutrophication, and toxic emissions. ... (UNEP, 2020b: 2–3) Environmental Agency of England (2011)—plastic bags compared to alternatives A study released in February, 2011, by the Environmental Agency of England, entitled Life Cycle Assessment of Supermarket Carrier Bags, provided a "cradle-to-grave" review of seven types of grocery store bags: conventional lightweight bags made of high-density polyethylene (HDPE); an HDPE bag doped with a chemical to speed its degradation; a lightweight bag made from a biodegradable starch-polyester blend; a regular paper bag; a heavy-duty "bag for life" made from low-density

polyethylene (LDPE); a heavier duty polypropylene bag; and a cotton bag.

Environmental end points assessed included global warming potential; abiotic depletion; acidification; eutrophication; human toxicity; freshwater aquatic ecotoxicity; marine aquatic ecotoxicity; and petrochemical oxidation. **The key findings were: Λ The conventional HDPE bag had the lowest environmental impacts of the lightweight bags in eight out of nine impact categories; Λ the biodegradable HDPE bag had larger environmental impacts than the regular kind; Λ the starch-poly bag (similar to HDPE bags, but made of a mixture of starch and polyethylene) was worse yet, with the highest environmental impact rankings on seven of the nine categories examined; Λ the heavy-duty LDPE bag must be used five times in order to get its global-warming potential below that of a conventional HDPE bag; Λ the non-woven polypropylene “bag for life” had to be used 14 times to get its global warming potential down to that of HDPE;**

Warrant: Greenhouse gas emissions lead to ozone depletion.

Velders, Guus. “Effect of Greenhouse Gas Emissions on Stratospheric Ozone Depletion.”

PBL Netherlands Environmental Assessment Agency, 31 Jan. 1997.

https://www.pbl.nl/en/publications/Effect_of_greenhouse_gas_emissions_on_stratospheric_ozone_depletion.

We studied the interactions in the atmosphere between the greenhouse effect and stratospheric ozone depletion from the point of view of past and future emissions of the anthropogenic compounds: CFCs, halons, CH₄, N₂O, NO_x, CO and CO₂. In our investigation the increase in emissions of chlorine- and bromine-containing compounds, largely responsible for the depletion of stratospheric ozone at mid-latitudes, was found to be -5.8% per decade from 1980 to 1990. **The increase in CH₄ emissions in the same period changes this ozone depletion by +1.4% per decade to -4.4% per decade, which is close to TOMS and Dobson measurements. The increase in N₂O emissions hardly**

affects this depletion. The decrease in stratospheric temperatures due to increased CO₂ emissions also diminishes the ozone depletion ; the same may also happen when NO_x emissions are increased. The effect of these interactions in coming decades is to accelerate the recovery of the ozone layer. The trend in CH₄ emissions described in the business-as-usual scenario IS92a may yield 1980 ozone column levels in 2060 compared with 2080 with CH₄ emissions fixed at 1990 levels. The temperature decrease in the stratosphere may initially also accelerate the recovery of the ozone layer by several years, ignoring a possible large extra ozone depletion by the extra formation of polar stratospheric clouds over large areas of the world.

Impact: Ozone layer depletion must be prevented to protect the world from increased UV radiation.

Ritchie, Hannah. "What is the ozone layer, and why is it important?" Our World in Data, 13 Mar. 2023. <https://ourworldindata.org/ozone-layer-context>.

The ozone layer absorbs 97% to 99% of the sun's incoming ultraviolet radiation (UV-B). This is fundamental to protecting life on Earth's surface from exposure to harmful levels of this radiation, which can damage and disrupt DNA. In the 1970s and '80s, humans emitted large amounts of gases that depleted this ozone in the upper atmosphere. As ozone concentrations in the stratosphere fell, and a hole in the ozone layer opened up, there have been measurable increases in the amount of UV-B radiation reaching the surface. The chart shows the measured change in annual quantities of UV irradiance reaching Earth's surface, in 2008 compared to 1979.¹ What's noticeable is that ozone depletion and UV irradiance have increased much more in the Southern Hemisphere. This is because ozone depletion is also impacted by temperature and sunlight. Temperatures are colder at high latitudes in the Southern Hemisphere, so polar stratospheric clouds can form. These clouds can accelerate the reactions that break ozone down. You will also notice that ozone depletion is worse at higher latitudes.

It's non-existent at the equator, and rises steeply towards the poles. Again, this is influenced by temperature and sunlight. That's why ozone holes form at the poles, rather than the equator. **This increase in UV-B irradiation reaching the surface matters for life on Earth. One of the biggest concerns has been an increased risk of skin cancer** (as well as skin damage and aging).² **This is because UV-B irradiation can damage skin DNA.**

Analysis: Plastic incineration specifically is a difficult impact to address, but if it is shown to be comparable enough to other greenhouse gas emissions, then you can show that the single-use plastic ban does more harm than it helps.

A/2: Other countries will follow US lead

Answer: The US cannot be a global leader on plastic bans -- it is behind 90 other countries and has not taken any substantial actions federally.

Seo, Hannah. "The US falls behind most of the world in plastic pollution legislation", Environmental Health News, 4 Oct 2021, <https://www.ehn.org/plastic-pollution-2655191194.html>.

But the U.S., a leading producer and consumer of plastics, remains woefully behind, even as it stands as one of the world's biggest polluters. According to the Environmental Protection Agency, the country produced 35.7 million tons of plastic waste in 2018, more than 90% of which was either landfilled or burned. The U.S. ranks second in the world in total plastic waste generated per year, behind only China — though when measured per capita, the U.S. outpaces China. In 2019, the U.S. also opted not to join the United Nations' updated Basel Convention, a legally binding agreement aimed at preventing and minimizing plastic waste generation that was signed by about 180 other countries. More than 90 countries have established (or have imminent plans to establish) either bans or fees on single-use plastic bags or other products, according to data from the non-profit ocean conservation organization Oceana. The U.S. is not one of them. Though Americans have been aware of plastic pollution as an environmental concern as early as the mid-20th century, U.S. action against plastics has been piecemeal — the federal government has left it up to individual cities, counties, and states to decide whether and how to regulate plastics.

Impact: Single-use plastic bans have negligible environmental benefits.

ARPBR. "Plastic Bags and the Environment", Bag the Ban, 2019, <https://www.bagtheban.com/learn-the->

facts/environment/#:~:text=The%20results%20are%20in%3A%20Bag,litter%2C%20waste%20or%20marine%20debris.

The results are in: **Bag bans and taxes don't help to reduce waste, litter, or marine debris. Ban and tax ordinances have never been successful at meaningfully reducing litter, waste or marine debris. Not anywhere. What they have been shown to do is heap unfair costs on low and fixed-income families and add more red tape to local businesses. The environment doesn't benefit, and neither do people.** LANDFILL WASTE INCREASES: According to the EPA, "plastic bags and sacks" account for 0.3% of municipal solid waste.⁵ Plastic retail bags are a fraction of this number. Without plastic grocery bags, people purchase replacement bags — often made of thicker, heavier plastic — and then send those bags to the landfill instead.⁶ **In Austin, landfill waste increased after a bag ban because shoppers used and disposed of thicker plastic reusable bags in the place of standard plastic grocery bags.**⁷

Impact: Single-use plastic bans are largely ineffective at accomplishing their goals and plastic alternatives might have an even worse carbon footprint.

Wirtz, Bill. "Would a single-use plastic ban be counterproductive?", The Hill, 30 Aug 2022, <https://thehill.com/opinion/energy-environment/3620887-would-a-single-use-plastic-ban-be-counterproductive/>.

However, **contrary to the idealism of the campaigners, banning the federal government from using single-use plastic goods would not benefit the environment.** In fact, life-cycle assessments on items such as single-use plastic bags have shown that there is a discrepancy between actual re-use rates of alternative bags and the re-use rate to break even on environmental grounds. **Paper bags need to be re-used four times, LDPE bags five times, non-woven PP bags 14 times and cotton bags 173 times. Their actual re-use rates are about half that, making them less sustainable than single-**

use plastic bags, which may also be used by consumers as bin liners. A 2020 study by University of Michigan Professor Shelie Miller displayed how alternatives to single-use plastic items are dependent on high re-use rates. Those rates are often not achieved. The same effects appear when we compare glass bottles to plastic bottles. **As glass bottles are much heavier, their carbon footprint for transport is also higher. Whoever substitutes a plastic straw with a bamboo straw should also probably be aware of their significant carbon footprint.** Further than that, the federal government doesn't only purchase plastic straws or plastic-bottled water. In fact, a ban on plastic would impact a plethora of products the government acquires for vital services, ranging from national parks and wildlife to construction and shipping logistics. If the GSA were to consider a ban, the least it should do is conduct an impact assessment on the effect it would have on sustaining those services. However, as a general measure, **a ban is no strategy for transition: It prevents government departments from using plastic where necessary and does not guarantee a path forward for substitution. For instance, the GSA is transitioning to electrify its fleet of vehicles, yet without banning gasoline-powered vehicles.**

Analysis: The response to this argument should be twofold: one, based on the US current track record, it is in no place to be a global leader on climate change; two, the efficacy of plastic bans are questionable in the first place. The US should be learning from other countries, not the other way around, and global efforts should go towards more effective environmental policies.

A/2: Single-use plastics cause health problems

Answer: Single-use plastics are crucial to infection prevention in the medical sector

“The Purpose of Single-Use Plastics”, This is Plastics, 2024,

<https://thisisplastics.com/environment/the-purpose-of-single-use-plastics/>.

Today, many other plastic items are designed to be used just once, delivering benefits beyond convenience and cost savings and ultimately supporting public health. For example, **single-use plastic products that prevent the spread of infection are crucial in the medical industry. Instruments such as syringes, applicators, drug tests, bandages and wraps are often made to be disposable.** Furthermore, **single-use plastic products have been enlisted in the fight against food waste, keeping food and water fresher for longer and reducing the potential for contamination.**

Impact: Single-use plastics can decrease the prevalence of foodborne illness.

“Problems with the use of plastic in the food industry”, Foodindustry.com, Jan 2023,

<https://www.foodindustry.com/articles/problems-with-the-use-of-plastic-in-the-food->

[industry/#:~:text=In%20addition%20to%20increasing%20product,dairy%2C%20and%20other%20perishable%20goods.](https://www.foodindustry.com/articles/problems-with-the-use-of-plastic-in-the-food-industry/#:~:text=In%20addition%20to%20increasing%20product,dairy%2C%20and%20other%20perishable%20goods.)

Plastic in the food industry fills many needs because it is so good at protecting food products from contamination. In addition to increasing product shelf life, plastic packaging can prevent bacteria from entering food it reduces the risk of food-borne illness. This is particularly important for products such as meat, dairy, and other perishable goods.

Warrant: Alternatives to single-use plastics may be just as harmful to human health.

Baker, Aryn. "The Dirty Secret of Alternative Plastics", Time, 28 Nov 2023,
<https://time.com/6339914/plastic-alternatives-pollute/>.

One proposed solution is to replace these plastics with alternatives: biodegradable utensils, compostable wrappers, plant-based bottles, and compressed-fiber plates and bowls. Theoretically, these products could seamlessly slot into existing supply chains, requiring no sacrifice on the part of consumers, who are clamoring for more sustainable options. **But production is limited in scale, more expensive than conventional plastic, and it's not yet clear that the alternatives are actually better for human and planetary health: most plant-based plastics are, on a molecular level, identical to their fossil-fuel-sourced siblings and last just as long in the environment.** Other substitutes require many of the same toxic chemical additives as conventional plastics to keep them waterproof, flexible, durable, and colorfast.

Analysis: While the link between single-use plastics and health problems is hard to disprove, there are some great turns against this argument. Single-use plastics help keep people healthy through hospital supplies and preventing food contamination. The negative impacts of a single-use plastic ban might outweigh the positive impacts in the context of human health. Also, the affirmative must prove the alternatives to plastic are safer, and the evidence suggests otherwise.

A/2: Banning single-use plastics forces companies to innovate.

Answer: Bans are counterintuitive to innovation.

Baca, Joshua. "My 'Break Free' Point of View: Bans Don't Work. Innovation Does", LinkedIn, 25 Mar 2021, <https://www.linkedin.com/pulse/my-break-free-point-view-bans-dont-work-innovation-does-joshua-baca/>.

Today, this misguided and harmful piece of legislation will be introduced. Supporters of the legislation will claim that the intent is to end plastic waste. Let me be clear - we share that vision, and have the same goal; plastic in the environment is never acceptable. But **after careful analysis of the legislation, we have concluded it won't end plastic waste, but rather end the American plastics industry -- by restricting the production of modern and innovative plastic materials. Domestic supply chains will be disrupted and force businesses to search for less effective alternatives, which may not be available at all. Burdensome regulations would be imposed on already struggling industries. Advanced recycling technologies will be prevented from coming to market, and eliminate what is likely the most effective tool to recover plastic waste. Industry winners and losers will be chosen legislatively, rather than by the free-market. Incentives will be created for materials that produce significantly more greenhouse gas emissions. And worst of all, it would limit products essential to combating climate change, including electric vehicle batteries, solar panels, and wind turbines. If passed into law, the legislation will risk a shortage of critical items. Ranging from masks to gowns, face shields and syringes, and specialized packaging for vaccines, undermining the global economic and health response to COVID-19. Bans don't work, innovation does. Plastics contribute so much to sustainable living, and are essential for pioneering solutions that reduce GHG emissions to keep our air clean. We know we**

have more work to do to end plastic waste. But it is a solvable problem we are committed to.

Warrant: Companies would find loopholes to avoid completely banning single-use plastics.

Lydia. “How to maximise the impact of single-use plastic bans?”, Trash Hero, 2 Feb 2023, <https://trashhero.org/how-to-maximise-the-impact-of-single-use-plastic-bans/>.

People and businesses affected by a ban will often try to find exceptions or loopholes that will allow them not to cooperate. Generally, governments use fines against law-breakers, but these can be costly and very difficult to enforce on a large scale. For example, in New York, USA, a plastics ban was introduced in 2020, but very few of the businesses failing to meet the regulations have suffered any consequences. Therefore, people continue to use the items that have been banned.

Warrant: Companies are already innovating alternatives to single-use plastics and consumer demand is high -- no need for a ban.

Schlossberg, Tatiana. “Tired of Plastic? These Businesses Have Ideas for You”, The New York Times, 27 May 2020, <https://www.nytimes.com/2020/05/27/climate/plastic-alternative-business.html>.

But to those who are working on alternatives to single-use plastic, the consumer momentum is not disappearing. In fact, founders of several plastic-alternative companies said that they had seen even more interest from consumers in their products, and a renewed commitment from some of the larger companies they work with to press on. “We’re fortunate enough that we aren’t seeing anyone say, ‘I’m not worried about sustainability, I’m just going to focus on survival right now,’” said Troy

Swope, co-founder and chief executive of Footprint, which produces fiber-based alternatives to single-use plastics (cardboard, essentially). **“If anything, we’ve seen an acceleration,” he added, since companies often see a boost from using sustainable packaging.**

Analysis: The best point to press the affirmative on is why a single-use plastic ban specifically is necessary to innovation. In the status quo, if companies are already innovating, what more will a ban accomplish? Based on the evidence, a ban might actually hurt sustainable plastic innovation or cause companies to find loopholes.

A/2: Banning single-use plastics creates consumer behavioral changes.

Answer: Plastic bans lead to public disapproval

Acaroglu, Leyla. “Tired of Plastic? These Businesses Have Ideas for You”, The New York Times, 27 May 2020, <https://www.unschools.co/journal-blog/will-global-plastic-bans-work>.

Bans are also interesting to consider from a behavioral perspective. On one hand, they create a new type of normal for people and allow society to shift perspectives on certain things — like the fact that hyper-disposable products are not good for any of us. Bans also force innovation, as people will have to find new ways of meeting their needs. **But on the other hand, when something becomes harder to get, it makes it more valuable, which leads to a rise in workarounds to getting the thing that is no longer readily available. What is even more interesting is the physiology of bans — people get really irate when they have something taken away from them. In both Singapore and Australia, for instance, there was a big controversy when the supermarkets tried to ban bags, and a small percentage of very vocal people claimed this was a violation of their rights.**

Warrant: Plastic bans can be misleading, causing consumers to redirect their material usage in ways just as harmful.

Acaroglu, Leyla. “Tired of Plastic? These Businesses Have Ideas for You”, The New York Times, 27 May 2020, <https://www.unschools.co/journal-blog/will-global-plastic-bans-work>.

While these numbers seem promising, things start to get a little more complex when you examine them through a systems mindset. **Bans can misdirect the perception of what the problem is; in the case of bags, it vilifies plastic, but many of the alternatives put in place do not fit into a circular economy and are equally as problematic from a whole systems perspective.** Paper bags are not as strong, so they are often double bagged. When you look at all the processes that go into making them (such as growing trees, cutting them, bleaching and processing them, and then manufacturing the bag), you start to see that there are ecological impacts at other parts of the system. Additionally, we're beginning to see plastic sales increase in other areas as an unintended consequence of bag bans; **in California, for example, plastic garbage bag sales increased 120%!** This is **due to consumers needing bags for things they previously reused their plastic grocery bags for, like collecting household waste and picking up pet waste.** The issue with all of these products being banned is the disposability of them. Paper straws or wooden chopsticks may conjure up more eco-friendly sentiments, but they still cause significant issues when they are designed for single-use outcomes. **Banning one product breeds a market for a new one, and then the question is in whether the new one will end up being better than the last disposable item. That is the sustainability question that needs to be answered from the start as we move toward circular design solutions that fit into a circular economy.**

Impact: Single-use plastic bans will not be effective without a change in recycling habits

La Shier, Brian. "Bans on Banning Bags: The Movement to End Single-Use Plastics Faces Significant Obstacles", Environmental and Energy Study Institute, 6 Sep 2018, <https://www.eesi.org/articles/view/bans-on-banning-bags-the-movement-to-end-single-use-plastics-faces-signific>.

Better, more widespread recycling is sometimes viewed as the solution to the spread of single-use plastics. **This approach depends heavily on two interrelated factors: the**

development of sufficient, reliable recycling infrastructure; and consumer behavior that supports recycling efforts and rewards companies for changing their practices. Investment in domestic recycling infrastructure is critical, especially given China's announcement last year that it will no longer accept plastic waste from other countries. Developing the capacity to recycle plastics domestically grows increasingly critical as foreign markets for U.S. plastic waste disappear and become less lucrative. To make domestic recycling more economically viable, consumers may need to take steps to reduce contamination and adapt to new sorting procedures to lower costs for recycling companies. In addition, there will need to be demand for goods made from recycled materials and non-plastic alternatives. Plastics are made from a variety of polymers with different uses and properties, which poses additional challenges to recycling operations. Technological advances in sorting and breaking down these plastics may help overcome these hurdles.

Analysis: Consumer psychology is not as simple as it seems -- while some consumers might change their habits in accordance with a plastic ban, not all individuals will be happy with the change. A single-use plastic ban could have unintended consequences like public disapproval or causing consumers to inadvertently harm the environment in other ways.

A/2: Single-use plastics worsen wildfires.

Answer: 85% of wildfires are caused by human actions, not single-use plastics

NPS. “Wildfire Causes and Evaluations”, National Park Service, 8 Mar 2022,
<https://www.nps.gov/articles/wildfire-causes-and-evaluation.htm>.

Nearly 85 percent* of wildland fires in the United States are caused by humans. Human-caused fires result from campfires left unattended, the burning of debris, equipment use and malfunctions, negligently discarded cigarettes, and intentional acts of arson. Answer (Warrant): Banning single-use plastics won’t decrease wildfires; they are particularly dangerous due to the buildup of dry materials and climate change induced drought.

Warrant: External factors are the primary cause of wildfires

Choi-Schagrin, Winston. “Wildfires Are Intensifying. Here’s Why, and What Can Be Done.”, The New York Times, 23 Aug 2023,
<https://www.nytimes.com/2021/07/16/climate/wildfires-smoke-safety-questions.html>.

In recent years, there’s been an abundance of very dry fuel. Drought and high heat can kill trees and dry out dead grass, pine needles, and any other material on the bottom of the forest floor that act as kindling when a fire sweeps through a forest. Wildfire experts see the signature of climate change in the dryness, high heat and longer fire season that have made these fires more extreme. “We wouldn’t be seeing this giant ramp up in fire activity as fast as it is happening without climate change,” said Park Williams, a climate scientist at UCLA. “There’s just no way.” These conditions have been exacerbated by fire-suppression policies. Before the modern settlement of the

American West, forested land in the region burned naturally from lightning or else was intentionally burned by native communities as a form of forest maintenance. **But for the past hundred years, most Western states have suppressed fires. That has led to increasingly dense forests and ample brush on the forest floors.**

Warrant: Policy-based solutions to wildfires need to be based on “prescribed burns,” not plastic bans.

Choi-Schagrin, Winston. “Wildfires Are Intensifying. Here’s Why, and What Can Be Done.”, The New York Times, 23 Aug 2023,
<https://www.nytimes.com/2021/07/16/climate/wildfires-smoke-safety-questions.html>.

Experts agree that prescribed burns — intentionally set fires that periodically clear underbrush or other fuels — are a key to reducing the severity of wildfires in the future. State and federal agencies have already committed to conducting more prescribed burns. **But experts also stress that there needs to be more federal and state legislation that prioritizes this technique. There are currently bills in the U.S. Senate and the California Assembly to provide more funding and training for prescribed burns. Another important step is taking care of the landscape to remove dead trees and other fuel.** After a huge die-off in the Sierra Nevadas in the 2010s, an estimated 150 million trees fell, but only 1 percent of those trees have been removed, creating more fuel for future fires.

Analysis: The best way to answer this argument is to push the affirmative on their solvency. While single-use plastics might be worsening wildfires, they are not the root of the problem or the main cause. A single-use plastic ban will do nothing to eliminate the impacts associated with wildfires.