Single-Use Plastics Brief

February, 2024

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

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Affirmative Case

AFF Cards

Lohr ‘23 IPSOS

https://www.ipsos.com/en-us/three-four-americans-support-national-policies-reduce-single-use-plastic#:~:text=Detailed%20Findings&text=Three%2Dquarters%20of%20Americans%20

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.

Center For Biological Diversity

“10 FACTS ABOUT SINGLE-USE PLASTIC BAGS” Center For Biological Diversity

https://www.biologicaldiversity.org/programs/population_and_sustainability/sustainability/plastic_bag_facts.html#:~:text=The%20world%20uses%205%20trillion%20plastic%20b

ags%20a%20year.&text=Americans%20use%20an%20average%20of,four%20plastic%20bags%20per%20year.

The world uses 5 trillion plastic bags a year. **Americans use** an average of **365 plastic bags per person** per year. People in **Denmark use** an average of **four** plastic bags per year.

Conway ‘07 NYT

The key issue is the price of plastics. Conway, Chris. “Taking Aim at All Those Plastic Bags” New York Times, 1 Apr 2007. https://www.nytimes.com/2007/04/01/weekinreview/01basics.html#:~:text=One%20reason%20for%20the%20abundance,cents%20for%20a%20paper%20bag.

One reason for the abundance of plastic bags is economic. **A standard plastic grocery bag costs about a penny to produce**, according to the plastics industry, **compared with 4 cents to 5 cents for a paper bag.** Compostable plastic bags would cost from 8 cents to a dime, the industry says, although supporters of the San Francisco action say the cost would drop as more local governments require them.

Lindwall '20

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.

Ferran '23

Daniel Banko Ferran, "Evaluating the Ban: Philadelphia's Plastic Bag Ban and Changes in Bag Usage in the City" April 2023

https://www.phila.gov/media/20230428110156/PlasticBagBanReportApril2023.pdf

Prior to the ban, 64% of shoppers used at least one plastic bag when shopping at sample grocery stores in the city. This proportion **dropped to only 4.1%** of shoppers after October 1st 2021. **This decrease was offset by an increase in the usage of paper and reusable bags**. The percentage of shoppers who used paper bags nearly tripled **from 17.7% to 45.5%,** and the usage of reusable bags almost doubles from **21.8% to 41.7%.**

Whiteman '23

Hilary Whiteman, "The world is creating more single-use plastic waste than ever, report finds" February 5, 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 Minderoo Foundation, found th**e 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.

International Union for Conservation of Nature '21

"Marine plastic pollution" November 2021

https://www.iucn.org/resources/issues-brief/marine-plastic-pollution

Over 400 million tons of plastic are produced every year for use in a wide variety of applications. At least 14 million tons of plastic end up in the ocean every year, and **plastic makes up 80% of all marine debris** found from surface waters to deep-sea sediments. Marine species ingest or are entangled by plastic debris, which causes severe injuries and death. Plastic pollution threatens food safety and quality, human health, coastal tourism, and contributes to climate change. There is an urgent need to explore new and existing legally binding agreements to address marine plastic pollution.

Holiday '23

Jetta Holiday, "N.J. environmentalists credit plastic bag ban with reducing litter along the shore" March 26, 2023

https://whyy.org/articles/new-jersey-beach-litter-sweeps-report-plastic-bag-ban/

The number of plastic bags collected dropped by 37% compared to 2021, while plastic straws decreased 39% and foam takeout containers by 38%.

Center for Biological Diversity

"OCEAN PLASTICS POLLUTION"

https://www.biologicaldiversity.org/campaigns/ocean_plastics/

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. gray whale. 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.

NIH '22

Usman, Sunusi, et al. "The Burden of Microplastics Pollution and Contending Policies and Regulations." International Journal of Environmental Research and Public Health, vol. 19, no. 11, 1 June 2022, p. 6773. NIH, https://doi.org/10.3390/ijerph19116773. Accessed 23 Feb. 2024.

The relationship between humans and plastics has become intricate due to their versatile nature and low production cost. Plastics generation has surpassed that of other manufactured products, which, coupled with the prevailing poor waste management systems, makes it a serious problem for the terrestrial and aquatic environments as its final destination. Their extensive presence has continued to pose a significant threat, not only to the aquatic ecosystem but also to the approximately 3 billion people relying on it for their livelihood. Even more disturbing were the recent findings of these plastics in food and drinking water and the evidence of human exposure, the long-term health effects of which are largely unknown.

AFF Case

We affirm the resolution, Resolved: The United States federal government should ban single-use plastics.

Overview:

Decades of attempts to curb single-use plastics have been futile for one sole reason: cost. Absent a ban, companies have no incentive to innovate as long as conventional plastics are cheaper. Without innovation, progress on reducing plastic-related pollution cannot be made. Without adequate incentive for voluntary change, government intervention is the only possible solution.

Sole Contention: Government Mandated Change is the Only Option

Americans want to transition. Lohr '23 shares that 76% of Americans, including 79% of voters, are worried about plastic pollution. This concern is shared by 90% of Democratic voters and 69% of Republican voters. However, there's a gap between concern and

action. The Center For Biological Diversity notes that Annually, Americans use 365 plastic bags per person, while those in Denmark use only four. The primary barrier to reducing plastic bag usage is the low cost. Conway ‘07 Standard plastic grocery bags cost about a penny to produce, while paper bags cost 4 to 5 cents, and compostable bags cost 8 to 10 cents. The affordability and convenience of single-use plastics make them the preferred choice for Americans. To encourage a switch, the cheap and easy option must be eliminated. The higher costs deter stores from transitioning to paper or other eco-friendly methods. A ban on single-use plastics could solve this issue by compelling companies to innovate and produce less resource-intensive and cheaper alternatives. Lindwall '20 highlights that plastic bans drive companies to innovate, redesign, and source sustainable materials, impacting culture and promoting sustainability. This progress has already been proven empirically in the US. Ferran ‘23 After Philadelphia’s plastic bag ban, usage dropped from 64% to 4.1%. This was offset by increased use of paper and reusable bags, which rose from 17.7% to 45.5% and 21.8% to 41.7% respectively. The overall impact was not just the reduction of plastic, but an overall increase in reusable options.

Companies must innovate to make existing resources more cost-effective. Currently, cheaper plastics discourage innovation. Government policies mandating innovation are the solution. While bans may not transcend national borders, innovation does, making the impacts global.

Impact: Pollution and Marine Life

Single-use plastics do not biodegrade and wind up in the oceans, where they are ingested by marine life and are toxic.

Single-use plastics waste is at record highs Whiteman ‘23 Despite efforts to reduce plastic pollution, the world produced a record 139 million metric tons of single-use plastic waste in 2021, up 6 million metric tons from 2019. Most of this waste is made from fossil fuel-derived polymers.

Plastic makes up a large majority of all marine debris pollution. International Union for Conservation of Nature ‘21 Plastic debris constitutes 80% of all marine litter. Holiday ‘23

Single-use plastic bans, like the one in New Jersey, have proven effective in reducing beach litter, with a 37% drop in plastic bags, straws, and takeaway containers collected during a 2022 clean-up. In the previous year, Straws and takeaway containers dropped by a similar amount.

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

Center for Biological Diversity Fish in the North Pacific consume 12,000 to 24,000 tons of plastic annually, leading to internal damage and death, and introducing plastic into the food chain. A study found 25% of fish in California markets contain gut plastic, primarily microfibers. Half of the world's sea turtles have ingested plastic, affecting beach reproduction. Hundreds of thousands of seabirds consume plastic yearly, with 60% of all species affected, predicted to rise to 99% by 2050.

Impact: 3 billion people rely on marine life for food

NIH '22 Plastics extensive presence has continued to pose a significant threat, not only to the aquatic ecosystem but also to the approximately 3 billion people relying on it for

their livelihood. Even more disturbing were the recent findings of these plastics in food and drinking water and the evidence of human exposure, the long-term health effects of which are largely unknown.

Thus we affirm.

Negative Case

NEG Cards

Blackmore ‘21

Blackmore, Josh. "Role and Benefits of Plastics in the COVID-19 Vaccine Rollout." MPO, 3 Mar. 2021, Accessed 23 Feb. 2024. www.mpo-mag.com/issues/2021-03-01/view_columns/role-and-benefits-of-plastics-in-the-covid-19-vaccine-rollout

- In early January, the first U.S. dose of the COVID-19 vaccine was administered in New York City to Sandra Lindsay, a critical care nurse. Around this time, people began to realize a sobering truth: Countless vaccines can be produced, but without a means to store, transport, and get them into peoples' arms, the progress the world so desperately needs will never be achieved.
- At the pandemic's onset, the plastics industry was crucial in meeting the surging need for PPE and medical supplies. And now—With some estimating the U.S. needs at least 850 million syringes for every person to receive the required two doses of the vaccine—plastics will play a significant role in ending the pandemic.

MedPro '16

Brenner, Ben. "How Many Needles Do Hospitals Use and How Do They Dispose of Them?" MedPro Disposal, 17 Oct. 2016, Accessed 23 Feb. 2024. www.medprodisposal.com/how-many-needles-hospitals-how-dispose/

- The World Health Organization estimates that 16 billion injections are administered world-wide, every single year. If we do some rough math, we can figure out how many of these needles are used in the USA.
- The US accounts for 5% of the world's population, so if you take 4% of the total needles used worldwide we still come to 800,000,000 needles used per year in the US, or just over 2 million needles a day!

WHO ‘18

Simelela, Princess Nothemba, Dr. "Vaccines: the powerful innovations bringing WHO's mission to life every day." World Health Organization, 24 Apr. 2018, Accessed 23 Feb. 2024. www.who.int/news-room/commentaries/detail/vaccines-the-powerful-innovations-bringing-who-s-mission-to-life-every-day

- Without a doubt, vaccines are one of the most life-saving public health interventions in history. WHO estimates that immunization saves the lives of 2.5 million people each year and protects millions more from illness and disability (1).

Joseph ‘21

Joseph, Blessy, et al. "Recycling of Medical Plastics." Advanced Industrial and Engineering Polymer Research, vol. 4, no. 3, July 2021, pp. 199-208, Accessed 23 Feb. 2024. https://doi.org/10.1016/j.aiepr.2021.06.003

- Regarding the 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].

A&C Plastics

Staff. "Uses for Medical Plastic Materials." A&C Plastics, Inc., Accessed 23 Feb. 2024. www.acplasticsinc.com/informationcenter/r/medical-uses-for-plastic-materials

- Bags: 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.

AHA

Staff. "Fast Facts on U.S. Hospitals, 2024." American Hospital Association, Accessed 23 Feb. 2024. www.aha.org/statistics/fast-facts-us-hospitals

- Total Admissions in All U.S. Hospitals: 33,679,935

Rust ‘24

Rust, Susanne. "California's war on plastic bag use seems to have backfired. Lawmakers are trying again." Los Angeles Times, 12 Feb. 2024, Accessed 23 Feb. 2024. www.latimes.com/environment/story/2024-02-12/californias-war-on-plastic-bag-use-seems-to-have-backfired

- According to a report by the consumer advocacy group CALPIRG, 157,385 tons of plastic bag waste was discarded in California the year the law was passed. By 2022, however, the tonnage of discarded plastic bags had skyrocketed to 231,072 — a 47% jump. Even accounting for an increase in population, the number rose from 4.08 tons per 1,000 people in 2014 to 5.89 tons per 1,000 people in 2022.
- The problem, it turns out, was a section of the law that allowed grocery stores and large retailers to provide thicker, heavier-weight plastic bags to customers for the price of a dime.

OECD

"Plastic leakage and greenhouse gas emissions are increasing." OECD, Accessed 23 Feb. 2024. 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.

WHO ‘23

Staff. "Climate change." World Health Organization, 12 Oct. 2023, Accessed 23 Feb. 2024. www.who.int/news-room/fact-sheets/detail/climate-change-and-health#:~:text=Between%202030%20and%202050%2C%20climate,diarrhoea%20and%20heat%20stress%20alone

- Research shows that 3.6 billion people already live in areas highly susceptible to climate change. Between 2030 and 2050, climate change is expected to cause approximately 250 000 additional deaths per year, from undernutrition, malaria, diarrhoea and heat stress alone.

NEG Case

We negate the resolution, The United States federal government should ban single-use plastics.

Overview:

Decades of attempts to curb single-use plastics have been futile for one sole reason: single-use plastics are necessary and unavoidable. The current environment does not allow for alternatives in every area, and single-use plastics are still the only option for certain industries. Additionally, bans have failed to curb plastic usage in the past, due to corporate workarounds. Because of these two facts, an all-out ban on single-use plastics would both accomplish nothing in the fight against climate change and only create new problems in critical fields.

Contention One: Healthcare

Subpoint A: Vaccines

Single-use plastics play a crucial role in the production, storage, and distribution of vaccines. Blackmore ‘21 quantifies, stating that single-use plastic was needed for the 850 million syringes for administering the COVID-19 vaccine. Blackmore continues to say that the equipment used to transport vaccines is also commonly single-use plastics. Without single-use plastics, Operation Warp Speed would not have been successful in tackling the pandemic. MedPro ‘16 explains how this applies to all vaccinations in the current world as well, as 800 million single-use needles/syringes are used each year in the U.S. The ***impact*** of vaccines is critical, as WHO ‘18 estimates that immunization saves the lives of 2.5 million people each year and protects millions more from illness and disability.

Subpoint B: Other Healthcare Uses

Single-use plastics are not only used for vaccinations, but also in nearly every other aspect of healthcare. Joseph ‘21 explains that removing single-use plastics from the medical industry is nearly impossible currently, and they offer benefits in keeping a sterile environment at hospitals. They are the main component of PPE, which includes masks, safety goggles, face shields, hair covers, and more. A&C Plastics states that single-use plastics are also used for IV bags and medical waste containers, as they are inexpensive for healthcare providers and are a safe way to keep solutions stable. They are also a part of medical tubing, which is a necessity for fluid management and drainage, and are used in countless other cases. The impact is that hospitals can’t function without these tools, and the AHA reports a staggering 33,679,935 hospital admissions in 2022 alone, ranging from life-saving care to other procedures, all at risk with a single-use plastic ban.

Contention Two: Loopholes and Reverse Effects

Bans on single-use plastic are not effective in reducing consumption of plastic, and in fact have had the opposite effect when applied in places like California. Loopholes allow this at a large scale. This is evident in the amount of plastic bag waste alone: Rust ‘24 reports that 157,000 tons of plastic bag waste was discarded in California the year the law was passed. By 2022, however, the tonnage of discarded plastic bags had skyrocketed to 231,000 — a 47% jump. Even accounting for an increase in population, the number rose from 4 tons per 1,000 people in 2014 to nearly 6 tons per 1,000 people. This is because grocery stores simply used thicker, heavier-weight bags for a minimal price to consumers. Even if the bags are labeled as “reusable”, consumers still discard them as if they are single-use, exacerbating the crisis. This clearly exemplifies how a ban just makes the issue of plastic waste exponentially worse. In 2019 alone, plastics generated 1.8 billion tonnes of greenhouse gas emissions – 3.4% of global emissions, per the OECD. Increasing this amount speeds up climate change, and warms the planet. The impact of this, per WHO ‘23, is that climate change is expected to cause approximately 250,000 additional deaths per year, and increased plastic emissions exacerbates this.

For these reasons, we negate.

Blocks to Affirmative (AT AFF)

AT: Single-use plastics harm marine life

Single-use plastics in the United States are not the primary harm to marine life

1. **Alt cause: Corporations, not consumers, are responsible for marine pollution** **Logomasini '18** 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.

2. **Alt cause: Other countries, not the United States, are responsible for marine pollution** Ritchie ‘21 Most of the world’s largest emitting rivers are in Asia, with some also in East Africa and the Caribbean. 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.
3. **Alt cause: China and Indonesia are the primary causes of plastic waste in the ocean Plastic** Ethics ‘19 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.
4. **Turn → Alternatives such as bioplastics are still damaging to marine life** ScienceDaily ‘23 Biodegradable plastics may not be the silver bullet to plastic pollution as we believe them to be, they can 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.
5. **Turn → Metal alternatives would be just as bad because metal pollutants in the ocean are harmful** Aziz ‘23 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.

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.

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.

AT: Single-use plastics preclude reusable alternatives

Reusable alternatives are worse than single-use plastics

1. **Turn → Reusable alternatives are worse than plastics when it comes to emissions** Green ‘22 reusables 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 going into the air, running off into the water, and going back into the land.

2. **(!!) Turn → Most reusable alternatives are only better at a surface level** Wirtz ‘22 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
3. **Mitigation → Banning single-use plastics results in other plastics being purchased more** Taylor ‘19 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.
4. **Mitigation → Reusable plastic bags still end up in landfills instead of being recycled** Waters ‘15 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.
5. **Delink → Plastic bags in the United States aren’t primarily made from oil in the first place** EIA ‘23 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

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.

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 then 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.

AT: Single use plastics' manufacturing process is bad for the environment.

Response: Reusable alternatives are worse for the environment than single-use plastics.

McGrath '23 reports,

1. **The most common alternative, paper, results in more emissions than plastic.** → "Manufacturing paper emits 80 percent more greenhouse gasses. And [it] uses trees that could be absorbing carbon dioxide. The process also [creates] 50 times more water pollutants than making plastic bags, [and] consumes four times as much energy."

Green '22 reports,

2. **Reusable alternatives are worse than plastics when it comes to emissions.** → "So why are alternatives to single-use plastics worse for the environment? [They] consume more energy over their life cycles than their single-use plastic alternatives in manufacturing, distribution, utilization, and disposal. [This] means greater environmental impacts coming out of the soil, going into the air, running off into the water, and going back into the land."

Turn: Most reusable alternatives are only better at a surface level.

Wirtz '22 reports,

1. **The most common alternative, paper, results in more emissions than plastic.** → "Life-cycle assessments on single-use plastic bags have shown a discrepancy between actual re-use rates of alternative[s] and the rate to break even [environmentally]. Paper bags need to be re-used four times, LDPE five, non-woven PP bags 14, and cotton 173. [The] actual re-use rates are half that, making them less sustainable than single-use bags, which [are] also used by consumers as bin liners."

Mitigation: Many single-use plastics are reused multiple times, significantly reducing their lifetime carbon footprint.

Bag the Ban reports,

1. "More than 90% of Americans reuse plastic bags at least once, from lining trash cans to packing lunches and picking up after pets. A Canadian government agency found that plastic bags have a 77.7% reuse rate as trashcan liners."

Delink: Plastic bags in the United States aren't primarily made from oil in the first place.

EIA '23 reports,

1. "Crude oil 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."

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.

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

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 gasses. 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.

Warrant: 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 plastic 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 gasses); running off into the water, and going back into the land (landfilling).

Warrant: 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.
"So many ways to reuse plastic bags." Bag the Ban, n.d.,
https://www.bagtheban.com/learn-the-facts/reusing/
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.

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

Banning single-use plastics doesn't solve this issue

1. **Non-unique → Low-income and Black Americans are disproportionately exposed to oil and gas refineries, not just plastic** Lavelle '17 More than 1 million African Americans live within a half-mile of oil and natural gas facilities and 6.7 million live in counties with refineries, exposing them to an elevated risk of cancer due to toxic air emissions. one in five African-American residents statewide lives within a half-mile of an oil or gas facility.
2. **Low-income families are hurt by single-use plastic bans** ENVS '16 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. 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.
3. **(!!) Single-use plastic alternatives are more expensive than plastic** Baker '23 The technology exists, but the cost is higher given how cheap plastic is.
4. **Delink → Single-use plastic bans have no impact because of globalization** Baker '23 France In 2022, banned all non-compostable PLU tags. However, [it] soon became a 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.
5. **Mitigation → A sizable portion of plastics are recycled** University of Michigan '23 About 30% of all the plastics ever made globally are still in use

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.

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 PlasticBags? 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 **[it] 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.

AT: Single-use plastics disproportionately harm communities of color

Banning single-use plastics doesn't solve this issue

1. **Non-unique → Low-income and Black Americans are disproportionately exposed to oil and gas refineries, not just plastic** Lavelle '17 More than 1 million African Americans live within a half-mile of oil and natural gas facilities and 6.7 million live in counties with refineries, exposing them to an elevated risk of cancer due to toxic air emissions. one in five African-American residents statewide lives within a half-mile of an oil or gas facility.
2. **Non-unique → Black communities will continue to be harmed by poor water infrastructure regardless of plastics** Montag '22 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. Thousands of Detroit residents have had to live without water in their homes for years due to the city's aggressive water shutoff policy.
3. **The pollution communities of color face are driven by other industries, not just plastics** Ward '21 Black communities across the country 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.
4. **Delink → Single-use plastic bans have no impact because of globalization** Baker '23 France In 2022, banned all non-compostable PLU tags. However, [it] soon became a 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.
5. **Mitigation → A sizable portion of plastics are recycled** University of Michigan '23 About 30% of all the plastics ever made globally are still in use

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.

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**.

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 **[it] 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.

AT: Single-Use Plastics Damage Ecosystems

Single-use plastic is better than existing alternatives.

1. **Reusable alternatives require extreme numbers of uses to be as environmentally efficient as single-use plastic.** Stanislaus '18 disposable plastic bags require fewer resources to produce than paper, cotton or reusable plastic bags—by a wide margin. 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.
2. **Ocean pollution does not come from the US and most of it is not plastic.** Logomasini '18 The primary culprit of ocean pollution is not straws, cups, and plastic bags. 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. 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.
3. **Impact → Reusable plastics will increase emissions, energy use, and water consumption.** Erickson '21 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.

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 where 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.**

AT: Single use plastics create waste buildup.

Argument: Reductions in plastic waste would be replaced by food losses

and waste.

Parriaux '22 reports,

1. **Alternatives to plastic packaging cause more food damage during transport.** → "In France, cucumbers are now delivered to supermarkets in containers made of alternative materials. 'but food can be damaged more easily in cardboard, causing more food waste in transport, and it's much heavier [which] means more [trucks] are needed to carry the same quantity of product. In the end it [is] more polluting to use cardboard wrapping than plastic, when the entire food production chain is taken into account.'"

Wong '21 reports,

2. **Plastic helps extend the shelf life of goods in retail stores.** → "A study [showed] that shrink-wrapped cucumbers lost a lot less water in a typical journey from farm to fork than [when] unwrapped, extending shelf life by up to 60 per cent. Ditching this wrapping would have a significant impact on food as crop[s] would go off before being eaten. Plastic packaging can retain the nutritional value of the crops too. Broccoli can lose up to 80 per cent of its glucosinolates, responsible for [it's] key health benefits, when loose on supermarket shelves, versus the shrink-wrapped version. [These] effects have been found in a wide range of crops."

Impact: Preventing food waste and loss is more important in the US.

Helmke '21 reports,

3. "According to the USDA, 40% of food produced is wasted. The annual amount is an alarming 36 million tons, worth $162 billion each year. When food spoils, it releases methane – a greenhouse gas even more potent than carbon monoxide. [It] also means wasted resources [like] the water required to grow [it] in the first place and the fuel used in transport. It is in everyone's best interest to minimize food waste"

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.

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 carboard is more costly, a life cycle assessment would be required.

Warrant: Plastic helps extend 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.

AT: Single-use plastics create harmful microplastics

Microplastic harms to health are overstated and would exist regardless.

1. **There is a fundamental epistemological problem with suggesting that microplastics cause risks to human health.** Leslie '20 the absence of evidence of microplastics risks currently does not allow one to conclude that risk is either present or absent with sufficient certainty. The best available evidence suggests that microplastics and nanoplastics do not pose widespread risk to humans and the environment.
2. **Impact: The most significant source of microplastics is tire dust, so banning single-use plastics would have no effect.** Stuchtey '20 The largest contributor to 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.

Analysis: The last card is primarily mitigation, but the other ones foist the burden of proof on why microplastics are bad onto the Pro.

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 microfibres, 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.

AT: Single use plastics create significant greenhouse gas emissions.

Argument: Reusable alternatives release more emissions.

Voulvoulis '20 reports,

1. **Life cycle assessments find significantly higher emissions for alternatives to single-use plastic.** → "When considering production and manufacturing of alternatives to plastic, other packaging types emit more greenhouse

gasses, with glass being the highest emitter overall. [For] example, if all plastic bottles were made from glass, additional carbon emissions would be equivalent to 22 large coal-fired power plants[, or] the electricity consumed by a third of the UK. LCA should be used to evaluate environmental impacts of alternatives over their life-time, from [extracting] raw material to [disposing of or recycling] packaging at the end of its life."

Ducharme '21 reports,

2. **Often, the number of reuses necessary for reusable goods to break even on life cycle emissions is extremely high and infeasible or nonexistent.** → "There's a 'payback' period 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 [as] the energy and resources required to make and wash it far exceed making flimsy disposable bags, [and the same applies to] many cotton tote bags."

Impact: Increased emissions will worsen the climate crisis.

Ebbs et al. '23 reports,

1. "Continued emissions lead[s] to increased warming, and every increment of increased warming [intensifies] hazards, but reductions in emissions would slow warming down within two decades. Changes like sea level rise are unavoidable but can be limited with cuts in emissions, [and] the world must reach net zero by the 2050s to limit warming to 1.5 degrees Celsius, which means man made emissions would be eliminated. Any incremental warming beyond that worsen[s] hazards such as extreme heat and precipitation and the risks of species loss, more extreme heat days that [are] dangerous to human health, and decreased yields from crops or fisheries."

Analysis: This is a more essential block than others because it demonstrates the necessity of single-use through comparison with its alternatives.

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 gasses 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 man made 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.

AT: Single-use plastics create plastic incineration

Reduced plastic incineration would come at the cost of ozone depletion through other emissions.

1. **Efforts to ban plastics would have created substantially higher emissions.** Green '22 Paper bags in most cases have a larger impact on the climate, eutrophication and acidification, compared to Single Use Plastic Bags. [In the study], the biodegradable HDPE bag had larger environmental impacts than the regular kind.
2. **Greenhouse gas emissions lead to ozone depletion.** Velders '97 The increase in CH_4 emissions in the same period changes this ozone depletion by +1.4% per decade to -4.4% per decade.

3. **Impact: Ozone layer depletion must be prevented to protect the world from increased UV radiation.** Ritchie '23 The ozone layer absorbs 97% to 99% of the sun's incoming ultraviolet radiation. This is fundamental to protecting life on Earth's surface from exposure to harmful levels of this radiation, which can damage and disrupt DNA. 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 radiation reaching the surface. 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.

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.

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. Λ 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, NOx, 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 NOx 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.

AT: Other countries will follow US lead

The US cannot be a global leader on plastic bans -- it is behind 90 other countries and has not taken any substantial actions federally.

1. **(!!!) Turn → Single-use plastic bans have negligible environmental benefits.** ARPBR '19 Ban and tax ordinances have **never** been successful at meaningfully reducing litter, waste or marine debris. 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. 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.
2. **Impact: Single-use plastic bans are largely ineffective at accomplishing their goals and plastic alternatives might have an even worse carbon footprint.** Wirtz '22 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 ban is no strategy for transition: It prevents government departments from using plastic where necessary and does not guarantee a path forward for substitution.

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.

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.**

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.

AT: Single-use plastics cause health problems

Answer: Single-use plastics are crucial to infection prevention in the medical sector

1. **This is Plastics '24** 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.

2. **Impact: Single-use plastics can decrease the prevalence of foodborne illness** Foodindustry.com '23 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.
3. **Warrant: Alternatives to single-use plastics may be just as harmful to human health.** Baker '23 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. 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.

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
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. B**ut 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.**

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

Answer: Bans are counterintuitive to innovation.

Trash Hero '23 reports,

1. **Companies would find loopholes to avoid completely banning single-use plastics.** → "Businesses affected by a ban will find exceptions or loopholes that allow them not to cooperate. Governments use fines against law-breakers, but these [are] costly and difficult to enforce on a large scale. In New York, a ban was introduced in 2020, but few of the businesses failing to meet regulations have suffered any consequences, [and] people continue to use the [banned] items."

Schlossberg '20 reports,

2. **Companies are already innovating alternatives to single-use plastics and consumer demand is high -- no need for a ban.** → "To those working on alternatives to single-use plastic, consumer momentum is not disappearing. Founders of alternative companies said they had seen even more interest from consumers, and a renewed commitment from some larger companies they work with."

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.

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.

AT: Banning single-use plastics creates consumer behavioral changes.

Answer: Plastic bans lead to public disapproval.

Acaroglu '20 reports,

1. "When something becomes harder to get, it [becomes] more valuable, which leads to a rise in workarounds to getting the thing that is no longer readily available. [Additionally], People get really irate when they have something taken away from them. Both Singapore and Australia, [experienced] a big controversy when supermarkets tried to ban bags, and people claimed this was a violation of their rights."
2. **Plastic bans can be misleading, causing consumers to redirect their material usage in ways just as harmful.** → "Bans misdirect the perception of what the problem is. [They] vilify plastic, but many alternatives do not fit into a circular economy and are as problematic. California plastic garbage bag sales increased 120% due to consumers needing bags for things they previously reused their plastic grocery bags for, like household and pet waste. Banning one product breeds a market for a new one, and then the question is whether the new one will end up being better. That question needs to be answered as we move toward solutions that fit into a circular economy."

Impact: Single-use plastic bans will not be effective without a change in recycling habits.

La Shier '18 reports,

1. "[Bans] depend heavily on two factors: the development of sufficient recycling infrastructure; and consumer behavior that supports recycling efforts and rewards companies for changing their practices. To make recycling more economically viable, consumers need to take steps to reduce contamination and adapt to new sorting procedures."

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.

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.

AT: Single-use plastics worsen wildfires

85% of wildfires are caused by human actions, not single-use plastics

1. **Banning single-use plastics won't decrease wildfires** NPS '22 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.

2. **Warrant: External factors are the primary cause of wildfires** Choi-Schagrin ‘23 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 Wildfire experts see the signature of climate change in the dryness, high heat and longer fire season that have made these fires more extreme.
3. **Warrant: Policy-based solutions to wildfires need to be based on “prescribed burns,” not plastic bans.** Choi-Schagrin ‘23 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. But experts also stress that there needs to be more federal and state legislation that prioritizes this technique.

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.

Warrant: Banning single-use plastics won’t decrease wildfires;

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. 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.

AT: Plant-based materials.

Argument: Plastics can't be replaced with plant-based materials.

Harrabin '18 reports,

1. **Plant-based materials require plants, which grow on finite land, already being over-exploited for bio-fuels, meat production, and crops.** → "Forests are already being felled to grow crops to feed the world's booming demand for meat production, and wild land is also disappearing to produce biofuels. But there is a finite amount of land, [and] a demand for plastic substitutes increase[s] the pressure for deforestation. This would lead to more greenhouse gasses that warm and acidify oceans. 'We must ensure that whatever solutions we design don't increase emissions, damage world ecosystems or result in more waste.'"

Warrant: Plant-based materials require plants, which grow on finite land, already being over-exploited for bio-fuels, meat production, and crops.

Harrabin, R. (2018, March 14). War on plastic may do more harm than good, warns think tank. Retrieved January 4, 2024, from Bbc.com website: https://www.bbc.com/news/business-43383607

[Roger Harrabin is a British journalist who was the BBC's energy and environment analyst until July 2022. He has broadcast on environmental issues since the 1980s and has won many awards in print, TV and radio. He is an honorary Fellow at St. Catharine's College, Cambridge,[1] a visiting fellow at Green Templeton College, Oxford, an Associate Press Fellow at Wolfson College, Cambridge, and has received an honorary Doctorate of Science from Cranfield University.]

But it warned that rejecting all plastic food packaging could prove counter-productive. Agriculture is a major source of greenhouse gas emissions, so reducing food waste is vital. Well-packed food - perhaps in plastic - helps protect food from damage, so it can actually save on greenhouse Gases. The other potential area of concern is the substitution of plastics with plant-based materials. Forests are already being felled to grow crops to feed the world's booming demand for meat production and wild land is also disappearing to produce bio-fuels for cars and electricity generation. But there is a finite amount of land. The Green Alliance fears that a demand for plastic substitutes could also increase the pressure for deforestation. This would, in turn, lead to more greenhouse gases that would warm and acidify the oceans people are anxious to protect. The Green Alliance's Libby Peake told BBC News: "Plastics are clearly a huge problem but we have concerns that legitimate public outrage will lead businesses and governments to rush into the wrong decisions. "We must ensure that whatever solutions we design don't increase emissions, damage world ecosystems or result in more waste." The public backlash against plastics led Lego to announce that in future it will make its toys from plastics derived not from oil, but from sugar cane. It won the headline: "Lego goes green one brick at a time". But the firm confirmed to me that the "eco" bricks would be made from polyethylene - that's exactly the same chemical compound as plastic derived from oil (which, of course, came from plants millions of years ago). The environment-friendly bricks will last just as long and be just as hard when you tread on them in bare feet.

AT: Bioplastics.

Argument: Bioplastics can't fill-in for single-use plastics after a ban

Bioplastics are great in theory, but face a number of issues:

i. there isn't enough supply capacity to replace traditional plastics

ii. When put in a landfill, as most are, bioplastics create methane, which is a far more potent greenhouse gas than carbon

iii. Bioplastics are often confused for normal plastics, thus complicating recycling and disposal efforts

iv. Bioplastics can take just as long to break down as traditional plastics

v. Some plant-derived plastics are chemically indistinguishable from traditional plastics

Baker '23 reports,

2. "There isn't enough global supply of alternative materials to replace the amount of single-use plastic being produced today. In a landfill, [these] material[s] create methane as [they] decompose, a greenhouse gas 25 times more potent than carbon when it comes to trapping heat in the atmosphere. The terms 'biodegradable' and 'compostable' are often misinterpreted to mean that the products will melt away in the natural environment, which is rarely the case. If you tossed a 'biodegradable' fork into your backyard, it could last as long as typical plastic cutlery. Without a dramatically ramped-up global system of collecting and processing biodegradable packaging, [alternatives are] little better than plastic for the environment. The plastic used for most single-use packaging is usually extracted from fossil fuels, but can also be manufactured from plants. The[se] versions are chemically indistinguishable."

Baker 23—[Baker, A. (2023, November 28). The Dirty Secret of Alternative Plastics. https://time.com/6339914/plastic-alternatives-pollute/

Practically speaking, there isn't enough global supply of alternative materials to replace the amount of single-use plastic being produced today, and that may be a good thing, says Paula Luu, project director for the Center for the Circular Economy at impact investing firm Closed Loop Partners. 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. 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. The terms "biodegradable" and "compostable" are often misinterpreted to mean that the products will melt away in the natural environment, which is rarely the case. To meet a baseline standard of compostability, 90% of a PLU sticker, or a fork, for that matter, must break down into carbon matter within six to 24 months under carefully regulated heat and moisture conditions. But if you just tossed a supposedly biodegradable fork into your backyard, it could last almost as long as your typical plastic cutlery. In one 2019 study, researchers left compostable plastic bags buried in soil or submerged in seawater for three years as a trial. At the end, some of the bags were intact enough to carry a full load of groceries. Which means that without a dramatically ramped-up global system of collecting and processing biodegradable packaging, compostable is little better than plastic for the environment. In the U.S., only 27% of the population has access to food waste composting programs, and only 142 out of the 201 industrial composting facilities nationwide that process food waste will accept compostable packaging as well, according to a new survey conducted by the composting website BioCycle and the Composting Consortium, a business group that promotes effective composting. That means that the country is producing far more compostable cups, plates, and take-out containers than it can actually process, says BioCycle's editor and publisher, Nora Goldstein. Facilities that are reluctant to take compostable packaging argue that they can't always tell the difference between conventional plastics and compostable, and they don't want to risk contamination. A compostable sachet of pre-washed salad greens looks just like a polyethylene produce bag, says Goldstein. "If I can't tell the difference, and I am a composting professional, your average consumer is just as likely to throw a plastic bag in the compost as a compostable bag in the recycling." Both are bad: When plastic ends up in compost, the facility can't sell it, which threatens the financial viability of the project. And when compostable packaging ends up in a recycling facility, it can gum up the machinery or, depending on how it is made, taint the next batch of recycled plastic. Add plant-based plastics into the mix, and you have even more problems. Polyethylene terephthalate, the PET plastic used for most soda bottles (and also in many other single-use packaging products), is usually extracted from fossil fuels, but, in a process similar to turning corn into ethanol, it can also be manufactured from plants. The plant- and fossil-fuel-based versions are chemically indistinguishable—the only way to tell the difference is through radiocarbon dating (carbon molecules extracted from fossil fuels are older than ones that come from plants)—and like conventional PET, plant-based PET can be recycled. But when consumers see a label saying a plastic is plant-based, "One in two Americans will say, 'Oh, this belongs in a composting bin'," says Luu of Closed Loop Partners, which recently conducted a survey of American attitudes to plastic alternatives. In other words, consumers might think they are doing the right thing, even if half of them are putting their plant-based PET products in the wrong place. Luu believes better labeling is the answer: "Just like we universally understand the stop sign, we should immediately understand that this package is compostable because it's tinted green or is prominently labeled. If we don't get labeling and design right, we could be creating problems for both the recycling and the composting industries."

Blocks to Negative (AT NEG)

AT: Alternatives to single-use plastics are bad

Alternatives are still better than single-use plastics

1. **Alternatives break down faster in the ecosystem.** Plumer ‘19 American shoppers use more than 100 billion plastic bags each year, and only a small portion 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.
2. **Plastic bags form a substantial volume of litter.** Plumer ‘19 San Jose found that plastic bags made up about 12 percent of the litter in its creeks before implementing a local bag ban in 2012.
3. **Reusable bags only need to be used 11 times to break even with plastic in terms of environmental harms.** Thompson ‘17 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.
4. **Paper bags are better from a waste perspective than plastic** Thompson ‘17 In terms of disposal, paper bags are better than their plastic counterparts. Paper is compostable.

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.

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.

AT: Banning single-use plastics hurts small businesses

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

1. **Plastic disposal is costly.** Pecci '18 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 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.
2. **Many municipalities have already banned single-use plastics without catastrophic economic consequences.** Pecci '18 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. 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.
3. **Plastic bans do not negatively impact local economies** Staff '13 Local economies are not negatively impacted in the long-term. 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."
4. **Plastic bans do not hurt cities** Staff '13 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. 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.

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.

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.

AT: Banning single-use plastics hurts manufacturing

Turn: Banning single-use plastics will spur innovation.

1. **Banning single-use plastics creates an incentive to innovate alternatives.** Staff '23 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.
2. **In the UK, announcements of a ban sparked innovation** Staff '23 The UK market is taking steps to grow influence in the area, following recent announcements of banning single-use plastic items. These technologies all attempt to reduce the persistence of plastic products, enabling plastics to better decompose or be recycled.
3. **In Europe, a plastics ban is designed to create a comprehensive system for reuse.** Hockenos '21 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.
4. **In Europe, a plastics ban has driven increased investment towards new plastics** Hockenos '21 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.

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.

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/
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 designand 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.

AT: Banning single-use plastics stifles innovation.

Turn → Banning single-use plastics accelerates innovation

1. **Consumers are willing to spend more for non-single-use plastics** Flower ‘23 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.
2. **Innovation is accelerating.** Flower ‘23 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.
3. **Shifting consumer behavior will change investment patterns as well.** Murphy ‘22 Between 2019 and 2021, people altered their shopping habits to actively avoid plastic packaging. 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.
4. **There is a massive market of customers who reject single-use plastics.** Murphy ‘22 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.

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.

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.

AT: Banning plastics causes leakage

A nationwide ban would be effective at stopping plastics usage.

1. **Plastic bag bans work** Staff '16 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 San Francisco, the city has saved a reported $600,000 per year in plastic processing fees alone.

2. **Restrictions on plastics in other countries work as well.** Staff '16 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.
3. **Change isn't wanted, it is needed.** Staff '16 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.
4. **Plastic bans worked in Philidelphia** Staff '23 Prior to the ban [in Philadelphia], 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.
5. **The ban has sustained effects** Staff '23 the ban prevented over 200 million disposable plastic bags from being distributed in the city in its first year. Adoption took time to accelerate, but the ban has had sustained effects. "It took three months for plastic bag usage to decrease in the city and remained steady near zero for the remainder of the study.

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.

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 Philidelphia

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 nPlastic bans can be augmented to accommodate disabled peopleear 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.

AT: Banning single-use plastics hurts marginalized groups

Turn → **Banning single-use plastics helps marginalized groups**

1. **Plastic bans can be augmented to accommodate disabled people** Hewitt '22
   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.
2. **Bans can be implemented in consultation with disabled groups.** Hewitt '22 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.

3. **Plastic bans can include waivers** Godoy ‘18 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.
4. **Banning plastics is important, even with accommodations.** Godoy ‘18 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,”

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.

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."

AT: Banning single-use plastics is economically inefficient.

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

Factory Direct '18 reports,

1. **Bag bans stimulate demand for new products.** → "By reducing the need for plastic bags, bans create a need for reusable shopping bags, [which] creates a market for manufacturers to create more durable alternatives in place of disposable bags."
2. **Single-use plastics have costly externalities.** → "Disposable plastic bag litter can clog drainage systems and [cause] flooding, [which] [causes] damage and [is] a hassle. To prevent flooding and the resulting mess, municipalities routinely clean storm drains, [but] this costs time and tax money. Bans eliminate the mess and trouble caused by plastic bags, [which] means tax money can be used for other important purposes."

Total Environment Centre '19 reports,

3. **Plastic bans incentivize conscientious consumption.** → "Professor of economics Richard Holden said if consumers [bought] fewer groceries, [they were] likely [to forgo] purchases of unnecessary items, [which] benefit[s] workers by leaving them more money to spend on things they actually need, while not adding to the growing amount of food waste [nationwide]."
4. **Short term economic costs are unavoidable for long-term sustainability.** → "Australian Prudential Regulation Authority member Geoff Summerhayes said there [is] an unavoidable short-term economic cost [of a] transition to a more environmentally friendly economy, but avoiding any mitigation would 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.

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 other 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.

AT: Banning single-use plastics is government overreach.

Response: Big government can be good.

Oreskes '20 reports,

1. **There is nothing inherently wrong with a large state.** → "History reveals no correlation between the scale of a national government and the coercion of its citizens. Most western European governments are "bigger" than the American government in levels of taxation and social services but they are as democratic."
2. **Big government is necessary to deal with big problems.** → "There's an obvious lesson for the climate crisis. Conservatives have denied its reality, in fear of "big government" solutions. [It's] not too late to take action. It will require government, and some of that government will be big."

Guerrera '23 reports,

3. **Big government is important for the economy.** → "Covid-19 prompted governments to step in [and] protect consumers and businesses. From employment support to [checks] mailed to every American, state[s asserted their] influence. Just as [COVID] was waning, Russia's invasion of Ukraine [brought] turmoil to global energy markets and international commerce, [requiring] further government intervention."
4. **Important public policies are expensive.** → "[An] interventionist government [isn't] cheap. Public spending, combined with the cost[s] of aging citizens and the struggle against climate disasters, is inflating debt burdens. The [IMF] predicts the U.S. government's adjusted budget deficit – will remain above 7% of GDP until 2028. As recently as 2014, it was 2.7%, [and] spending will exceed income by more than 4% for the next five years, double the level a decade ago."

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.

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 globalization backwards. Governments focused on securing energy sources and vital components. Companies prioritized 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 aging 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.

AT: Medical applications must shift away from plastics as well

Medical applications must shift away from plastics as well

1. **Many single-use plastics can be replaced with reusables.** Wen '23 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.

2. **Avoiding single-use plastics reduces risks** Wen ‘23 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?
3. **Medical innovation is happening now.** Staff ‘22 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.
4. **Hospitals are implementing solutions now.** Staff ‘22 While various companies strive towards making technological developments, other organizations have focused on systematic healthcare revisions through the provision of environmental solutions and funding. 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 incuments are pushed to make changes.

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

Wen, Leana. “Plastics are everywhere in health care. That must change.” Washnigton 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.” Washnigton 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.**

AT: Single-use plastics are better than paper

Turn → Paper bags are far better for the environment.

1. **Paper bags can be reused multiple times and converted to biofuel** Patel '23 The bags could be a ecofriendly alternative to single-use plastic bags. At the end of their lives, the paper bags can be broken down to be used as biofuel.
2. **Unlike plastic bags, paper bags can decompose.** Patel '23 The world makes five trillion plastic bags a year. Each bag takes over 1,000 years to decompose. 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.
3. **Innovation means that in the future, paper bags will be far more durable and reusable than plastic** Mulhollem '23 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.

4. **Converting to paper bags would reduce the amount of waste generated.** Mulhollem ‘23 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,”

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.

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."

AT: Single-use plastic decreases food waste

Turn → Single-use plastic increases food waste.

1. **Plastic packaging causes people to buy more than they need.** Wood '22 The study 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.
2. **Plastic packaging leads people to throw away food before they need to** Smolokoff '22 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. Not only would the elimination of plastic packaging from produce save more than 10,000 tons of plastic but more than 100,000 tons of food annually.

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.

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."

AT: Single-use plastics are better than glass

Glass is better for the environment.

1. **Glass can be reused indefinitely.** The Cary Company glass is 100% recyclable meaning that each time glass is recycled, the resulting product has no loss of quality.
2. **Reuse of glass is safe.** Ho '23 glass does not leach toxic chemicals, making it a great option for you to continually use and repurpose it.
3. **Reuse of single-use plastic is not safe.** Earth Talk '22 Health advocates advise against reusing bottles made from plastic bottles. [they] may be safe for one-time use but reuse should be avoided. The containers may leach DEHP—another probable human carcinogen.

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.

Consumers prefer glass to plastic.

1. **Consumers think glass is better for the environment.** Packaging Insights '23 consumers perceive glass to be the most reusable material compared to other conventional packaging materials, and third place for recyclability. 70% of grocery shoppers trust glass as a healthy packaging choice for their food and beverages. more than half of consumers actively seek products packaged in glass because they believe it protects the integrity of their foods and beverages.
2. **Consumers see glass as a sign of quality.** The Cary Company participants believed food products packaged in glass had a higher level of pleasantness than the same product stored in plastic.

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.

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.

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.

AT: Single-use plastic bans failed in Ottawa.

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

Canada Plastics Pact '24 reports,

1. **Canada recycles about 20% of their plastic.** → "The most current and reliable data available in 2022 [estimates] that Canada generated [nearly 980,000] tonnes of plastic packaging, [and] 20% of [that] was recycled, up from 12% in 2019."

Budryk '22 reports,

2. **The US recycles significantly less, and rates are on the decline.** → "Only about 5 percent of 51 million tons of U.S. plastic waste was recycled in 2021, [and that] number has been steadily declining in [recent] years."

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.

Lohr '23 reports,

1. **A vast majority of Americans support a ban.** → "A new survey conducted by Ipsos shows broad support for national policies that would reduce single-use plastics. 75% of Americans and 77% of registered voters support national policies that reduce single-use plastics."

Guzman '22 reports,

2. **The ban has had unwavering bipartisan support over the last two years.** → "A national poll found [that] 81 percent of voters are in favor of national, state and local policies to [reduce] the use of single-use plastics. Along party lines, 91 percent of Democrats supported [these changes], 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.

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.

Warrant: A vast majority of Americans support a ban.

Lohr, Annaleise 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.

AT: Banning single-use plastics does not stop the problem.

Answer: Single-use plastic should not be reused.

Earth Talk '22 reports,

1. **Single-use plastics release toxic chemicals when reused.** → "Re-use of plastic bottles—which get dinged up through wear and tear while being washed—increases the chance [of] chemicals [leaking] out of the tiny cracks and crevices that develop over time. According to the Environment California Research & Policy Center, BPA has been linked to breast and uterine cancer, increased risk of miscarriage, and decreased testosterone levels, [and it] can wreak havoc on children's developing systems."
2. **Re-use of single plastic is not safe.** → "Bottles made from plastic #1 (polyethylene terephthalate, also known as PETE), including most disposable water, soda, and juice bottles, may be safe for one-time use, but reuse should be avoided. Studies indicate that [they] leach DEHP—[a] probable human carcinogen—when they are structurally compromised and in less than perfect condition."

Cleveland Clinic reports,

3. **Carcinogens cause cancer.** → "Carcinogens increase your risk of developing cancer. When a carcinogen changes your DNA, it triggers a chain reaction that turns normal cells into cancerous cells."

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.

Main '23 reports,

1. **Most plastic doesn't get reused.** → "95% of plastic used in packaging is disposed of after one use, [losing] the economy $120 billion annually, 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.’”

Budryk '22 reports,

2. **The US recycles just 5% of its plastics.** → “Only about 5 percent of 51 million tons of U.S. plastic waste was recycled in 2021. Moreover, [that] number has been steadily declining in [recent] years.”

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.

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 Bisephenol 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: Re-use of single 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.

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.

AT: Banning proliferates pandemics

Pandemics aren't a risk.

1. **We have the tools to prepare for a pandemic.** Phumapi '23 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.
2. **We are using the tools at our disposal.** Callaway '23 a machine-learning tool can predict the evolution of viruses with the potential to cause a pandemic. This information could improve the resilience of vaccines, and could give the world a head start when the next pandemic threat appears.
3. **The US has a pandemic preparedness plan.** Gallagher '24 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. 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.

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.

PPE doesn't have to be single-use.

1. **PPE can be disinfected.** **3M** 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.
2. **Innovations in PPE make it reusable.** **Newton 23'** Many people in the food and beverage and construction industries already have reusable PPE — most commonly, gloves. some masks are reusable too. 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.

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?" Healio, 5 Jan. 2024, https://www.healio.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.

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/1921677O/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 similarfacilities 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.**

AT: AEPW

Plastics companies are offsetting their impact on the environment through the AEPW

1. **The Alliance to End Plastic Waste is simply a greenwashing mechanism for the plastics industry, allowing them to divert attention from the billions**

invested in new plastics manufacturing capacity each year Gore-Langton '23
The Alliance to End Plastic Waste (AEPW) has reportedly achieved 0.2% of its plastic diversion target, the organization's members, use the AEPW to divert attention from the continued expansion of plastic production globally. AEPW is simply a "sophisticated greenwashing" scheme. many AEPW members are choosing to invest heavily in the expansion of plastic production while failing to fund even meager recovery and recycling targets through the AEPW,"

Warrant: The Alliance to End Plastic Waste is simply a greenwashing mechanism for the plastics industry, allowing them to divert attention from the billions invested in new plastics manufacturing capacity each year

Gore-Langton 23—[Alliance to End Plastic Waste defends failures after achieving 0.2% of its targets. (2023, February 10). Retrieved January 2, 2024, from .packaginginsights.com/ website: https://www.packaginginsights.com/news/alliance-to-end-plastic-waste-defends-failures-after-achieving-02-of-its-targets.html] **The Alliance to End Plastic Waste (AEPW) has reportedly achieved 0.2% of its plastic diversion target,** equating to roughly 34,000 tons, despite pledging US$1.5 billion to fight waste since 2019. Financial think tank Planet Tracker says **the organization's members**, which include major petrochemical corporations, **use the AEPW to divert attention from the continued expansion of plastic production globally.** An AEPW spokesperson tells Packaging Insights the organization's original target of diverting 15 million tons of plastic waste "was just too ambitious" and that its projects are "beginning to scale and deliver impact." However, Planet Tracker asserts **the AEPW is simply a "sophisticated greenwashing" scheme** and warns that many of its 77 members could soon be open to legal action, which is expected to increase as legislation like the UN's Global Treaty on Plastic Pollution, comes into force. "Currently, **many AEPW members are choosing to invest heavily in the expansion of plastic production while failing to fund even meager recovery and recycling targets through the AEPW**," a Planet Tracker spokesperson tells us. "The US$1.5 billion pledged by AEPW members over a five-year period represents only a fraction of its members' financial capacity and is trivial compared to the US$400 billion the oil, gas and chemical industry plans to spend on new plastic manufacturing capacity." Planet Tracker says the top ten producers of single-use plastic in the AEPW generated almost 32 million tons of waste in 2019, equal to approximately 128 million tons in a four-year period. "This compares to the 34,000 tons of plastic waste the AEPW has now confirmed has been removed and recycled for the first four years, showing that the major plastic producers in the AEPW do not even remove or recycle 99.97% of their own plastic waste. This goal surely cannot be merely called 'too ambitious,'" the spokesperson Says. A recent report by the Minderoo Foundation found that virgin plastics production increased by 6 million metric tons globally between 2019 and 2021 – outpacing recycling rates by a factor of 15. Minderoo also forecasts that corporate liabilities from plastics litigation triggered in 2022-2030 could exceed US$20 billion in the US alone. "Corporates and investors need to be very careful not to use greenwashing techniques directly or indirectly through organizations like AEPW," continues the spokesperson.

AT: LCA.

Argument: Lifecycle Analyses show that plastic has a smaller carbon footprint than other materials like glass, metal or paper.

Pearson & Khare '20 reports,

1. **Single-use plastics release toxic chemicals when reused.** → "LCA studies do not account for the environmental consequences of marine wildlife ingesting or becoming entangled in plastic waste, broader impacts of waste [ending] up in uncontrolled environments or upstream effects of

plastics production such as oil spills. Alternatives to plastic [are] more environmentally favorable."

Warrant: Single-use plastics release toxic chemicals when reused.
Pearson, Matthew, and Eesha Khare. "Addressing the single-use plastic proliferation problem." MIT Science Policy Review, 29 Aug. 2022,
sciencepolicyreview.org/wp-content/uploads/securepdfs/2022/08/MITSPR-v3-191618003017.pdf
However, as critics of LCA studies will point out, LCA studies on plastic materials do not account for the environmental consequences of marine wildlife ingesting or becoming entangled in plastic waste, broader environmental impacts of waste that ends up in uncontrolled environments (i.e., litter), or upstream effects of plastics production such as oil spills [35, 40, 41]. By these metrics, alternatives to plastic, such as paper, become the more environmentally favorable material. Therefore, when designing policies to address the plastic waste problem, policymakers are left facing trade-offs between competing environmental impact categories—whether it be climate change impact, land or water use, or ecological impacts on wildlife—underscoring the importance of setting policy goals from the outset. For example, if the policy goal were to address the consequences of single-use plastic bag litter on marine wildlife, a policy might be designed to reduce single-use plastic bag consumption. Furthermore, instituting mechanisms to evaluate the total consumption of bags and the resulting effect on marine wildlife a set time after implementation could help determine such a policy's efficacy towards the intended goal. It is also worth noting that, because single-use items are harmful to the environment irrespective of the specific material, it has been suggested that policy solutions also consider reducing consumption in addition to alternative material solutions [42].

AT: CEI.

Argument: The CEI is not a reputable source.

Scoffield '23 reports,

1. **The CEI is a climate-change-denial think tank funded by fossil fuel companies that aims to protect corporate interests over the health of our planet.** → "'The Competitive Enterprise Institute is known for its work disputing the science of climate change' [and is] a business mouthpiece. Not only does CEI take funding from fossil fuel interests [like] (ExxonMobil and the Charles Koch Institute), Big Tech and Big Pharma, but it also takes money from Big Tobacco. As a "factory for global warming skepticism," CEI has produced [content] against what it dubs "climate alarmism"—that is, anything that acknowledges [or] attempts to mitigate [the] climate catastrophe. [CEI] is willing to defend the rights of corporations over the public."

Warrant: The CEI is a climate-change-denial think tank funded by fossil fuel companies that aims to protect corporate interests over the health of our planet.
Scoffield, J. (2023, July 17). The Climate Denialist Think Tank That Might Produce the Next FTC Commissioner.
https://prospect.org/power/2023-07-17-climate-denialist-think-tank-ftc/
[Julian Scoffield holds a B.S. in the Health Sciences from the College of William and Mary as well as a Masters in Public Health from George Washington University. His academic, internship, and volunteer experiences center around community engagement, public health policy, and COVID-19 vaccine equity.]

During last week's House Judiciary Committee oversight hearing, the chair Jim Jordan chose to attack Khan, accusing her of "harassing" corporations the FTC is charged with regulating (though some Republicans on the committee supported her, to be fair). These accusations are nothing new. Since Khan was sworn in over two years ago, right-wing politicians and pundits alike have attacked her endlessly about her supposed injection of radical ideology into the otherwise apolitical realm of antitrust enforcement. (The mile-long record of previous FTC officials having a vested interest in the companies the agency oversees mysteriously gets no attention from Republicans.) But conservatives' heated accusations of bias against Khan make for an interesting contrast with Holyoak's nomination. She previously worked as a senior attorney for the Competitive Enterprise Institute—a libertarian think tank "arguably best known for its work disputing the science of climate change." It seems that radical ideologues are allowed at the FTC after all! A brief glimpse under the hood of the D.C.-based organization makes it clear that this outfit is a straightforward business mouthpiece. Not only does CEI take funding from fossil fuel interests (ExxonMobil and the Charles Koch Institute), Big Tech (Alphabet, Amazon, and Meta), and Big Pharma (the Pharmaceutical Research and Manufacturers of America), but it also takes money from Big Tobacco (Philip Morris and Altria). It's 2023 and Big Tobacco is apparently not deemed pernicious by some. And all these corporations and lobbying groups are getting what they paid for. As a "factory for global warming skepticism," CEI has produced a number of studies, books, advertisements, and documentaries against what it dubs "climate alarmism"—that is, anything that acknowledges, let alone attempts to mitigate, our ongoing climate catastrophe. Myron Ebell, the director of CEI's Center for Energy and Environment, was even credited as being influential in former President Donald Trump's decision to withdraw the U.S. from the Paris climate accords. It doesn't stop there. The organization's broader deregulatory agenda—it was formed during Ronald Reagan's first presidential term, after all—also includes loud opposition to actions that limit the power of big business, especially Big Tech. During her five-year tenure at CEI's Center for Class Action Fairness (CCAF), Holyoak represented the organization in a number of lawsuits, including one against the Federal Communications Commission in 2019. In that case, she successfully argued to remove language that provided discounted broadband service rates to low-income consumers in a merger deal between Charter, Bright House, and Time Warner. It's hard to see how this aligns with CCAF's purported mission to safeguard consumers and the general public, but that goes to show how much one should trust CEI's word. You would imagine that any organization with such a corporate pedigree would have their opinions on the actions of regulatory agencies taken with a grain of salt. Yet, for some reason, CEI is still offered space in major media outlets to act as a legitimate voice on antitrust issues—often without having to acknowledge their industry ties. Whether it be quotes in The New York Times, or full op-eds in The Hill, Fortune, or Forbes, CEI researchers are regularly defending the likes of Facebook, Google, Apple, and Amazon against the increasing scrutiny of regulators and legislators at both the federal and state level. CEI's sympathy for the tech industry's flagship monopolists ostensibly comes from a place of concern for consumers. Being big isn't necessarily bad, they've argued, so long as consumers continue to benefit from innovation, product availability, and—most importantly of all—low prices. (Unless, of course, low prices are mandated for low-income consumers, as seen in their case against the FCC.) Such deference to the consumer welfare standard of competition, however, ignores all the ways in which the anti-competitive nature of monopoly power harms consumers both in terms of their personal privacy and the availability of products. It's also not remotely clear that the consumer welfare standard actually leads to lower prices—some research suggests the opposite is true. It also places CEI at odds with growing concerns from Democrats and some Republicans alike over the sheer size of these firms and their dominance over daily life. This ardently pro-monopoly position is in direct conflict with the resurgence of more expansive antitrust enforcement, typified by Khan and DOJ Antitrust Assistant Attorney General Jonathan Kanter. It should therefore be unsurprising to learn that CEI finds Khan and Kanter's penchant for antitrust enforcement via litigation, rather than negotiated settlement, particularly offensive. The former especially seems to have drawn CEI's ire, sparking the launch of an "Eye on FTC" campaign earlier this year to "raise awareness about overreach and a lack of transparency at Chairman Lina Khan's Federal Trade Commission." Holyoak will presumably be carrying on that torch, supplanting former Commissioner Christine Wilson as the resident Khan hater of the FTC. To those inclined to want to live on a habitable planet free of monopoly dominance—that is, the majority of Americans—CEI's politics are obviously an issue. But a larger problem is the ostensible neutrality they are offered by the media in debates over public policy. Take this recent Greenwire article on the Supreme Court's invocation of the so-called "major questions doctrine" to strike down Biden's student debt relief plan, for example. In examining the potential implications this legal theory may have on current and future climate-focused regulatory policy, an attorney at CEI, Devin Watkins, was quoted. However, there was no mention of CEI's fossil fuel ties or the deregulatory agenda of its corporate funders. To be fair, all of the quoted individuals in the article received this same courtesy, but the fact that a corporate-funded climate denialist organization was even solicited for their opinion on climate policy is concerning. Watkins was again quoted in a Washington Post piece that similarly analyzed the major questions doctrine's implications on attempts to regulate auto emissions. Although the Post was at least willing to describe CEI as a "conservative group," this characterization still lends credibility to an organization with objectively crackpot views produced by large corporate donations. Or consider antitrust. Any sensible person would brush off a Mark Zuckerberg-penned op-ed defending Meta's practice of "innovating" by buying up smaller competitors. But you might be less skeptical when Iain Murray, CEI's vice president for strategy and senior fellow, made the same argument in a 2021 Fortune piece. But that's only because neither Fortune nor Murray disclosed that CEI receives funding from Meta. Whether or not Murray actually believes that antitrust enforcement against Facebook represents an "assault on entrepreneurs" is immaterial to the fact that his judgment on the issue is compromised by financial ties to the firm. Fortune's failure to acknowledge this conflict of interest effectively

allows monopolists like Zuckerberg to launder their talking points through an ostensibly independent third party. The Competitive Enterprise Institute is a perfect example of an unfortunate reality in our current political landscape: that there are plenty of individuals and organizations willing to defend the rights of corporations over the public. I, for one, feel that such a blatant disregard for public interests would render these actors unfit to weigh in on public policy. But if media outlets insist on taking CEI and its ilk seriously in this regard, they should also take seriously the conflicts of interest that contextualize, if not directly shape, their analyses.

AT: Sanitary.

Argument: Plastic bags are more sanitary than cloth or other reusable bags.

McVeigh '20 reports,

1. **Plastic bags aren't safer than reusable bags, and viruses like COVID can live on plastic for over a week, but Petroleum companies continue to push the narrative that plastic is safe and sanitary.** → "Recent studies [show] that Covid-19 [remains] on plastic for three days, compared with 24 hours for cardboard. 'Plastic does not inherently make something clean and safe, and we should not confuse corporate public relations with factual medical research.' Just because a material is made from single-use plastic does not make it less likely to transmit viral infections; in fact, plastic surfaces allow coronaviruses to remain infectious for particularly long periods compared to other materials.'"

Warrant: Plastic bags aren't safer than reusable bags, and viruses like COVID can live on plastic for over a week, but Petroleum companies continue to push the narrative that plastic is safe and sanitary.
McVeigh 20—[McVeigh, K. (2020, March 27). Rightwing think tanks use fear of Covid-19 to fight bans on plastic bags. https://www.theguardian.com/environment/2020/mar/27/rightwing-thinktanks-use-fear-of-covid-19-to-fight-bans-on-plastic-bags
[Julian Scoffield holds a B.S. in the Health Sciences from the College of William and Mary as well as a Masters in Public Health from George Washington University. His academic, internship, and volunteer experiences center around community engagement, public health policy, and COVID-19 vaccine equity.]
The fight to ban plastic bags, many of which end up polluting oceans and rivers, has taken a step backward as conservative US think-tanks exploit the fear of Covid-19, campaigners have said. Articles warning that reusable tote bags are worse than plastic ones for spreading coronavirus have been linked to major rightwing nonprofits such as the Manhattan Institute, and contain misinformation aimed at defeating or repealing plastic bag bans, said Greenpeace USA. The effort "risks further confusion" amid a global public health crisis, it said. Recent studies have found that Covid-19 could be stable on plastic and steel for up to three days, compared with 24 hours for cardboard and four hours for copper. The studies have not examined how long the virus remained on tote bags and there is little scientific evidence comparing reusable bags with plastic. Last week a number of US states and cities nevertheless took the decision to roll back plastic bag bans, citing the coronavirus. Maine repealed its ban. The governor of New Hampshire went further by issuing an order banning reusable bags, saying they risk spreading coronavirus. The governor of Massachusetts banned reusable bags and lifted plastic bag bans. And New York state, which implemented its plastic bag ban on 1 March, will delay enforcement until June. The moves follow articles by researchers at the Competitive Enterprise Institute (CEI) - a libertarian nonprofit instrumental in persuading the Trump administration to abandon the Paris climate agreement - suggesting reusable grocery bags are riskier than plastic, and in a journal published by the Manhattan Institute suggesting sustainable bags can carry viruses for up to nine days. While nonprofits are not required to disclose their donors, both have reportedly received money from fossil fuel companies.

Among the sponsors for a CEI gala last year were the Charles Koch Institute and the American Fuel and Petrochemical Manufacturers association, the New York Times reported. Greenpeace USA criticised the Manhattan Institute and the CEI for a series of articles suggesting that reusable bags are a higher risk for transmitting coronavirus than plastic bags, misrepresenting recent research that shows the virus survives at least as long on plastic.

Such misinformation is already being used to lobby state legislatures to defeat or repeal plastic bag ban legislation, it said. John Hocevar, Greenpeace USA's oceans campaigner, condemned what he described as industry groups that have "seen the crisis as an opportunity to exploit people's fears around Covid-19 to push their pro-pollution agendas". "Even in the short term, plastic does not inherently make something clean and safe, and we should not confuse corporate public relations with factual medical research," Hocevar said. Similar moves are under way in Britain, where the environment secretary, George Eustice, has waived the 5p charge on plastic bags for supermarket shoppers online. Eustice said it was a temporary measure aimed at reducing potential cross-infection between delivery workers and those in isolation, and to speed up deliveries. Plans to further reduce single-use plastic, under the environment bill, have been put on hold due to Covid-19. The timing of the Welsh government's plans to restrict single-use plastics is also under review, it told the Guardian. In the US, the misinformation campaign against reusable bags ramped up after two recent studies. The first, from the University of California, published last month in the Journal of Hospital Infection, reported that viruses similar to Covid-19 could remain on plastic for up to nine days. The second, published on 17 March in the New England Journal of Medicine, found that Covid-19 could be stable on plastic for up to three days. The viruses could be inactivated by disinfection. Neither study examined reusable bags. However, the day after the first study was published, the Plastics Industry Association wrote to the US Department for Health and Human Services, urging the government to make a pronouncement supporting single-use plastic. The association claimed "study after study" showed reusable bags to be a health risk. It did not mention the University of California study. Then on 12 March, the City Journal, published by the MI, ran an article claiming: "The 'sustainable' bags that environmentalists and politicians have been so eager to impose on the public ... can sustain the Covid-19 and flu viruses and spread the virus throughout the store." The piece, headlined "Greening our way to infection" and written by John Tierney, cites unnamed research that Tierney claims showed viruses and bacteria can survive on tote bags for nine days. It offers no evidence to back this claim – in fact, it links to a study showing viruses can remain on plastic for nine days. The piece also quotes a 2018 study published in the Journal of Environmental Health where researchers found traces of a surrogate virus on surfaces and the hands of shoppers and store staff high enough "to risk transmission". They recommended in-store hand hygiene and washing reuseable bags. They did not compare the risk of reusable bags with new plastic bags. Another piece by Tierney, with a similar argument, appeared in the New York Post entitled "Using tote bags instead of plastic could help spread coronavirus". Meanwhile, the Washington Examiner published a piece by Angela Logomasini of the Competitive Enterprise Institute on 18 March, a day after the New England Journal of Medicine study, headlined: "Plastic bag bans aren't helping us fight against coronavirus". Logomasini quotes the same 2018 study as Tierney, as well as a 2011 study on reusable and plastic bags that looked at bacteria, not viruses, and was partly funded by the American Chemistry Council. Ivy Schlegel, a researcher at Greenpeace USA, said: "This is a classic PR tactic. After new studies showing Covid-19 lasts longer on plastic, they have pulled back into their bag of tricks to redeploy old studies, linking them to legitimate public fear of the coronavirus." Hocevar said: "The truth is that we don't have all of the answers to this Covid-19 emergency yet, and for industry to use this as an opportunity to increase profits for the fossil fuel and plastics sectors is dangerous and irresponsible. "What we do know is that there is no substitute for strict hygiene. Just because a material is made from single-use plastic does not make it less likely to transmit viral infections during use; in fact, plastic surfaces appear to allow coronaviruses to remain infectious for particularly long periods compared to other materials." "The decisions we make for our families in this health crisis should be based on science and the advice of medical professionals, not lobbyists for the fossil fuel and plastics industries. Wherever reusables are an option, it is incumbent upon all of us to do our part to protect one another by washing them thoroughly after every use."