### PLASTIC BAG IMPLOSION

This document is a compilation of notes sourced mostly from peer-reviewed literature. It does not cover the entire literature available for these topics, but is meant to serve as a reference when developing educational literature or other campaign material. Notes are separated by different topics of plastic pollution.

### **Material Dimension**

### FACT 1

- 1. How Plastics Are Made, American Chemistry Council, 2020, plastics.americanchemistry.com/How-Plastics-Are-Made/.
- 2. Daniel Brockett Educator Expertise Community Development. "How Plastic Is Made from Natural Gas." *Penn State Extension*, 13 June 2020, extension.psu.edu/how-plastic-is-made-from-natural-gas.

### FACT 2

- 1. April 19, 2019 Melissa Denchak. "Fracking 101." NRDC, 27 Jan. 2020, www.nrdc.org/stories/fracking-101.
- 2. "What Is Fracking and Why Is It Controversial?" BBC News, BBC, 15 Oct. 2018, www.bbc.com/news/uk-14432401.

### FACT 3

- 1. Amico, Chris, et al. "Shale Play: Natural Gas Fracking in Pennsylvania." NPR, NPR, stateimpact.npr.org/pennsylvania/drilling/.
- 2. "Your Guide to Pipelines | StateImpact Pennsylvania." NPR, NPR, stateimpact.npr.org/pennsylvania/tag/pipelines/.

### FACT 4

- 1. "The Extrusion Process." *The Extrusion Process : Plastics Technology*, www.ptonline.com/knowledgecenter/profile-extrusion/profile-extrusion-fundamentals/history-and-fundamentals-of-extrusion.
- 2. Daniel Brockett Educator Expertise Community Development. "How Plastic Is Made from Natural Gas." *Penn State Extension*, 13 June 2020, extension.psu.edu/how-plastic-is-made-from-natural-gas.

### FACT 5

- 1. Rhodes, Christopher J. "Solving the Plastic Problem: From Cradle to Grave, to Reincarnation." Science Progress, vol. 102, no.
- 3, 2019, pp. 218–248., doi:10.1177/0036850419867204.
- 2. "Zero Waste PA." PennEnvironment, pennenvironment.org/feature/pae/zero-waste-pa.

# **Disposal/Health Dimension**

# FACT 6

- 1. Yang, Chun Z., et al. "Most Plastic Products Release Estrogenic Chemicals: A Potential Health Problem That Can Be Solved." *Environmental Health Perspectives*, vol. 119, no. 7, 2011, pp. 989–996., doi:10.1289/ehp.1003220.
- 2. Smart Plastics Guide. Sea Studios Foundation, www-tc.pbs.org/strangedays/pdf/StrangeDaysSmartPlasticsGuide.pdf.

### FACT 7

1. Newkirk II, Vann R. "Environmental Racism Is Real, According to Trump's EPA." *The Atlantic*, Atlantic Media Company, 28 Feb. 2018.

www. the at lantic.com/politics/archive/2018/02/the-trump-administration-finds-that-environmental-racism-is-real/554315/.

2. Donahue, Marie. "Report: Waste Incineration: A Dirty Secret in How States Define Renewable Energy." *Institute for Local Self-Reliance*, 24 Jan. 2019, ilsr.org/waste-incineration-renewable-energy.

### FACT 8

- 1. "Philadelphia Zero Waste and Litter Cabinet Action Plan." CleanPHL, 2016, cleanphl.org/wp-content/uploads/2017/07/Zero\_Waste\_and\_Litter\_Action\_Plan.pdf
- 2. "Fact Sheet: Plastics in the Ocean." Earth Day, 25 Apr. 2018, www.earthday.org/fact-sheet-plastics-in-the-ocean/#\_ftn6.
- 3. France-Presse, Agence. "Whale Dies from Eating More than 80 Plastic Bags." *The Guardian*, Guardian News and Media, 3 June 2018, www.theguardian.com/environment/2018/jun/03/whale-dies-from-eating-more-than-80-plastic-bags.

## FACT 9

- 1. Sedaghat, Lilly. "7 Things You Didn't Know About Plastic (and Recycling)." *National Geographic Society Newsroom*, 13 Apr. 2018, blog.nationalgeographic.org/2018/04/04/7-things-you-didnt-know-about-plastic-and-recycling/.
- 2. THE NEW PLASTICS ECONOMY: RETHINKING THE FUTURE OF PLASTICS & CATALYSING ACTION. www.ellenmacarthurfoundation.org/assets/downloads/publications/NPEC-Hybrid\_English\_22-11-17\_Digital.pdf.
- 3. "Frontline: Plastic Wars." PBS, Public Broadcasting Service, 31 Mar. 2020, www.pbs.org/wgbh/frontline/film/plastic-wars/.

### FACT 10

- 1. "Frontline: Plastic Wars." PBS, Public Broadcasting Service, 31 Mar. 2020, www.pbs.org/wgbh/frontline/film/plastic-wars/.
- 2. Smart Plastics Guide. Sea Studios Foundation, www-tc.pbs.org/strangedays/pdf/StrangeDaysSmartPlasticsGuide.pdf.

# FACT 11

- 1. "History and Future of Plastics." *Science History Institute*, 20 Nov. 2019, www.sciencehistory.org/the-history-and-future-of-plastics.
- 2. "Frontline: Plastic Wars." PBS, Public Broadcasting Service, 31 Mar. 2020, www.pbs.org/wgbh/frontline/film/plastic-wars/.

# **Political Dimension**

### FACT 12

- 1. McCormick, Erin, et al. "Where Does Your Plastic Go? Global Investigation Reveals America's Dirty Secret." *The Guardian*, Guardian News and Media, 17 June 2019, www.theguardian.com/us-news/2019/jun/17/recycled-plastic-america-global-crisis.
- 2. Dell, Jan. "157,000 Shipping Containers of U.S. Plastic Waste Exported to Countries with Poor Waste Management in 2018." *Plastic Pollution Coalition*, 6 Mar. 2019,

www.plastic pollution coalition. or g/blog/2019/3/6/157000-shipping-containers-of-us-plastic-waste-exported-to-countries-with-poor-waste-management-in-2018.

# **FACT 13**

- 1. Carpenter, Zoë. "The Toxic Consequences of America's Plastics Boom." *The Nation*, 18 Mar. 2019, www.thenation.com/article/archive/plastics-pollution-crisis-fracking-petrochemicals/.
- 2. Bauman, Brooke. "Why Plastics Can Be Garbage for the Climate." *Yale Climate Connections*, 4 Apr. 2020, www.yaleclimateconnections.org/2019/08/how-plastics-contribute-to-climate-change/.

# **FACT 14**

- 1. "Fueling Plastics: Fossils, Plastics, & Petrochemical Feedstocks." *Center for International Environmental Law*, www.ciel.org/wp-content/uploads/2017/09/Fueling-Plastics-Fossils-Plastics-Petrochemical-Feedstocks.pdf.
- 2. Laville, Sandra. "Founders of Plastic Waste Alliance 'Investing Billions in New Plants'." *The Guardian*, Guardian News and Media, 21 Jan. 2019,

www. the guardian. com/environment/2019/jan/21/founders-of-plastic-waste-alliance-investing-billions-in-new-plants.

3. Juhasz, Antonia. "Boom Goes the Plastics Industry." *Sierra Club*, 30 June 2019, www.sierraclub.org/sierra/2019-4-july-august/protect/boom-goes-plastics-industry.

### FACT 15

1. Irfan, Umair. "Fossil Fuels Are Underpriced by a Whopping \$5.2 Trillion." *Vox*, Vox, 17 May 2019, www.vox.com/2019/5/17/18624740/fossil-fuel-subsidies-climate-imf.
2.

# FACT 16

- 1. Roberts, David. "Americans Are Willing to Pay \$177 a Year to Avoid Climate Change." *Vox*, Vox, 13 Oct. 2017, www.vox.com/energy-and-environment/2017/10/13/16468318/americans-willing-to-pay-climate-change.
- 2. Nuccitelli, Dana. "America Spends over \$20bn per Year on Fossil Fuel Subsidies. Abolish Them | Dana Nuccitelli." *The Guardian*, Guardian News and Media, 30 July 2018,

www.theguardian.com/environment/climate-consensus-97-per-cent/2018/jul/30/america-spends-over-20bn-per-year-on-fossil -fuel-subsidies-abolish-them.

### **FACT 17**

1. "Fueling Plastics: How Fracked Gas, Cheap Oil, and Unburnable Coal Are Driving the Plastics Boom." *Center for International Environmental Law*, 2017,

www.ciel.org/wp-content/uploads/2017/09/Fueling-Plastics-How-Fracked-Gas-Cheap-Oil-and-Unburnable-Coal-are-Driving-the -Plastics-Boom.pdf.

2. Taylor, Matthew. "\$180bn Investment in Plastic Factories Feeds Global Packaging Binge." *The Guardian*, Guardian News and Media, 26 Dec. 2017,

www.theguardian.com/environment/2017/dec/26/180bn-investment-in-plastic-factories-feeds-global-packaging-binge.

3. "Plastic Waste Causes Financial Damage of US\$13 Billion to Marine Ecosystems Each Year as Concern Grows over Microplastics." *UNEP - UN Environment Programme*, 23 June 2014,

www.unenvironment.org/news-and-stories/press-release/plastic-waste-causes-financial-damage-us13-billion-marine-ecosystems.

# **Contextual/Symbolic Dimension**

# **FACT 18**

1. 10 Facts About Single-Use Plastic Bags,

 $www.biological diversity.org/programs/population\_and\_sustainability/sustainability/plastic\_bag\_facts.html.$ 

- 2. "Rethinking the Convenience of Single-Use Plastics." *Outrider Post*, outrider.org/climate-change/articles/rethinking-convenience-single-use-plastics/.
- 3. Stamp, Jimmy. "Who Really Invented the Smiley Face?" *Smithsonian.com*, Smithsonian Institution, 13 Mar. 2013, www.smithsonianmag.com/arts-culture/who-really-invented-the-smiley-face-2058483/.
- 4. Inteplast Group, www.inteplast.com/.

# FACT 19

- 1. Calma, Justine. "Plastic Bags Are Making a Comeback Because of COVID-19." *The Verge*, The Verge, 2 Apr. 2020, www.theverge.com/2020/4/2/21204094/plastic-bag-ban-reusable-grocery-coronavirus-covid-19.
- 2. Gellerman, Bruce. "Paper Or Plastic? Bans On Single-Use Bags Tossed Out Amid Fears Of Virus Spread." Paper Or Plastic? Bans On Single-Use Bags Tossed Out Amid Fears Of Virus Spread | Earthwhile, WBUR, 30 Mar. 2020, www.wbur.org/earthwhile/2020/03/30/plastic-bag-bans-lifted-coronavirus-reusable-massachusetts.

3. Chua, Jasmin Malik. "Plastic Bags Were Finally Being Banned. Then Came the Pandemic." Vox, Vox, 20 May 2020, www.vox.com/the-goods/2020/5/20/21254630/plastic-bags-single-use-cups-coronavirus-covid-19-delivery-recycling.

### FACT 20

- 1. Schlanger, Zoë. "Will Coronavirus Be the Death or Salvation of Big Plastic?" *Time*, Time, 4 May 2020, time.com/5831005/coronavirus-plastic-industry/.
- 2. Gellerman, Bruce. "Paper Or Plastic? Bans On Single-Use Bags Tossed Out Amid Fears Of Virus Spread." Paper Or Plastic? Bans On Single-Use Bags Tossed Out Amid Fears Of Virus Spread | Earthwhile, WBUR, 30 Mar. 2020, www.wbur.org/earthwhile/2020/03/30/plastic-bag-bans-lifted-coronavirus-reusable-massachusetts.

### FACT 21

- 1. Zeitlin, Matthew. "Do Plastic Bag Taxes or Bans Curb Waste? 400 Cities and States Tried It out." *Vox*, Vox, 20 Aug. 2019, www.vox.com/the-highlight/2019/8/20/20806651/plastic-bag-ban-straw-ban-tax.
- 2. "Ever More Countries Are Banning Plastic Bags." *The Economist*, The Economist Newspaper, www.economist.com/graphic-detail/2019/07/24/ever-more-countries-are-banning-plastic-bags.

# FACT 22

- 1. Hughes, Kristin. "Plastic in the Time of a Pandemic: Protector or Polluter?" World Economic Forum, 6 May 2020, www.weforum.org/agenda/2020/05/plastic-pollution-waste-pandemic-covid19-coronavirus-recycling-sustainability/.
- 2. Laville, Sandra. "Reusable Containers Safe during Covid-19 Pandemic, Say Experts." *The Guardian*, Guardian News and Media, 22 June 2020,

www.theguardian.com/environment/2020/jun/22/reusable-containers-safe-during-covid-19-pandemic-say-experts.

3. Laville, Sandra. "Single-Use Plastics a Serious Climate Change Hazard, Study Warns." *The Guardian*, Guardian News and Media, 15 May 2019,

www.theguardian.com/environment/2019/may/15/single-use-plastics-a-serious-climate-change-hazard-study-warns.