



Formosa Plastics Group:

# A SERIAL OFFENDER OF ENVIRONMENTAL AND HUMAN RIGHTS

A CASE STUDY

## ACKNOWLEDGMENTS

The lead authors of this report were Jane Patton and Nikki Reisch at the Center for International Environmental Law (CIEL); Delia Ridge Creamer at the Center for Biological Diversity (CBD); and Ethan Buckner at Earthworks.

It was edited by Cate Bonacini with assistance from Lani Furbank at CIEL.

Many people contributed to this report, including Carroll Muffett, Ka'sha Bernard, Diane Wilson, Sharon Lavigne, Darryl Malek-Wiley, Tim Schütz, Paul Jobin, Alan Septoff, Kaitlyn Joshua, Adam Kurland, Cooper Kass, Natalie Bishop, and Taylor Black.

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## FORMOSA PLASTICS GROUP: A SERIAL OFFENDER OF ENVIRONMENTAL AND HUMAN RIGHTS (A CASE STUDY)



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## ACRONYMS

<b>BPA</b>	Bisphenol A
<b>CO</b>	Carbon monoxide
<b>CO<sub>2</sub></b>	Carbon dioxide
<b>EDC</b>	Endocrine-disrupting chemical
<b>FPG</b>	Formosa Plastics Group
<b>GHG</b>	Greenhouse gas
<b>HDPE</b>	High-density polyethylene
<b>ITEP</b>	Industrial Tax Exemption Program
<b>LDEQ</b>	Louisiana Department of Environmental Quality
<b>LDPE</b>	Low-density polyethylene
<b>LNG</b>	Liquefied natural gas
<b>NEPA</b>	National Environmental Policy Act
<b>NGL</b>	Natural gas liquids
<b>NO<sub>x</sub></b>	Nitrogen oxides
<b>OSHA</b>	Occupational Safety and Health Administration
<b>PE</b>	Polyethylene
<b>PET</b>	Polyethylene terephthalate
<b>PM</b>	Particulate matter
<b>PP</b>	Polypropylene
<b>PVC</b>	Polyvinyl chloride
<b>RSEI</b>	Risk-Screening Environmental Indicators
<b>UNESCO</b>	United Nations Educational, Scientific and Cultural Organization
<b>VCM</b>	Vinyl chloride monomer

## GLOSSARY

**Cancer Alley** An industrial chemical corridor along the Mississippi River, conventionally defined as the 85-mile stretch between New Orleans and Baton Rouge, Louisiana. The stretch contains seven out of ten census tracts with America's highest cancer rates.

**Conglomerate** A corporation that owns unrelated enterprises in a variety of industries.

**Cracker** A facility that converts oil- or gas-based compounds such as naphtha or natural gas liquids into chemical components used to produce plastics.

**Discharge** The flow of a substance (liquid, solid, or gas) from an industrial facility into the surrounding environment.

**Endocrine-disrupting chemicals** Chemicals that mimic, block, or interfere with naturally occurring hormones, disrupting developmental, reproductive, immune, and other bodily systems.

**Environmental racism** Any environmental policy or practice, or system of policies or practices, that has the intent or effect of differentially affecting or disadvantaging individuals, groups, or communities based on race, ethnicity, or color.

**Feedstock** Raw materials used for manufacturing plastics.

**Formosa** A name that was historically given to the island of Taiwan by Portuguese sailors in the 16th century; it is now commonly used in monikers for various unrelated businesses, flora, and fauna originating from the island. All companies bearing the name Formosa mentioned in this report have been confirmed to be part of the same conglomerate.

**Fracking** Common shorthand for hydraulic fracturing, a process in which highly pressurized chemical slurry is injected into underground rock formations (shale) to fracture them to release oil and gas.

**Groundwater** Water that is found underground in the soil or rock, and which is often the source of drinking water.

**Human rights** The fundamental rights and freedoms inherent to all human beings, without distinction as to race, color, gender, language, religion, political or other opinion, national or social origin, property, birth, or any other status.

**Incineration** Burning of waste materials resulting in solid materials and a gaseous mixture.

**Microplastic** Plastic particles up to 5 millimeters.

**Monomer** In the context of this report, molecules such as ethylene, propylene, or other olefins (derived from oil, gas, or coal) that make up the polymer chains commonly called plastic.

**Nurdle** A common nickname for the pellet-form used to transport plastic resins before production and processing into familiar plastic products.

**Particulate matter** A mixture of solid particles and liquid droplets found in the air, also called particle pollution, with both natural and human-made industrial sources.

**Petrochemicals** Fossil-fuel-derived chemicals, some of which are used to produce plastic.

**Polymer** Molecules that are formed by bonding together long chains of monomers.

**Remedy** The means of enforcing a right or preventing or redressing a wrong.

**Resin identification code** A system to identify the type of resin contained in a given product. These systems are not internationally standardized and can vary by country or region.

**Single-use plastic** Disposable forms of plastic that are commonly found in items such as packaging, food and beverage service, and fast-moving consumer goods.

**Waste** Any discarded material that no longer has value in its present form but may or may not be recyclable or otherwise able to be repurposed.

## Executive Summary

The world is in the midst of a perilous plastics and petrochemicals boom that is both disastrous from a health and environmental perspective and foolish from a financial and economic one. Among the companies leading the global expansion of plastic production is the Formosa Plastics Group (FPG or Formosa Plastics), a Taiwanese conglomerate that has grown to become the world's fourth-largest producer of petrochemicals and plastics.<sup>1</sup>

Politicians supportive of Formosa Plastics in the United States have described the company as “a fine example” of international trade relations.<sup>2</sup> Yet the conglomerate’s six-decade-long history exemplifies the profound risks that the petrochemicals and plastics industry poses to human health,<sup>3</sup> local ecosystems,<sup>4</sup> and the global climate.<sup>5</sup> Formosa Plastics Group's global track record shows how the

rights and safety of local communities and workers, as well as the environment and public health, become casualties of corporate profit. Formosa Plastics Group — either directly or through its subsidiaries — has been labeled variously a “serial offender,”<sup>6</sup> a state’s “biggest polluter,”<sup>7</sup> and the entity responsible for a country’s “worst environmental disaster.”<sup>8</sup>

*Formosa Plastics Group Mailiao Industrial Complex, Yunlin.*



While Formosa Plastics Group's products vary, its environmental, health, safety, and ethics record reflects recurring patterns across its operations. Harms associated with the operations of entities in the Group include: the pollution of over 125 miles of coastline in Vietnam, which devastated local industries, livelihoods, and food sources;<sup>9</sup> the dumping of mercury-laced waste in Cambodia, exposing residents to toxins;<sup>10</sup> and incidents and accidents that have killed more than two dozen workers and injured many dozens more.<sup>11</sup> Entities in the conglomerate have faced multiple allegations of bribery and corruption,<sup>12</sup> and numerous findings of non-compliance with environmental, health, and safety laws in countries where they operate.<sup>13</sup>

The estimated \$569 million in fines and penalties incurred by the Group since it began business,<sup>14</sup> while a substantial sum,

pales in comparison to its annual market capitalization of more than \$103 billion.<sup>15</sup> More importantly, these figures do not capture all the harms associated with petrochemicals and plastics production. They do not include the significant, ongoing damage to local health, quality of life, and property values in communities surrounding facilities operated by Formosa Plastics across the world<sup>16</sup> — let alone those operated by other companies. Persistent environmental, health, and safety issues at several of the conglomerate's sites continue to put communities at risk.<sup>17</sup>

Beyond the human rights and environmental threats linked to Formosa Plastics' operations, reports indicate that Formosa Plastics Group or its subsidiaries or affiliates have used litigation to silence critics, including scientists. They have reportedly engaged in intimidation tactics to discourage civil society

*Marchers headed toward the site of the proposed petrochemical complex in St. James Parish, Louisiana.*



organizations and members of the public who raised concerns about Formosa Plastics entities.<sup>18</sup> In several instances, activists and journalists who have covered or sought to hold Formosa Plastics accountable for harms associated with its operations have reportedly faced intimidation, repression, arbitrary detention, and physical abuse by State authorities — amounting, in some cases, to torture.<sup>19</sup>

In detailing the past and present impacts of one of the largest corporate players in the industry, this report exposes how the ongoing expansion of plastics and petrochemical production poses profound risks to the environment, human health, human rights, and good governance, in the United States and worldwide. The pattern of human rights violations and environmental degradation visible across Formosa Plastics’ operations is egregious but, unfortunately, not exceptional. Around the world, communities living in the shadow of plastics and petrochemical facilities have experienced similar disasters and tell similar stories — underscoring that the industry itself poses significant and recurring threats.

Chapter II reviews the complicated web of subsidiaries and affiliates that comprise the Formosa Plastics Group and the overlapping executive leadership positions across the conglomerate. Chapter III outlines the conglomerate’s principal petrochemical products and the health and safety risks those products pose for workers, communities, and consumers. Chapters IV and V provide a snapshot of documented environmental, health, and safety violations at Formosa Plastics Group facilities, and examine some of the most devastating incidents as well as the public resistance the conglomerate’s conduct has triggered. Chapter VI details Formosa

Throughout this report, unless otherwise noted, the terms “Formosa Plastics” and “FPG” are used interchangeably to denote the Formosa Plastics Group in its entirety. When referring to a specific subsidiary or affiliate of Formosa Plastics Group, the text so indicates.

Because of Formosa Plastics Group’s integrated corporate structure and apparent common control, the operations and impacts of any individual company in the Group — be it engaged in the production of plastics, industrial chemicals, steel, or another material — form part of the conglomerate’s collective record and may have implications for other entities in the Group or the Group as a whole. The incidents and impacts discussed in this report are considered to fall under the conglomerate’s responsibility, irrespective of which entity or entities may bear legal liability in whole or in part.

Plastics’ current plans to construct a massive petrochemical complex in a predominantly Black community in Louisiana already disproportionately burdened by toxic pollution, and exposes the shaky economic foundations of these and other industry expansion plans. Chapter VII analyzes the human rights risks associated with the conglomerate’s operations and growth plans. The conclusion and recommendations in Chapter VIII offer decision makers a path toward preventing future harm from this company or other petrochemical producers.

This report is a call to action for environmental and human rights defenders and policy-makers at all levels. Formosa Plastics Group has demonstrated that it cannot be trusted to run inherently dangerous industrial facilities. Therefore, it is irresponsible for decision makers at any level of government to subject communities to the risks those facilities and their products pose. In the face of evidence of repeated regulatory violations and persistent harm to communities, endorsing Formosa Plastics Group's expansion plans is unjustifiable and potentially dangerous. Leaders and actors at all political levels should take immediate steps to halt the petrochemical buildout and protect communities — from Formosa Plastics Group, specifically, and

from the plastics and petrochemical industry, more generally.

## Key Conclusions

### 1. Prevent Formosa Plastics Group from inflicting more harm to people or the environment.

*Formosa Plastics Group's track record speaks for itself. Decision makers should consider the company's history of environmental, health, and safety impacts when reviewing any applications by Formosa Plastics (including any of its subsidiaries or affiliates) for new permits or direct or indirect economic incentives for new or expanded facilities, and deny*

*Police presence at a Formosa Plastics Group facility following a June 2010 explosion at the company's Sixth Cracker in Yunlin County, Taiwan.*



*any and all proposals that threaten the environment, health, and/or human rights.*

- A. Governments, wherever Formosa Plastics Group operates, should ensure stringent enforcement of environmental, health, and safety standards, and take decisive measures, including suspension and closure of operations, in the event of repeated violations.
- B. To prevent future harms from Formosa Plastics' operations in the United States:
  - i. Federal regulators and state and local officials should rescind the permits granted to Formosa Plastics to construct the planned plastics megacomplex in St. James, Louisiana.
  - ii. Louisiana regulators and East Baton Rouge Parish officials should rescind the permits granted to Formosa Plastics to expand the Baton Rouge PVC facility.
  - iii. Texas regulators should rescind permits granted to Formosa Plastics and deny any pending permits to expand the Point Comfort plant.

**2. Hold Formosa Plastics Group accountable for the harms it has already wrought.**

*National governments and local authorities should hold Formosa Plastics Group accountable for its impacts on human rights and the environment and guarantee victims access to justice and effective remedy.*

- A. The governments of Taiwan and Vietnam should hold Formosa Plastics Group responsible for the Vietnam marine life disaster caused by its subsidiary in 2016.
- B. Taiwanese courts should exercise jurisdiction over claims concerning harms allegedly caused by Formosa

Plastics' subsidiaries abroad and should adjudicate the case brought by victims of the Vietnam marine life disaster to provide justice to Vietnamese communities.

- C. The Vietnamese government should allow for a fully transparent and impartial investigation of the specific causes and consequences of the disaster, including evaluating compensation for damages and loss. The Vietnamese government should also release all detained environmental protesters and protectors.
- D. The United States federal government and state authorities should work together to hold Formosa Plastics fully accountable for any current violations and to require the conglomerate to clean up contamination caused by spills and effluents from the company's existing or dormant facilities in Texas, Louisiana, and other states.
- E. Wherever Formosa Plastics Group, its subsidiaries, or affiliates operate, governments should ensure that the company provides adequate and effective remedy for harms to human rights and the environment which it has caused or to which it has contributed, consistent with international human rights law and the polluter pays principle.

**3. Protect against similar harms to people and the environment occurring throughout the petrochemicals and plastics production supply chain.**

*The problems documented in this report are not unique to Formosa Plastics. All production and processing of petrochemicals and plastics poses inherent and significant risks to human rights, the local environment, and the global climate. An industry-wide problem*



*Protests related to the construction of the Sixth Cracker in Yunlin County, Taiwan.*

*demands an industry-wide response.*

- A. Governments worldwide should implement a ban on new plastics plants.
- B. Governments worldwide should cease providing tax benefits and other public financial or economic incentives to petrochemical companies.
- C. Governments worldwide should develop and implement pollution standards that reflect the best available technology and the changing nature of the plastic industry before issuing permits or allowing companies to construct any new facilities.

- D. Private financial actors should cease providing capital or other financial support to petrochemical companies whose operations pose the risk of serious harm to communities and the climate.
- E. Financial institutions moving away from fossil fuels should also exclude petrochemicals and plastics production from their portfolios.

## CHAPTER I

# INTRODUCTION



As the global market for fossil fuels weakens in the face of the mounting climate crisis and the rise of renewable energy alternatives,<sup>20</sup> oil and gas companies are increasingly hitching their future growth to demand for plastics and the oil- and gas-based petrochemicals used to make them.<sup>21</sup> The need for a new outlet for oil and gas supply is driving ongoing expansion in plastics and petrochemical production facilities worldwide, with chemical producers aiming to increase plastic output by nearly 40% between 2018 and 2025.<sup>22</sup>

While climate campaigns often name fossil fuel companies<sup>23</sup> and popular consumer brands face the heat for their plastic packaging problem,<sup>24</sup> the petrochemical industry and the plastics producers it supplies have remained largely out of the public spotlight. But they are all too familiar to the fenceline communities that live and die with the industry's daily pollution, dangerous jobs, and the constant threat of accidents.<sup>25</sup>

Plastics are fossil fuels in another form. Ninety-nine percent of all plastics are made from oil and gas derivatives, the extraction and processing of which are themselves environmentally destructive and hazardous activities.<sup>26</sup> The transformation of these base components into plastic resins for consumer products is both carbon-intensive and dangerous for local communities.<sup>27</sup> That transformation involves not only fossil feedstocks, but a variety of chemical ingredients posing an array of known or suspected toxic risks.<sup>28</sup>

Plastics and the petrochemicals from which they are made pose inherent threats to the environment,<sup>29</sup> public health,<sup>30</sup> and the climate<sup>31</sup> across their life cycles, jeopardizing the rights to health, a healthy environment, and a dignified life.<sup>32</sup>

These threats are not evenly distributed. While exposure to plastic and microplastic is near-universal, historically marginalized and disadvantaged communities often shoulder a disproportionate toxic burden from the industry. Around the world, hazardous industrial facilities, like those operated by Formosa Plastics, are routinely located in low-income communities and frequently in areas with predominantly Black, Brown, Indigenous, or other marginalized populations.<sup>33</sup>

The disproportionate siting of hazardous facilities in marginalized communities is not accidental; industries target such neighborhoods because they are perceived to represent the 'path of least resistance.'<sup>34</sup> Formosa Plastics Group is no different. In the United States, the conglomerate has sited its existing and planned facilities in marginalized communities in Texas and Louisiana. Both are states with regulatory agencies known to have dwindling staff<sup>35</sup> and even favorable attitudes toward the very industries they are tasked with regulating.<sup>36</sup>

But notwithstanding the company's calculations and the often significant barriers to speaking out, fenceline communities are fighting back with ever greater frequency and growing effectiveness. People who have experienced harm caused by industrial infra-

structure are increasingly resisting plans to build new plants, pipelines, rail lines, export terminals, and shipping canals to produce and transport plastics, petrochemicals, and other oil and gas products in their communities.

Vast and growing networks of residents and leaders have come together to hold petrochemical producers accountable for their harms and to say ‘no’ to expansion plans.<sup>37</sup>

Chief among these struggles is the fight to stop Formosa Plastics’ planned construction of a massive petrochemical complex in St. James Parish, Louisiana. If constructed, the complex, dubbed the “Sunshine Project” by developers, would be one of the world’s largest production facilities for plastics and plastics feedstocks.<sup>38</sup> The project would be located in a predominantly Black council district already overburdened with pollution from oil, gas, and petrochemical facilities.<sup>39</sup> The Louisiana Department of Environmental Quality (LDEQ) granted the complex a permit to double the level of toxic air emissions in the surrounding community,<sup>40</sup> exacerbating residents’ exposure to chemicals like ethylene oxide<sup>41</sup> that can cause cancer, respiratory disease, and other health problems,<sup>42</sup> potentially compounding the ongoing health impacts of decades of environmental racism.<sup>43</sup> In addition to these threats, the planned Formosa Plastics megacomplex would desecrate numerous likely gravesites of people who were enslaved when they died, some of whose descendants still live in the area.<sup>44</sup>

Although the companies that comprise the Formosa Plastics Group produce a range of materials, plastics and their component petrochemicals account for the bulk of the con-



*Formosa Petrochemical Corp. truck.*

glomerate’s global business — and a growing segment of its operations. The conglomerate is seeking to further increase its refining and manufacturing of petrochemicals and plastics through a complex global web of subsidiaries and affiliates. The US Gulf Coast, including Louisiana, is a hotspot for those expansion efforts.

Expanding an inherently dangerous industry is risky regardless of who the operator is or where the buildout occurs. When the company leading the expansion has a track record like that of the Formosa Plastics Group — of repeated environmental, health, and safety violations and a trail of protest in its wake — such development is reckless. And when the expansion endangers communities already disproportionately harmed by local industrial hazards and the global plastics crisis, that development violates basic principles of human rights and human dignity.

The record is clear: Formosa Plastics is not a good neighbor.<sup>45</sup>

Climate science is also clear: Keeping global temperature rise below 1.5°C requires a halt to new fossil fuel production and a managed phaseout of existing fossil fuel production and use.<sup>46</sup> Despite this science-based mandate, the petrochemical industry, which relies on oil and gas, appears to be moving in the opposite direction. The rapid expansion of shale drilling in the Permian Basin of west Texas and southeast New Mexico has led to a glut of oil and methane gas in the market. This oversupply of feedstocks has in turn prompted oil, gas, and petrochemical companies to plan dozens of new and expanded projects related to the plastics supply chain, ranging from pipelines, processing plants, and plastics production facilities to natural gas liquids (NGL) storage and liquefied natural gas (LNG) export terminals.<sup>47</sup> Of the 10 most climate-polluting projects proposed in the United States, nine are located along the US Gulf Coast.<sup>48</sup> Cumulatively, the planned expansions in the production and use of plastic threaten efforts to reduce emissions sufficiently to keep warming below 1.5°C:

*“If plastic production and use grow as currently planned, by 2030, [the cumulative emissions from the plastics life cycle] could reach 1.34 gigatons per year — equivalent to the emissions released by more than 295 new 500-megawatt coal-fired power plants.”<sup>49</sup>*

Formosa Plastics Group represents one of the largest contributors to this expansion of greenhouse gas emissions in the United States. If built, Formosa Plastics’ St. James complex would release more than 13 million tons of CO<sub>2</sub>-equivalents per year<sup>50</sup> — roughly equivalent to what 3.5 coal-fired power plants would produce annually.<sup>51</sup> This super-polluting project does not belong anywhere in a

climate-safe world — and certainly not in Louisiana, where accelerating coastal erosion, sea-level rise, and strengthening hurricanes are already leading to displacement and climate-driven migration.<sup>52</sup>

### **BOX 1: A Problem Bigger Than One Company**

While the Formosa Plastics Group’s multi-decade-long history of environmental and safety violations merits particular scrutiny, it is far from the only player in the industry whose operations require close examination. There are hundreds of petrochemical facilities worldwide, and the sector continues to expand, with new facilities planned, permitted, or under construction. Although this report focuses on specific concerns regarding the Formosa Plastics Group, no petrochemical manufacturer is exempt — the entire life cycle of plastics poses profound risks to human health and the global climate.<sup>53</sup>

## CHAPTER II

# A TANGLED WEB: CORPORATE STRUCTURE AND SCANDAL



## CHAPTER II

The structure of Formosa Plastics Group is a study in obfuscation: The complex network of corporations, subsidiaries, and affiliates involves circular shareholder relationships between and among the constituent companies, which obscures beneficial ownership and control. Such complexity can deflect scrutiny and facilitates impunity for violations of regulations and rights at various Formosa Plastics facilities. While the web of constituent companies is difficult to untangle, Formosa Plastics Group effectively functions as an integrated corporate enterprise, largely under the common direction of a single family.

This report does not provide a comprehensive assessment of Formosa Plastics Group's entire operations or history, nor does it account for every problematic incident or detail all practices of concern. Rather, it focuses on documented incidents or risks associated with select Formosa Plastics Group facilities — past, present, or planned. (The omission of other Formosa Plastics' facilities from this report does not indicate that those facilities have been free of similar incidents or risks.) Even this partial accounting exposes a concerning record of social and environmental harm. It highlights the heavy footprint of the petrochemical manufacturing industry, calling into question the safety, sustainability, and acceptability of planned petrochemical expansion.

### *Formosa Plastics Group Overview*

Founded as the Formosa Plastics Corporation in 1954 by brothers Wang Yung-ching and Wang Yung-tsai, the company was initially formed to produce polyvinyl chloride (PVC) at a small facility in Kaohsiung, Taiwan. Due to downstream supply chain constraints, the company grew vertically — first via the Nan Ya Plastics Corporation, which fabricated PVC pipes, film, and leather from resins produced at the Kaohsiung plant. Following Nan Ya Plastics came the New Eastern Corporation, formed to manufacture tertiary goods from

Nan Ya's supply, such as shoes, accessories, and homewares for export.<sup>54</sup>

In the ensuing decades, Formosa Plastics Group vastly expanded and diversified its businesses into a global enterprise. Now Taiwan's largest conglomerate, it operates subsidiaries engaged in a range of activities, including petrochemical production; oil exploration, drilling, and refining; power generation; and manufacturing of steel, textiles, pharmaceuticals, electronics, automobiles, and more. Formosa Plastics maintains industrial operations in Taiwan, China, Vietnam, Indonesia, and the United States.<sup>55</sup> In 2018, Formosa Plastics Group reported \$78.3 billion in sales revenues, translating to \$13.1 billion in profits.<sup>56</sup>

### **KEY for Box 2 and Figure 1**

**FG:** Formosa Group

**FPC:** Formosa Plastics Corporation

**FCFC:** Formosa Chemicals & Fibre Corporation

**FPCC:** Formosa Petrochemical Corporation

**FPC-USA:** Formosa Plastics Corp., USA

**FPC-USA, LA:** Formosa Plastics Corp.,  
Louisiana

**FPC-USA, TX:** Formosa Plastics Corp., Texas

**NYP:** Nan Ya Plastics Corporation

**NPCAM:** Nan Ya Plastics Corp., America

**NYPUSA:** Nan Ya Plastics Corp., USA

**FG LA LLC**

**FHS:** Formosa Ha Tinh Steel Corporation

**FIC:** Formosa Industries Corporation

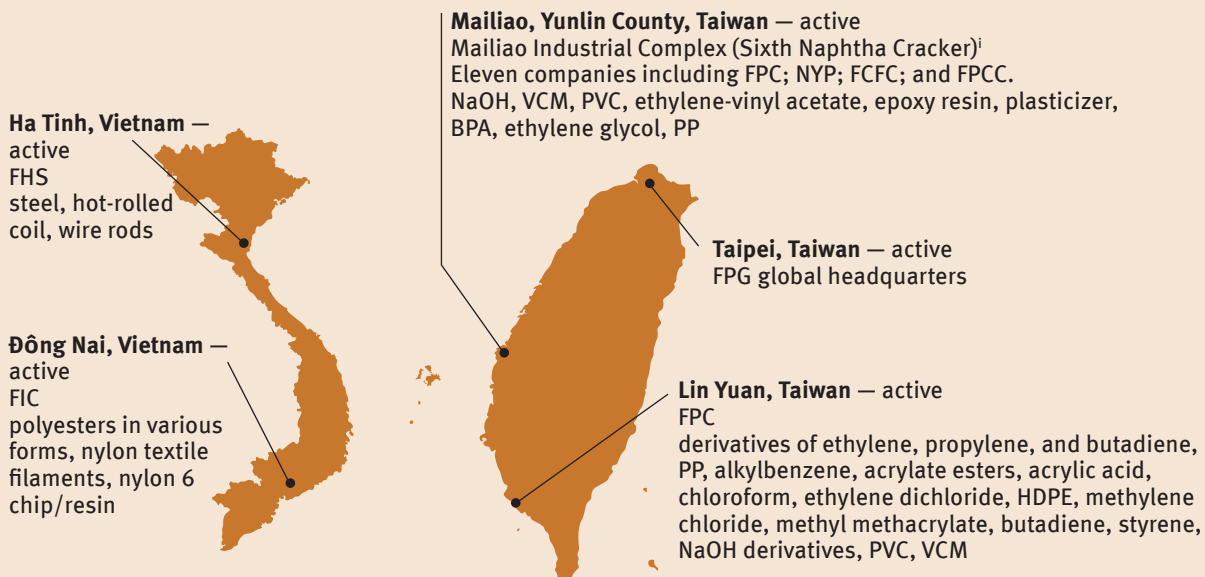
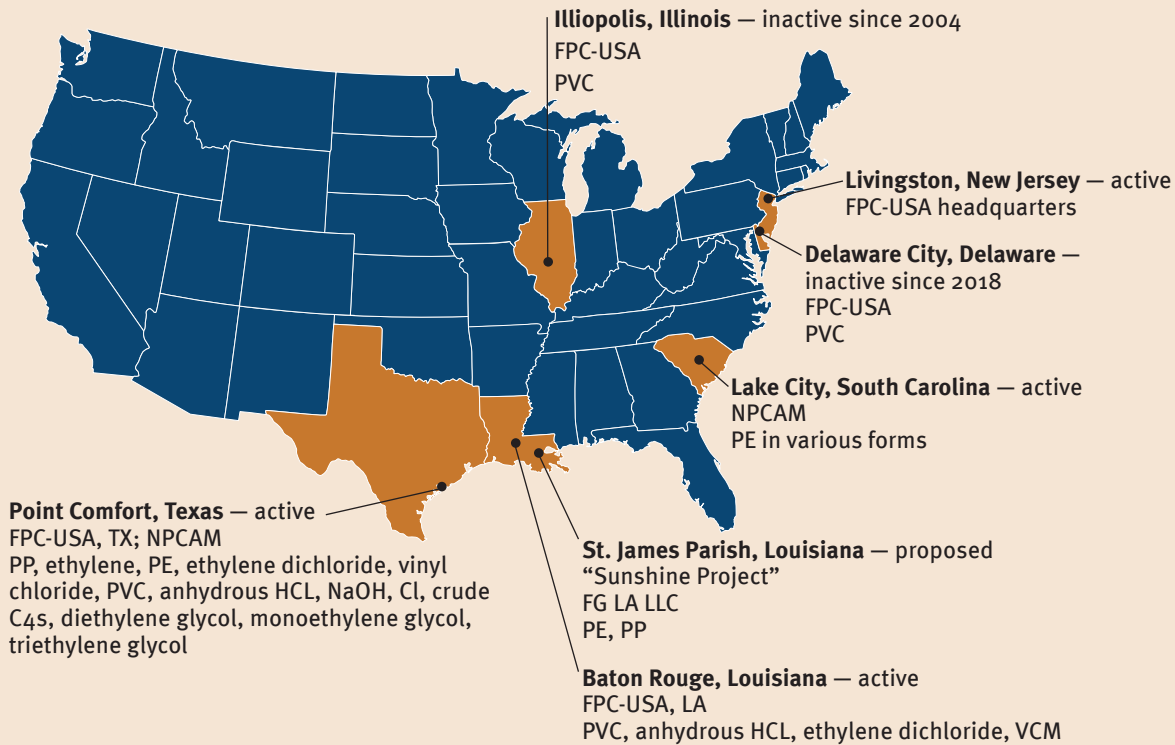
**BOX 2:****Formosa Plastics Group at a Glance**

**Headquarters:** Taipei, Taiwan • **Number of Employees:** 115,929<sup>57</sup>

**Market Cap:** \$103.194 billion (as of Sept. 29, 2021)<sup>58</sup>

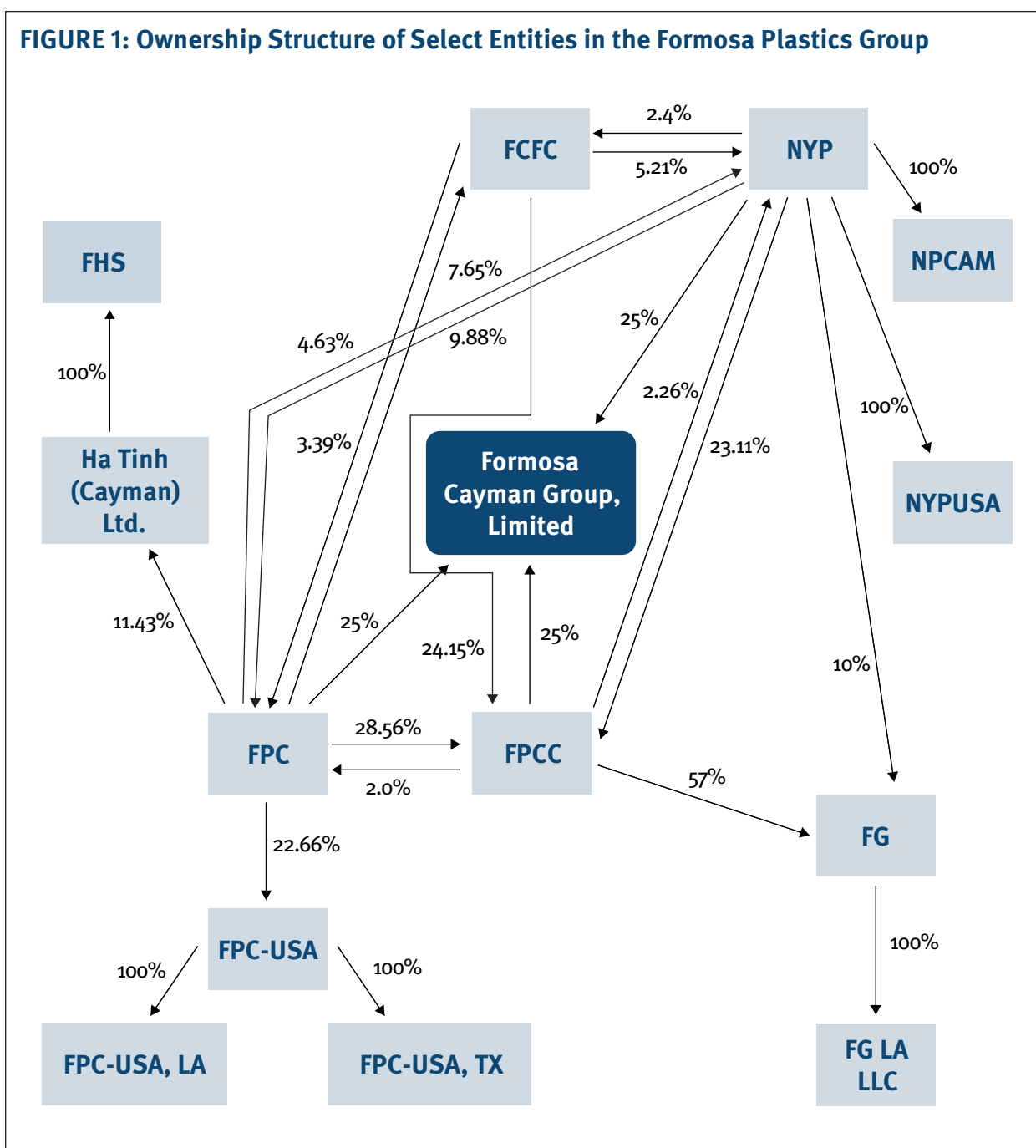
**MAP KEY**

Location — status of the plant  
Common name (if there is one)  
Companies operating at the site  
Select products produced at the site



<sup>i</sup> In some of the sources cited in this report, this facility is called the “Sixth Naphtha Cracker” or the “Six(th) Light Project”, referring to the fact that it was the sixth facility built in Taiwan to crack naphtha from light oil into olefins.

**FIGURE 1: Ownership Structure of Select Entities in the Formosa Plastics Group**



**KEY for Box 2 and Figure 1**

**FG:** Formosa Group  
**FPC:** Formosa Plastics Corporation  
**FCFC:** Formosa Chemicals & Fibre Corporation  
**FPCC:** Formosa Petrochemical Corporation  
**FPC-USA:** Formosa Plastics Corp., USA  
**FPC-USA, LA:** Formosa Plastics Corp., Louisiana

**FPC-USA, TX:** Formosa Plastics Corp., Texas  
**NYP:** Nan Ya Plastics Corporation  
**NPCAM:** Nan Ya Plastics Corp., America  
**NYPUSA:** Nan Ya Plastics Corp., USA  
**FG LA LLC**  
**FHS:** Formosa Ha Tinh Steel Corporation  
**FIC:** Formosa Industries Corporation



*An aerial shot of the Formosa Plastics facility in Point Comfort, Texas.*

## ***Ownership Structure***

Formosa Plastics Group is the umbrella enterprise under which many subsidiaries or affiliate companies with cross-cutting holdings and overlapping leadership are organized.

Complex layers of circular ownership among subsidiaries, affiliates, and limited liability corporations make Formosa Plastics Group's entire global footprint difficult to pin down in detail. For example, the currently operational Formosa Plastics facilities in the United States are part of a Formosa Plastics Corporation subsidiary, while the facilities currently proposed for construction in the United States would be Formosa Petrochemical Corporation subsidiaries — technically two different corporate entities. Yet each of these entities holds an ownership stake in the other. As exemplified in Figure 1, this pattern of intersecting ownerships is replicated across the conglomerate. Such an intricate web of corporate relationships can obfuscate

control, insulate management structures from scrutiny, and, in the event of harm, make it difficult to identify and assert jurisdiction over the responsible entity or entities, thwarting efforts at accountability.

*Statue of Formosa Plastics Corporation co-founder Wang Yung-ching at Chang Gung University in Taiwan.*



Box 2 details a number of facilities mentioned in this report, all of which fall under the Formosa Plastics umbrella.

Several of the conglomerate's executives — many of them members of the Wang<sup>ii</sup> family — serve in leadership and fiduciary roles in multiple subsidiaries and affiliates.<sup>59</sup> This network of overlapping executives, coupled with the constituent company's circular ownership structure, indicates common or connected decision-making and control across the many legal entities that comprise the conglomerate.

### *Corporate Scandal*

Questions regarding Formosa Plastics Group's financial and regulatory dealings date back decades, and have led to penalties, resignations, and criminal investigations.

In 2000, a briefing paper profiling Formosa Plastics Group's practices alleged a pattern of payments to government officials to allow for favorable dispute outcomes, relaxed regulatory findings, and illegal dumping.<sup>60</sup> In one instance in 1995, a vice president of a Formosa Plastics subsidiary reportedly made campaign finance contributions of at least \$50,000 through an associate in a suspected effort to gain regulatory leniency or approval for projects in South Carolina, Texas, and Louisiana.<sup>61</sup> The Federal Elections Commission later cited those contributions as a violation in a finding against the associate.<sup>62</sup> In hearings before the US Senate Committee on Government Affairs concerning illegal and improper activities connected to the 1996 federal election campaigns, senators questioned several witnesses about potentially improper contacts and contributions received from a Formosa Plastics official.<sup>63</sup> In another scandal connected to the siting of a Formosa Chemical Corporation facility in Louisiana, a federal jury convicted the president of St. John the Baptist Parish in 1997

for taking money in exchange for offering to use his authority to obtain necessary permits and acquire land needed for the plant.<sup>64</sup>

In addition to alleged involvement in improper dealings with public officials, Formosa Plastics Group has also been embroiled in scandals related to fraud perpetrated against its own contractors and customers. In 1998, the Supreme Court of Texas found legally sufficient evidence that Formosa Plastics Corporation had an intentional, premeditated scheme to defraud contractors working on its expansion project in the state.<sup>65</sup> In 2014, Formosa Plastics paid \$22.5 million as part of a settlement for a lawsuit that alleged the company had defrauded state and local governments by selling shoddily produced PVC piping for more than 10 years through a subsidiary, J.M. Eagle.<sup>66</sup> (J.M. Eagle, one of the world's largest PVC pipe manufacturers with more than 20 facilities in the United States, was owned by Formosa Plastics Group from 1982 until 2005.<sup>67</sup> Walter Wang, a California-based son of one of Formosa Plastics Group's founders, now owns the company.<sup>68</sup>) And in 2015, in Taiwan, one of Formosa Plastics Group's top executives was forced to resign, and nearly two dozen employees were placed under criminal investigation after the whistle was blown on a years-long internal kickback scheme to guarantee delivery on purchase orders to a certain customer.<sup>69</sup>

In summary, Formosa Plastics Group has faced credible accusations of cheating its customers and buying its way into favorable business deals or out of the consequences of repeated regulatory violations. Combined with the history of safety and environmental violations detailed in the chapters that follow, these behaviors expose Formosa Plastics Group as a distinctly bad actor in an industry already rife with risk and harm.

ii Across various annual reports and news stories, the spellings "Wang" and "Wong" seem to be used interchangeably in English translations of the family name.

## CHAPTER III

# A DANGEROUS OPERATION: PETROCHEMICAL PRODUCTS AND THEIR HAZARDS



## CHAPTER III

Formosa Plastics Group's chief products include: polyvinyl chloride (PVC), high and low-density polyethylene (HDPE and LDPE), polypropylene (PP), and polyethylene terephthalate (PET) resins — all of which are polymers found in consumer products worldwide — along with a number of related and constituent petrochemicals, plastics, and textiles.<sup>70</sup> Formosa Plastics' integrated operations also include producing the base components of each of those polymers, plus many more downstream petrochemical products, including toluene, benzene, caustic soda, chlorine, chloroform, bisphenols, hydrochloric acid, and others. These and other highly dangerous and toxic chemicals form the core of Formosa Plastics Group's business around the world, although several subsidiaries under the conglomerate's umbrella make other industrial products as well, such as steel and textiles.

The table below provides examples of plastic and petrochemical products manufactured by Formosa Plastics Group or one or more of its

subsidiaries and affiliates,<sup>71</sup> including the uses and significant known health impacts associated with each product.

**TABLE 1: Plastic and Petrochemical Products Manufactured by the Formosa Plastics Group**

CHEMICAL	APPLICATIONS	HEALTH AND SAFETY IMPACTS
<b>Ethylene</b> [Resultant plastics: polyester, polyethylene terephthalate chip (PET, US resin identification code #1), <sup>72</sup> high-density polyethylene (HDPE, US resin identification code #2), low-density polyethylene (LDPE, US resin identification code #4)]	Packaging and containers for consumer and industrial goods (personal care products, food and beverage, oils and cleaning products, films, bags, shrink wrap), industrial piping, toys, computer parts, industrial and laboratory equipment. <sup>73</sup>	Exposure to ethylene can cause headache, dizziness, fatigue, lightheadedness, confusion, and unconsciousness. It is a highly flammable chemical and is a fire and explosion hazard. <sup>74</sup>
<b>Ethylene glycol</b>	Used to manufacture polyester fiber and for consumer products including antifreeze. <sup>75</sup>	Short-term exposure includes intoxication, impacting the central nervous system, the heart, and the kidneys. Severe exposure can result in coma, loss of reflexes, and brain damage. <sup>76</sup>

CHEMICAL	APPLICATIONS	HEALTH AND SAFETY IMPACTS
<b>Ethylene oxide</b>	Used in the production and manufacture of industrial chemicals (e.g., ethylene glycol).	Ethylene oxide is carcinogenic to humans when inhaled. Acute exposure may result in respiratory irritation and lung injury, headache, nausea, vomiting, diarrhea, shortness of breath, and cyanosis. Chronic exposure has been associated with the occurrence of cancer, reproductive effects, mutagenic changes, neurotoxicity, and sensitization. <sup>77</sup>
<b>Ethylene dichloride</b>	The raw material used to manufacture vinyl chloride monomer.	Inhalation induces respiratory distress, nausea, and vomiting. It affects the central nervous system, liver, <sup>78</sup> and kidneys. The chemical is also highly flammable. When it burns, it releases toxic fumes of hydrochloric acid, and is a suspected human carcinogen. <sup>79</sup>
<b>Propylene</b> [Resultant plastics: polypropylene (PP, US resin identification code #5)]	Consumer goods and food packaging, automotive components.	High levels of propylene exposure can cause dizziness, lightheadedness, or fainting. Exposure may affect the heart, liver, or nervous system. Direct contact can cause frostbite. <sup>80</sup>
<b>Vinyl chloride monomer (VCM)</b> [Resultant plastics: polyvinyl chloride (PVC, US resin identification code #3)]	Primarily industrial piping, building, and construction products.	VCM is a known human carcinogen and is highly explosive. Acute exposure, typically via inhalation, can lead to dizziness, irritation to the eyes, membranes, and respiratory tract, fatigue, coma, or even death. Chronic exposure can cause liver dysfunction, including liver injury or cancer, <sup>81</sup> other forms of cancer, congenital disabilities, genetic changes, neurological or behavioral symptoms, chronic bronchitis, ulcers, skin diseases, deafness, vision failure, indigestion, and changes to the skin and bones. <sup>82</sup> PVC is recognized as a major source of phthalates, <sup>83</sup> known endocrine disruptors, which harm reproductive and nervous systems. <sup>84</sup>
<b>Chlorine</b>	A building block ingredient used to manufacture PVC plastics and other chemicals such as pesticides and antifreeze. Also used in cleaning and bleaching processes. <sup>85</sup>	Chlorine production uses and emits highly toxic pollutants. Breathing high levels of chlorine causes fluid buildup in the lungs and further lung damage. Contact with chlorine may cause frostbite of the skin and eyes. <sup>86</sup>

CHEMICAL	APPLICATIONS	HEALTH AND SAFETY IMPACTS
<b>Caustic soda (Sodium hydroxide)</b>	Used to manufacture a variety of products such as paper, alumina, soap, and detergents. It is a feedstock to manufacture a wide range of chemicals and is also used in the fracking process. <sup>87</sup>	Can cause severe burns and permanent damage to any tissue that it comes in contact with because it is corrosive. Inhaled sodium hydroxide can negatively impact the lungs. Ingestion may lead to vomiting, drooling, abdominal pain, or gastrointestinal shock. <sup>88</sup>
<b>Hydrochloric acid</b>	Used in the production of polyvinyl chloride, polyurethane foam, and calcium chloride. <sup>89</sup>	Hydrochloric acid has toxic effects on human skin and eyes, by causing severe skin irritation, burns, or frostbite. It can have acute health effects if inhaled, ingested, or absorbed, including inflammation, irritation, corrosive burns, severe respiratory distress, or even death. <sup>90</sup>
<b>Paraxylene</b>	Used as feedstock material to manufacture other chemicals such as terephthalic acid and dimethyl-terephthalate, the building blocks to manufacture polyesters. <sup>91</sup>	Xylene can have negative effects on health, in both the short and long term. High concentration exposure can cause a number of effects on the nervous system, such as headaches, lack of muscle coordination, dizziness, confusion, and changes in one's sense of balance. Some people exposed to very high levels of xylene for a short period of time have died. <sup>92</sup>



*Powder sample taken from Lavaca Bay, near Formosa Plastics' Point Comfort, Texas, facility.*

The products listed in Table 1 are typical of the substances manufactured by other companies producing plastics and their constituent polymers and additives. Therefore, the risks highlighted here apply equally to the products made by Formosa Plastics Group and its competitors operating around the world. Moreover, the production process for polymer resins requires the manufacture and use of dozens of chemical additives. As detailed above, many of these additives — or even the base components themselves, manufactured by Formosa Plastics into plastics or polymers — are known human carcinogens or have other demonstrated toxic impacts on



*Smoke from a Formosa Plastics facility in Yunlin County, Taiwan.*

people, especially children, who may be exposed through touching, ingesting, or other contacts with these plastics.<sup>93</sup>

The plastics produced by Formosa Plastics Group and its peer companies have been accumulating in the environment for decades, released both during the production process and through the use and disposal of the single-use plastics made from these resins worldwide. Plastics, especially microplastics, are known to enter the food chain through fish, edible crops, water supply, and even salt, eventually making their way into human bodies.<sup>94</sup> Indeed, recent studies have shown that 81% of tap water<sup>95</sup> and 93% of bottled water<sup>96</sup> tested in a global sample contained microplastic particles or fibers. Mounting concern about this visible and invisible pollution has driven an explosion in new research,<sup>97</sup> massive activist movements,<sup>98</sup> and increasingly urgent discussions about policy solutions.<sup>99</sup>

Because of the toxicity of the chemical inputs and byproducts associated with petrochemicals and plastics production, the refining and manufacturing processes pose inherent risks to human health and the environment. When such dangerous industrial processes are run by a company with an opaque management structure, a history of credible allegations of corruption and fraud, and a track record of environmental, health, and safety violations, workers and local communities face heightened risks.<sup>100</sup>



## CHAPTER IV

# A HEAVY FOOTPRINT: IMPACTS BY THE NUMBERS



Across its global operations, Formosa Plastics has an enormous social and environmental footprint. The conglomerate's operations have adversely affected the lives and livelihoods of some of its workers and of community members in areas surrounding its facilities worldwide. Too often, the company's violations of environmental, health, and safety standards have gone unchecked or have been met with only nominal penalties, while the company continues to enjoy tax benefits or other economic incentives. With few exceptions,<sup>101</sup> in those instances where local authorities have levied penalties, they have been generally insufficient to repair past harms or prevent their recurrence.

For all facilities that release toxic chemicals, the US Environmental Protection Agency (US EPA) assigns each a score indicating a relative risk ranking from the toxicity of those emissions (a "Risk-Screening Environmental Indicators" (RSEI) score). The score is "a unit-less value that accounts for the magnitude of the release quantity of a chemical, the fate and transport of the chemical throughout the environment, the size and locations of potentially exposed populations, and the chemical's inherent toxicity."<sup>102</sup> Even in comparison to nearby jurisdictions, the Formosa Plastics facilities in Louisiana and Texas have strikingly high scores in this ranking, implying an elevated risk of toxic exposure in neighborhoods surrounding Formosa Plastics facilities and similar facilities nationwide.

The plastics material and resin manufacturing industry appears to have an elevated RSEI score compared to the national US median for all industries. Thus, while Formosa Plastics' scores are particularly high, communities on the frontlines and fencelines of any plastics production facilities have cause for concern about public health and safety.

An overview of some of the most harmful incidents associated with various facilities in the

**TABLE 2: Risk-Screening Environmental Indicators (RSEI) for Formosa Plastics Corporation in Louisiana and Texas**

**2019 RSEI Scores<sup>103</sup>**

Formosa Baton Rouge:	224,227
County Median (East Baton Rouge Parish):	599
State Median (Louisiana):	152
Formosa Point Comfort:	115,362
County Median (Calhoun):	4370
State Median (Texas):	15
Industry Median (plastics material and resin manufacturing):	296
National Median:	14

Formosa Plastics Group illustrates the human and environmental toll of the company's business practices. Safety failures and environmental violations at Formosa Plastics facilities have resulted in harm to potentially thousands of people. The company's practices have caused fear and panic, loss of livelihoods, injury, and even death. Industrial accidents have killed at least 24 people and injured dozens more. In Illiopolis, Illinois, an explosion at a Formosa PVC plant killed five people, including a husband and wife. A federal investigation determined the explosion resulted from inade-

quate safety measures by the plant operator, Formosa Plastics.<sup>104</sup> In Yunlin County, Taiwan, scientists linked thousands of cases of cancer per year to Formosa Plastics’ routine operations, adding to mounting evidence that such plastic production facilities are fundamentally unsafe.<sup>105</sup>

Penalties and notices of violation by local and national governments do not seem to have ameliorated Formosa Plastics Group’s adherence to environmental and safety standards.

Globally, reported penalties for environmental and safety violations across Formosa Plastics facilities have totaled more than \$560 million since 1999, with penalties levied for violations and incidents in the United States, Vietnam, and Taiwan.<sup>iii</sup> Over \$1,000,000 of those penalties were accrued penalties were for 200-plus incidents in the United States involving workplace, railroad, or health and safety violations since 1980.<sup>117</sup>

iii See Annex for a complete list of incidents and penalties.

TABLE 3: Overview of Select Global Incidents and Known Harms

LOCATION	DATE	FATALITIES	INJURIES / SICKNESS	NOTES
Sihanoukville, Cambodia <sup>106</sup>	December 1998	5	600+	Formosa Plastics Corporation dumped toxic waste laden with mercury in a Cambodian seaport town. Hundreds of people reported sickness, which caused a mass panic in which thousands fled, leading to injuries and deaths. <sup>107</sup>
Illinois, IL, USA <sup>108</sup>	April 2004	5	8	Explosion and chemical fire at Formosa Plastics plant.
Point Comfort, TX, USA <sup>109</sup>	December 1998	0	26	Ethylene dichloride tank explosion, resulting in a full plant shutdown.
Point Comfort, TX, USA <sup>110</sup>	October 2005	0	16	Explosion at the Olefins II Unit of the plant. Sixteen workers were injured, one seriously.
Point Comfort, TX, USA <sup>111</sup>	May 2013	0	14	Flash fire.
Ha Tinh Province, Vietnam <sup>112</sup>	March 2015	14	27+	Scaffold collapse at Formosa Ha Tinh Steel complex kills at least 14, traps 100+ more workers.
Ha Tinh Province, Vietnam <sup>113</sup>	April 2016	Unknown	Unknown	Toxic waste discharge from Formosa Ha Tinh Steel complex contaminated the coastline and killed more than 300 tons of fish. More than 260,000 area workers were impacted directly or indirectly, <sup>114</sup> including 8,000 fisherfolk seeking compensation from Formosa Plastics.
Yunlin County, Taiwan <sup>115</sup>	April 2019	0	Unknown	Explosion at Formosa Chemicals & Fibre aromatics plant. Over 10,000 were forced to evacuate because of a gas leak after an explosion, resulting in heightened tensions between police and residents. (Note: Scientists have linked significantly higher cancer rates to communities within 10km of the Yunlin County complex.) <sup>116</sup>

**TABLE 4: Tally of Known Penalties Since 1980<sup>118</sup>**

LOCATION	TALLIED PENALTIES (USD)
Cambodia	\$5,000
United States	\$65,946,867
Vietnam	\$500,025,000
Taiwan	\$3,058,795

*These are approximate estimates of penalties and/or fines levied against entities in the Formosa Plastics Group. This list is not exhaustive, but it includes all penalties available to this report's authors at the time of writing. See Annex for a list of violations across countries.*

These penalties are minor compared to Formosa Plastics' annual revenue, and they almost certainly understate the number and severity of incidents at the company's facilities worldwide. This report only covers select Formosa Plastics facilities and therefore does not include incidents at facilities of the company's subsidiaries or affiliates across every locale, notably China, Indonesia, and Taiwan. For example, in the United States, at least one incident at the Formosa Point Comfort plant led to the exposure of 1,700 people to a highly hazardous chemical not explicitly named. The incident received a level 10 rating, the highest level of gravity recorded by the Occupational Safety and Health Administration (OSHA). Yet, it appears to have triggered a relatively minuscule penalty of only \$14,000.<sup>119</sup>

From minor infractions to major disasters, Formosa Plastics' global track record of hundreds of environmental violations has exposed many local communities to harm. Below are key figures regarding some of Formosa Plastics' documented violations of environmental standards in the United States.

- Cumulatively, Formosa Plastics plants in the United States have been out of compliance with US EPA regulations for 65 quarters, equivalent to over 16 years.<sup>120</sup>

- The Baton Rouge and Point Comfort plants have over 500 documented instances of noncompliance and enforcement through the LDEQ and the Texas Commission for Environmental Quality. In 2009, the company reached a \$13 million settlement with the US Department of Justice, including a \$2.8 million penalty, to resolve extensive violations of the Clean Air Act and Clean Water Act at the company's Texas and Louisiana plants, as well as failure to disclose toxic releases properly.<sup>121</sup>
- The Formosa Plastics Point Comfort plant's 269 air-related enforcement cases from 2013-2018 include violations such as "failure to prevent unauthorized emissions to the atmosphere" and "failure to comply with permit emissions limitations."<sup>122</sup>
- The LDEQ issued 293 documents, including warning letters, notices, and enforcement orders, related to air quality, hazardous waste, radiation, and water compliance for the Formosa Plastics Baton Rouge PVC plant.<sup>123</sup> Twenty-one are reports of noncompliance with air quality or surface water requirements.<sup>124</sup>

## CHAPTER V

# A PROFILE OF HARM: INCIDENTS AND ABUSES



## CHAPTER V

Formosa Plastics is not a good neighbor. In the United States, Cambodia, Vietnam, and its home country of Taiwan, the company has a history of risking public harm for private gain and putting workers and communities at unnecessary risk.

In hundreds of incidents, large and small, during its 65 years of operation, Formosa Plastics seems to have paid about \$570 million in fines and penalties across nearly a dozen sites worldwide for environmental harm and safety breaches. Even if not comprehensive, this figure is still a small amount compared to the company's profits. Several of Formosa Plastics' sites emit carcinogenic and toxic chemicals — including ethylene oxide,<sup>125</sup> vinyl chloride,<sup>126</sup> and ethylene dichloride<sup>127</sup> — into the local water and air. Explosions have occurred at multiple facilities. Formosa Plastics Group or its subsidiaries have been labeled variously as a “serial offender,”<sup>128</sup> a state's “biggest polluter,”<sup>129</sup> and the entity responsible for a country's “worst environmental disaster.”<sup>130</sup>

In addition to a track record of apparent disregard for worker and community safety,

Formosa Plastics Group has been repeatedly hostile toward residents working to protect health and safety, ways of life, livelihoods, economies, and resources near sites the company operates.<sup>131</sup> Regulators have often given the company a free pass, imposing only light penalties for noncompliance or affording the company offsetting benefits. For example, after being sued for polluting the waters around its Texas plant for years, Formosa Plastics agreed to pay out \$50 million — approximately the same amount it received in tax breaks and incentives from Texas and Louisiana combined between 2000 and 2020.<sup>132</sup> Meanwhile, the company, whose contractor, according to media reports, was alleged to have paid millions in bribes to Cambodian officials, was fined just \$5,000<sup>133</sup> for dumping mercury-laden toxic waste in Sihanoukville — an incident that

*Signs warning of toxicity leading to the facility in Yunlin County, Taiwan.*



reportedly resulted in injuries to residents and dockworkers and was linked to several panic-induced deaths.<sup>134</sup> Formosa Plastics' conduct reflects a recurring disregard for safety standards and regulations with insufficient measures to address known violations and hazards. The result is economic, environmental, and physical damage to front and fenceline communities around the world.

Yet while the company has enjoyed years of lax oversight and regulation, governments and courts have begun to show a willingness to hold the company accountable in recent years. In 2016, Vietnam required the company to pay restitution and rectify dozens of violations at its Ha Tinh Steel plant following

the disaster there, detailed below.<sup>135</sup> A lawsuit for further reparations to local fisherfolk is pending in a Taiwanese court.<sup>136</sup> (See *infra* BOX 7: Justice Delayed: Victims of Toxic Spill in Vietnam Await their Day in Court on p.59.) In 2019, a US federal judge found Formosa Plastics liable for “enormous” violations, labeling the company a “serial offender” of clean water regulations in Texas.<sup>137</sup> As of this report’s writing, another US judge has delayed a permit issued to Formosa Plastics for a new plant in Louisiana, citing concerns over environmental racism.<sup>138</sup> Simultaneously, US regulators have suspended another permit issued for the same site over irregularities in the process.<sup>139</sup> This report underscores the need to continue this accountability trend.

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### *Dumping in Sihanoukville (Cambodia)*

In late November 1998, 3,000 tons of toxic waste, cemented into bricks and packaged in plastic bags, was dumped in a field in coastal Sihanoukville in Cambodia. Within days, nearby villagers began salvaging anything deemed useful from the pile of unlabeled material. They took the bags and even some of the waste bricks home, resulting in widespread local toxic mercury exposure. By mid-December, dozens of people had begun to get sick with complaints of fever, vomiting, headaches, and diarrhea. A dockworker died, though tests conducted weeks and months later did not clearly identify his cause of death.<sup>140</sup>

Later investigations revealed the company responsible for the waste: The Formosa Plastics Corporation, a subsidiary of the Formosa Plastics Group, whose PVC plant in Taiwan’s Jenwu township produced the toxic waste from 1975 until 1983. Unable to dump the waste locally due to resistance from surrounding communities, the company eventually exported it out of Taiwan and is alleged

to have bribed officials to allow the toxic shipment to be offloaded in Cambodia.<sup>141</sup>

As rumors began to circulate about the death and sickness in Sihanoukville, mass panic spread throughout the area. Hundreds of people evacuated their homes out of fear, causing accidents along the narrow, winding escape route. Four more people reportedly died, and at least 13 were injured in the



*Toxic waste was sealed in plastic bags and sent to Cambodia.*

panic-induced flight.<sup>142</sup> Formosa Plastics maintained that the waste had been treated and was not toxic.<sup>143</sup> However, government agencies in four countries conducted tests, revealing that the illegally dumped waste was leaching levels of mercury up to four times higher than Taiwan's Environmental Protection Administration deemed safe.<sup>144</sup> This level of mercury contamination was putting all who came into contact with it at risk.<sup>145</sup>

The Taiwanese and Cambodian governments eventually forced Formosa Plastics to remove the waste. More than two dozen local officials were suspended or punished in the subsequent investigation by the Cambodian government.<sup>146</sup> But it appears the Formosa Plastics Corporation staff associated with the deal avoided jail sentences and personal fines, and the company has not compensated the families of those who were harmed or killed.

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### *Devastation at Ha Tinh (Vietnam)*

Formosa Ha Tinh Steel Corporation, a Formosa Plastics Group subsidiary, began operating in Vietnam in mid-2017.<sup>147</sup> But the company's

steel mill project was marred by disaster even before production began.

#### **BOX 3: Spillover Effects**

The destructive impacts of this preventable incident at the Formosa Ha Tinh Steel mill have been ongoing and far-reaching, and cannot be reduced to numbers. After the Ha Tinh site reopened in 2017, faulty equipment caused an explosion of mismanaged limestone dust particles at the mill site.<sup>162</sup> This explosion provides another example of the dangers posed by inadequate environmental safety measures and deficient oversight of operations.

The human toll of the Ha Tinh incident continues to grow even years later. The devastation of fishing and tourism by the 2016 waste discharge was cited as one possible reason several dozen Vietnamese people were seeking a better life in the UK when they tragically perished in the back of a truck container in 2019.<sup>163</sup>

In March 2015, while the Samsung Group was working fast to fulfill its construction contract on the site, scaffolding collapsed as it was being erected. Reports differ, but many state 14 workers were killed, at least 27 more were injured, and more than 100 people were trapped in the collapsed metal for hours.<sup>148</sup> "People were screaming, calling for help from the rubble," one worker said. He counted himself "lucky" to have survived.<sup>149</sup>

In April 2016, the mill, still under construction, began discharging toxic industrial wastewater into the coastal waters of central Vietnam.<sup>150</sup> This release from the facility devastated 125 miles of coastline, resulting in a massive marine life and fish kill.<sup>151</sup>

The Vietnamese Labor Ministry estimated that the Formosa Ha Tinh Steel Corporation's toxic discharge adversely affected the livelihoods of approximately 263,000 people, including nearly 40,000 jobs directly involved in the fishing and tourism industries.<sup>152</sup> The result was a catastrophic economic loss to coastal communities in the four provinces affected.<sup>153</sup> Fisherfolk were left jobless for months, leading to massive outrage and protests calling for environmental

protections and demanding transparency in the investigation process.<sup>154</sup> Many people who ate contaminated seafood during the period between April and May 2016 reported falling ill.<sup>155</sup> The health risks led the government to issue a two-year prohibition on the sale and consumption of fish in the wake of the disaster, further debilitating the fishing industry.<sup>156</sup> When taken together, these cumulative impacts demonstrate why the mismanagement of toxic waste by the Formosa Ha Tinh Steel Corporation is widely discussed as one of the worst environmental disasters in Vietnamese history.<sup>157</sup>

The Vietnamese government eventually identified a series of cost-cutting measures culminating in the improper installation of an undersea dumping pipeline, which resulted in the release of exceedingly high levels of toxic chemicals that devastated fish populations.<sup>158</sup>

After months of denials and investigations,<sup>159</sup> Formosa Plastics Corporation was forced to accept responsibility for the disaster and



*While under construction, the Formosa Ha Tinh Steel Corporation emitted toxic industrial wastewater into the coastal waters of central Vietnam, impacting 125 miles of coastline and marine life, resulting in a massive fish kill.*

agreed to pay \$500 million to the Vietnamese government. Each affected fisherperson received only \$765.<sup>160</sup> Following this settlement, Vietnamese officials ordered a corruption probe into the approval processes for the Formosa Ha Tinh Steel plant.<sup>161</sup> The investigation was still pending as of this report's writing.

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## ***Ongoing Risks and Resistance (Taiwan)***

Formosa Plastics Group has a heavy and controversial footprint at home in Taiwan as well. The conglomerate's Taiwanese operations include integrated plastic resin manufacturing from naphtha crackers (facilities that convert oil-based compounds into chemical components used to produce plastics), and the production of PVC, rayon fiber and yarn, polyethylene, and other resins, along with requisite power plants.<sup>164</sup>

Formosa Plastics Group has faced stiff public resistance in response to its manufacturing practices and reports of corruption, despite its prominence as one of the largest private enterprises in Taiwan. Residents have spoken out and demonstrated against the negative

impacts of the company's operations on the health of workers, communities, and the environment.<sup>165</sup> Taiwan's efforts to establish itself as a petrochemical hub prompted public resentment. As part of a wave of backlash in the late 1980s, thousands of people repeatedly took to the streets to protest the planned construction of additional privately owned crackers that would turn coal into naphtha (one of which was set to be built and owned by Formosa Plastics Group).<sup>166</sup> These protests forced the company to shift its original location plans for the cracker plant, eventually settling on Yunlin County.<sup>167</sup>

Organized mobilization against Formosa Plastics in Taiwan may have even been a factor



*People from Yilan attend a demonstration opposing the construction of the Sixth Naphtha Cracker.*

in the company's decision to dump the mercury-laced bricks in Cambodia, as Taiwanese communities resisted efforts to process the waste locally.<sup>168</sup> At the time, Formosa Plastics Corporation's president reflected, "We just couldn't find another legal landfill in Taiwan. Finally, to avoid more problems, we decided to send it abroad."<sup>169</sup>

### **Formosa Plastics' Massive Footprint in Yunlin County**

Formosa Plastics' Yunlin County complex began with the construction of a naphtha cracker in the late 1990s. It now encompasses more than 6,000 acres of land and more than 50 plants, including crackers, oil refineries, chemicals, plastics, resins, textile manufacturers, and power plants.<sup>170</sup> Several subsidiary and/or affiliate companies of Formosa Plastics Group have facilities on the

Yunlin County site. The naphtha cracker's construction pitted the company and the Taiwanese government against residents, especially as the site expanded into a massive integrated petrochemicals complex. Permits for facility expansion continued to be issued by the government, even as opposition mounted. In the wake of repeated fires at the complex, public protests in 2010 led to clashes at the site between police and local residents, fisherfolk, and farmers over Formosa Plastics' refusal to meet Yunlin County's demands for compensation for fire damage and pollution.<sup>171</sup>

In the ensuing decade, more than a dozen accidents and safety violations have occurred on the site, including the following incidents:

- **2011:** Two separate fires in May and July caused significant parts of the facility to shut down temporarily.<sup>172</sup>

- **2013:** BPA manufacturing was temporarily suspended in February at the Nan Ya Plastics division of the facility after a fire broke out.<sup>173</sup>
- **2014:** Two employees suffered chemical and steam burns in March when a fire started from a hydrogen leak.<sup>174</sup>
- **2017:** Four employees were injured when an explosion occurred at the Formosa Chemicals & Fibre Corporation division.<sup>175</sup>

After scientists studying the surrounding community in Yunlin County attributed thousands of cancer cases and nearly 1,000 deaths per year to exposure from the petrochemical complex, Formosa Plastics Group filed suit against the study's lead author.<sup>176</sup> The company lost that lawsuit in 2013.<sup>177</sup> Despite the evidence of harm to human health, however, local mobilizations in 2017 failed to prevent the renewal of Formosa Plastics Group's permit to use coal on the site.<sup>178</sup>

In April 2019, a leak of liquefied natural gas at the Formosa Chemicals & Fibre Corporation caused a powerful explosion<sup>179</sup> that forced more than 10,000 people to evacuate. The explosion shattered windows, shook walls, collapsed roofs, and, according to some reports, led to the deaths of livestock and nearby fisheries.<sup>180</sup>

While the company paid a \$162,000 fine for that explosion,<sup>181</sup> Formosa Plastics Group continues to crack naphtha and produce various plastics and fibers on the site. The local community continues to resist the complex's expansion and demand accountability from the Yunlin and Taiwanese governments for injustices at home and abroad.

#### BOX 4:

### International Solidarity

In 2020, in a show of international solidarity, advocates and NGO leaders in Taiwan held a rally outside of Formosa Plastics Group's annual shareholder meeting in Taipei, opposing the company's plans to build a similar petrochemical complex in St. James, Louisiana.<sup>182</sup> Community advocates in Louisiana contributed comments and images for use in the rally, which complemented their own local actions commemorating a Juneteenth celebration<sup>183</sup> and a call for the rescission of Formosa Plastics' permits to build in St. James.



*Taiwanese activists hold signs featuring members of RISE St. James ahead of the 2020 Formosa Plastics Group Annual General Meeting.*

## ***Persistent Lapses at Multiple Sites (United States)***

Formosa Plastics' history in the United States is also marked by safety violations and harm, including loss of life at a now-closed facility.

### **Explosion and Closure in Illiopolis**

In April 2004, a worker accidentally opened the wrong valve at the Formosa Plastics PVC production plant in Illiopolis, Illinois, allowing thousands of pounds of vinyl chloride monomer (VCM) to escape into a highly flammable cloud of gas.<sup>184</sup> That cloud then violently exploded, killing five people (including a husband and wife who both worked at the plant) and severely wounding three more. As PVC resins stored on-site also burned, a plume of thick, black smoke threatened a nearby neighborhood.

According to the US Chemical Safety and Hazard Investigation Board report, “the explosions destroyed much of the plant, blew off the reactor building roof, and tore asbestos-containing paneling and insulation from framing and piping, spreading it across the plant site.”<sup>185</sup> Authorities ordered a complete evacuation of four cities in the area, but because the plant largely supplied the area’s electricity and water, communications were offline. It took hours for residents to receive evacuation orders.<sup>186</sup>

In a subsequent investigation in 2007, federal authorities found that Formosa Plastics had significant responsibility for the explosions, deaths, and community exposure. The valves were easy to open mistakenly, a structural problem known to the company’s managers and engineers but left unfixed. Safety procedures were also woefully inadequate — there were few written safety guidelines, staff lacked training, and more than 10 years had passed since the last large release emergency drill.<sup>187</sup>

Shortly after the explosion, a local woman said, “We never believed or bothered to know what went on out there [at the Formosa site].” Yet the terror for the workers and communities who did know was palpable. The same woman continued, “It was just a fact of life. We’ve lived with it for so long.”<sup>188</sup>

For the five workers’ deaths, Formosa Plastics paid only a \$300,000 penalty as part of a settlement with OSHA. The company also agreed to additional health and safety measures as part of that settlement. But because Formosa Plastics closed the Illiopolis PVC plant following the explosion, the company never implemented the additional measures.<sup>189</sup>

### **Decades of Pollution in Delaware City**

When the Formosa Plastics plant in Delaware City closed, the lede in the local newspaper was, “One of Delaware’s biggest polluters will be shutting down its New Castle County plant this fall.”<sup>190</sup> The Delaware site produced PVC and other chemicals until its closure in 2018. Although no direct fatalities were recorded at the plant while it was open, the facility had a three-decade-long record of releasing toxic and carcinogenic emissions into the surrounding area.



*Formosa Plastics PVC production plant following the 2004 explosion.*



The timeline below provides only a partial picture of the toll that this plant took on the community of Delaware City. In 2017, the year before the site closed, the Delaware City Formosa Plastics plant was the third-largest emitter of toxics in the state, releasing more than 34,000 pounds of vinyl acetate and nearly 46,000 pounds of vinyl chloride into the air — both known human carcinogens.<sup>203</sup> The

groundwater under the site was already contaminated with carcinogenic chemicals when Formosa Plastics bought the plant. While the company pledged to keep pollution and emissions under control, these safety violations coupled with the ongoing contamination of residential water supplies demonstrate insufficient care for the environment and the surrounding community.<sup>204</sup>

## FIGURE 2: Timeline of Pollution Incidents in Delaware City

- 1981**  
 Formosa Plastics acquired the already polluted 200-acre PVC production facility from Stauffer Chemical.<sup>191</sup>
- 1983**  
 The US EPA deemed the location a Superfund site following testing that showed nearby groundwater was contaminated with solvent chemicals, including trichloroethylene, ethylene dichloride, and vinyl chloride.<sup>192</sup>
- 1984**  
 Formosa Plastics agreed, along with Stauffer Chemical, to clean up the Superfund site under oversight from the US EPA.<sup>193</sup>
- 1985**  
 Formosa Plastics' operating license for the site was revoked for two weeks after it was discovered that the required reporting mechanism for emissions was inoperable. As a result, the site violated permit limits in 16 of the 24 months from October 1983 to September 1985.<sup>194</sup>
- 2005**  
 A design flaw very similar to the problem cited in the Illiopolis explosion resulted in the release of 2,500 pounds of vinyl chloride monomer.<sup>195</sup>  
  
 Formosa Plastics paid a \$450,000 penalty and more than \$840,000 on plant upgrades to settle lawsuits from state and federal agencies over vinyl chloride emissions, among other things.<sup>196</sup>
- 2012**  
 Regulators fined the Delaware City site another \$60,500 for numerous air quality violations between 2010 and 2012;<sup>197</sup> OSHA added citations for another \$148,700 in penalties for repeated, serious health and safety violations for its staff at the site.<sup>198</sup>
- 2013**  
 Formosa Plastics paid another \$23,460 in penalties for violations of the air quality permit in the first five months of the year.<sup>199</sup>
- 2015**  
 The US EPA assessed a penalty of \$112,500 to Formosa Plastics for mismanaging PVC solids at the Delaware City site.<sup>200</sup>
- 2016**  
 Another penalty was issued (\$241,000) for unsafely storing 89,000 pounds of highly flammable PVC resins on the site.<sup>201</sup>
- 2018**  
 Formosa Plastics closed the site and moved operations to Point Comfort, TX.<sup>202</sup>

## Years of Noncompliance in Baton Rouge

Formosa Plastics currently operates facilities along the US Gulf Coast which have repeatedly been flagged for regulatory violations and concerns over environmental justice. In Louisiana, Formosa Plastics' existing PVC manufacturing facility is located approximately one mile from a historically Black community in a heavily industrialized section of north Baton Rouge. According to the US EPA's environmental justice mapping and screening tool (EJScreen), the Baton Rouge area plant is above the 90th percentile in six of eleven environmental indicators for excess risk to the local population.<sup>205</sup> The site has been identified as a "significant non-complier" under the Resource Conservation and Recovery Act since 2004, and it has over a decade's worth of "unaddressed violations" of the Clean Air Act.<sup>206</sup>

In the years following Formosa Plastics' purchase of the Baton Rouge facility in 1981, testing showed ethylene dichloride<sup>207</sup> made and used by the plant to make PVC present at extremely high concentrations in local wells, part of the city's water supply.<sup>208</sup> No recent drinking water analyses appear to be available through the state's public databases. The Louisiana government's response to this ongoing hazard and concern from the community has since focused on reporting and cleaning up unauthorized releases, rather than preventing contamination.

These measures have been wholly inadequate to eliminate the Formosa Plastics facility's threats to workers and the local population. Between 1984 and 1990, Formosa Plastics was fined more than \$150,000 for "chronic vinyl chloride violations."<sup>209</sup> Workers continued to have concerns over compensation and safety at the site over a decade later.<sup>210</sup> In 2002, Formosa Plastics was fined \$300,000,



*An aerial shot of Formosa Plastics' facility in Baton Rouge.*

forced to pay \$1.35 million in cleanup related projects, and required to make \$2.7 million in adjustments to the facility's groundwater recovery operations related to the ongoing discharge of ethylene dichloride and violations of the Clean Water Act at the Baton Rouge facility.<sup>211</sup> Inspectors found that Formosa Plastics failed to monitor its wells, maintain the wells' structural integrity, or operate a sewage treatment plant properly for a nearly two-year period between 1999 and 2000. The neglect contaminated local bayous and threatened the water supply of Baton Rouge residents.<sup>212</sup> Following a 2009 finding by the US EPA against the Formosa Plastics facilities in both Baton Rouge and Point Comfort, Texas, the company was penalized \$2.8 million for improperly releasing hazardous waste into local waterways.<sup>213</sup> Formosa Plastics pledged to spend another \$10 million in "man-hours" to set up additional monitoring rather than make any equipment changes or investments.<sup>214</sup>

Despite these violations and ongoing concerns, LDEQ approved a massive expansion to the Formosa Plastics Baton Rouge facility's production capacity. In the early 2000s, the facility produced an average of 40,000 pounds per year of the highly toxic substance

ethylene dichloride.<sup>215</sup> Since 2016, the facility has produced an average of nearly 2.5 million pounds of ethylene dichloride and an additional nearly 2.5 million pounds of 1,1,2-trichloroethane,<sup>216</sup> among other chemicals, per year. While the site has not been fined since the 2009 penalty, EPA records indicate it has been in violation of the Clean Air Act every quarter since then.<sup>217</sup>

#### **BOX 5:** **Residents Monitor Sites for Toxicity**

Official air quality and toxicity monitoring near the Baton Rouge PVC facility occur at distant or discontinuous intervals. As a result, residents who live and work near the site have taken it upon themselves to log and report any signs of exposure. Residents have become experts on the effects of ethylene dichloride and vinyl chloride monomer, logging and reporting odors in the air and any physical side effects they may be experiencing — effectively serving as the first reporters of spills and other emissions incidents.

The impact on community members is severe: Not only does the toxicity of the plant's operations take a toll on residents' and workers' physical health, but the continual monitoring affects their mental health. Residents report that the inadequate enforcement of regulations of the ongoing environmental and health hazards places an incredible burden on them in terms of knowledge, personal time commitments, and stress, to keep themselves safe from the Formosa Plastics facility.<sup>218</sup>

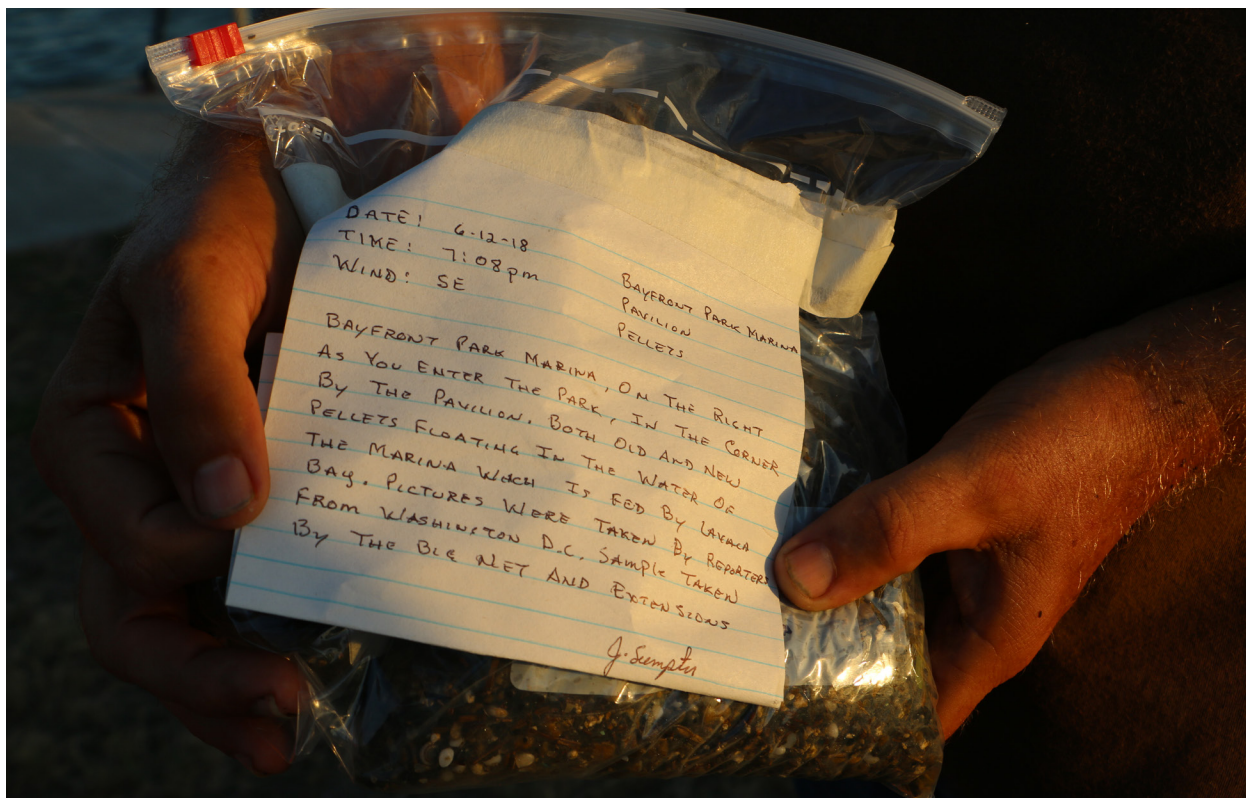
#### **“Enormous” Violations in Point Comfort**

The longstanding and ongoing pollution and safety violations at Formosa Plastics' production plant in Point Comfort, Texas, provide another illustration of the company's harmful record in the United States. In 1983, Formosa Plastics set up shop in Point Comfort, producing PVC and vinyl chloride monomer. By 1989, the site had contributed to the area becoming one of the worst in the country for toxic releases on land.<sup>219</sup> These chemicals include vinyl chloride monomer and ethylene dichloride — the same chemicals that contaminate the air and water around the Formosa Plastics facility in Baton Rouge, Louisiana.

Despite ongoing and vocal opposition from a growing group of local residents, Formosa Plastics continued to invest more than \$2 billion over the following decades, expanding the site to produce more types of plastic resin, including polypropylene and polyethylene.<sup>220</sup> At the time of this report's writing, the facility encompasses 17 different operating units on 1,800 acres of land and water.<sup>221</sup> This enormous complex releases nine million gallons of wastewater into nearby Lavaca Bay every day.<sup>222</sup> Like the Baton Rouge plant, the Formosa Plastics facility in Point Comfort has been identified as a “significant non-complier” under the Resource Conservation and Recovery Act since 2004 and has been in violation of the Clean Air Act every quarter since 2009.<sup>223</sup>

#### **Accident and Explosion**

In October 2005, a forklift operator at the Point Comfort plant accidentally ripped loose a small valve in the polypropylene piping system. Almost instantly, a highly flammable vapor cloud began to form. Within two minutes, that cloud ignited and exploded, sending flames at least 500 feet into the air. Sixteen workers were injured, one severely. The local community was ordered to shelter-in-place. That portion of the facility did not reopen for more than six months.



*Texans bag pellets as evidence of discharge into Lavaca Bay from the Point Comfort facility.*

An investigation by the US government later found that Formosa Plastics had failed to account for potential vehicle impacts on the site and did not adequately protect its workers with flame retardant clothing. They further found that the design of the plant was inadequate in its safety standard from the start.<sup>224</sup>



*The interior of the Formosa Plastics Point Comfort site following the explosion.*

### Plastic Discharge in the Water

In 2009, the lead organizer against the plant's expansion, local resident and lifelong fisherwoman Diane Wilson, got a tip from a Formosa Plastics employee to look for plastic pollution in Lavaca Bay, where the facility was releasing wastewater discharge.<sup>225</sup> Visible all over the Bay were billions of tiny plastic pellets, called nurdles. "Nurdles" are the industry nickname for the pellet-form used to transport plastic resins before production and processing into familiar plastic products.<sup>226</sup> The pellets are not just a nuisance — they are noxious. Like nearly all plastics, nurdles contain endocrine-disrupting chemicals that harm fish, animal, and human populations.<sup>227</sup> Nurdles can also be vectors for other toxicants and pathogens, accumulating other contaminants and being mistaken by fish for food.<sup>228</sup>



*Diane Wilson in Lavaca Bay.*

After being dismissed by the US EPA and Texas authorities to whom they complained, local leaders started collecting soil and water samples from Lavaca Bay. In 2018, they filed a “citizen lawsuit” in federal court against the company. In late 2019, a federal judge cited their collected evidence of over 20 million nurdles as an indication of “enormous” violations, pinning the company as a “serial offender” and criticizing Texas regulators for not ensuring the site was in compliance.<sup>229</sup> Formosa Plastics agreed to a \$50 million settlement of the lawsuit, the largest ever

reached in a Clean Water Act case — and nearly five times higher than the next highest settlement of its nature.<sup>230</sup> As part of that settlement, Formosa Plastics, which maintained throughout the lawsuit that no plastic flake or pellets were in the wastewater, pledged to bring the Point Comfort facility down to true “zero discharge” of plastic pollution.<sup>231</sup>

Since January 2020, when the settlement was meant to go into effect, a volunteer team has continued to find nurdles and plastic pollution in Lavaca Bay on an almost daily basis.<sup>232</sup>

## CHAPTER VI

# A GROWING THREAT: IN THE SHADOW OF THE SUNSHINE PROJECT



Given the track record of existing facilities within the Formosa Plastics Group, it is no surprise that the plans to build and operate new facilities under a newly created subsidiary are controversial. The following section highlights how Formosa Plastics' high-profile expansion project in St. James, Louisiana, is poised to exacerbate systemic racism, undermine human rights, and inflict environmental harm.

### *Formosa Plastics' US Expansion Plans*

St. James is situated between New Orleans and Baton Rouge, Louisiana, in the middle of an industrial chemical corridor along the Mississippi River conventionally referred to as Cancer Alley. Out of the 10 census tracts with America's highest cancer rates, seven of them are located in this 85-mile stretch.<sup>233</sup>

It is in the heart of St. James Parish's Council District 5, a community already overburdened with pollution from a dozen oil, gas, and petrochemical facilities, that Formosa Plastics plans to build one of the world's largest petrochemical complexes, disturbingly dubbed the "Sunshine Project."<sup>234</sup> As designed, the complex will encompass 14 plants, including two ethane crackers, two ethylene glycol plants, two high-density polyethylene plants, two linear low-density polyethylene plants, additional plants producing propylene and polypropylene, two utility (power) plants, a storage and transportation loading facility, and a wastewater treatment plant.<sup>235</sup> The materials produced will be used to manufacture single-use plastic products such as grocery bags, plastic bottles, and other products including antifreeze, pipes, and car casings.<sup>236</sup>

The proposed St. James complex has faced significant backlash from the local commu-

nity, which has drawn nationwide attention to the project's injustices and potential environmental and health harms.<sup>237</sup> Two legal challenges to the permits issued for the construction of the facility have resulted in significant roadblocks to Formosa Plastics Group's plans to build the megacomplex.<sup>238</sup>

In addition to the proposed St. James complex, Formosa Plastics is planning to move forward with expansion projects at its Point Comfort and Baton Rouge facilities. In Point Comfort, the company has received permits for and is constructing a new ethane cracker, LDPE unit, olefins unit, LDPE resin plant, HDPE resin plant, and polypropylene line.<sup>239</sup> The company is also planning to expand the plant's ethylene glycol production.<sup>240</sup> In January 2021, the company announced a further \$2.92 billion expansion planned for the Texas facility to produce even more PVC, vinyl chloride monomer, and caustic soda.<sup>241</sup> A planned \$332 million expansion of PVC production at the Baton Rouge plant was announced in 2019, aiming to increase PVC output by 300 million pounds annually.<sup>242</sup> Permits have been issued to expand the plant's hydrochloric production unit.<sup>243</sup>

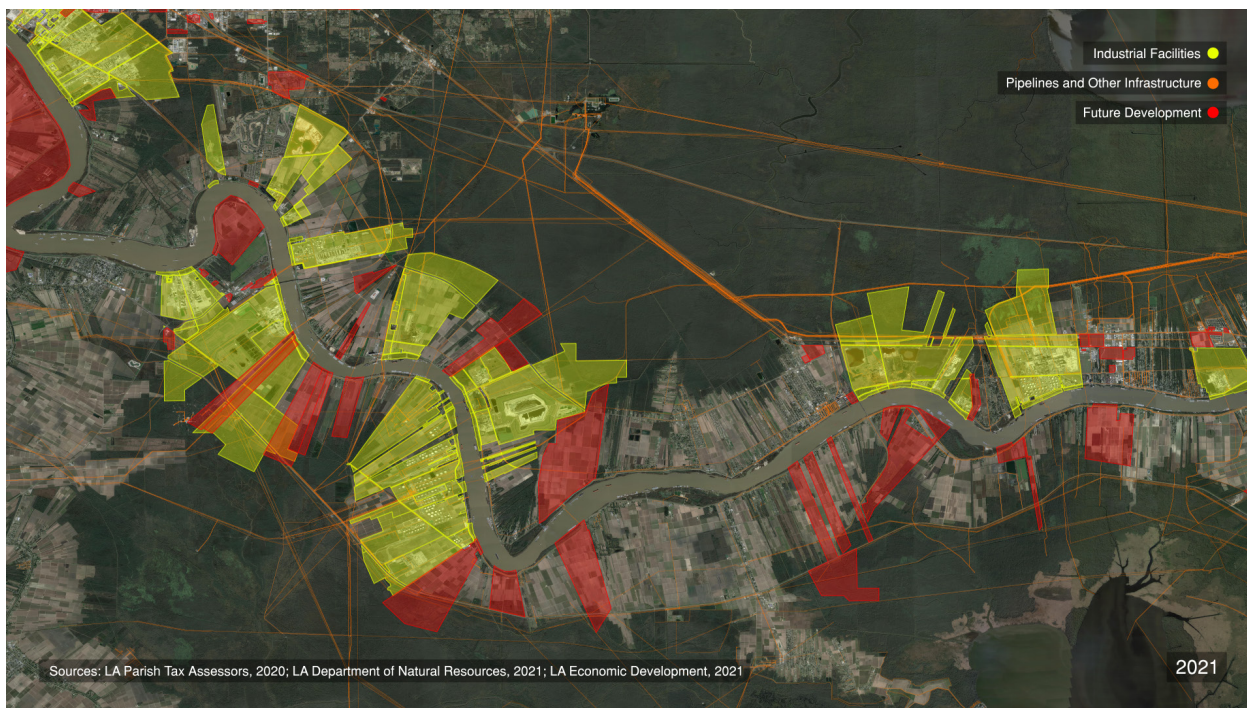
These expansions are planned despite growing recognition within the industry that current and planned capacity for major categories of plastic products exceeds foreseeable demand.<sup>244</sup> Formosa Plastics had to shut down operations of the LDPE line in

Texas in December 2020 and January 2021 due to disruptions in the site's ethylene supply.<sup>245</sup> Formosa Plastics Corporation USA has declared *force majeure* several times since 2020, suspending production of various products, including PVC and polypropylene, reportedly due to circumstances beyond their control.<sup>246</sup>

This report does not thoroughly explore the environmental, public health, and economic implications of these expansion projects. Still, evidence from existing operations suggests risks will only be heightened if regulators allow Formosa Plastics' plans to proceed. The Point Comfort plant continues

to struggle to comply with its zero discharge mandate.<sup>247</sup> As described above, the PVC plant in Baton Rouge has been in "significant non-complier" status for years, and numerous violations have yet to be remedied.<sup>248</sup> Based on these patterns of harm and noncompliance by Formosa Plastics, the planned expansion projects pose a clear, credible, and significant risk of compounding and exacerbating existing, well-documented problems.

*Multiple layers of public data reveal the ongoing sell-off of land along Cancer Alley, including residential land that is home to 'fenceline' communities, to oil, gas, and chemical companies.*



## *Injustices of Development and Environmental Racism in St. James*

Facing more public resistance at home in Taiwan, Formosa Plastics Group has looked to expand its operations in the United States, prompting headlines such as “A Plastics Giant That Pollutes Too Much for Taiwan Is Turning to America.”<sup>249</sup> One 2019 analysis by ProPublica asserted that “the air around Formosa’s [planned St. James complex] site is more toxic with cancer-causing chemicals than 99.6% of industrialized areas of the

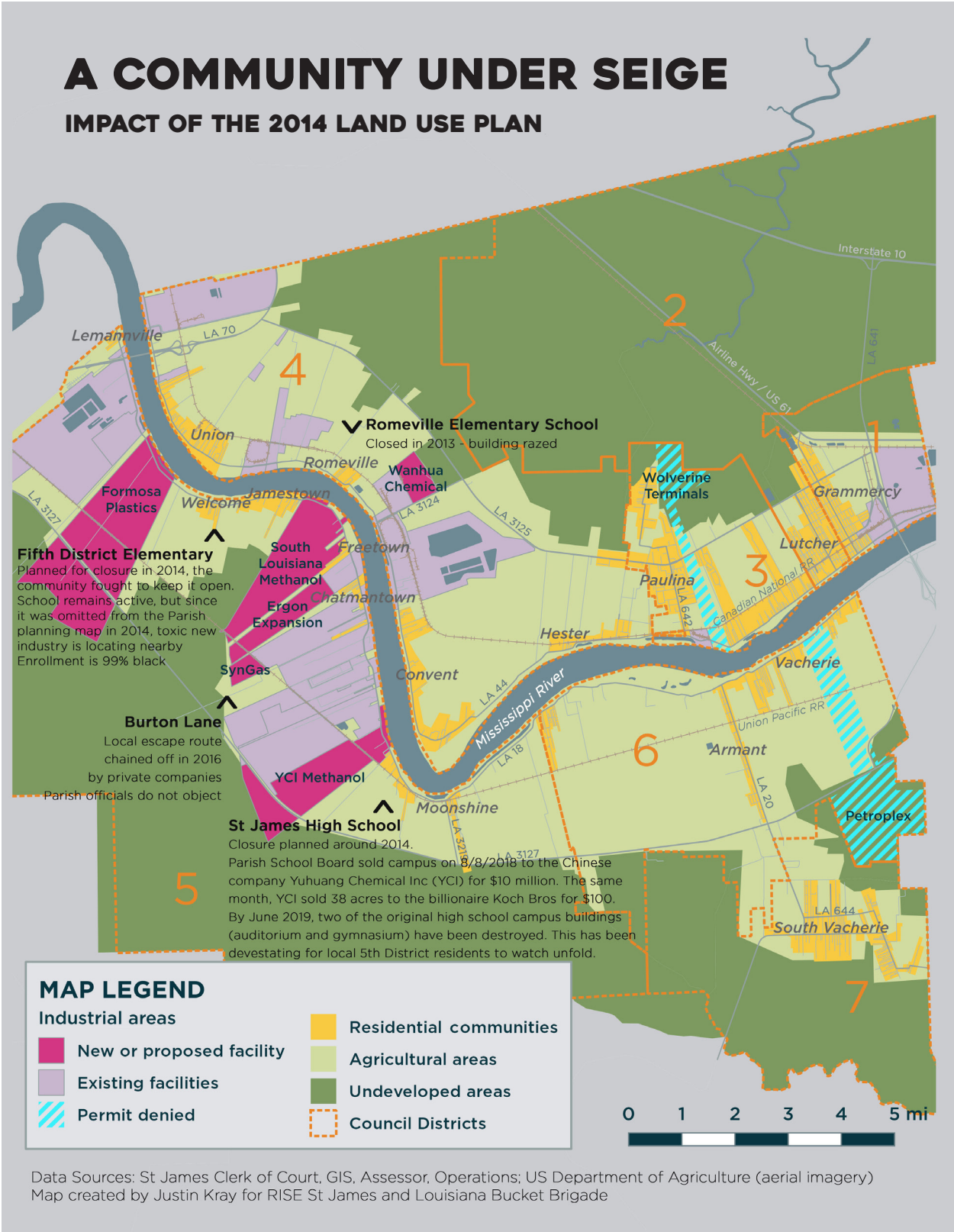
country.”<sup>250</sup> If the complex is built and releases emissions as permitted, “it would rank in the top 1% nationwide of major plants in America in terms of the concentrations of cancer-causing chemicals in its vicinity.”<sup>251</sup>

The below chart outlines some of the most significant air quality impacts of the proposed complex.

**FIGURE 3: Emissions Permitted for the Proposed St. James Complex**

POLLUTANT	TONS PER YEAR <sup>252</sup>	HEALTH IMPACTS
<b>Particulate matter (PM<sub>10</sub> + PM<sub>2.5</sub>)</b>	703.67	Aggravated asthma, respiratory distress, premature death in people with heart or lung disease <sup>253</sup>
<b>Sulfur dioxide</b>	82.90	Death or permanent injury, eye and respiratory irritation, aggravated asthma <sup>254</sup>
<b>Nitrogen oxides</b>	1242.53	Asphyxia or breathing difficulty, headache, drowsiness, frostbite on contact <sup>255</sup>
<b>Carbon monoxide</b>	2768.93	Headache, dizziness, weakness, confusion, nausea, unconsciousness, and possibly death <sup>256</sup>
<b>Ethylene oxide</b>	7.70	Respiratory irritation, lung injury, headache, nausea, vomiting, diarrhea, shortness of breath, cyanosis, cancer, reproductive effects, mutagenic changes, neurotoxicity, sensitization <sup>257</sup>
<b>Benzene</b>	36.58	Skin and eye irritation, dizziness, weakness, headache, vomiting, possible coma, cancer, death <sup>258</sup>
<b>1,3-Butadiene</b>	23.89	Nose and eye irritation, frostbite on contact, cancer <sup>259</sup>
<b>Formaldehyde</b>	8.90	Skin and eye irritation, coughing, wheezing, a probable carcinogen <sup>260</sup>
<b>Acetaldehyde</b>	17.78	Nose and eye irritation, nausea, vomiting, headache, unconsciousness, severe burns on contact, possibly carcinogenic <sup>261</sup>
<b>GHGs (CO<sub>2</sub> equivalents)</b>	13,628,091	Climate change; increased respiration, headache, unconsciousness <sup>262</sup>

FIGURE 4: A Community Under Siege



The planned \$9.4 billion complex would *double* toxic emissions in St. James Parish, with the most concentrated harms inflicted upon the Black community of the 5th Council District.<sup>263</sup> A 2021 analysis by the state’s can-

*“We have to stop building our future on the mistakes of the past. The mistake of the past was a wink and a nod and a blind eye to slavery... We cannot continue to build our future on inequality.”*

— Gail LeBoeuf of Inclusive Louisiana

cer registry found that the census tract where Formosa Plastics plans to build the St. James complex has a cancer rate 20% higher than the Louisiana state average.<sup>264</sup> Louisiana’s cancer incidence rate, in turn, is already 9% higher than the US national average.<sup>265</sup> The complex presents a potentially devastating increase in the local population’s environmental burden and public health risk, especially in light of the COVID-19 pandemic. Multiple studies have now demonstrated links between air pollution exposure and COVID-19 death rates.<sup>266</sup> As of July 2020, three out of Louisiana’s five parishes with the highest COVID-19 death rates were located in Cancer Alley, including St. James, with averages up to 3.8 times the state’s median death rate.<sup>267</sup> Louisiana’s Black residents have been disproportionately susceptible to death from COVID-19 from early in the pandemic.<sup>268</sup>

Numerous studies have established the harms from the oil, gas, and petrochemical industries borne disproportionately by Black communities in Louisiana<sup>269</sup> and nationwide.<sup>270</sup> Industrial development in Cancer Alley is a textbook case of environmental

racism, understood here as any environmental “policy, practice, or directive that differentially affects or disadvantages (whether intended or unintended) individuals, groups, or communities based on race or color.”<sup>271</sup> St. James Parish’s 5th Council District is 86% Black.<sup>272</sup> More than half of the industrial plants operating in St. James Parish are concentrated in the 5th District, while there are no such facilities in the 3rd District,<sup>273</sup> which is 78% white.<sup>274</sup> Many 5th District residents are descendants of formerly enslaved people, who, in 1872, after the abolition of slavery, established Freetown, one of America’s first free Black communities.<sup>275</sup> In the century and a half that followed, large tracts of plantation land along the Mississippi River were sold to oil, gas, and chemical companies, creating a corridor now infamous for its toxic air, risks of cancer, and high rates of respiratory and other diseases.<sup>276</sup>

A 2019 report showed how environmental racism paved the way for the issuance of the land use permit to Formosa Plastics for the St. James complex.<sup>277</sup> Between 2011 and 2014, a significant change to the St. James Parish Land Use Plan was rushed through without adequate public oversight, shifting the zoning designation of an area in the Parish’s 4th and 5th Council Districts, predominantly populated by Black people, from “Residential” to “Residential / Future Industrial.”<sup>278</sup> Since then, a slew of petrochemical developments have been approved for construction in those areas, including the Formosa Plastics complex, South Louisiana Methanol, SynGas, YCI Methanol, and an expansion of the Ergon facility.<sup>279</sup> An additional company, Wanhua Chemical, sought a land use permit but eventually withdrew its application, apparently under public pressure and a changing financial climate.<sup>280</sup> The Formosa Plastics complex is by far the largest of these proposed facilities.<sup>281</sup>



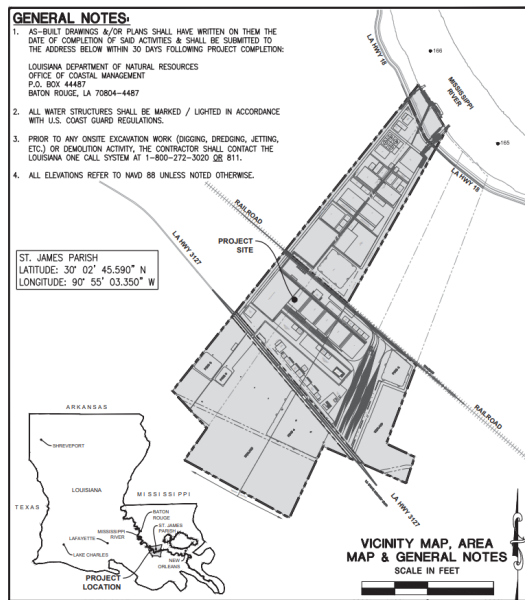
*Juneteenth celebration at the site of the proposed Formosa Plastics complex in St. James Parish.*

### **Not Honoring St. James' Ancestors**

In addition to vastly increasing toxic emissions in St. James's overburdened community, the construction of Formosa Plastics' proposed facility would desecrate numerous likely gravesites, very likely those of African American people then enslaved.<sup>282</sup> An analysis prepared for local community members in early 2020 highlighted that Formosa Plastics' archaeological surveys of the site ignored the recommendations of the company's own consultants in ways that greatly increased the risk that the likely graves would go undocumented.<sup>283</sup> This finding led community members to question whether Formosa Plastics intentionally tried to avoid the discovery of possible gravesites while seeking a land-use permit from the St. James Parish Council, as the company appeared to know but not disclose this crucial information to state and municipal decision makers.<sup>284</sup> Since learning about the likely gravesites over a year after the land use permit was issued for

the complex, community members have been running an ongoing campaign to pressure the St. James Parish Council to rescind that permit.<sup>285</sup> Local leaders have made clear their demands.<sup>286</sup>

As of this report's writing, the St. James Parish Council has yet to take action on the Formosa Plastics complex's permits. However, two city councils downriver have recently taken action, with each unanimously passing resolutions opposing the construction of the Formosa Plastics complex proposed for St. James.<sup>287</sup> In New Orleans, the largest city dependent on the water sources affected by petrochemical development upriver, a city councilmember proposing the resolution recalled her family in Vietnam who had been harmed by the chemical release from the Formosa Plastics Ha Tinh Steel facility.<sup>288</sup>



A plan of the proposed facility in St. James Parish.

## A Threat to Local Waterways and Fisheries

For local residents, Formosa Plastics' record of dumping plastic pellets from its Point Comfort, Texas facility into Lavaca Bay is an ominous sign of what to expect from the proposed St. James complex. When speaking to the St. James Parish Council in 2019, Diane Wilson shared:

*"It's not just a trace amount. It's not a handful. It's billions of pellets that are in the water. It's very, very typical, and we have oystermen who are finding the pellets in the oysters. They're in the fish. It is all over Lavaca Bay shore, and it's all over the creek."*<sup>289</sup>

In its preliminary description of the complex's stormwater management plan, Formosa Plastics proposes to discharge its rainwater runoff into the St. James Canal. The Canal feeds directly into Lac des Allemands,<sup>290</sup> a celebrated source for local seafood once designated by the Louisiana State Legislature as the "Catfish Capital of the Universe."<sup>291</sup> Lead-

ers in the local fishing and restaurant industries have expressed alarm at the proposed St. James complex's significant potential to cause irreparable harm to the lake's ecology. Some worry the project will have spillover effects on the region's food culture and tourism. Joey Fonseca, the owner of Outlaw Katfish Company who has been fishing in Lac des Allemands his whole life, passionately told the St. James Parish Council in October 2020:

*"For the life of me, I can't understand how y'all would entertain the audience of these people from Formosa [Plastics] with their past history and allow them to put a plant here...If this plant is successfully allowed to be completed and built, [the estuary] will not only be harmed by the release of all the chemicals, microplastics, so forth and so on, but so will the crab, the shrimp, and the crawfish."*<sup>292</sup>

## Avoiding Taxes

For decades, Louisiana has had one of the most generous industrial tax subsidy programs in the country. In St. James, industrial tax exemptions have served to deprive local governments of much-needed funding for schools, health programs, hospitals, roads, emergency response, and other services,<sup>293</sup> while the increased health burden from industrial pollution has fallen disproportionately on the parish's Black community.<sup>294</sup> Following years of organizing and several high-profile analyses, community groups succeeded in pressuring the governor to sign an executive order in 2016, scaling back the scope of the state's Industrial Tax Exemption Program (ITEP).<sup>295</sup> The move gave local jurisdictions back the power to review — and possibly deny — applications for exemptions from local property taxes. Formosa Plastics nonetheless received an automatic 10-year, \$1.5 billion tax exemption under the previous state rules by filing its application the *day before* the new rules were to take effect.<sup>296</sup>

Simultaneously, Formosa Plastics launched local public relations and charity campaigns seemingly designed to curry favor in the community. The company’s efforts involved several full- and multi-page ads in the local newspaper,<sup>297</sup> the distribution of staple foods along with a flyer about the new project,<sup>298</sup> and sponsorship of an anti-litter campaign at a local high school.<sup>299</sup> These campaigns appeared to be one-off and irregular. Their cost was vanishingly small compared to the foregone revenue from the Formosa Plastics complex’s property tax exemptions, which would have otherwise gone to fund St. James schools, roads, and other essential public services.

“Good Neighbor” Marketing Campaign

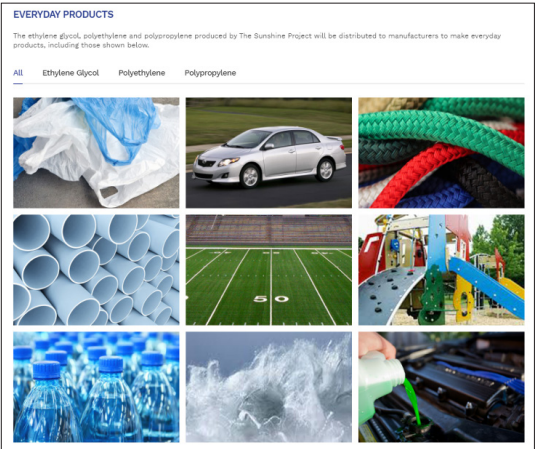
Formosa Plastics’ public relations efforts extend beyond highlighting its local charitable contributions to portraying its products as essential to the community. As the public has become more aware of the proposed Formosa Plastics plant’s potential to exacerbate air pollution in St. James’ Black community, the

company has altered its marketing materials in a way that deflects attention from the environmentally harmful characteristics of Formosa Plastics’ core products. Until June 2020, the website for the Formosa Plastics St. James complex featured single-use plastics and chemicals among its imagery and product highlights. But after multiple lawsuits had been filed against the complex’s permits, with the COVID-19 pandemic in full swing, and uprisings across the United States and in Louisiana calling for racial justice, Formosa Plastics dramatically altered the website imagery to feature a diverse set of people, reusable products, and medical personnel in personal protective equipment.

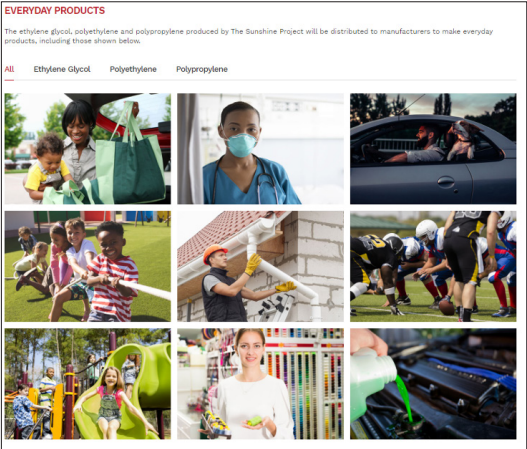
These shifts echo the Plastics Industry Association’s broader efforts to deflect criticism of the industry’s contributions to air pollution and other dangers in favor of a focus on the ‘life-saving properties’ of plastic during the COVID-19 pandemic.<sup>300</sup> Yet, the complex’s construction timeline means that production will not be brought online until at least 2024, likely after the acute COVID-19 threat has passed.<sup>301</sup>

FIGURE 5: Sunshine Project Webpages

“Sunshine Project” website homepage on June 9, 2020:<sup>302</sup>



The same website homepage on June 18, 2020:<sup>303</sup>



## BOX 6:

### Is the Future in Plastics?

Economic analyses published since the initial announcement of Formosa Plastics' plans to construct the St. James complex have cast a shadow over the financial viability of the plastics industry generally and this proposed project specifically. As early as 2018, it was clear that the plastics market was being flooded by oil and gas companies seeking to maintain profits by boosting petrochemical sales in the face of dropping consumer demand for combustible fossil fuels.<sup>304</sup> The oil, gas, and petrochemicals markets are now suffering from a problem of oversupply from which they are unlikely to recover.<sup>305</sup> Manufacturers were already producing more plastics than were in demand in 2019. Continued construction today to add new production capacity is further straining the market and could lead to stranded assets.<sup>306</sup> Communities looking to manufacturing to secure long-term fiscal stability may not find it with a company like Formosa Plastics.

Indeed, a March 2021 analysis on the proposed Formosa Plastics St. James complex found:

*“The accumulation of risk factors has upended the original investment thesis for the Formosa project. Moreover, even if the complex is built, it is highly likely to face vigorous and protracted opposition to the pollution from its operations.”*

*The Formosa plant is the wrong project for the company, the petrochemical markets, the St. James community, the state of Louisiana, and the countries of Taiwan and the United States.”<sup>307</sup>*



## CHAPTER VII

# AN INHERENT RISK: AN INDUSTRY AT ODDS WITH HUMAN RIGHTS



Under international human rights law, countries (referred to in this section as States) have an obligation to respect, protect, and fulfill basic rights and freedoms inherent to all human beings. Private enterprises have a responsibility to respect those same rights.<sup>308</sup> The numerous violations of environmental and safety standards outlined above must be viewed both in light of their impacts on human rights and in light of the duties and responsibilities of governments and the Formosa Plastics Group to prevent and remedy those harms. Here, a disturbing pattern comes into focus: Throughout Formosa Plastics Group's history, governments have failed to uphold their obligations by allowing the conglomerate to maintain practices that erode rights and freedoms. In some instances, governments have looked the other way or actively facilitated harm. For its part, Formosa Plastics appears to have been complicit in or turned a blind eye to State conduct that has undermined the human rights of communities and workers.

In Vietnam,<sup>309</sup> Taiwan,<sup>310</sup> and the United States,<sup>311</sup> journalists, protesters, and scientists who have documented or denounced Formosa Plastics' harmful practices have faced intimidation, abuse, and imprisonment. Rather than condemning the repression of its critics, the company has largely remained quiet. In some cases, Formosa Plastics has actively engaged in the criminalization of scientists,<sup>312</sup> deflection of responsibility for its toxic emissions,<sup>313</sup> and the silencing of injured workers.<sup>314</sup> In other cases, the company's implication in the intimidation of environmental human rights defenders may be more indirect.<sup>315</sup> Across its operations, repressive political environments work to insulate Formosa Plastics from accountability for its practices.

### *Freedom of Expression and Association, and Freedom From Arbitrary Detention and Torture*

In Vietnam, the massive toxic discharge at the Formosa Ha Tinh Steel mill in 2016 led

to protests on a scale never before seen in the country.<sup>316</sup> Multi-day protests,<sup>317</sup> hunger strikes,<sup>318</sup> and demonstrations prompted an aggressive crackdown against those who aired grievances about the Formosa Ha Tinh Steel disaster. Authorities arrested and prosecuted multiple individuals who spoke out in response to the spill, including bloggers and journalists,<sup>319</sup> and police officers reportedly beat protesters who took to the streets.<sup>320</sup> Activists were also reportedly subjected to surveillance, with some indications that the government censored information regarding the disaster and protests.<sup>321</sup>

These incidents were widely reported in the media and condemned by United Nations human rights experts<sup>322</sup> and prominent human rights organizations. In 2018, Amnesty International and Frontline Defenders issued urgent action alerts regarding the imprisonment and abuse of environmental activists who spoke out against Formosa Plastics in Vietnam.<sup>323</sup> Amnesty International documented various police measures



*Police violence against protestors at a demonstration against Formosa Plastics' expansion into Vietnam.*

employed to repress protestors, in violation of the rights to peaceful assembly, freedom of expression, and freedom of movement.<sup>324</sup> Some environmental human rights defenders were reportedly subjected to violent arrest and abuse in custody and forced to make confessions.<sup>325</sup> Such acts violate international prohibitions on torture, including the use of corporal punishment and coercion to obtain testimony.<sup>326</sup> Other protestors were arrested on charges carrying a possible death sentence or life imprisonment and held in incommunicado detention, a practice that facilitates torture and can itself be a form of cruel treatment or even torture.<sup>327</sup> Despite the international outcry, many of the jailed activists remain incarcerated.

At home in Taiwan, Formosa Plastics has actively discouraged dissent. In 2012, the company filed civil and criminal complaints<sup>328</sup> against a Taiwanese scientist. The complaints were filed after he publicly presented research showing that emissions from operations similar to those of Formosa Plastics' complex in Yunlin County contribute to increased risk of cancer in nearby communities, potentially causing thousands of cases of cancer and hundreds of deaths each year.<sup>329</sup> Authorities declined to bring criminal



charges. The court hearing the civil claim ruled against Formosa Plastics, finding that the scientist's comparison constituted free expression concerning public health, the environment, and public safety.<sup>330</sup> While the company's lawsuit was unsuccessful, it reportedly had a chilling effect on the scientific community.<sup>331</sup>

Formosa Plastics has also benefited from differential treatment under the law in places where it operates. In Cambodia, for example, activists who protested the company's dumping of toxic waste in the port city of

*Public participation during 2010 hearings on the Sixth Cracker project.*





*Taiwanese people go to the Ministry of Economic Affairs to protest the construction of the Sixth Naphtha cracker in 1990.*

Sihanoukville were reportedly arrested without a warrant, jailed for a month, and subjected to physical abuse in custody.<sup>332</sup> Among those arrested and charged with inciting violence and property damage were two local activists who had worked for years with the well-known human rights organization Licadho.<sup>333</sup> In contrast, Formosa Plastics Corporation managers reportedly responsible for the dumping were not detained.<sup>334</sup> After the company was implicated in the alleged bribery of Cambodian officials to allow the dumping, the press reported that a company official laid the blame for the damage on Taiwanese environmental activists who had opposed the waste being deposited in a landfill in Taiwan.<sup>335</sup> Pointing fingers at protestors not only shirks the company's responsibility to right wrongs and prevent their recurrence, but also adds to intimidation of environmental human rights defenders, who are entitled to protection in their work.<sup>336</sup>

The freedom to engage in peaceful protest — to speak out against a corporation polluting one's community — is a fundamental tenet of democracy and a basic human right.<sup>337</sup> International law recognizes the inalienable right to participate in peaceful assemblies, subject only to narrow limitations that must be necessary, lawful, and non-discriminatory.<sup>338</sup> Efforts to raise awareness regarding environmental and public health concerns should be praised, not punished. No one should risk harassment, imprisonment, violence, or other forms of retaliation for speaking out against corporate abuse of human rights and the environment. Criminalizing dissent violates the rights to freedom of expression, association, and peaceful assembly and chills the legitimate exercise of those rights in the future. It also deprives people of access to information essential to protect their rights to life, health, and the environment.

## Access to Information

Residents, workers, and others affected by industrial activities rely on access to adequate, accurate, and timely information about the risks posed by toxic chemicals. Such information enables people to manage their exposure, mitigate harm, and meaningfully participate in decision-making about when, whether, and how those activities take place.<sup>339</sup> People have a right under international law to participate in public affairs, not just through the ballot box but also through engagement in consultative processes regarding the formulation and implementation of policies that affect their lives and those of future generations in their communities.<sup>340</sup> Participation in public affairs includes decisions about the siting, regulation, and oversight of industrial facilities like those run by Formosa Plastics.

International law protects the right to seek, receive, and impart information, which is of particular relevance in the context of environmental harm.<sup>341</sup> Both states and businesses have obligations to ensure communities' access to information, especially related to the risks posed by toxic chemicals.<sup>342</sup> The lack of access to such information exacerbates the problems faced by fenceline communities and workers, frustrating their ability to exercise and defend their rights.<sup>343</sup> For example, following the Formosa Plastics marine disaster in Vietnam, there was a lack of transparency regarding its causes and potential health risks, as authorities reportedly withheld or delayed the release of information.<sup>344</sup> The Louisiana Formosa Plastics subsidiary has yet to confirm plans for water management and disaster response at the proposed St. James complex, so affected communities remain in the dark about how the plant will affect a region heavily impacted by severe weather and the existing footprint of chemical plants.<sup>345</sup>

The more Formosa Plastics pursues industrial practices that endanger the health and safety of workers and community members and degrade the environment, the more likely it is to face resistance and public pressure. If experience to date is any indication, the response to that resistance may well jeopardize rights.

## Rights to a Healthy Environment, a Dignified Life, and Health

Pollution not only prompts protest; it also poses a threat to human rights in itself. The civil and political rights violations that critics of Formosa Plastics have faced compound the human rights risks inherent in the very nature of the products it manufactures. As discussed in the preceding chapters, the pollution emanating from the day-to-day activities at Formosa Plastics facilities and from the toxic products they make,<sup>346</sup> as well as specific contamination events due to accidents or deliberate dumping, have led to the loss of livelihood, property damage, environmental degradation, health problems, and even death.<sup>347</sup> Those impacts not only contravene local laws and regulations, they violate fundamental human rights, including the rights to life, health, food, and a healthy environment.<sup>348</sup>

*An EPA air quality monitoring seminar for residents in St. James Parish.*



Everyone has a right to a safe, clean, healthy, and sustainable environment, which is necessary to realize other human rights.<sup>349</sup> More than 150 countries — the vast majority of the world — have enacted laws protecting the right to a healthy environment, which is also enshrined in numerous international agreements.<sup>350</sup> And the momentum for global recognition by the United Nations is growing.<sup>351</sup> Mainland China and the United States — the two jurisdictions where Formosa Plastics Group has the largest operational footprint outside of Taiwan — are among the outlier countries that have not yet codified the right to a healthy environment in their domestic laws. But their existing duties to protect the rights to life and health under

core human rights treaties they have signed and/or ratified require them to protect the environment.<sup>352</sup> Because every country has recognized either the right to life, the right to health, or both, “[e]very State has an obligation to prevent . . . human exposure to pollution, toxic industrial chemicals, pesticides, wastes and other substances with intrinsic hazards.”<sup>353</sup>

Pollution is “the single largest source of premature death in the world.”<sup>354</sup> Together with other forms of environmental degradation, it constitutes one of the greatest threats to a dignified life.<sup>355</sup> The right to life, which is widely protected<sup>356</sup> and broadly interpreted<sup>357</sup> under international law, encompasses “the right to enjoy a life with dignity.”<sup>358</sup> Families are denied a life with dignity when they must become experts at tracking changes in the odor or color of air around their homes to protect themselves from hazardous emissions, as they must near the Formosa Plastics PVC facility in Baton Rouge, Louisiana. They are denied a life with dignity when they are forced to evacuate urgently because of a sudden, preventable explosion, as they were near Formosa Plastics’ naphtha cracker in Yunlin County, Taiwan. And they are denied a life with dignity when they can no longer eat or sell the fish they catch because of toxins dumped in waterways, as they could not near the Formosa Ha Tinh Steel mill in Vietnam.

The right to health is essential to a dignified life. Plastics and the petrochemicals from which they are made threaten human health throughout their life cycles, from their origins in oil and gas extraction to their processing, production, consumption, and disposal.<sup>359</sup> The chemical processes at Formosa Plastics’ facilities put the health of fenceline communities and the company’s own workers at risk. Those individuals not only face daily exposure to a variety of toxins at higher

*Sharon Lavigne of RISE St. James speaks at a protest at the Army Corps of Engineers office in New Orleans. Sharon is holding a photograph of a fellow advocate, Keith Hunter, who died of a sudden respiratory illness.*





*Farmers near Chiayi County, Taiwan, the county immediately south of Yunlin.*

levels than the average,<sup>360</sup> but they also face a constant threat of increased exposure from incidents and accidents. Many of the chemicals involved as inputs or byproducts of plastic production — as well as the plastic products themselves — cause severe health problems, including cancer (See Chapter III: A Dangerous Operation). The threat is exacerbated by the fact that many of the chemicals involved in plastics production are colorless, odorless, or otherwise difficult to detect.<sup>361</sup>

Though often invisible, air pollution is among the most pernicious impacts of the chemicals processed or produced at Formosa Plastics' facilities. Clean air is a prerequisite to health, and it is a basic human right.<sup>362</sup> Air quality directly affects the quality of life of Formosa Plastics' workers and residents near

its facilities. Formosa Plastics Corporation, LA has stated that it “values clean air and certainly believes that everyone is entitled to protection from unhealthy air.”<sup>363</sup> However, it has opposed the strengthening of air quality standards.<sup>364</sup> Formosa Plastics attacked the more protective regulations based on a supposed lack of scientific certainty that they would improve health outcomes — a position directly at odds with the precautionary principle under international law. Simultaneously, the company offered no proof of its theory that the measure would trigger poorer health outcomes.<sup>365</sup> The Army Corps of Engineers' initial assessment of the proposed St. James complex reflected a similar double standard: It disregarded air and water pollution impacts while giving weight to the facility's anticipated economic benefits.<sup>366</sup>

As noted above,<sup>367</sup> the new petrochemical complex Formosa Plastics plans to build in St. James Parish would double the level of toxic air emissions in the surrounding community, exacerbating already elevated health risks faced by the predominantly Black population. The project's purported economic benefits cannot offset the toll this pollution takes on residents' rights and welfare.

Beyond direct exposure to toxins, the impacts of Formosa Plastics' operations on the local environment surrounding its facilities jeopardize the underlying determinants of human health, such as safe water, food, and housing, among others,<sup>368</sup> and threaten the right to an adequate standard of living. That right, which is guaranteed under international law, entitles people to a sufficient quantity of healthy food<sup>369</sup> and the right not to be unjustly deprived of their source of livelihood.<sup>370</sup> When corporate pollution or depletion of waterways, soil, or air deprives people of the means to feed themselves and make a living, it violates human rights.

This is precisely what happened in Vietnam. The marine wastewater disaster at the Formosa Ha Tinh Steel mill devastated local fisheries in four provinces, stripping thousands of households of a critical source of income and nutrition and decimating the tourism industry, leading to additional loss of livelihood.<sup>371</sup> According to a study published by the World Bank, "the disaster sharply reduced average fishery income by as much as 42 percent" in the year it occurred, with downstream fisherfolk experiencing heavier losses exceeding half of their average income.<sup>372</sup> In Texas, activists have also connected plastic pellet and PVC powder runoff from the Formosa Plastics facility to the steep declines in Calhoun County's commercial fishing industry.<sup>373</sup>

Formosa Plastics' impacts on the global climate only compound the local environmental harms and rights violations experienced by communities on the fencelines of its facilities. Climate change threatens a range of human rights,<sup>374</sup> and industrial activities that generate significant greenhouse gas emissions exacerbate those risks by fueling global warming.

The production of petrochemicals and plastics is one such high-emitting activity. Making plastics feedstocks and resins is carbon-intensive by nature, because it involves converting a hydrocarbon product — oil or gas — into another form through energy-intensive processes.<sup>375</sup> An annual report by Formosa Plastics USA shows that the conglomerate's facilities in Delaware City, Baton Rouge, and Point Comfort emitted more than 7 million metric tons of CO<sub>2</sub> equivalent in 2018.<sup>376</sup> If the planned petrochemical complex in St. James Parish comes online, it would nearly double that figure, emitting another 13 million tons of greenhouse gases a year.<sup>377</sup> Those figures do not reflect the indirect emissions from the company's production activities, including upstream emissions from oil and gas extraction and piping of the plastics feedstocks to the plant, or downstream emissions from the transportation, use, or disposal of their products, including through incineration. When these lifecycle emissions are considered, it is clear that Formosa Plastics' core business exacerbates a significant and growing threat to Earth's climate, and by extension, human rights.

**BOX 7:****Justice Delayed: Victims of Toxic Discharge in Vietnam Await Their Day in Court**

Residents and fisherfolk in Vietnam affected by the Formosa Ha Tinh Steel disaster have persistently fought for justice, despite continued pressure from the company and the government to back down. Following the discharge, nearly 8,000 fisherfolk filed a lawsuit against Formosa Plastics in Taiwanese court, alleging violations of the rights to work, health, and life. The company contests the court's jurisdiction over the case, so the court has yet to hear the complaint on its merits.<sup>378</sup> An organization representing victims of the disaster submitted a complaint to the United Nations Human Rights Council documenting illnesses, food insecurity, and even deaths related to the discharge. The complaint alleges violations of victims' rights to a safe, clean, healthy, and sustainable environment, to health, food, livelihood, information, freedom of expression and assembly, and effective remedy.<sup>379</sup> After receiving a submission from the same organization,<sup>380</sup> several United Nations Special Rapporteurs — human rights experts appointed by the Human Rights Council — sent a joint communication to the government of Vietnam concerning the disaster.<sup>381</sup> These actions have yet to deliver justice for the victims of Formosa Plastics in Vietnam.

***Freedom From Discrimination***

Like the consequences of the climate crisis, which magnify inequalities, the indignity and injustice of exposure to toxic substances, such as those used and produced by Formosa Plastics, are not evenly distributed. The burden of pollution falls most heavily

on vulnerable populations.<sup>382</sup> The United Nations Special Rapporteur on toxics and human rights has observed that “[a]round the world, industrial plants, landfills and other hazardous exposures are placed near areas where indigenous peoples, people of colour and racial and ethnic minorities, people of



*St. James Parish residents gather for a protest outside the Army Corps of Engineers building in New Orleans.*

certain religions and low-income populations live, posing grave risks to their health and environment.”<sup>383</sup> Consequently, marginalized populations are at heightened risk of a range of adverse health impacts, food insecurity, environmental degradation, and loss of cultural resources, among other harms. In the United States, persistent racial disparity in toxic exposure has well-documented impacts on the health and welfare of communities of color.<sup>384</sup> Studies show that “[p]eople of color comprise nearly half the population (11.4 million) living near potential sources of toxic emissions” in the United States and are “almost twice as likely as whites to live on the ‘fenceline.’”<sup>385</sup>

Formosa Plastics’ facilities in the United States follow this same discriminatory pattern. As previously discussed, the St. James complex will increase emissions of greenhouse gases and other toxic air pollutants in a community already suffering from height-

ened health disparities. The plant’s construction exacerbates threats to the community’s rights to health and a healthy environment, and freedom from discrimination.<sup>386</sup> Courts in the United States have already recognized the context of pervasive environmental racism in which the complex’s permits were issued and a Louisiana judge referred one of those permits for reconsideration by local officials.<sup>387</sup>

The destruction of important cultural and historic resources, such as the likely burial grounds of enslaved African Americans, is inconsistent with subnational (and possibly national) laws<sup>388</sup> and international norms regarding the preservation of cultural heritage. Everyone has a right to participate in cultural life,<sup>389</sup> and the preservation of cultural heritage is critical to the enjoyment of that right. The United Nations Educational, Scientific and Cultural Organization (UNESCO) has adopted numerous declarations and recommendations reiterating Member States’ responsibility to protect or save cultural property, such as historic cemeteries, from public or private works likely to damage and destroy it.<sup>390</sup> The failure to adequately assess and avoid such harms to cultural property or account for the cumulative impacts of environmental racism in deciding the location of Formosa Plastics’ project undermines cultural rights and violates the prohibition on discrimination under human rights law.

International law bars practices that have a disparate *impact* on the basis of race, not just those that reflect discriminatory *intent*,<sup>391</sup> including “*environmental harm that results from or contributes to discrimination.*”<sup>392</sup> The International Convention on the Elimination of All Forms of Racial Discrimination requires States “to prohibit and to eliminate racial discrimination in all its forms and to guarantee the right of everyone, without distinction as to race, colour, or national or ethnic origin, to

equality before the law.”<sup>393</sup> All of the States in which Formosa Plastics or its subsidiaries and/or affiliates operate are bound by one or more international treaties prohibiting discrimination.<sup>394</sup>

Domestic law likewise prohibits conduct that results in racially disparate environmental harm. In the United States, federal agencies are required to address environmental racism in their operations. Executive Order 12898 of February 11, 1994, instructs every federal agency to “make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.”<sup>395</sup>

One week into office, US President Joseph Biden issued an executive order reaffirming this environmental justice mandate, directing agencies to “address the disproportionately high and adverse human health, environmen-

tal, climate-related and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts,” and establishing new advisory bodies to strengthen implementation of this policy.<sup>396</sup> President Biden mentioned “Cancer Alley” by name when announcing this order and its focus on environmental justice.<sup>397</sup>

Together with other federal laws, these policies oblige federal agencies to consider the discriminatory impacts of any projects they permit or finance, including decisions regarding the siting or operation of facilities subject to federal authorization, such as the Formosa Plastics planned complex in St. James. Recipients of federal funding, including local governments, in turn, have an obligation not to discriminate on the basis of race, color, or national origin.<sup>398</sup> That prohibition and the regulations that implement it apply not only to intentional discrimination but to actions that have a discriminatory effect,<sup>399</sup> such as disproportionately exposing Black communities to more toxic risk than others.

*Protest outside the South Gate of Formosa Plastics' Mailao facility in 2006.*



**BOX 8:****UN Experts Call for the End of Environmental Racism in Cancer Alley**

In November 2020, the Human Rights Advocacy Project of the Loyola New Orleans College of Law gathered co-signers on a simple yet urgent call to the United Nations Special Rapporteur on contemporary forms of racism to conduct an inquiry into environmental racism in Cancer Alley. The letter details expanding industrialization in communities already overburdened by pollution that are targeted on the basis of race and demographics.<sup>400</sup> Following ongoing local advocacy and awareness-raising, United Nations experts responded with a statement co-signed by five special rapporteurs on human rights and the Working Group of Experts on People of African Descent. The co-signers called out the proposed Formosa Plastics complex by name as a significant concern and said:

*“The African American descendants of the enslaved people who once worked the land are today the primary victims of deadly environmental pollution that these petrochemical plants in their neighbourhoods have caused. We call on the United States and St. James Parish to recognise and pay reparations for the centuries of harm to Afro-descendants rooted in slavery and colonialism.”<sup>401</sup>*

This statement and a subsequent panel conversation during the March 2021 meeting of the Working Group of Experts on People of African Descent received significant coverage in both national and local media in the United States and southern Louisiana. Shortly thereafter, United States congressional representatives from California and Virginia wrote a letter to President Biden, requesting that he revoke the permits already issued to the proposed Formosa Plastics complex in St. James.<sup>402</sup> Local community leaders welcomed these statements,<sup>403</sup> even as politicians supported by the plastics industry dismissed the link between industrial plants and increased cancer risk, deflecting blame onto tobacco use, obesity, and other health factors.<sup>404</sup>

***Regulation and Remedy***

Formosa Plastics’ harmful impacts on human rights do not occur in a vacuum. The governments of the countries where the conglomerate’s constituent companies are registered and/or operate have a duty to protect human rights by adequately regulating businesses subject to their jurisdiction.<sup>405</sup> Adequate regulation means taking measures to ensure that companies do not cause foreseeable harm to human rights, and when they do — as Formosa Plastics has — to hold them to account for the “*harm they generate both domestically and extraterritorially.*”<sup>406</sup> Human rights

bodies have long recognized that effectively protecting the public from environmental harm requires enforcing pollution controls<sup>407</sup> and regulating industrial activities.<sup>408</sup> Each year provides more evidence that exposure to hazardous substances threatens the rights to life and health, among other rights.<sup>409</sup>

Corporations, in turn, have a responsibility to respect human rights,<sup>410</sup> including by preventing “exposure to hazardous substances resulting from their activities and/or business relationships,”<sup>411</sup> and to cooperate in remedying wrongs when they cause or contribute

to human rights harm. Although Formosa Plastics Group has sited facilities in places where money can often be substituted for democratic legitimacy and access to power can be purchased, it is not above the law. Wherever it operates, Formosa Plastics has a responsibility to avoid causing or contributing to the violation of rights, regardless of whether local laws are adequately protective.

The company's history shows that it has repeatedly failed to fulfill its responsibilities. In turn, the States where the Formosa Plastics Group operates have routinely abdicated their duties to protect people from the company's harmful conduct and hold the company accountable.

### Right to Remedy

When a person's rights are violated, they have a right to justice, regardless of who was responsible for the violation.<sup>412</sup> Righting the wrong — adequately repairing the harm — may require restitution, compensation, public apologies, and/or guarantees that the harm will not recur.<sup>413</sup> Of the thousands of individ-

uals whose lives and livelihoods have been adversely affected by Formosa Plastics Group's operations, few have received effective remedy for past or ongoing harms. Too often, people have been denied justice altogether. Where reparation has been provided, victims have neither received adequate compensation nor seen practices change to prevent future harms. As a result, the threats to their rights continue.

In the case of the environmental disaster in Vietnam, Formosa Plastics admitted responsibility. Still, advocates for victims criticized the compensation settlement reached with the government as insufficient to cover actual damages and as not having benefited the many thousands affected.<sup>414</sup> Scientific studies indicating negative impacts on the health of surrounding communities of a Formosa Plastics complex in Taiwan did not prevent the company from obtaining a permit to expand its operations there. Nor have investigations into the causes of explosions at Formosa Plastics facilities prevented their recurrence elsewhere (for example, the explosion at

*The Coalition Against Death Alley gathers in front of the Whitney Plantation during a five-day march. Less than 15 miles from St. James, the site was owned by Formosa Chemicals & Fiber Corp. from 1990-1999.*



the Delaware plant in 2005, one year after a similar explosion at its plant in Illinois). And while a landmark settlement reached in 2019 in a lawsuit against Formosa Plastics' plant in Point Comfort, Texas, requires the company to eliminate the facility's discharge of plastic pollution, residents monitoring the nearby waterways have continued to find spilled pellets into 2021.<sup>415</sup>

Remedying the harms Formosa Plastics' operations have caused and continue to cause to people and the environment requires: (a) cessation of its dangerous industrial practices; (b) full disclosure of the risks posed by the company's operations, as well as mitigation, management, and emergency response plans;<sup>416</sup> (c) complete assessment of the costs — both direct and indirect — of past accidents

and contamination events; and (d) cleanup of pollution that continues to threaten waterways, soil, air, and health. Of equal importance is the need to prevent such harms from recurring. Meaningful prevention requires exposing the true impacts of the petrochemicals, plastics, and other products made by Formosa Plastics Group. It also requires assessing whether those impacts exacerbate existing inequalities, entrench racism, or perpetuate other forms of discrimination. Armed with such information, affected residents and workers must have an opportunity to decide if, when, and how Formosa Plastics operates in their communities. Where it is not possible to eliminate the serious threats that an industrial activity poses to human rights and the environment, then the activity itself must be eliminated.

#### **BOX 9:**

### **Human Rights Violators Are Not a Good Investment**

In August of 2020, after a lengthy investigation, Norway's Government Pension Fund Global excluded two Formosa Plastics Group subsidiaries from its investment portfolio (Formosa Taffeta and Formosa Chemicals & Fibre) due to the "unacceptable risk that the companies cause systematic human rights abuses."<sup>417</sup> According to the Council on Ethics for the Fund:

*"Investigations into working conditions at Formosa Taffeta's factory in Vietnam identified numerous labour rights violations such as the illegal and involuntary use of overtime, underpayment of employees, discrimination, and violations of occupational health and safety requirements. The Council on Ethics emphasises that Formosa Taffeta has provided misleading information about working hours to the Council, and that it in practice does little to prevent the abuse of labour rights within its own operations."*<sup>418</sup>

As of this writing, the Fund continues to hold assets in another Formosa Plastics subsidiary, Formosa Petrochemical Corporation.<sup>419</sup>

Nordic asset manager Storebrand has likewise excluded two Formosa Plastics Group affiliates — Formosa Chemicals & Fibre Corporation and Formosa Petrochemical Corporation — as part of its commitment to an investment portfolio aligned with climate goals under the Paris Agreement.<sup>420</sup>

## *A Problem Bigger than Formosa Plastics Group*

The above-detailed risks to human rights and the environment are not limited to Formosa Plastics Group and its subsidiaries' operations; they are systemic throughout the plastics industry. As the former Special Rapporteur on toxics and human rights stated, "The entire lifecycle of plastic production, use and disposal results in adverse impacts on multiple human rights, which can constitute violations and abuses by involved States and businesses. ... plastic pollutes from extraction through disposal."<sup>421</sup> Like Formosa Plastics' facilities, other companies engaged in the production or processing of plastic feedstocks and plastics emit contaminants during routine operations and as a result of chemical release incidents, which are all too common. In 2013, an ExxonMobil refinery and chemical plant in Louisiana reported 76 incidents in a single year, an average of more than six per month.<sup>422</sup> "Among the top chemicals released were propylene, ethylene, and benzene, all of which are related to plastic production."<sup>423</sup>

Petrochemical facilities pose a threat to surrounding populations and their own workers due to the hazards of their daily operations and the ever-present risk of an accident, regardless of their location or what company is operating them. And across the world, petrochemical facilities are disproportionately located in low-income and marginalized communities.<sup>424</sup> In May 2019, a chemical leak at a Hanwha Total Petrochemical plant in South Korea caused health problems for more than 650 people, including workers and nearby residents who inhaled the toxic fumes.<sup>425</sup>

On the other side of the world, an explosion and fire at an ExxonMobil petrochemical plant in Baytown, Texas, injured 37 people in August 2019, sending a thick cloud of smoke over the area.<sup>426</sup> This was the second fire in

12 months at the facility.<sup>427</sup> According to a *Houston Chronicle* investigation from 2016, a major chemical incident occurs once every six weeks in the greater Houston area.<sup>428</sup>

## *Petrochemical facilities pose a threat to surrounding populations and their own workers regardless of their location or what company is operating them.*

Extreme weather events exacerbated by climate change, which the plastics industry helps fuel, put industrial facilities and fence-line communities at risk of accidents — even where emergency preparedness plans are in place.<sup>429</sup> In August 2017, Hurricane Harvey caused approximately 23,000 pounds of contaminants to spill into the floodwaters from Arkema's plant in Crosby, Texas.<sup>430</sup> The chemical plant produces organic peroxides, which are used to make plastics and fiberglass.<sup>431</sup> The floodwaters also compromised refrigeration on some of Arkema's backup product storage containers, triggering an evacuation of the facility and surrounding areas.<sup>432</sup> Those unrefrigerated organic peroxides decomposed and self-ignited, causing explosions at the site. Even though Arkema had multiple safety systems in place to ensure that the organic peroxide products were kept cold, protection measures still failed due to the extreme weather event taking place. In the aftermath, testing of a nearby well showed elevated levels of chloroform and bromodichloromethane, substances known to cause kidney and liver problems in animals.<sup>433</sup>

The 2020 and 2021 hurricane seasons have seen a record number of storms making landfall in the United States, particularly along the Gulf Coast. Immediately following Hurricane Laura in 2020, a chemical plant in



*Flaring at a petrochemical facility in Cancer Alley following Hurricane Ida.*

Westlake, Louisiana, caught fire and burned for several days, prompting local officials to issue a shelter-in-place order, compounding dangers for local residents who had already suffered damage to homes and roofs, which left them exposed to the open air.<sup>434</sup> After Hurricane Ida in 2021 — a storm whose impacts are still being felt as of this report's writing — state and federal regulators reported tracking more than 2,000 oil and chemical spills into Louisiana's waters and lands, with unknown long-term consequences for local environments and communities.<sup>435</sup> During both of these acute extreme weather threats, among many others, residents had to additionally weigh risks of exposure to COVID-19 in their plans to evacuate and seek safety from storms. The carbon and other pollutant emissions from petrochemical facilities unavoidably contributed to these harms.

In Grand Prairie, Texas, lies Poly-America, the world's largest producer of polyethylene construction film and trash bag manufacturer in the United States.<sup>436</sup> In August 2020, a massive

fire ignited at the plant, sending a toxic plume into nearby communities and threatening respiratory issues.<sup>437</sup> A similar accident occurred at the plant 30 years earlier.<sup>438</sup>

The dangers of the toxic substances from which plastic is produced, the ever-present risk of accidents and contamination during processing and production, and plastic's health and environmental impacts throughout its life cycle all point to one conclusion. There is no such thing as “rights-compatible plastics” — particularly not when they are produced by a company with an alarming track record of environmental, safety, and health violations like that of the Formosa Plastics Group.

## CHAPTER VIII

# A PATH FORWARD: CONCLUSIONS AND RECOMMENDATIONS



Formosa Plastics’ decades-long pattern of corporate misconduct has continued despite fines, penalties, and public pressure to change its behavior. The conglomerate’s harmful practices reflect a documented pattern of disregard for environmental law, worker safety, and community health. Over the years, the conglomerate and its subsidiaries have made countless public statements regarding their commitment to environmental protection and worker and public safety. The website for Formosa Plastics’ proposed complex in St. James, for example, claims that the subsidiary will “ensure health, safety and environmental policy is a prime responsibility of management – from senior executives to first-line supervisors.”<sup>439</sup> But Formosa Plastics Group’s track record makes clear that the time has long passed to trust the company’s promises.

Formosa Plastics’ operations and expansion plans — like those of the plastics industry as a whole — are on a collision course with the globally recognized need to reduce the extraction, production, and consumption of fossil fuels and the plastics made from them, in pursuit of conserving the oceans and preserving a safe climate.<sup>440</sup> Local, regional, and national policymakers, regulatory agencies, and financial institutions should closely scrutinize Formosa Plastics Group’s operations and expansion plans, treating their promises and proposals with the skepticism that the conglomerate’s history has earned. Global mandates for climate action, plastics reduction, and protecting human rights must guide future petrochemicals and plastics production decisions.

Based on the findings in this report, political and financial decision makers at all levels should take action to prevent further harm by Formosa Plastics Group, to provide access to justice for those who have suffered harm to date, and to protect human rights and the environment. But it is not enough to take actions against one corporation in an industry

that poses inherent risks to human rights. Solutions to an industry-wide problem must be equally comprehensive.

### *Key Recommendations*

#### **1. Prevent Formosa Plastics Group from inflicting more harm to people or the environment.**

*Formosa Plastics Group’s track record speaks for itself. Decision makers should consider the company’s history of environmental, health, and safety impacts when reviewing any applications by Formosa Plastics (including any of its subsidiaries or affiliates) for new permits or direct or indirect economic incentives for new or expanded facilities. Any and all new proposals that threaten the environment, health, and/or human rights should be denied.*

A. Governments, wherever Formosa Plastics Group operates, should ensure stringent enforcement of environmental, health, and safety standards. In the event of repeated violations, governments should take decisive measures, including

suspension and closure of the company's operations.

**B. To prevent likely future harms from Formosa Plastics' operations in the United States:**

1. Federal regulators and state and local officials should rescind the permits granted to Formosa Plastics to construct the planned plastics megacomplex in St. James, Louisiana. Even as the US Army Corps of Engineers ordered a comprehensive environmental impact statement as of this report's writing, the project's existing environmental review reveals that there is no scenario in which the proposed project would operate without causing immense undue harm to surrounding communities, ecosystems, and the climate. Furthermore, it showed that the current proposed location of the facility has been revealed to be part of a pattern of environmental racism in state-level permitting and decision-making.<sup>441</sup> Therefore, the project should be rejected.

- a. The Louisiana Department of Environmental Quality should rescind the project's air permits and deny its water pollution permits.
- b. The Army Corps of Engineers should revoke the project's Clean Water Act wetlands filling permit.
- c. The St. James Parish Council should rescind the project's land use permit.

2. Louisiana regulators and East Baton Rouge Parish officials should rescind the permits granted to Formosa Plastics for the proposed expansion to the Baton Rouge PVC facility. This should include permits for expansion of both the PVC production unit and the hydrochloric acid unit.
3. Texas regulators should rescind permits granted to Formosa Plastics and deny any pending permits to expand the Point Comfort plant. Calhoun County commissioners and Calhoun County school district should deny or rescind any tax abatements for the current/ proposed expansion of Formosa Plastics in Point Comfort, Texas. The historic Clean Water Act settlement granted a five-year timeline for the existing Point Comfort plant to meet a "zero discharge" of plastics mandate. The company and Texas regulators should remain focused on that goal.

**2. Hold Formosa Plastics Group accountable for the harms it has already wrought.**

*National governments and local authorities should hold Formosa Plastics Group accountable for its impacts on human rights and the environment and guarantee victims access to justice and effective remedy.*

- A. The governments of Taiwan and Vietnam should hold Formosa Plastics Group responsible for the Vietnam marine life disaster caused by its subsidiary in 2016.

- B. Taiwanese courts should adjudicate the case brought by victims of the Vietnam marine life disaster to provide justice to Vietnamese communities.
- C. The Vietnamese government should allow for a fully transparent and impartial investigation of the specific causes and consequences of the disaster, including evaluating compensation for damages and loss. The Vietnamese government should also release all detained environmental protesters and protectors.
- D. United States federal and state governments should work together to hold Formosa Plastics fully accountable for its current violations. They should require the conglomerate to clean up the contamination caused by spills and effluents from the company's existing or dormant facilities in Texas, Louisiana, and other states.
- E. Wherever Formosa Plastics Group, its subsidiaries, and/or affiliates operate, governments should ensure that the company provides adequate and effective remedy for harms to human rights and the environment to which it has caused or contributed, consistent with international human rights law and the polluter pays principle.

### **3. Protect against similar harms to people and the environment occurring throughout the petrochemicals and plastics production supply chain.**

*The problems documented in this report are not unique to Formosa Plastics. All production and processing of petrochemicals and plastics pose inherent and significant risks to human rights, the local environment, and the global climate. An industry-wide problem demands an industry-wide response. Any company should be required to*

*prove its operations will not exacerbate public health disparities, climate change, and plastic pollution before being issued any construction or expansion permits. Governments and permitting agencies have given Formosa Plastics Group unearned leeway, trusting hollow commitments to environmental protection and occupational safety. At the same time, communities and workers ultimately pay the price of ensuing disasters. Community health, worker safety, human rights, and climate protection must be prioritized over promised economic benefits.*

**A. Governments worldwide should implement a ban on new plastics plants.** Before the outbreak of the COVID-19 pandemic, the United States was in the midst of an unprecedented buildout of plastic processing and production facilities, made possible by the boom in drilling in the Appalachian and Permian shale basins.<sup>442</sup> Given the scale of the proposed buildout and rapidly evolving science pointing to devastating impacts of plastics production on public health and the environment, governments need to press 'pause' on these developments to assess the cumulative impact of the buildout fully. In the United States, the Presidential Plastics Action Plan<sup>443</sup> calls on the executive branch to take action to enforce a moratorium on new plastic production facilities. An update to the proposed Break Free From Plastic Pollution Act provides a strong legislative framework for implementing such a moratorium and conducting an environmental justice analysis.<sup>444</sup>

**B. Governments worldwide should cease providing tax benefits and other public financial incentives to petrochemical companies.** Public funds should not be used to prop up a failing industry that threatens human health and local ecosystems. Decision makers must not allow the petrochemical sector to co-opt COVID-19 relief and recovery efforts to save its already-failing business model via bailouts, tax breaks, and other incentives.<sup>445</sup>

**C. Governments worldwide should develop and implement pollution standards that reflect the best available technology and changing nature of the plastic industry before issuing permits or allowing companies to construct any new facilities.**

1. In the US, the president and legislators should:
  - a. Fully implement Executive Orders 12898 and 14008 directing the mainstreaming of environmental justice across the federal government, in all aspects of federal permitting and approval processes, including through an increased focus on cumulative impacts of authorized activities;
  - b. Add civil rights and racial justice protections to the National Environmental Policy Act (NEPA) through executive order or the passage of the Environmental Justice for All Act;

- c. Update Clean Air Act regulations that apply to petrochemical facilities to effectively eliminate dangerous air pollutants by requiring they use only zero-emissions energy sources; and
- d. Update Clean Water Act regulations to eliminate toxic water pollution and establish a zero-plastic standard for water discharges.

**D. Private financial actors should cease providing capital or other financial support to petrochemical companies** whose economically unsustainable business models seem predicated on harm to communities and the climate.

**E. Financial institutions moving away from fossil fuels should also exclude petrochemicals and plastics from their portfolios.** As banks, investors, and public funds seek to respond to public demands to end their relationships with the fossil fuel industry. Actions should also include breaking free from plastic and petrochemical production.

## ENDNOTES

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- 9 See *infra* Chapter V: Devastation at Ha Tinh (Vietnam).
- 10 See *infra* Chapter V: Dumping in Sihanoukville (Cambodia).
- 11 See *infra* Chapter IV.
- 12 See *infra* Chapter II; see also SANFORD LEWIS, FORMOSA PLASTICS: A BRIEFING PAPER ON WASTE, SAFETY AND FINANCIAL ISSUES INCLUDING U.S. CAMPAIGN FINANCE ABUSES (Tim Anderson & Eileen O'Connor eds., 2000), [http://www.pvcinformation.org/assets/pdf/Formosa\\_Plastics\\_report.pdf](http://www.pvcinformation.org/assets/pdf/Formosa_Plastics_report.pdf) [hereinafter LEWIS (2020)].
- 13 See *infra* See *infra* Chapter IV and Annex, available at <https://www.ciel.org/plastic-human-rights> (providing a non-exhaustive list of penalties and/or fines levied against entities in the Formosa Plastic Group, based on public information available to the authors at the time of writing).
- 14 *Id.*
- 15 Formosa Plastics Group's four major subsidiaries are Formosa Plastics Corporation, Nan Ya Plastics Corporation, Formosa Petrochemical Corporation, and Formosa Chemicals & Fibre Corporation. The sum total of their market capitalizations, converted to USD, is \$103,194,016,516. See: Formosa Plastics Corporation (1301.TW), YAHOO FINANCE, <https://finance.yahoo.com/quote/1301.tw/>; Nan Ya Plastics Corporation (1303.TW), YAHOO FINANCE, <https://finance.yahoo.com/quote/1303.TW/>; Formosa Petrochemical Corporation (6505.TW), YAHOO FINANCE, <https://finance.yahoo.com/quote/6505.TW/>; Formosa Chemicals & Fibre Corporation (1326.TW), YAHOO FINANCE, <https://finance.yahoo.com/quote/1326.TW/> (all accessed on Sept. 29, 2021). Converted New Taiwanese dollar value to U.S. Dollar at the exchange rate of 1 NT\$ = 0.036 US\$ on Sept. 29, 2021.
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- 30 CIEL ET AL, PLASTIC & HEALTH (2019), *supra* note 3, at 61-64; see also ENDOCRINE SOC'Y & IPEN, PLASTICS, EDCS & HEALTH (2020), *supra* note 27, at 9-13.
- 31 CIEL ET AL, PLASTIC & CLIMATE (2019), *supra* note 5, at 87-88.
- 32 See *infra* Chapter VII and the sources cited therein.

- 33 Baskut Tuncak (Special Rapporteur on the Implications for Human Rights of the Environmentally Sound Management and Disposal of Hazardous Substances and Wastes), *Rep. on Twenty-Five Years of the Mandate on Toxics*, ¶ 11, U.N. Doc. A/75/290 (Aug. 5, 2020), <https://undocs.org/en/A/75/290> [hereinafter *Rep. on Twenty-Five Years of the Mandate on Toxics* (2020)]; UNEP, *Neglected: Environmental Justice Impacts of Marine Litter and Plastic Pollution* (April 2021), <https://wedocs.unep.org/xmlui/bitstream/handle/20.500.11822/35417/EJIPP.pdf>.
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- 335 Tempest (1999), *supra* note 136 (“The president of Formosa Plastics Corp., the main subsidiary of Taiwan’s largest industrial group and one of the world’s leading petrochemical companies, claims that the fault lies with his nation’s environmentally militant citizens. They forced the company to remove the waste, which he maintains is harmless, from a landfill in southern Taiwan where it had been legally placed after undergoing processing to reduce the danger of mercury poisoning.”).
- 336 See, e.g., G.A. Res. 53/144, Declaration on Human Rights Defenders (Dec. 9, 1998); see also John H. Knox (Special Rapporteur on the issue of Human Rights Obligations Relating to the Enjoyment of a Safe, Clean, Healthy and Sustainable Environment), *Rep. to the Human Rights Council*, U.N. Doc. A/HRC/37/59, annex, Framework principles on human rights and the environment, Princ. 5 (Jan. 24, 2018), <https://undocs.org/A/HRC/37/59> [hereinafter Framework principles on human rights and the environment]; UN Human Rights Treaty Bodies, Guidelines against Intimidation or Reprisals on the Twenty-Seventh Meeting of Chairpersons of the Human Rights Treaty Bodies, HRI/MC/2015/6 (Jul. 30, 2015); *Acts of intimidation and reprisal for cooperation with the special procedures*, UNITED NATIONS HUMAN RIGHTS OFFICE OF THE HIGH COMMISSIONER, <http://www.ohchr.org/EN/HRBodies/SP/Pages/Actsofintimidationandreprisal.aspx> (last visited Jun. 23, 2021); Margaret Sekaggya (Special Rapporteur on the situation of human rights defenders), *Commentary to the Declaration on the Right and Responsibility of Individuals, Groups and Organs of Society to Promote and Protect Universally Recognized Human Rights and Fundamental Freedoms* (Jul. 2011), <https://www.ohchr.org/Documents/Issues/Defenders/CommentarytoDeclarationondefendersJuly2011.pdf>.
- 337 See ICCPR, *supra* note 326, at art. 19 (Right to Freedom of Expression), art. 21 (Right to Freedom of Assembly), art. 22 (Right to Freedom of Association); see also *Joint Rep. of the Special Rapporteur on the Rights to Freedom of Peaceful Assembly and of Association and the Special Rapporteur on Extrajudicial, Summary or Arbitrary executions on the Proper Management of Assemblies*, U.N. Doc. A/HRC/31/66 (Feb. 4, 2016) at 7; Human Rights Comm., General Comment No. 37 on the Right of Peaceful Assembly (Article 21) on Its 129th Session, ¶¶ 1, 6 U.N. Doc. CCPR/C/GC/37 (Sept. 17, 2020).
- 338 ICCPR, *supra* note 326, at art. 21 (Right to Peaceful Assembly); see also ICCPR, *supra* note 326, at arts., 2, 4, 26 (enshrining the principle of nondiscrimination).
- 339 See Baskut Tuncak (Special Rapporteur on the Implications for Human Rights of the Environmentally Sound Management and Disposal of Hazardous Substances and Wastes), *Rep. on the Implications for Human Rights of the Environmentally Sound Management and Disposal of Hazardous Substances and Wastes*, ¶ 7, U.N. Doc. A/HRC/30/40 (Jul. 8, 2015) [hereinafter U.N. Doc. A/HRC/30/40].
- 340 See, e.g., G.A. Res. 217 (III) A, Universal Declaration of Human Rights, U.N. Doc. A/810, at art. 21 (Dec. 10, 1948) [hereinafter UDHR]; ICCPR, *supra* note 326, at art. 25; Human Rights Comm., General Comment No. 25 on the Right to Participate in Public Affairs, Voting Rights, and the Right of Equal Access to Public Service on Its Fifty-Seventh Session, ¶¶ 5, 6, 8, U.N. Doc. CCPR/C.21/Rev.1/Add.7 (Aug. 27, 1996).
- 341 See UDHR, *supra* note 340, at art. 19; see also ICCPR, *supra* note 326, at art. 19; see also Framework principles on human rights and the environment, *supra* note 336, at Princ. 7.
- 342 See U.N. Doc. A/HRC/30/40, *supra* note 339, at ¶¶ 82, 87-89 (discussing the responsibility of businesses to assess and communicate information related to risks and impacts associated with their activities and hazardous substances used); Human Rights Comm., General Comment No. 36 on the Right to life (Article 6) on Its 124th Session, ¶ 62, U.N. Doc. CCPR/C/GC/36 (Sept. 3, 2019) [hereinafter General Comment No. 36] (articulating the state duty to ensure “appropriate access to information on environmental hazards”); see also CIEL ET AL, PLASTIC & HEALTH (2019), *supra* note 3, at 22.

- 343 See *Statement of the Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes at the 30th session of the Human Rights Council*, U.N. OFFICE OF THE HIGH COMMISSIONER FOR HUMAN RIGHTS (Sept. 16, 2015), <https://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=16444&LangID=E>.
- 344 See UN SRs Letter to Vietnam, *supra* note 309, at 10-13.
- 345 These details would be available through the application for a wastewater permit, which the company is not required to submit before construction begins. A preliminary plan for wastewater is available in *Hydrologic Modification Impact Analysis (Level 4)*, SUNSHINE PROJECT (Aug. 17, 2018), but these plans are not confirmed and the details are insufficient to answer all of the community's concerns.
- 346 See *supra* Chapter III, A Dangerous Operation: Petrochemical Products & their Hazards.
- 347 See *supra* Chapters IV: A Heavy Footprint: Impacts by the Numbers, and V: A Profile of Harm: Incidents and Abuses.
- 348 See, e.g., Baskut Tuncak (Special Rapporteur on the Implications for Human Rights of the Environmentally Sound Management and Disposal of Hazardous Substances and Wastes), ¶ 2, U.N. Doc. A/74/480 (Oct. 7, 2019), <https://undocs.org/en/A/74/480> [hereinafter U.N. Doc. A/74/480].
- 349 Framework principles on human rights and the environment, *supra* note 336, at Princ. 1-2, ¶ 4; see also U.N. Doc. A/74/480, *supra* note 348, at ¶ 72.
- 350 See David Boyd (Special Rapporteur on the Issue of Human Rights Obligations Relating to the Enjoyment of a Safe, Clean, Healthy and Sustainable Environment), *Rep. to the Human Rights Council on Right to a healthy environment: good practices*, ¶ 11-13, U.N. Doc. A/HRC/43/53 (Dec. 30, 2019); Framework principles on human rights and the environment, *supra* note 336. Regional agreements that explicitly protect the right to a healthy environment include the African Charter on Human and Peoples' Rights, the Aarhus Convention, the Escazu Convention, the Protocol of San Salvador, and the Arab Charter on Human Rights.
- 351 See *Call for the Global Recognition of the Right to a Healthy Environment*, THE RIGHT TO A HEALTHY ENVIRONMENT CAMPAIGN, <http://healthyenvironmentisaright.org/> (last visited Jun. 24, 2021) (posting a September 2020 letter to United Nations Member States signed by over 1000 civil society and Indigenous organizations).
- 352 The United States has ratified the ICCPR, article 6 of which guarantees the right to life, and has signed but not ratified the ICESCR, and therefore must not defeat its object and purpose. China has ratified the ICESCR, which guarantees, inter alia, the right to health, and has signed but not ratified the ICCPR. Taiwan ratified the ICCPR and ICESCR in 2009 (without reservation and with implementing legislation). Its deposit of instruments of ratification was rejected by the UN system, because Taiwan's statehood is contested, but the government has publicly committed to comply with the twin covenants and has enacted legislation and instituting mechanisms accordingly. See *Taiwan Signs Up for Human Rights*, AMNESTY INTERNATIONAL (Apr. 9, 2009), <https://www.amnesty.org/en/latest/news/2009/04/taiwan-ratifica-normas-basicas-ddhh-20090409/>.
- 353 U.N. Doc. A/74/480, *supra* note 348, at ¶¶ 2, 6, 7 & n.3; see also Human Rights Council Res. 42/21, U.N. Doc. A/HRC/RES/42/21 (Sept. 26, 2019), <https://undocs.org/A/HRC/RES/42/21> (recognizing the duty of States to prevent unsafe occupational exposure to hazardous substances and the corresponding responsibility of businesses).
- 354 U.N. Doc. A/74/480, *supra* note 348, at ¶ 9.
- 355 General Comment No. 36, *supra* note 342, at ¶ 62 (identifying environmental degradation as one of "the most pressing and serious threats to the ability of present and future generations to enjoy the right to life").
- 356 See, e.g., UDHR, *supra* note 340, at art. 3; ICCPR, *supra* note 326, at art 6; G.A. Res. 44/25, Convention on the Rights of the Child, at art. 6 (Nov. 20, 1989) [hereinafter CRC]; Organization of African Unity, *African (Banjul) Charter on Human and Peoples' Rights*, art. 4, OAU Doc. CAB/LEG/67/3 rev. 5, 21 I.L.M. 58 (Jun. 27, 1981); Inter-American Commission on Human Rights, *American Declaration on the Rights and Duties of Man*, art. 1 (May 2, 1948); Inter-American Commission on Human Rights, *American Convention on Human Rights*, art. 4, 1144 U.N.T.S. 17955 (Nov. 22, 1969); *European Convention for the Protection of Human Rights and Fundamental Freedoms*, art. 2, 213 U.N.T.S. 222 (Sept. 4, 1950).
- 357 See, e.g., Human Rights Comm., General Comment No. 6 on the Right to Life (Article 6) on Its 120th Session, ¶ 1 U.N. Doc. HRI/GEN/1/Rev.1 (Apr. 30, 1982) (the right to life is the "supreme right" and "should not be interpreted narrowly"); African Commission on Human and Peoples' Rights, General Comment No. 3 on The African Charter on Human and Peoples' Rights: The Right to Life (Article 4) on Its Fifty-Seventh Ordinary Session, ¶ 3 (Nov. 18, 2015) ("[The Charter] envisages the protection of not only a life in a narrow sense, but of dignified life. This requires a broad interpretation of States' responsibilities to protect life."); *Sawhoyamaya Indigenous Community v. Paraguay*, Merits, Reparations, and Costs, Judgment, Inter-Am. Ct. H.R. (ser. C) No. 125, ¶ 150 (Mar. 29, 2006) (given the fundamental nature of the right to life, "no restrictive approach ... is admissible") [hereinafter *Sawhoyamaya*].

358 General Comment No. 36, *supra* note 342, at ¶ 3.

359 See CIEL ET AL, PLASTIC & HEALTH (2019), *supra* note 3, at 87 (“Mounting evidence demonstrates that, from wellhead to store shelves to water and food systems, the plastic lifecycle poses risks not only for the environment, but also for human health.”).

360 CIEL ET AL, PLASTIC & HEALTH (2019), *supra* note 3, at 21; *see also supra* Chapter VI: A Growing Threat: In the Shadow of the Sunshine Project, at nn. 251-277 & accompanying text (discussing emission and exposure levels in St. James Parish and the disproportionate toxic burden borne by the Parish’s Black community).

361 CIEL ET AL, PLASTIC & HEALTH (2019), *supra* note 3, at 18-19.

362 U.N. Doc. A/74/480, *supra* note 348, at ¶ 74 & n. 56 (citing Council of Europe, Parliamentary Assembly resolution 2286 (2019) on air pollution: a challenge for public health in Europe); *see also* David Boyd, Issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment), *Rep. of the Special Rapporteur*, U.N. Doc. A/HRC/40/55 (Jan. 8, 2019).

363 National Ambient Air Quality Standards for Ozone, 79 Fed. Reg. 75234 (Dec. 17, 2014) (to be codified at 40 C.F.R. pts. 50, 51, 52, 53, and 58). Letter from Formosa Plastics to US EPA: Comments of Formosa Plastics Corporation, LA (FPC-LA) Regarding Proposed Rule to Revise the National Ambient Air Quality Standards for Ozone (December 17, 2014: 79 FR 75234) (March 21, 2015).

364 The company claimed that the costs to businesses could “inadvertently harm the socioeconomic status of individuals, and thereby contribute to poor health and premature death.” *Id.*

365 *Id.*

366 See Army Corps of Engineers, Memorandum for Record accompanying 404 permit issued to FG LA, LLC, CEMVN-ODR-C, File Number. MVN-2018-00159-CM (September 5, 2019), at 19-20.

367 See *supra* Chapter VI: A Growing Threat: In the Shadow of the Sunshine Project.

368 The right to health under international law encompasses the right to the underlying determinants of health. UDHR, *supra* note 340, at art. 25; G.A. Res. 2200A (XXI), International Covenant on Economic, Social and Cultural Rights, at art. 12(2) (Dec. 16, 1966) [hereinafter ICESCR] (guaranteeing the right to health, including the underlying determinants of health); U.N. ESCOR, Committee on Economic, Social and Cultural Rights (CESCR), General Comment No. 14 on The Right to the Highest Attainable Standard of Health (Article 12), ¶¶ 11, 15-16, 51, U.N. Doc. E/C.12/2000/4 (Aug. 11, 2000) [hereinafter CESCR General Comment No. 14].

369 The right to an adequate standard of living incorporates multiple rights, including the rights to adequate food, water, clothing, and housing, among others. See UDHR, *supra* note 340, at art. 25(1); ICESCR, *supra* note 368, at art. 11(1); *see also* G.A. Res. 34/180, Convention on the Elimination of All Forms of Discrimination against Women, at art. 14 (Dec. 18, 1979) [hereinafter CEDAW]; G.A. Res. 2106 (XX), International Convention on the Elimination of All Forms of Racial Discrimination, at art. 5 (Dec. 21, 1965) [hereinafter ICERD]; G.A. Res. 61/106, Convention on the Rights of Persons with Disabilities, at art. 9 (Jan. 24, 2007) [hereinafter CRPD]; CRC, *supra* note 356, at art. 27; *see also* General Comment No. 12 on The Right to Adequate Food (Article 11) on its Twentieth Session, ¶ 10, U.N. Doc. E/C.12/1999/5 (May 12, 1999) (discussing the guarantee of food free from adverse substances) [hereinafter General Comment No. 12]; U.N. Food and Agriculture Organization, Declaration of the World Summit on Food Security, U.N. Doc. WSFS 2009/2 (Nov. 2009).

370 See UDHR, *supra* note 340, at arts. 23(1), 25; ICESCR, *supra* note 368, at art. 6; U.N. ESCOR, Committee on Economic, Social and Cultural Rights (CESCR), General Comment No. 18 on The Right to Work, U.N. Doc. E/C.12/GC/18 (Feb. 6, 2006); General Comment No. 12, *supra* note 370, ¶¶ 6, 12, 15 (guaranteeing access to food or ways to obtain it).

371 See, e.g., *Justice for Formosa Victims*, Complaint to UN SRs (2019), *supra* note 309, at 6-10.

372 World Bank Group Policy Research Working Paper, Paper No. 8827, *supra* note 113, at 1.

373 Sarah Morath, *Using an Old Law to Fight New Plastic Pollution*, EARTH ISLAND JOURNAL (Nov. 18, 2019) <https://www.earthisland.org/journal/index.php/articles/entry/using-an-old-law-to-fight-new-plastic-pollution/>.

374 See e.g., Human Rights Council Res. 35/20, U.N. Doc. A/HRC/RES/35/20 (Jun. 19, 2017); David Boyd (Special Rapporteur on the Issue of Human Rights Obligations Relating to the Enjoyment of a Safe, Clean, Healthy and Sustainable Environment), *Rep. on Human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment*, ¶ 26, U.N. Doc A/74/161 (July 15, 2019); *Five UN human rights treaty bodies issue a joint statement on human rights and climate change*, UNITED NATIONS HUMAN RIGHTS OFFICE OF THE HIGH COMMISSIONER (Sept. 16, 2019) <https://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=24998&LangID=E> [hereinafter *Five UN human rights treaty bodies*]; *Committee releases statement on climate change and the Covenant*, UNITED NATIONS HUMAN RIGHTS OFFICE OF THE HIGH COMMISSIONER (Oct. 8, 2018), <https://www.ohchr.org/en/NewsEvents/Pages/DisplayNews.aspx?NewsID=23691&LangID=E>.

375 CIEL ET AL, PLASTIC & CLIMATE (2019), *supra* note 5, at 2.

- 376 FORMOSA PLASTICS CORP., U.S.A., 2018 ENVIRONMENT, HEALTH AND SAFETY ANNUAL REPORT (2018), <https://www.fpcusa.com/citizenship/environmental/EHSReport2018.pdf>.
- 377 BASIS FOR DECISION: PART 70 OPERATING PERMITS, *supra* note 40, at 5 (stating that permitted emissions from the FG LA complex include 13,628,091 tons of CO<sub>2</sub>e greenhouse gases per year).
- 378 See Global Voices Guest Contributor, *Taipei Court Dismisses Lawsuit Filed by 8,000 Vietnam Marine Disaster Victims*, THE NEWS LENS (Oct. 31, 2019), <https://international.thenewslens.com/article/126835>; see also *The Ruling of Taiwan Supreme Court* (2020), *supra* note 136.
- 379 *Submission to the Human Rights Council Complaint Procedure On behalf of Justice for Formosa Victims*, *supra* note 309.
- 380 *Justice for Formosa Victims*, Complaint to UN SRs (2019), *supra* note 309.
- 381 Mandates of the Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression; the Special Rapporteur on the rights to freedom of peaceful assembly and of association; the Special Rapporteur on the right of everyone to the enjoyment of the highest attainable standard of physical and mental health; the Special Rapporteur on the situation of human rights defenders; the Special Rapporteur on freedom of religion or belief; and the Special Rapporteur on torture and other cruel, inhuman or degrading treatment or punishment, Letter dated Sept. 21, 2017 to the Permanent Mission of the Socialist Republic of Viet Nam to the United Nations Office, the World Trade Organization and Other International Organizations in Geneva, U.N. Doc. AL VNM 6/2017 (Sept. 21, 2017), <https://spcommreports.ohchr.org/TMResultsBase/DownloadPublicCommunicationFile?gId=23338>.
- 382 Human Rights Council Res. 34/20, U.N. Doc. A/HRC/RES/34/20, at 2 (Apr. 6, 2017) (noting that consequences of environmental damage “are felt most acutely by those segments of the population that are already in vulnerable situations”).
- 383 *Rep. on Twenty-Five Years of the Mandate on Toxics* (2020), *supra* note 33, at ¶ 11.
- 384 See Committee on the Elimination of Racial Discrimination, Concluding observations on the combined seventh to ninth periodic reports of the United States of America, UN DOC. CERD/C/USA/CO/7-9, at ¶ 10 (Sept. 25, 2014) (“[T]he Committee is concerned that individuals belonging to racial and ethnic minorities, as well as indigenous peoples, continue to be disproportionately affected by the negative health impact of pollution caused by the extractive and manufacturing industries.”); see also Linda Villarosa, *Pollution is Killing Black Americans. This Community Fought Back*, N.Y. TIMES MAGAZINE (Jul. 28, 2020), <https://www.nytimes.com/2020/07/28/magazine/pollution-philadelphia-black-americans.html?auth=login-email&login=email> (“A 2017 report from the N.A.A.C.P. and the Clean Air Task Force...showed that African-Americans are 75 percent more likely than other Americans to live in so-called fence-line communities, defined as areas situated near facilities that produce hazardous waste.”); see also TOXIC WASTES AND RACE AT TWENTY, *supra* note 270; LIVING IN THE SHADOW OF DANGER, *supra* note 270; Bill Chameides, *A Look at Environmental Justice in the United States Today*, THE HUFFINGTON POST (Jan. 20, 2014), [www.huffingtonpost.com/bill-chameides/a-look-at-environmental\\_j\\_b\\_463223.html](http://www.huffingtonpost.com/bill-chameides/a-look-at-environmental_j_b_463223.html).
- 385 Mandates of the Working Group of experts on people of African descent; the Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes; the Special Rapporteur on the right of everyone to the enjoyment of the highest attainable standard of physical and mental health; the Special Rapporteur on the rights of indigenous peoples; the Special Rapporteur on minority issues; the Special Rapporteur on contemporary forms of racism, racial discrimination, xenophobia and related intolerance; and the Special Rapporteur on the human right to safe drinking water and sanitation, Letter dated Mar. 2, 2016 to Keith M. Harper, U.S. Representative to the UN Human Rights Council, at 5 & n.9, U.N. Doc. USA 1/2016 (Mar. 2, 2016), <https://spcommreports.ohchr.org/TMResultsBase/DownloadPublicCommunicationFile?gId=18467>; see also LIVING IN THE SHADOW OF DANGER, *supra* note 270.
- 386 See Amicus Curiae Brief of the American Civil Liberties Union of Louisiana Foundation in Support of Plaintiffs’ Motion for Preliminary Injunction and Request for Oral Argument at 12, *Center for Biological Diversity v. U.S. Army Corps of Engineers and FG LA LLC*, No. 1:20-cv-00103-RDM (D.D.C. Jul. 17, 2020) (“Black communities in the Mississippi corridor are disproportionately impacted by the ‘government system for permitting and expansion of hazardous waste and chemical facilities.’”); see generally U.S. COMM’N ON CIVIL RIGHTS, NOT IN MY BACKYARD: EXECUTIVE ORDER 12,898 AND TITLE VI AS TOOLS FOR ACHIEVING ENVIRONMENTAL JUSTICE (2003), at 23, 124, <https://www.usccr.gov/pubs/envjust/ejo104.pdf>.
- 387 Mitchell, *Judge delays crucial permit* (2020), *supra* note 43.
- 388 See, e.g., 36 C.F.R. § 60.4(d)(d) (2012) (implementing the National Historic Preservation Act, through regulation stipulating the protection of any cemetery that “derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events”).
- 389 ICESCR, *supra* note 368, at art. 15.

- 390 See, e.g., UNESCO, Recommendation concerning the Preservation of Cultural Property endangered by Public or Private works (Nov. 19, 1968); see, e.g., UNESCO, Declaration concerning the Intentional Destruction of Cultural Heritage (Oct. 17, 2003).
- 391 See ICERD, *supra* note 369, at art. 1 (defining discrimination as “any distinction, exclusion, restriction or preference” based on those grounds “which has the purpose or effect of nullifying or impairing the recognition, enjoyment or exercise, on an equal footing, of human rights and fundamental freedoms in the political, economic, social, cultural or any other field of public life”) (emphasis added); *id.*, art. 2(c) (“Each State Party shall take effective measures to review governmental, national and local policies, and to amend, rescind or nullify any laws and regulations which have the effect of creating or perpetuating racial discrimination wherever it exists.”) (emphasis added); see also U.N. ESCOR, Committee on Economic, Social and Cultural Rights, General Comment No. 20 on Non-discrimination in Economic, Social and Cultural rights, ¶ 10, U.N. Doc. E/C.12/GC/20 (Jul. 2, 2009).
- 392 Framework principles on human rights and the environment, *supra* note 336, at Princ. 3 & commentary, ¶ 7 (citing non-discrimination provisions of multiple international human rights treaties).
- 393 ICERD, *supra* note 369, at art. 5. Articles 2 of the ICCPR and ICESCR also contain non-discrimination clauses.
- 394 The United States, China, and Vietnam, three countries in which the Formosa Plastics Group has operations, have each ratified one or both of the foundational international human rights covenants (ICCPR and ICESCR), and have all ratified the ICERD. See *Status of Ratification Interactive Dashboard*, U.N. Office of the High Comm’r for Human Rights, <https://indicators.ohchr.org/> (last visited July 1, 2021), The government of Taiwan, where Formosa Plastics Group is based, has adopted legislation implementing the twin covenants in its domestic law. Act to Implement the International Covenant on Civil and Political Rights and the International Covenant on Economic, Social and Cultural Rights (promulgated Apr. 22, 2009), <https://mojlaw.moj.gov.tw/NewsContentE.aspx?id=3> (last visited July 1, 2021).
- 395 Exec. Order No. 12898, 59 Fed. Reg. 7629 (Feb. 16, 1994), at § 1-101; see also Memorandum on Executive Order for Federal Actions to Address Environmental Justice In Minority Populations and Low-Income Populations, 1 PUB. PAPERS 241 (Feb. 11, 1994).
- 396 Exec. Order No. 14008, 86 Fed. Reg. 7619 (Jan. 27, 2021); see also Exec. Order No. 13990, 86 Fed. Reg. 7037 (Jan. 20, 2021) (articulating a commitment to prioritize environmental justice in climate action and environmental and public health measures).
- 397 *President Biden Signs Executive Orders on Environmental Policy*, C-SPAN (Jan. 27, 2021), <https://www.c-span.org/video/?508385-1/president-biden-calls-climate-change-existential-threat> (recorded remarks starting at 16:30).
- 398 Civil Rights Act of 1964, as amended, 42 U.S.C. §§ 2000d-2000d-7.
- 399 See, e.g., Nondiscrimination in Programs Receiving Federal Assistance from the Environmental Protection Agency, 40 C.F.R. §§ 7.35(b)-(c) pt. 7.
- 400 Letter from the Human Rights Advocacy Project (HRAP) of Loyola New Orleans College of Law to Professor E. Tendayi Achiume, United Nations Special Rapporteur on Contemporary Forms Racism, Racial Discrimination, Xenophobia and Related Intolerance (Nov. 18, 2020), <https://law.loyno.edu/human-rights-advocacy-project-letter-un>.
- 401 Press Release, UN Human Rights Office of the High Commissioner, USA: Environmental racism in “Cancer Alley” must end - experts (Mar. 2, 2021), <https://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=26824&LangID=E>.
- 402 Press Release, Congressman Raúl M. Grijalva, In Test for Environmental Justice, Chair Grijalva and Rep. McEachin Urge Biden to Revoke Permits for Proposed Plastics Plant in Louisiana’s Cancer Alley (Mar. 17, 2021), <https://grijalva.house.gov/press-releases/test-environmental-justice-chair-grijalva-and-rep-mceachin-urge-biden-revoke-permits>.
- 403 Julie Dermansky, *UN Human Rights Experts Condemn Expanding Petrochemical Industry in Louisiana’s Cancer Alley as ‘Environmental Racism’*, DESMOG (Mar. 3, 2021), <https://www.desmogblog.com/2021/03/03/un-human-rights-formosa-petrochemical-cancer-alley>.
- 404 Jarvis DeBerry, *By objecting to the term ‘Cancer Alley,’ Sen. Bill Cassidy is defending polluters, not Louisiana*, LA. ILLUMINATOR (Feb. 5, 2021), <https://lailluminator.com/2021/02/05/by-objecting-to-the-term-cancer-alley-sen-bill-cassidy-is-defending-polluters-not-louisiana/>.
- 405 See *Guiding Principles on Business and Human Rights*, *supra* note 308, at 1-12 (State Duty to Protect) (codifying existing legal obligations under international human rights law); see also General Comment No. 36, *supra* note 343, at ¶¶ 18, 62.

- 406 See *Five UN human rights treaty bodies*, *supra* note 374, at ¶¶ 1, 3 (emphasis added); see also Framework principles on human rights and the environment, *supra* note 336, at Princ. 12 (calling on states to ensure enforcement of environmental standards against public and private actors).
- 407 See CESCR General Comment No. 14, *supra* note 368, ¶¶ 15 (describing State obligations to prevent exposure to harmful substances and detrimental environmental conditions), 51 (stating that the failure to regulate corporate conduct or to enact or enforce laws to prevent pollution violates the State duty to protect human rights).
- 408 See, e.g., *Sawhoyamaya*, *supra* note 358; *Budayeva and Others v. Russia*, App. no. 15339/02, Eur. Ct. H.R. ¶ 128 (2008) (“First Section”) (holding that States should protect the lives of people within their jurisdiction from environmental harm including from a predictable or preventable environmental disaster); *Öneryildiz v. Turkey*, App. No. 48939/99, Eur. Ct. H.R. ¶ 71 (Nov. 30, 2004) (holding that the right to life includes a State’s obligation to safeguard the lives of people in their jurisdiction); *Hatton and Others v. U.K.* App. No. 36022/97, Eur. Ct. H.R. ¶¶ 96, 98 (July 8, 2003) (noting that state responsibility for violation of the right to private or family life may arise from a failure to adequately regulate private industry); *Community of San Mateo de Huanchor and its Members v. Peru*, Inter-Am. Comm’n H.R., Report No. 69/04, OEA/Ser.L/V/II.122 Doc. 5 rev. 1 at 487 (2004) (recognizing state responsibility engaged by non-regulation of private polluting activities); see also John H. Knox (Independent Expert), *Rep. of the Independent Expert on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment: Mapping Report*, ¶¶ 46, 48 n.41, U.N. Doc. A/HRC/25/53 (Dec. 30, 2013); see also, John H. Knox (Independent Expert), *Rep. of the Independent Expert on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment: Compilation of Good Practices*, ¶¶ 72-78, U.N. Doc. A/HRC/28/61 (Feb. 3 2015) (substantive obligations).
- 409 See, e.g., U.N. Doc. A/74/480, *supra* note 348, at ¶¶ 2, 14, 15, 17, 18-34 (discussing the impacts of toxic pollution on a range of human rights); see also Human Rights Committee, *Cáceres et al. v. Paraguay*, U.N. Doc. CCPR/C/126/D/2751/2016, ¶¶ 7.3, 7.5, 7.6, 7.8 (finding that exposure to toxic pesticides violated rights to private and family life, among other rights).
- 410 See *Guiding Principles on Business and Human Rights* *supra* note 308, at 13-26 (Princs. 11-24).
- 411 U.N. Doc. A/74/480, *supra* note 348, at ¶ 7 (citing UNGP).
- 412 G.A. Res. 60/147, Basic Principles and Guidelines on the Right to a Remedy and Reparation for Victims of Gross Violations of International Human Rights Law and Serious Violations of International Humanitarian Law, at Princ. III, U.N. Doc. A/RES/60/147 (Mar. 21, 2006) [hereinafter Principles for Victims of Gross Violations of International Human Rights Law].
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## ANNEX: FORMOSA PLASTICS GROUPS' ENVIRONMENTAL AND/OR SAFETY VIOLATIONS SINCE 2000

The table below includes information regarding penalties and/or fines assessed against entities in the Formosa Plastics Group since 2000 for environmental and/or safety violations. It is not an exhaustive list of such penalties or violations, but is based on documents publicly available to the authors at the time of writing. The penalty amounts recorded are the amounts of penalties, fines, and/or remediation costs actually paid, where known. Otherwise the figures reflect the reported amount of the penalty or fine assessed.

Country	Entity Name, State (where applicable)	Penalty Year	Penalty Amount (USD)	Info Source
Vietnam	Formosa Ha Tinh Steel Complex	2017	\$25,000	Formosa fined in Vietnam for burying waste, TAIPEI TIMES (Dec. 18, 2017), <a href="http://www.taipeitimes.com/News/biz/archives/2017/12/18/2003684157">http://www.taipeitimes.com/News/biz/archives/2017/12/18/2003684157</a> (last visited Sept. 30, 2021).
Vietnam	Formosa Ha Tinh Steel Complex	2016	\$500,000,000	Formosa fined in Vietnam for burying waste, TAIPEI TIMES (Dec. 18, 2017), <a href="http://www.taipeitimes.com/News/biz/archives/2017/12/18/2003684157">http://www.taipeitimes.com/News/biz/archives/2017/12/18/2003684157</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corporation, Texas	2021	\$2,850,000	Consent Decree, <i>US v. Formosa Plastics Corporation, Texas</i> , No. 6:21-CV-00043 (Dist. Ct. Southern Dist., Victoria Div., Tex.), available at: <a href="https://www.justice.gov/enrd/consent-decree/file/1432396/download">https://www.justice.gov/enrd/consent-decree/file/1432396/download</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corporation, Texas	2021	\$333,638	TEXAS COMM'N ON ENVTL. QUALITY, ENFORCEMENT MATTER NO. 57699: FORMOSA PLASTICS CORPORATION, TX (2019), at 1, <a href="https://www.tceq.texas.gov/assets/public/comm_exec/agendas/comm/backup/Agendas/2021/01-27-2021/o688AIR.pdf">https://www.tceq.texas.gov/assets/public/comm_exec/agendas/comm/backup/Agendas/2021/01-27-2021/o688AIR.pdf</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corporation, Texas	2020	\$45,000	Annual Enforcement Report, TEXAS COMM'N ON ENVTL. QUALITY (2020), at 113, <a href="https://www.tceq.texas.gov/compliance/enforcement/enforcement-reports/annenfreport.html">https://www.tceq.texas.gov/compliance/enforcement/enforcement-reports/annenfreport.html</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Co.	2020	\$6,000	Annual Enforcement Report Fiscal Year 2020, US DEP'T OF TRANSP. FED. R.R. ADMIN. (2021), at 112, <a href="https://railroads.dot.gov/elibrary/fiscal-year-2020-enforcement-report">https://railroads.dot.gov/elibrary/fiscal-year-2020-enforcement-report</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Co.	2020	\$1,700	Annual Enforcement Report Fiscal Year 2020, US DEP'T OF TRANSP. FED. R.R. ADMIN. (2021), at 112, <a href="https://railroads.dot.gov/elibrary/fiscal-year-2020-enforcement-report">https://railroads.dot.gov/elibrary/fiscal-year-2020-enforcement-report</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Co.	2020	\$3,250	Annual Enforcement Report Fiscal Year 2020, US DEP'T OF TRANSP. FED. R.R. ADMIN. (2021), at 112, <a href="https://railroads.dot.gov/elibrary/fiscal-year-2020-enforcement-report">https://railroads.dot.gov/elibrary/fiscal-year-2020-enforcement-report</a> (last visited Sept. 30, 2021).

Country	Entity Name, State (where applicable)	Penalty Year	Penalty Amount (USD)	Info Source
US	Formosa Plastics Corporation, Texas	2019	\$121,875	TEXAS COMM'N ON ENVTL. QUALITY, ENFORCEMENT MATTER NO. 54494: FORMOSA UTILITY VENTURE, LTD and FORMOSA PLASTICS CORPORATION, TX (2017), at 2, <a href="https://www.tceq.texas.gov/assets/public/comm_exec/agendas/comm/backup/Agendas/2019/01-16-2019/0737IWD.pdf">https://www.tceq.texas.gov/assets/public/comm_exec/agendas/comm/backup/Agendas/2019/01-16-2019/0737IWD.pdf</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corporation, Texas	2019	\$50,000,000	Final Consent Decree, San Antonio Bay Estuarine Waterkeeper v. Formosa Plastics Corporation, Texas, No. 6:17-CV-47 (Dist. Ct. Southern Dist., Victoria Div., Tex.), available at: <a href="https://static1.squarespace.com/static/5b58f65a96d455e767cf70d4/t/5de5306c5fb6fb30a7bdd7dc/1575301231792/Final+consent+decree.pdf">https://static1.squarespace.com/static/5b58f65a96d455e767cf70d4/t/5de5306c5fb6fb30a7bdd7dc/1575301231792/Final+consent+decree.pdf</a> (last visited on Sept. 30, 2021)
US	Formosa Plastics Corporation, Delaware	2018	\$20,838	Inspection: 1367126.015 - Formosa Plastics Corporation, U.S. DEP'T OF LABOR, OSHA, <a href="https://www.osha.gov/pls/imis/establishment.inspection_detail?id=1367126.015">https://www.osha.gov/pls/imis/establishment.inspection_detail?id=1367126.015</a> (last visited Sept. 30, 2021).
US	Nan Ya Plastics Corporation U.S.A.	2018	\$15,521	Inspection: 1313678.015 - Nan Ya Plastics Corporation Usa, U.S. DEP'T OF LABOR, OSHA, <a href="https://www.osha.gov/pls/imis/establishment.inspection_detail?id=1313678.015">https://www.osha.gov/pls/imis/establishment.inspection_detail?id=1313678.015</a> (last visited Sept. 30, 2021).
US	Nan Ya Plastics Corporation U.S.A.	2018	\$6,652	Inspection: 1307444.015 - Nan Ya Plastics Corporation Usa, U.S. DEP'T OF LABOR, OSHA, <a href="https://www.osha.gov/pls/imis/establishment.inspection_detail?id=1307444.015">https://www.osha.gov/pls/imis/establishment.inspection_detail?id=1307444.015</a> (last visited Sept. 30, 2021).
US	Nan Ya Plastics & J.M. Eagle Manufacturing Companies	2018	\$5,000	Electronic Document Management System: AI No. 18584, LA. DEP'T OF ENVTL. QUALITY, at 2, <a href="https://deg.louisiana.gov/assets/docs/General/Settlement_Agreements/2018/NanYaPlasticsoo44_Final.pdf">https://deg.louisiana.gov/assets/docs/General/Settlement_Agreements/2018/NanYaPlasticsoo44_Final.pdf</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corporation, Louisiana	2018	\$10,000	Electronic Document Management System: AI No. 288, LA. DEP'T OF ENVTL. QUALITY, at 8, <a href="https://deg.louisiana.gov/assets/docs/General/Settlement_Agreements/2017/Formosa0002_Final.pdf">https://deg.louisiana.gov/assets/docs/General/Settlement_Agreements/2017/Formosa0002_Final.pdf</a> (last visited Sept. 30, 2021).
US	Nan Ya Plastics Corporation, America	2018	\$14,000	SOUTH CAROLINA DEP'T OF HEALTH AND ENVTL. CONTROL, SUMMARY SHEET, (Oct. 11, 2018), at 68-69, <a href="https://scdhec.gov/sites/default/files/media/document/Enforcement_Report_October_-_Issued_Orders_20180601-20180831.pdf">https://scdhec.gov/sites/default/files/media/document/Enforcement_Report_October_-_Issued_Orders_20180601-20180831.pdf</a> (last visited Sept. 30, 2021).

Country	Entity Name, State (where applicable)	Penalty Year	Penalty Amount (USD)	Info Source
US	Formosa Plastics Corporation, Texas	2018	\$16,101	TEXAS COMM’N ON ENVTL. QUALITY, ENFORCEMENT MATTER NO. 54643: FORMOSA PLASTICS CORPORATION, TX (2017), at 1, <a href="https://www.tceq.texas.gov/assets/public/comm_exec/agendas/comm/backup/Agendas/2018/09-19-2018/0884AIR.pdf">https://www.tceq.texas.gov/assets/public/comm_exec/agendas/comm/backup/Agendas/2018/09-19-2018/0884AIR.pdf</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corporation, Texas	2018	\$6,000	TEXAS COMM’N ON ENVTL. QUALITY, ANNUAL ENFORCEMENT REPORT, TX (2019), at 110, <a href="https://www.tceq.texas.gov/assets/public/compliance/enforcement/enf_reports/AER/historical/Annual-Enforcement-Report-FY2019.pdf">https://www.tceq.texas.gov/assets/public/compliance/enforcement/enf_reports/AER/historical/Annual-Enforcement-Report-FY2019.pdf</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corporation, Louisiana	2017	\$277,200	Civil Enforcement Case Report: Formosa Plastics RMP CAFO, Case No. 06-2016-3361, U.S. EPA, ENFORCEMENT AND COMPLIANCE HISTORY ONLINE, <a href="https://echo.epa.gov/enforcement-case-report?id=06-2016-3361">https://echo.epa.gov/enforcement-case-report?id=06-2016-3361</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corporation, Delaware	2017	\$21,572	Inspection: 1282150.015 - Formosa Plastics Corporation De, U.S. DEP’T OF LABOR, OSHA, <a href="https://www.osha.gov/pls/imis/establishment.inspection_detail?id=1282150.015">https://www.osha.gov/pls/imis/establishment.inspection_detail?id=1282150.015</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Co.	2017	\$10,800	Annual Enforcement Report Fiscal Year 2017, US DEP’T OF TRANSP. FED. R.R. ADMIN. (2017), at 134, <a href="https://railroads.dot.gov/sites/fra.dot.gov/files/fra_net/17839/FY%2017%20Enforcement%20Report_Final.pdf">https://railroads.dot.gov/sites/fra.dot.gov/files/fra_net/17839/FY%2017%20Enforcement%20Report_Final.pdf</a> (last visited on Sept. 30, 2021).
US	Formosa Plastics Corporation, Texas	2017	\$167,401	TEXAS COMM’N ON ENVTL. QUALITY, ENFORCEMENT MATTER NO. 48852: FORMOSA PLASTICS CORPORATION, TX (2014), at 1, <a href="https://www.tceq.texas.gov/assets/public/comm_exec/agendas/comm/backup/Agendas/2017/05-24-2017/09231HW.pdf">https://www.tceq.texas.gov/assets/public/comm_exec/agendas/comm/backup/Agendas/2017/05-24-2017/09231HW.pdf</a> (last visited Sept 30, 2021).
US	Formosa Plastics Corporation, Texas	2017	\$15,000	TEXAS COMM’N ON ENVTL. QUALITY, ENFORCEMENT MATTER NO. 52513: FORMOSA PLASTICS CORPORATION, TX (2016), at 1, <a href="https://www.tceq.texas.gov/assets/public/comm_exec/agendas/comm/backup/Agendas/2017/04-12-2017/0903AIR.pdf">https://www.tceq.texas.gov/assets/public/comm_exec/agendas/comm/backup/Agendas/2017/04-12-2017/0903AIR.pdf</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corporation, Delaware	2016	\$10,000	Inspection: 1161628.015 - Formosa Plastics Corporation, U.S. DEP’T OF LABOR, OSHA, <a href="https://www.osha.gov/pls/imis/establishment.inspection_detail?id=1161628.015">https://www.osha.gov/pls/imis/establishment.inspection_detail?id=1161628.015</a> (last visited Sept. 30, 2021).

Country	Entity Name, State (where applicable)	Penalty Year	Penalty Amount (USD)	Info Source
US	Formosa Plastics Co.	2016	\$2,500	Annual Enforcement Report Fiscal Year 2017, US DEP'T OF TRANSP. FED. R.R. ADMIN. (2017), at 134, <a href="https://railroads.dot.gov/sites/fra.dot.gov/files/fra_net/17839/FY%2017%20Enforcement%20Report_Final.pdf">https://railroads.dot.gov/sites/fra.dot.gov/files/fra_net/17839/FY%2017%20Enforcement%20Report_Final.pdf</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Co.	2016	\$5,000	Annual Enforcement Report Fiscal Year 2017, US DEP'T OF TRANSP. FED. R.R. ADMIN. (2017), at 134, <a href="https://railroads.dot.gov/sites/fra.dot.gov/files/fra_net/17839/FY%2017%20Enforcement%20Report_Final.pdf">https://railroads.dot.gov/sites/fra.dot.gov/files/fra_net/17839/FY%2017%20Enforcement%20Report_Final.pdf</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Co.	2016	\$3,250	Annual Enforcement Report Fiscal Year 2017, US DEP'T OF TRANSP. FED. R.R. ADMIN. (2017), at 134, <a href="https://railroads.dot.gov/sites/fra.dot.gov/files/fra_net/17839/FY%2017%20Enforcement%20Report_Final.pdf">https://railroads.dot.gov/sites/fra.dot.gov/files/fra_net/17839/FY%2017%20Enforcement%20Report_Final.pdf</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Co.	2016	\$6,500	Annual Enforcement Report Fiscal Year 2017, US DEP'T OF TRANSP. FED. R.R. ADMIN. (2017), at 134, <a href="https://railroads.dot.gov/sites/fra.dot.gov/files/fra_net/17839/FY%2017%20Enforcement%20Report_Final.pdf">https://railroads.dot.gov/sites/fra.dot.gov/files/fra_net/17839/FY%2017%20Enforcement%20Report_Final.pdf</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corporation, Delaware	2016	\$241,013	DELAWARE DEP'T OF NAT'L RESOURCES AND ENVTL. CONTROL, NOTICE OF ADMINISTRATIVE PENALTY ASSESSMENT AND SECRETARY'S ORDER, ORDER 2016-WH-0035 (Feb. 9, 2004), <a href="http://www.dnrec.delaware.gov/Info/Documents/Secretarys-Order-No-2016-WH-0035.pdf">http://www.dnrec.delaware.gov/Info/Documents/Secretarys-Order-No-2016-WH-0035.pdf</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Co.	2015	\$15,000	Annual Enforcement Report Fiscal Year 2015, US DEP'T OF TRANSP. FED. R.R. ADMIN. (2015), at 114, <a href="https://www.fra.dot.gov/eLib/details/L17311#p1_z5_gD_IFA">https://www.fra.dot.gov/eLib/details/L17311#p1_z5_gD_IFA</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Co.	2015	\$5,000	Annual Enforcement Report Fiscal Year 2016, US DEP'T OF TRANSP. FED. R.R. ADMIN. (2016), at 113, <a href="https://railroads.dot.gov/elibrary/fiscal-year-2016-enforcement-report">https://railroads.dot.gov/elibrary/fiscal-year-2016-enforcement-report</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corporation, Texas	2015	\$13,200	Inspection: 1019201.015 - Formosa Plastics Corporation, Texas, U.S. DEP'T OF LABOR, OSHA, <a href="https://www.osha.gov/pls/imis/establishment.inspection_detail?id=1019201.015">https://www.osha.gov/pls/imis/establishment.inspection_detail?id=1019201.015</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corporation, Texas	2015	\$32,500	TEXAS COMM'N ON ENVTL. QUALITY, ENFORCEMENT MATTER NO. 49366: FORMOSA PLASTICS CORPORATION, TX (2014), at 1, <a href="https://www.tceq.texas.gov/assets/public/comm_exec/agendas/comm/backup/Agendas/2015/05-13-2015/1394AIR.pdf">https://www.tceq.texas.gov/assets/public/comm_exec/agendas/comm/backup/Agendas/2015/05-13-2015/1394AIR.pdf</a> (last visited Sept. 30, 2021).

Country	Entity Name, State (where applicable)	Penalty Year	Penalty Amount (USD)	Info Source
US	Formosa Plastics Corporation, Delaware	2015	\$112,500	Civil Enforcement Case Report: Formosa Plastics Corporation, Delaware, U.S. EPA, ENFORCEMENT AND COMPLIANCE HISTORY ONLINE, <a href="https://echo.epa.gov/enforcement-case-report?id=03-2015-0205">https://echo.epa.gov/enforcement-case-report?id=03-2015-0205</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corporation, Texas	2014	\$7,000	Inspection: 1022041.015 - Formosa Plastics Corporation, Texas, U.S. DEP'T OF LABOR, OSHA, <a href="https://www.osha.gov/pls/imis/establishment.inspection_detail?id=1022041.015">https://www.osha.gov/pls/imis/establishment.inspection_detail?id=1022041.015</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corporation, Texas	2014	\$15,000	Inspection: 1001092.015 - Formosa Plastics Corporation, Texas, U.S. DEP'T OF LABOR, OSHA, <a href="https://www.osha.gov/pls/imis/establishment.inspection_detail?id=1001092.015">https://www.osha.gov/pls/imis/establishment.inspection_detail?id=1001092.015</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corporation, Texas	2014	\$14,000	Inspection: 985296.015 - Formosa Plastics Corporation, Texas, U.S. DEP'T OF LABOR, OSHA, <a href="https://www.osha.gov/pls/imis/establishment.inspection_detail?id=985296.015">https://www.osha.gov/pls/imis/establishment.inspection_detail?id=985296.015</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corporation, Texas	2014	\$21,000	Inspection: 974143.015 - Formosa Plastics Corporation, Texas, U.S. DEP'T OF LABOR, OSHA, <a href="https://www.osha.gov/pls/imis/establishment.inspection_detail?id=974143.015">https://www.osha.gov/pls/imis/establishment.inspection_detail?id=974143.015</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corporation, Texas	2014	\$12,620	TEXAS COMM'N ON ENVTL. QUALITY, ENFORCEMENT MATTER NO. 47496: FORMOSA PLASTICS CORPORATION, TX (2013), at 111, <a href="https://www.tceq.texas.gov/assets/public/comm_exec/agendas/comm/backup/Agendas/2014/4-9-2014/1609air.pdf">https://www.tceq.texas.gov/assets/public/comm_exec/agendas/comm/backup/Agendas/2014/4-9-2014/1609air.pdf</a> (last visited on Sept. 30, 2021).
US	Formosa Plastics Corporation, Texas	2013	\$2,800,000	Civil Enforcement Case Report: Formosa Plastics Corporation, Texas, U.S. EPA, ENFORCEMENT AND COMPLIANCE HISTORY ONLINE, <a href="https://echo.epa.gov/enforcement-case-report?id=06-2006-3410">https://echo.epa.gov/enforcement-case-report?id=06-2006-3410</a> (last visited Sept. 30, 2021). See also: Consent Decree, US v. Formosa Plastics Corporation, Texas, No. 6:09-cv-00061 (Dist. Ct. Southern Dist., Victoria Div., Tex.), available at: <a href="https://www.eli.org/sites/default/files/doj-consent-decrees/r_formosa_plastics_corp_consent_decreefinal.pdf">https://www.eli.org/sites/default/files/doj-consent-decrees/r_formosa_plastics_corp_consent_decreefinal.pdf</a> (last visited on Sept. 30, 2021).
US	Formosa Plastics Corporation, Texas	2013	\$7,000	Inspection: 903912.015 - Formosa Plastics Corporation, Texas, U.S. DEP'T OF LABOR, OSHA, <a href="https://www.osha.gov/pls/imis/establishment.inspection_detail?id=903912.015">https://www.osha.gov/pls/imis/establishment.inspection_detail?id=903912.015</a> (last visited Sept. 30, 2021).

Country	Entity Name, State (where applicable)	Penalty Year	Penalty Amount (USD)	Info Source
US	Formosa Plastics Corporation, Texas	2013	\$7,000	Inspection: 941435.015 - Formosa Plastics Corporation, Texas, U.S. DEP'T OF LABOR, OSHA, <a href="https://www.osha.gov/pls/imis/establishment.inspection_detail?id=941435.015">https://www.osha.gov/pls/imis/establishment.inspection_detail?id=941435.015</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corporation, Delaware	2013	\$26,979	DELAWARE DEP'T OF NAT'L RESOURCES AND ENVTL. CONTROL, NOTICE OF ADMINISTRATIVE PENALTY ASSESSMENT AND SECRETARY'S ORDER, ORDER 2013-A-0053 (Nov. 20, 2013), available at: <a href="https://web.archive.org/web/20210103075025/http://www.dnrec.delaware.gov/Info/Documents/Secretarys%20Order%20No.%202013-A-0053.pdf">https://web.archive.org/web/20210103075025/http://www.dnrec.delaware.gov/Info/Documents/Secretarys%20Order%20No.%202013-A-0053.pdf</a> (last visited on Sept. 30, 2021).
US	Formosa Plastics Corporation, U.S.A.	2012	\$97,060	Inspection: 311813919 - Formosa Plastics Corporation, U.S.A., U.S. DEP'T OF LABOR, OSHA, <a href="https://www.osha.gov/pls/imis/establishment.inspection_detail?id=311813919">https://www.osha.gov/pls/imis/establishment.inspection_detail?id=311813919</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corporation, Delaware	2012	\$69,575	DELAWARE DEP'T OF NAT'L RESOURCES AND ENVTL. CONTROL, NOTICE OF ADMINISTRATIVE PENALTY ASSESSMENT AND SECRETARY'S ORDER, ORDER 2012-A-0038 (Nov. 20, 2012), available at: <a href="https://web.archive.org/web/20210103075211/http://www.dnrec.delaware.gov/Info/Documents/Secretary's%20Order%20No.%202012-A-0038.pdf">https://web.archive.org/web/20210103075211/http://www.dnrec.delaware.gov/Info/Documents/Secretary's%20Order%20No.%202012-A-0038.pdf</a> (last visited on Sept. 30, 2021).
US	Formosa Plastics Corporation, Texas	2012	\$8,000	TEXAS COMM'N ON ENVTL. QUALITY, ENFORCEMENT MATTER NO. 43969: FORMOSA PLASTICS CORPORATION, TX (2012), at 1, <a href="https://www.tceq.texas.gov/assets/public/comm_exec/agendas/comm/backup/Agendas/2012/12-5-2012/o8o4AIR.pdf">https://www.tceq.texas.gov/assets/public/comm_exec/agendas/comm/backup/Agendas/2012/12-5-2012/o8o4AIR.pdf</a> (last visited on Sept. 30, 2021)
US	Formosa Plastics Co.	2011	\$12,000	Annual Enforcement Report Fiscal Year 2011, US DEP'T OF TRANSP. FED. R.R. ADMIN. (2011), at 59, <a href="https://www.fra.dot.gov/eLib/details/Lo1494#p1_z5_gD IEA">https://www.fra.dot.gov/eLib/details/Lo1494#p1_z5_gD IEA</a> (last visited on Sept. 30, 2021)
US	Formosa Plastics Corporation, Texas	2011	\$54,140	TEXAS COMM'N ON ENVTL. QUALITY, ENFORCEMENT MATTER NO. 40000: FORMOSA PLASTICS CORPORATION, TX (2010), at 2, <a href="https://www.tceq.texas.gov/assets/public/comm_exec/agendas/comm/backup/Agendas/2011/2-9-2011/1112ihw.pdf">https://www.tceq.texas.gov/assets/public/comm_exec/agendas/comm/backup/Agendas/2011/2-9-2011/1112ihw.pdf</a> (last visited on Sept. 30, 2021).
US	Formosa Plastics Co.	2010	\$5,000	Annual Enforcement Report Fiscal Year 2010, US DEP'T OF TRANSP. FED. R.R. ADMIN. (2010), at 54, <a href="https://www.fra.dot.gov/eLib/details/Lo1493#p1_z5_gD IEA">https://www.fra.dot.gov/eLib/details/Lo1493#p1_z5_gD IEA</a> (last visited on Sept. 30, 2021)

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US	Formosa Plastics Co.	2010	\$10,000	Annual Enforcement Report Fiscal Year 2010, US DEP'T OF TRANSP. FED. R.R. ADMIN. (2010), at 54, <a href="https://railroads.dot.gov/elibrary/annual-enforcement-report-fiscal-year-2010#p1_z5_gD_IEA">https://railroads.dot.gov/elibrary/annual-enforcement-report-fiscal-year-2010#p1_z5_gD_IEA</a> (last visited on Sept. 30, 2021)
US	Formosa Plastics Corporation, Texas	2010	\$11,979	Inspection: 314384090 - Formosa Plastics Corporation, Texas, U.S. DEP'T OF LABOR, OSHA, <a href="https://www.osha.gov/pls/imis/establishment.inspection_detail?id=314384090">https://www.osha.gov/pls/imis/establishment.inspection_detail?id=314384090</a> (last visited on Sept. 30, 2021)
US	Formosa Plastics Corporation, Texas	2010	\$14,360	TEXAS COMM'N ON ENVTL. QUALITY, ENFORCEMENT MATTER NO. 39698: FORMOSA PLASTICS CORPORATION, TX (2010), at 3, <a href="https://www.tceq.texas.gov/assets/public/comm_exec/agendas/comm/backup/Agendas/2010/11-18-2010/0795air.pdf">https://www.tceq.texas.gov/assets/public/comm_exec/agendas/comm/backup/Agendas/2010/11-18-2010/0795air.pdf</a> (last visited on Sept. 30, 2021)
US	Formosa Plastics Corporation, U.S.A.	2009	\$18,850	Inspection: 311807374 - Formosa Plastics Corporation, U.S.A., U.S. DEP'T OF LABOR, OSHA, <a href="https://www.osha.gov/pls/imis/establishment.inspection_detail?id=311807374">https://www.osha.gov/pls/imis/establishment.inspection_detail?id=311807374</a> (last visited on Sept. 30, 2021)
US	Formosa Plastics Corporation, U.S.A.	2009	\$67,925	Inspection: 311807358 - Formosa Plastics Corporation, U.S.A., U.S. DEP'T OF LABOR, OSHA, <a href="https://www.osha.gov/pls/imis/establishment.inspection_detail?id=311807358">https://www.osha.gov/pls/imis/establishment.inspection_detail?id=311807358</a> (last visited on Sept. 30, 2021)
US	Formosa Plastics Corporation, Texas	2009	\$50,044	TEXAS COMM'N ON ENVTL. QUALITY, ENFORCEMENT MATTER NO. 37165: FORMOSA PLASTICS CORPORATION, TX (2009), at 5, <a href="https://www.tceq.texas.gov/assets/public/comm_exec/agendas/comm/backup/Agendas/2009/9-23-2009/0216air.pdf">https://www.tceq.texas.gov/assets/public/comm_exec/agendas/comm/backup/Agendas/2009/9-23-2009/0216air.pdf</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corporation, Texas	2009	\$5,940	TEXAS COMM'N ON ENVTL. QUALITY, ENFORCEMENT MATTER NO. 36470: FORMOSA PLASTICS CORPORATION, TX (2008), at 3, <a href="https://www.tceq.texas.gov/assets/public/comm_exec/agendas/comm/backup/Agendas/2009/3-11-2009/1412air.pdf">https://www.tceq.texas.gov/assets/public/comm_exec/agendas/comm/backup/Agendas/2009/3-11-2009/1412air.pdf</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corporation, Texas	2009	\$7,052	TEXAS COMM'N ON ENVTL. QUALITY, ENFORCEMENT MATTER NO. 36025: FORMOSA PLASTICS CORPORATION, TX (2008), at 3, <a href="https://www.tceq.texas.gov/assets/public/comm_exec/agendas/comm/backup/Agendas/2009/2-11-2009/0973air.pdf">https://www.tceq.texas.gov/assets/public/comm_exec/agendas/comm/backup/Agendas/2009/2-11-2009/0973air.pdf</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corporation, Texas	2008	\$121,443	TEXAS COMM'N ON ENVTL. QUALITY, ENFORCEMENT MATTER NO. 29089: FORMOSA PLASTICS CORPORATION, TX (2006), at 4, <a href="https://www.tceq.texas.gov/assets/public/comm_exec/agendas/comm/backup/Agendas/2008/11-5-2008/0429air.pdf">https://www.tceq.texas.gov/assets/public/comm_exec/agendas/comm/backup/Agendas/2008/11-5-2008/0429air.pdf</a> (last visited Sept. 30, 2021).

Country	Entity Name, State (where applicable)	Penalty Year	Penalty Amount (USD)	Info Source
US	Formosa Plastics Corporation, Texas	2008	\$9,880	TEXAS COMM’N ON ENVTL. QUALITY, ENFORCEMENT MATTER NO. 34337: FORMOSA PLASTICS CORPORATION, TX (2007), at 3, <a href="https://www.tceq.texas.gov/assets/public/comm_exec/agendas/comm/backup/Agendas/2008/2-27-2008/1227Air.pdf">https://www.tceq.texas.gov/assets/public/comm_exec/agendas/comm/backup/Agendas/2008/2-27-2008/1227Air.pdf</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corporation, Texas	2008	\$6,422	TEXAS COMM’N ON ENVTL. QUALITY, ENFORCEMENT MATTER NO. 32648: FORMOSA PLASTICS CORPORATION, TX (2007), at 3, <a href="https://www.tceq.texas.gov/assets/public/comm_exec/agendas/comm/backup/Agendas/2008/2-13-2008/0230Air.pdf">https://www.tceq.texas.gov/assets/public/comm_exec/agendas/comm/backup/Agendas/2008/2-13-2008/0230Air.pdf</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corporation, Texas	2008	\$20,000	TEXAS COMM’N ON ENVTL. QUALITY, ENFORCEMENT MATTER NO. 33495: FORMOSA PLASTICS CORPORATION, TX (2007), at 3, <a href="https://www.tceq.texas.gov/assets/public/comm_exec/agendas/comm/backup/Agendas/2008/1-30-2008/0771AIR.pdf">https://www.tceq.texas.gov/assets/public/comm_exec/agendas/comm/backup/Agendas/2008/1-30-2008/0771AIR.pdf</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Plant, Delaware	2007	\$46,000	DELAWARE DEP’T OF NAT’L RESOURCES AND ENVTL. CONTROL, FORMOSA PLASTICS PLANT - 780 SCHOOLHOUSE ROAD, DELAWARE CITY - ENFORCEMENT MATTER (Feb. 15, 2007), <a href="http://www.nav.dnrec.delaware.gov/DEN3/Detail/EnforcementDetail.aspx?id=10955">http://www.nav.dnrec.delaware.gov/DEN3/Detail/EnforcementDetail.aspx?id=10955</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corporation, Texas	2006	\$7,000	Inspection: 310528005 - Formosa Plastics Corporation, Texas, U.S. DEP’T OF LABOR, OSHA, <a href="https://www.osha.gov/pls/imis/establishment.inspection_detail?id=310528005">https://www.osha.gov/pls/imis/establishment.inspection_detail?id=310528005</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corporation, Texas	2006	\$27,634	Annual Enforcement Report Fiscal Year 2006, TEXAS COMM’N ON ENVTL. QUALITY (2006), <a href="https://www.tceq.texas.gov/assets/public/compliance/enforcement/enf_reports/AER/historical/Annual-Enforcement-Report-FY2006.pdf">https://www.tceq.texas.gov/assets/public/compliance/enforcement/enf_reports/AER/historical/Annual-Enforcement-Report-FY2006.pdf</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corporation, Delaware	2005	\$1,290,000	Formosa Plastics Corporation Settles Federal-State Lawsuit over Environmental Violations at Delaware City Plant, U.S. DEP’T OF JUSTICE (Jun. 28, 2005), <a href="https://www.justice.gov/archive/opa/pr/2005/june/05_enrd_345.htm">https://www.justice.gov/archive/opa/pr/2005/june/05_enrd_345.htm</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corporation, Texas	2005	\$5,000	Inspection: 309343770 - Formosa Plastics Corporation, Texas, U.S. DEP’T OF LABOR, OSHA, <a href="https://www.osha.gov/pls/imis/establishment.inspection_detail?id=309343770">https://www.osha.gov/pls/imis/establishment.inspection_detail?id=309343770</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corporation, Texas	2005	\$75,000	Inspection: 309343648 - Formosa Plastics Corporation, Texas, U.S. DEP’T OF LABOR, OSHA, <a href="https://www.osha.gov/pls/imis/establishment.inspection_detail?id=309343648">https://www.osha.gov/pls/imis/establishment.inspection_detail?id=309343648</a> (last visited Sept. 30, 2021).

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US	Formosa Plastics Corporation, Delaware	2005	\$1,292,847	Civil Enforcement Case Report: Formosa Plastic Corporation, Case No. 03-2004-0299, U.S. EPA, ENFORCEMENT AND COMPLIANCE HISTORY ONLINE, <a href="https://echo.epa.gov/enforcement-case-report?id=03-2004-0299">https://echo.epa.gov/enforcement-case-report?id=03-2004-0299</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corporation, Texas	2005	\$20,916	Annual Enforcement Report Fiscal Year 2006, TEXAS COMM’N ON ENVTL. QUALITY (2006), at 112, <a href="https://www.tceq.texas.gov/assets/public/compliance/enforcement/enf_reports/AER/historical/Annual-Enforcement-Report-FY2006.pdf">https://www.tceq.texas.gov/assets/public/compliance/enforcement/enf_reports/AER/historical/Annual-Enforcement-Report-FY2006.pdf</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corporation, Texas	2005	\$24,600	Annual Enforcement Report Fiscal Year 2005, TEXAS COMM’N ON ENVTL. QUALITY (2005), at 98, <a href="https://www.tceq.texas.gov/assets/public/compliance/enforcement/enf_reports/AER/historical/Annual-Enforcement-Report-FY2005.pdf">https://www.tceq.texas.gov/assets/public/compliance/enforcement/enf_reports/AER/historical/Annual-Enforcement-Report-FY2005.pdf</a> (last visited Sept. 30, 2021).
US	Nan Ya Plastics Corporation, America	2004	\$12,500	Inspection: 307596007 - Nan Ya Plastics Corporation, America, U.S. DEP’T OF LABOR, OSHA, <a href="https://www.osha.gov/pls/imis/establishment.inspection_detail?id=307596007">https://www.osha.gov/pls/imis/establishment.inspection_detail?id=307596007</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corporation, Illinois	2004	\$300,000	Inspection: 305893679 - Formosa Plastics Corporation, U.S. DEP’T OF LABOR, OSHA, <a href="https://www.osha.gov/pls/imis/establishment.inspection_detail?id=305893679">https://www.osha.gov/pls/imis/establishment.inspection_detail?id=305893679</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corporation, Texas	2004	\$15,090	Civil Enforcement Case Report: Formosa Plastics Corporation, Case No. HQ-2004-5042, U.S. EPA, ENFORCEMENT AND COMPLIANCE HISTORY ONLINE, <a href="https://echo.epa.gov/enforcement-case-report?id=HQ-2004-5042">https://echo.epa.gov/enforcement-case-report?id=HQ-2004-5042</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Plant, Delaware	2004	\$23,100	DELAWARE DEP’T OF NAT’L RESOURCES AND ENVTL. CONTROL, FORMOSA PLASTICS PLANT - 780 SCHOOLHOUSE ROAD, DELAWARE CITY - ENFORCEMENT MATTER (Feb. 9, 2004), <a href="http://www.nav.dnrec.delaware.gov/DEN3/Detail/EnforcementDetail.aspx?id=10209">http://www.nav.dnrec.delaware.gov/DEN3/Detail/EnforcementDetail.aspx?id=10209</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corporation, Texas	2004	\$150,000	Annual Enforcement Report Fiscal Year 2005, TEXAS COMM’N ON ENVTL. QUALITY (2005), at 98, <a href="https://www.tceq.texas.gov/assets/public/compliance/enforcement/enf_reports/AER/historical/Annual-Enforcement-Report-FY2005.pdf">https://www.tceq.texas.gov/assets/public/compliance/enforcement/enf_reports/AER/historical/Annual-Enforcement-Report-FY2005.pdf</a> (last visited Sept. 30, 2021).

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US	Nan Ya Plastics, Texas	2003	\$80,000	Annual Enforcement Report Fiscal Year 2004, TEXAS COMM'N ON ENVTL. QUALITY (2004), at 382, <a href="https://www.tceq.texas.gov/assets/public/compliance/enforcement/enf_reports/AER/historical/Annual-Enforcement-Report-FY2004.pdf">https://www.tceq.texas.gov/assets/public/compliance/enforcement/enf_reports/AER/historical/Annual-Enforcement-Report-FY2004.pdf</a> (last visited Sept. 30, 2021).
US	Nan Ya Plastics Corporation, America	2002	\$77,850	Inspection: 304475304 - Nan Ya Plastics Corporation, America, U.S. DEP'T OF LABOR, OSHA, <a href="https://www.osha.gov/pls/imis/establishment.inspection_detail?id=304475304">https://www.osha.gov/pls/imis/establishment.inspection_detail?id=304475304</a> (last visited Sept. 30, 2021).
US	Nan Ya Plastics Corporation, America	2002	\$204,300	Inspection: 304475296 - Nan Ya Plastics Corporation, America, U.S. DEP'T OF LABOR, OSHA, <a href="https://www.osha.gov/pls/imis/establishment.inspection_detail?id=304475296">https://www.osha.gov/pls/imis/establishment.inspection_detail?id=304475296</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corporation	2002	\$17,000	Civil Enforcement Case Report: Formosa Plastics Corporation, Case No. 06-2003-2901, U.S. EPA, ENFORCEMENT AND COMPLIANCE HISTORY ONLINE, <a href="https://echo.epa.gov/enforcement-case-report?id=06-2003-2901">https://echo.epa.gov/enforcement-case-report?id=06-2003-2901</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corp., Louisiana	2002	\$19,250	Civil Enforcement Case Report: FORMOSA PLASTICS CORP., A LOUISIANA CORPORATION, Case No. 06-2002-0503, U.S. EPA, ENFORCEMENT AND COMPLIANCE HISTORY ONLINE, <a href="https://echo.epa.gov/enforcement-case-report?id=06-2002-0503">https://echo.epa.gov/enforcement-case-report?id=06-2002-0503</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corp., Louisiana	2002	\$4,350,000	Formosa Plastics to Spend \$4.3 Million To Resolve Environmental Violations, INDEPENDENT COMMODITY INTELLIGENCE SERVICES (Oct. 20, 2002), <a href="https://www.icis.com/explore/resources/news/2002/10/18/183060/formosa-plastics-to-spend-4-3-million-to-resolve-environmental-violations/">https://www.icis.com/explore/resources/news/2002/10/18/183060/formosa-plastics-to-spend-4-3-million-to-resolve-environmental-violations/</a> (last visited Sept. 30, 2021).
US	Formosa Plastics Corporation, Texas	2000	\$14,500	Inspection: 302105218 - Formosa Plastics Corporation, Texas, U.S. DEP'T OF LABOR, OSHA, <a href="https://www.osha.gov/pls/imis/establishment.inspection_detail?id=302105218">https://www.osha.gov/pls/imis/establishment.inspection_detail?id=302105218</a> (last visited Sept. 30, 2021).
Taiwan	Formosa Chemical and Fiber Corp.	2019	\$162,000	Thousands evacuated after Taiwan chemical plant explosion, CHINA DAILY (Apr. 8, 2019), <a href="http://www.chinadaily.com.cn/a/201904/08/WS5caae4dca3104842260b4eb5.html">http://www.chinadaily.com.cn/a/201904/08/WS5caae4dca3104842260b4eb5.html</a> (last visited Sept. 30, 2021).

Country	Entity Name, State (where applicable)	Penalty Year	Penalty Amount (USD)	Info Source
Taiwan	Hwa Ya Power Corporation, Taoyuan	2011	\$34,100	REPUBLIC OF CHINA CONTROL YUAN, Formosa Plastics Group Violates Air Pollution Control Law (Oct. 2019), <a href="https://www-ws.cy.gov.tw/Download.ashx?u=LzAwMS9VcGxvYWQvMy9yZWxmaWxlLzg5MTlvMTQ2NDMvODk1ZmlmMjltZDU4ZSo0NTg2LWlwMzktNTY1MDRiMjFkN2FLLnBkZg%3D%3D&amp;n=MTA4MTAwM%2BWPsOW-hkeaWsOiBnueov1%2FpmYTooagucGRm">https://www-ws.cy.gov.tw/Download.ashx?u=LzAwMS9VcGxvYWQvMy9yZWxmaWxlLzg5MTlvMTQ2NDMvODk1ZmlmMjltZDU4ZSo0NTg2LWlwMzktNTY1MDRiMjFkN2FLLnBkZg%3D%3D&amp;n=MTA4MTAwM%2BWPsOW-hkeaWsOiBnueov1%2FpmYTooagucGRm</a> (in Chinese) (last visited Sept. 30, 2021).
Taiwan	Nan Ya Plastics Corporation, New Taipei City	2011	\$27,280	REPUBLIC OF CHINA CONTROL YUAN, Formosa Plastics Group Violates Air Pollution Control Law (Oct. 2019), <a href="https://www-ws.cy.gov.tw/Download.ashx?u=LzAwMS9VcGxvYWQvMy9yZWxmaWxlLzg5MTlvMTQ2NDMvODk1ZmlmMjltZDU4ZSo0NTg2LWlwMzktNTY1MDRiMjFkN2FLLnBkZg%3D%3D&amp;n=MTA4MTAwM%2BWPsOW-hkeaWsOiBnueov1%2FpmYTooagucGRm">https://www-ws.cy.gov.tw/Download.ashx?u=LzAwMS9VcGxvYWQvMy9yZWxmaWxlLzg5MTlvMTQ2NDMvODk1ZmlmMjltZDU4ZSo0NTg2LWlwMzktNTY1MDRiMjFkN2FLLnBkZg%3D%3D&amp;n=MTA4MTAwM%2BWPsOW-hkeaWsOiBnueov1%2FpmYTooagucGRm</a> (in Chinese) (last visited Sept. 30, 2021).
Taiwan	Nan Ya Plastics Corporation, Jinhsin Factory, Taoyuan City	2011	\$8,525	REPUBLIC OF CHINA CONTROL YUAN, Formosa Plastics Group Violates Air Pollution Control Law (Oct. 2019), <a href="https://www-ws.cy.gov.tw/Download.ashx?u=LzAwMS9VcGxvYWQvMy9yZWxmaWxlLzg5MTlvMTQ2NDMvODk1ZmlmMjltZDU4ZSo0NTg2LWlwMzktNTY1MDRiMjFkN2FLLnBkZg%3D%3D&amp;n=MTA4MTAwM%2BWPsOW-hkeaWsOiBnueov1%2FpmYTooagucGRm">https://www-ws.cy.gov.tw/Download.ashx?u=LzAwMS9VcGxvYWQvMy9yZWxmaWxlLzg5MTlvMTQ2NDMvODk1ZmlmMjltZDU4ZSo0NTg2LWlwMzktNTY1MDRiMjFkN2FLLnBkZg%3D%3D&amp;n=MTA4MTAwM%2BWPsOW-hkeaWsOiBnueov1%2FpmYTooagucGRm</a> (in Chinese) (last visited Sept. 30, 2021).
Taiwan	Formosa Chemical and Fibre Corporation, Xingang Township, Chiayi County	2011	\$34,100	REPUBLIC OF CHINA CONTROL YUAN, Formosa Plastics Group Violates Air Pollution Control Law (Oct. 2019), <a href="https://www-ws.cy.gov.tw/Download.ashx?u=LzAwMS9VcGxvYWQvMy9yZWxmaWxlLzg5MTlvMTQ2NDMvODk1ZmlmMjltZDU4ZSo0NTg2LWlwMzktNTY1MDRiMjFkN2FLLnBkZg%3D%3D&amp;n=MTA4MTAwM%2BWPsOW-hkeaWsOiBnueov1%2FpmYTooagucGRm">https://www-ws.cy.gov.tw/Download.ashx?u=LzAwMS9VcGxvYWQvMy9yZWxmaWxlLzg5MTlvMTQ2NDMvODk1ZmlmMjltZDU4ZSo0NTg2LWlwMzktNTY1MDRiMjFkN2FLLnBkZg%3D%3D&amp;n=MTA4MTAwM%2BWPsOW-hkeaWsOiBnueov1%2FpmYTooagucGRm</a> (in Chinese) (last visited Sept. 30, 2021).
Taiwan	6th Naphtha Cracker Complex, Formosa Plastics	2013	\$54,560	REPUBLIC OF CHINA CONTROL YUAN, Formosa Plastics Group Violates Air Pollution Control Law (Oct. 2019), <a href="https://www-ws.cy.gov.tw/Download.ashx?u=LzAwMS9VcGxvYWQvMy9yZWxmaWxlLzg5MTlvMTQ2NDMvODk1ZmlmMjltZDU4ZSo0NTg2LWlwMzktNTY1MDRiMjFkN2FLLnBkZg%3D%3D&amp;n=MTA4MTAwM%2BWPsOW-hkeaWsOiBnueov1%2FpmYTooagucGRm">https://www-ws.cy.gov.tw/Download.ashx?u=LzAwMS9VcGxvYWQvMy9yZWxmaWxlLzg5MTlvMTQ2NDMvODk1ZmlmMjltZDU4ZSo0NTg2LWlwMzktNTY1MDRiMjFkN2FLLnBkZg%3D%3D&amp;n=MTA4MTAwM%2BWPsOW-hkeaWsOiBnueov1%2FpmYTooagucGRm</a> (in Chinese) (last visited Sept. 30, 2021).

Country	Entity Name, State (where applicable)	Penalty Year	Penalty Amount (USD)	Info Source
Taiwan	Formosa Chemical and Fibre Corporation, 6th Naphtha Cracker Complex	2011	\$10,230	REPUBLIC OF CHINA CONTROL YUAN, Formosa Plastics Group Violates Air Pollution Control Law (Oct. 2019), <a href="https://www.ws.cy.gov.tw/Download.ashx?u=LzAwMS9VcGxvYWQvMy9yZWx-maWxlLzg5MTlvMTQ2NDMvODk1ZmlmMjltZ-DU4ZSooNTg2LWlwMzktNTY1MDRiMjFkN2FLLnBkZg%3D%3D&amp;n=MTA4MTAwM%2BWPsOW-hkeaWsOiBnueov1%2FpmYTooagucGRm">https://www.ws.cy.gov.tw/Download.ashx?u=LzAwMS9VcGxvYWQvMy9yZWx-maWxlLzg5MTlvMTQ2NDMvODk1ZmlmMjltZ-DU4ZSooNTg2LWlwMzktNTY1MDRiMjFkN2FLLnBkZg%3D%3D&amp;n=MTA4MTAwM%2BWPsOW-hkeaWsOiBnueov1%2FpmYTooagucGRm</a> (in Chinese) (last visited Sept. 30, 2021).
Taiwan	Renwu Plant	2011	\$2,728,000	Environmental Policy Monthly, REPUBLIC OF CHINA EPA, Vol. XIV Issue 6 (June 2011), <a href="https://www.epa.gov.tw/DisplayFile.aspx?FileID=30331D224AA368CF&amp;P=2207a7bd-0578-4301-ac16-c149of891580">https://www.epa.gov.tw/DisplayFile.aspx?FileID=30331D224AA368CF&amp;P=2207a7bd-0578-4301-ac16-c149of891580</a> (last visited Sept. 30, 2021).

\*All 2011 Taiwanese penalties were converted to USD at an exchange rate of 0.0341 USD to 1 TWD, which was the average exchange rate in 2011. See: Taiwan Dollar to US Dollar Spot Exchange Rates for 2011, EXCHANGERATES.ORG.UK, <https://www.exchangerates.org.uk/TWD-USD-spot-exchange-rates-history-2011.html> (last visited on Oct. 1, 2021).



