

Bloomberg Green

This Plastic Mega-Factory Is a \$10 Billion Bet on a Single-Use Future

A world leader in virgin resins comes to Louisiana's Cancer Alley with an unlimited vision for its products.

By Polly Mosendz June 8, 2020, 4:00 AM CDT

By the time the ribbon is cut in 2029 on the Sunshine Project, a \$9.4 billion petrochemical plant under construction in rural Louisiana, single-use plastic bags will likely be restricted for most shoppers in the U.S. Right now there are bans, fees, and other rules on plastic for more than 1 in 5 Americans. Push that trend into the next decade, and you can imagine metal straws becoming commonplace, chicken breasts purchased without the tug of shrink wrap, and a generation unfamiliar with the touch of a Styrofoam cup.



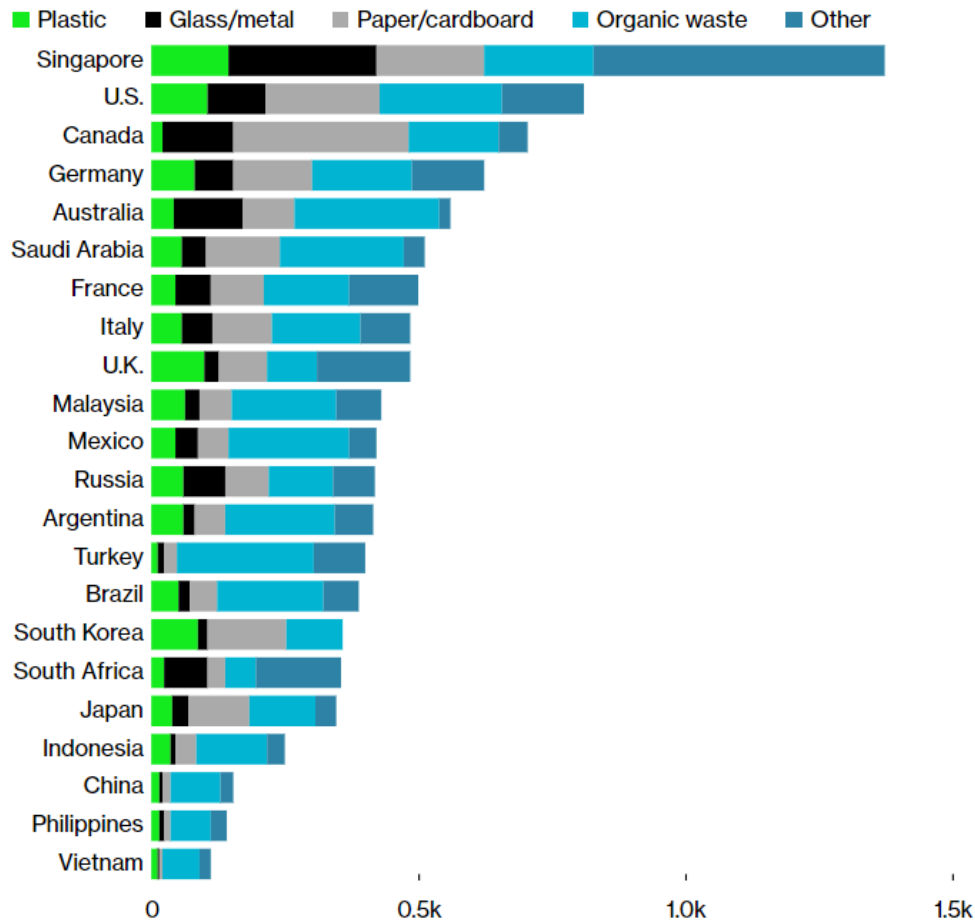
Yet right there on the same timeline sits Sunshine. When ready to run, the 2,400-acre complex owned by the Taiwanese conglomerate Formosa Plastics Group will be dedicated to production of polyethylene, polypropylene, and ethylene glycol. These virgin resins are used to make plastic products. Manufacturing will spread across 14 plants, all built to last.

The people pushing single-use bans want to eliminate what this giant factory and hundreds of others like it create. In the decade after Sunshine is fully operational, the world will see plastic production—and plastic pollution—more than double from its current level, according to reports from the World Wildlife Fund and the World Economic Forum. Other factories will open, of course, and the energy required to churn out plastic in 2030 will generate 1.34 gigatons of greenhouse gas emissions a year, as much as 295 coal-powered plants, based on estimates from the Center for International Environmental Law.

Plastic factories aren't quite as long-lived as what they produce, but they are almost as timeless. When San Diego's Rensch plant opened in 1914, it produced the kind of thin, white cards printed with numbers to assign customers a place in line at groceries and delicatessens. Today the same factory is owned by Ridout Plastics Co., which makes everything from frosted plexiglass to double-sided tape.

Solid Waste Produced per Capita, by Country

Kilograms



Source: World Bank

By petrochemical industry standards, major factory equipment should last at least two decades. But that's just the minimum. With regular maintenance and upgrades, documents the company released for the Sunshine complex suggest, it "can run continuously," which Formosa says means indefinitely.

There are two incompatible visions of the future. Call one "the end of plastics"; call the other "plastics forever." Sunshine is an almost \$10 billion wager that the age of plastic will not end.

It took more than a day of driving in March for Diane Wilson to reach Louisiana in her battered Chevy pickup. She was on her way to show off a dozen glass jars filled with sludgy resin scooped up from the waters and land near her Texas hometown.

Her destination was a council meeting in St. James Parish, where the Sunshine factory will be built. She intended to warn the community about the risks from plastics production, but the audience wasn't exactly unfamiliar with the subject. If you've heard of this area, with its high concentration of petrochemical infrastructure, it's almost certainly because of its nickname: Cancer Alley.

Wilson, 71, is a former shrimp boat captain with a deep drawl and an affinity for red cowboy boots and patterned shawls. She knew all about the parish's newest industrial neighbor, having staged a long legal battle against Formosa's plant near Point Comfort, Texas. Her suit alleging Formosa had illegally dumped plastic pellets and other pollutants managed to wrest a \$50 million settlement from the company, paid to a local cleanup fund. Formosa also agreed to stop discharging plastic pellets.

"I don't think industry is going to go there willingly," Wilson says of plastic makers cleaning up their act. "You really have to wrestle these corporations to the ground, then they come along."

Wilson isn't blind to the irony of driving around in a 20-year-old, gas-guzzling truck to oppose plastic. She's also not so pure that she'll decline a nonrecyclable cup when drinking coffee, and she pokes fun at the unavoidability of plastic tableware. Plastic, she points out, is a mainstay in her life.

People in aggregate haven't demonstrated a real ability to reduce their demand for plastic, and new regulations haven't changed that

The politicians of St. James Parish shook Wilson's sludgy jars but took no action to stop the Sunshine Project. Formosa was able to break ground in late March, around the time Covid-19 lockdowns disrupted business in the area. A legal challenge against the state's approval of the plant by the environmental group Earth Justice was slowed by court closures.

Wilson and other activists have come to believe that the industrial drive to produce plastic—and the tendency of even people who oppose plastic to use it when convenient—will only end if citizens can impose legal and political restraints on businesses. There's an emerging playbook of tactics to make plastic illegal, expensive, or otherwise inconvenient. A regulation passed in the European Parliament, for instance, will set severe restrictions on single-use plastic next year, requiring nations in the bloc to recycle 90% of beverage bottles by 2029. Similar measures have popped up in 60 countries and 350 U.S. municipalities, according to a report by financial researcher MSCI Inc.

The spread of such rules should lower demand and result in the closure of plastic manufacturing at places like Sunshine, simply because continuing to produce shouldn't be profitable. A gargantuan plastic factory, in this view, has the potential to become a stranded asset. That's the term economists use for abandoned coal mines and unusable oil rigs once the basic economics of continued operation no longer make sense.

But any effort to strand the assets of plastic producers faces one tremendous obstacle: People in aggregate haven't demonstrated a real ability to reduce their demand for plastic, and new regulations

haven't changed that. As of 2016, we turn out about 116 pounds of new plastic a year for every man, woman, and child. Data from the World Economic Forum show that annual plastic output rose from 15 million tons in 1964 to 311 million tons in 2014. Plastic packaging is among the most common finished plastic products, and only 5% ends up being successfully recycled. Three-quarters of all plastic ever produced has already been discarded.

The plastic production boom has now endured for a half century, even as new technologies and pressure from investors have helped turn markets against other fossil fuel products. The makers of airplanes and cars have increasingly embraced plastic, often achieving efficiency improvements and cost savings; sometimes switching to plastic components proves to have a lesser impact on the planet, particularly when the alternative is a metal that must be mined and forged.

Formosa certainly isn't anticipating wrestling with new laws or shifts in consumer behavior. Research cited by the company finds plastic use is only going in one direction, and independent analysts largely agree. A plastics business can offer a straightforward answer to environmental critics: Manufacturers are just giving people exactly what they want. "As the world population continues to grow, especially in Third World countries, FG is helping the world achieve a better quality of life," says spokeswoman Janile Parks of FG LA LLC, the Formosa affiliate behind the Louisiana complex. "Plastics are not the enemy."

That makes the risk calculation very clear. The company, she says, "would not be building this facility if we didn't think demand for our products would exist" into the future. It's not a view troubled by the distant prospect of stranded assets.

Formosa's complex will be located on a stretch of highway along the Mississippi River, halfway between New Orleans and Baton Rouge, that's dotted with butterweed, ambulance-chaser billboards, and about 150 factories, almost all of which produce petrochemicals. Many of these facilities are among America's most profitable industrial plants.

The region is particularly attractive to high-polluting manufacturers because Louisiana combines lax environmental regulations and easy access to fossil fuels with generous corporate incentives. The state won't recoup the roughly \$1.5 billion tax credit it handed Formosa for decades. This light touch with taxes can be traced back to Depression-era legislation meant to promote industrialization in the Deep South. The idea is that a business gets a financial cushion in its early years, and in exchange the region makes up for lost tax revenue with added jobs.

Formosa has promised to create 1,200 permanent jobs, along with 8,000 temporary positions at the peak of Sunshine's construction. Local activists have pointed to the large number of temporary roles when questioning the deal. "They say 1,200 jobs here," says Broderick Bagert, who researches Louisiana's tax incentive program as part of the community group **Together Louisiana**. "That's over \$1 million per job. I'm not familiar with anyone who says \$1 million per job is a good deal."

When Formosa's Sunshine complex takes its place there, it will become one of the largest petrochemical plants in the world

Formosa's corporate life as a plastic maker began with a handout from the U.S. government. It was founded in 1954 with a loan from a federal aid program that went to Wang Yung-ching, a Taiwanese farmer's son who left school in the sixth grade. His business started by making polyvinyl chloride—PVC—and has grown into a mammoth holding company. Its subsidiaries now produce petrochemicals, steel, and bleach. With a market cap of more than \$500 billion and 113,000 employees, Formosa is worth more than two and a half Coca-Colas or about four Teslas, and it touches more lives than both without the public profile of either. Formosa is investing in China, but growth there has become challenging because of a regulation that required foreign entities to have state-owned partners. That's part of the reason the company turned to the U.S., with a substantial investment encouraged by looser regulations and smoother politics.

Another reason is the cheap and virtually unlimited supply of fossil fuels on the U.S. Gulf Coast. The world's endless plastic expansion has been helped along by the U.S.'s fracking boom. Oil and gas are the feedstocks that go on to become plastic, and prices have never been lower. "The most important incentive for us to invest in the U.S. is that we are eyeing cheap shale gas," said Lin Keh-Yen, an executive vice president at Formosa, in a 2017 interview.

Plastic plants eat up natural gas—now so plentiful that producers sometimes pay to have it taken away—and churn out a slew of chemicals and raw materials that go on to become our everyday items. In the last decade, more than 330 petrochemical plants have made plans to open in the U.S., most in Texas and Louisiana, where the Dakota Access Pipeline ends. When Formosa's Sunshine complex takes its place there, it will become one of the largest petrochemical plants in the world.

About six years after the scheduled opening of Sunshine, Formosa will have made its first dollar of return on a multibillion-dollar investment, according to Bloomberg Intelligence.

Of course, by 2050 the average summer high near Baton Rouge is projected to be about 95.2F—that's 3.5F hotter than it is today. And this particular plastic future assumes Louisiana isn't hit with major storms in the years ahead. The sprawling Sunshine plant will sit on the edge of the Mississippi, and water levels are rising. Over the decades the factory is expected to pump out plastic, Formosa might very well face an entirely different type of stranding.