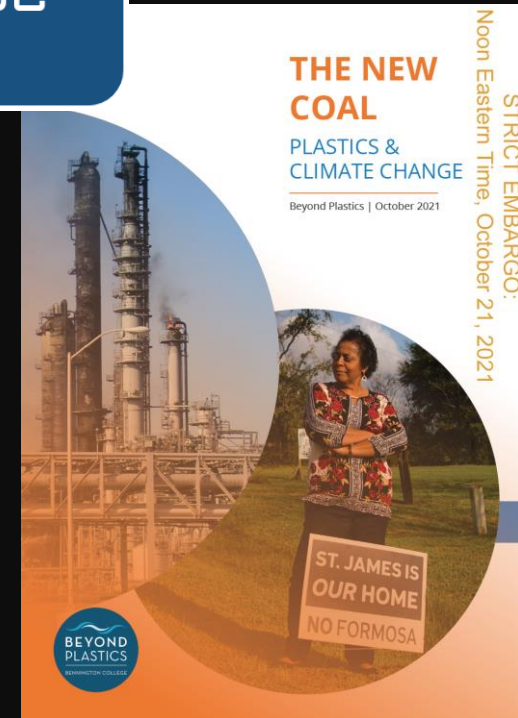


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THE NEW COAL: PLASTICS AND CLIMATE CHANGE

The New Coal: Plastics and Climate Change is a comprehensive account of the United States plastics industry's significant, yet rarely acknowledged contributions to the climate crisis. Using coal-fired power plants as a benchmark, the report examines ten stages in the creation, usage, and disposal of plastics: fracking for plastics, transporting and processing fossil fuels, gas crackers, other plastics feedstock manufacturing, polymers and additives production, exports and imports, foamed plastic insulation, "chemical recycling", municipal waste incineration, and plastics in the water.

As of 2020, the U.S. plastics industry is responsible for at least 232 million tons of CO₂e gas emissions per year. This amount is equivalent to the average emissions from 116 average-sized (500-megawatt) coal-fired power plants.

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

Plastics are the new coal.

Although the plastics industry has long touted plastic's recyclability, in truth, less than 9% of plastics



BEYOND PLASTICS

Appendix 1: Plastics & Climate CO2e Data

Facility	City/Town	County/ Parish	Stage	Facility reported emissions, CO2e 2020 (U.S. tons)	Potential Emissions (U.S. tons)	New Capacity (2019 to future)	2020 CO2e reports (U.S. tons) except power plants	Power plant name
U.S. Total			U.S.	114,377,574	56,897,105	42 stes	101,694,576	
HARRIS COUNTY/CHAMBERS COUNTY, TEXAS			TOTAL COMMUNITY	<u>20,213,955</u>				
ExxonMobil Chemical	Baytown	Harris County, Texas	3. Gas Cracker	1,237,866			1,237,866	ExxonMobil Bayt
ChevronPhillips Chemical Company LP (CPChem, Cedar Bayou)	Baytown	Harris County, Texas	3. Gas Cracker	2,416,224			2,416,224	
Covestro	Baytown	Harris County, Texas	5a. Polymers, Resins	62,640			62,640	Baytown Energy
Channelview Complex (LyondellBasell/Equistar)	Channelview	Harris County, Texas	3. Gas Cracker	3,899,841	907,132	2022	2,274,153	Two: Optim Ene
Shell Chemical	Deer Park	Harris County, Texas	3. Gas Cracker	458,713			458,713	Shell Deer Park
TPC Group LLC (SK Capital)	Deer Park	Harris County, Texas	5a. Polymers, Resins	60,173	302,575	2020+	60,173	
Occidental	Deer Park	Harris County, Texas	4. Other feedstoc	145,767			145,767	
Flint Hills Resources - Houston								

SECTION 1 FRACKING FOR PLASTICS

In the 1990s, geological engineers in the United States perfected methods that coax natural gas and petroleum out of bedrock formations. This achievement touched off the largest energy boom the country has ever seen. Oil and gas producers have become adroit at drawing hydrocarbons to the surface by injecting high-pressure streams of “fracking fluid” (primarily water, containing sand and small ceramic balls suspended with the aid of chemicals) and “fracturing” the natural pressure contained within the rock. Since the turn of this century, petrochemical companies have drilled more than 1 million new oil and gas wells using this technique, called hydraulic fracturing⁹.

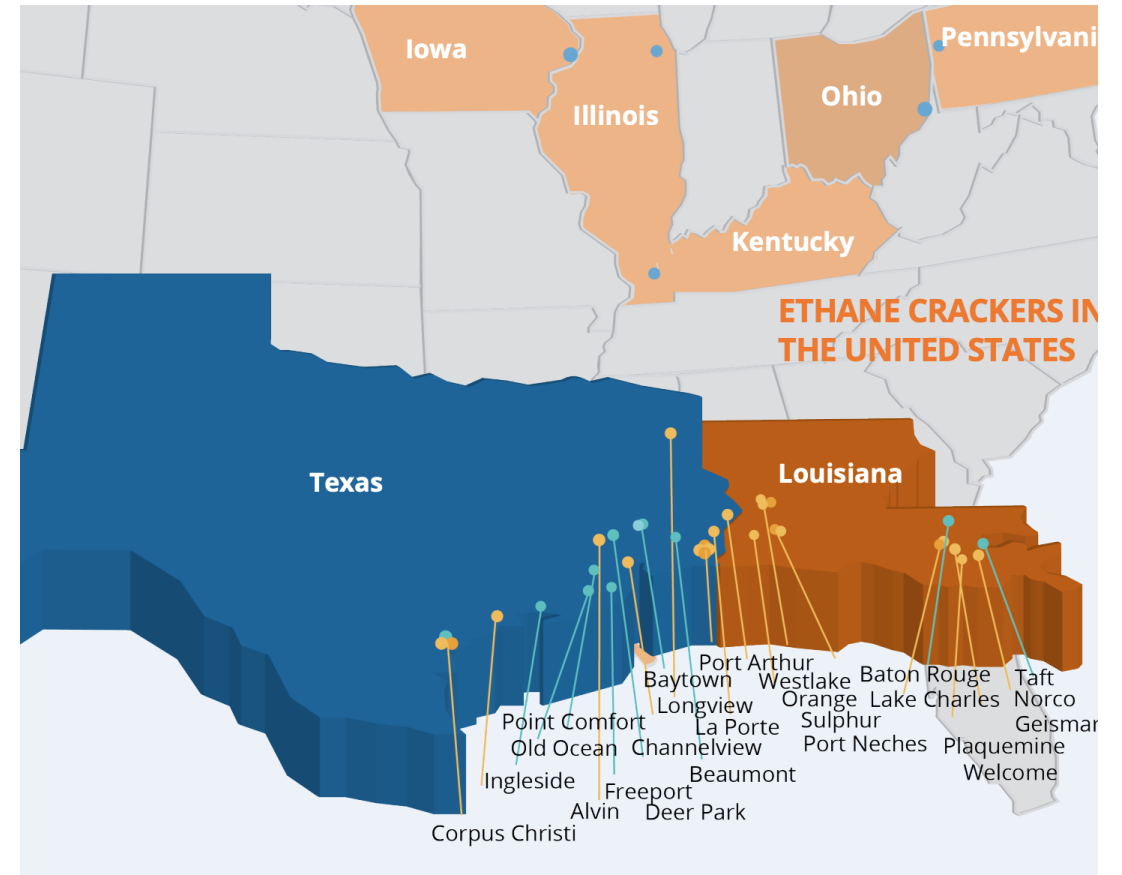
Fracking profoundly reduced the cost of oil and gas, and increased its environmental impacts. Numerous sources have documented serious contamination of



This stage of plastics production – fracking in the United States for gases – releases an estimated 36 million tons of CO₂e gases per year. This amount is roughly equivalent to the releases of eighteen average sized (500-megawatt) coal-fired power plants in 2020. Expansion in the U.S. and demand from overseas plastics manufacturers for gas obtained by hydraulic fracturing has the potential to cause the release of an additional 6 million tons CO₂e, equal to three additional power plants.

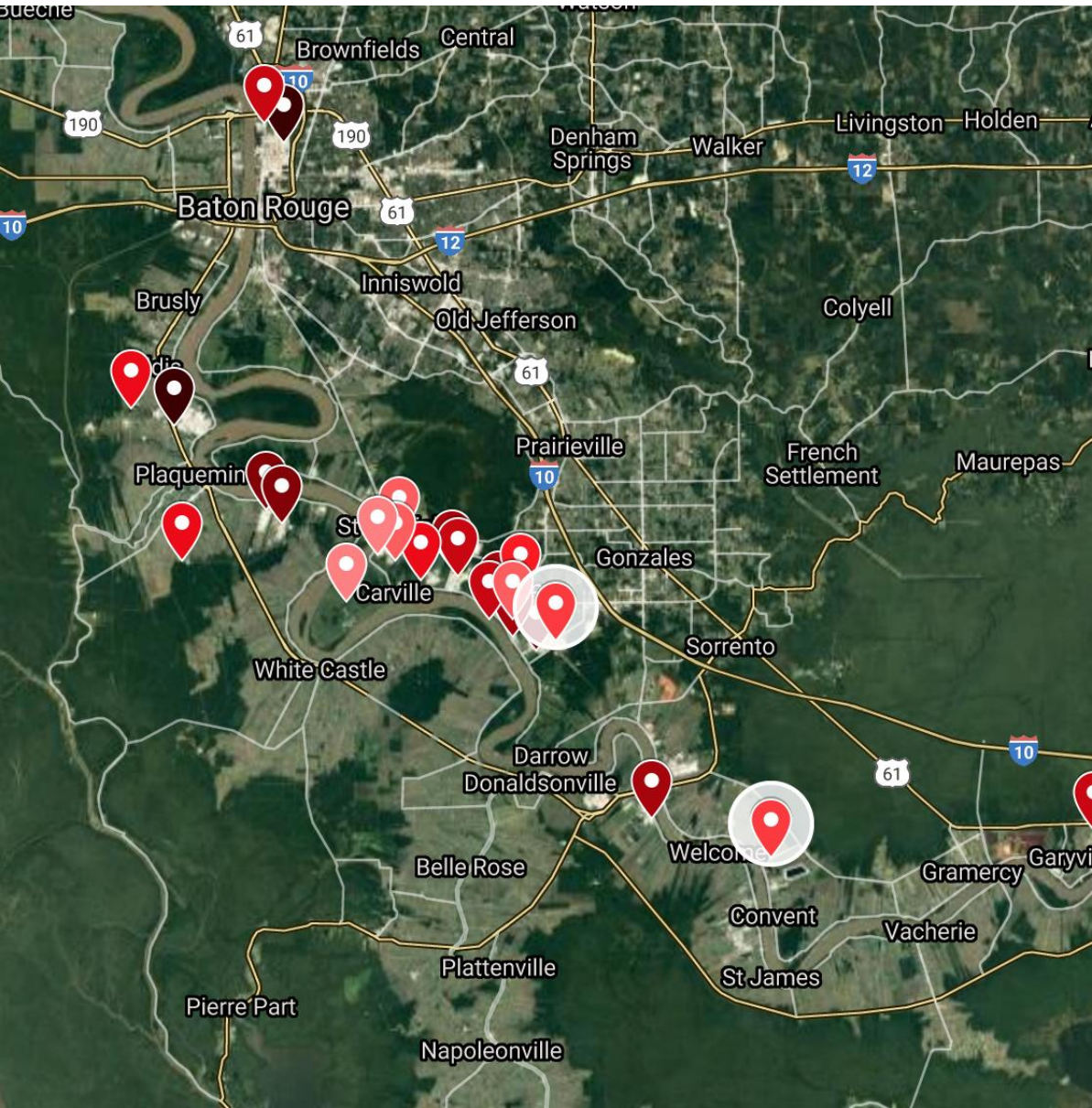
term, methane has 84 times the climate impact of carbon dioxide.

A recent review by scientists at Cornell and Stanford Universities found that on average, 2.6% of the methane produced at each wellhead passes directly into the atmosphere. The plastics industry consumes more than 1.5 billion U.S. tons of fracked gases annually¹¹. At a leakage rate of 2.6%, this demand causes an



This map is a mix of existing, under construction, and proposed new cracker facilities. Under Construction: Corpus Christi, Texas; Monaca (Beaver County), Pennsylvania. Planned: Welcome

BEYOND PLASTICS



Demographics at the Intersection of Plastics and Climate

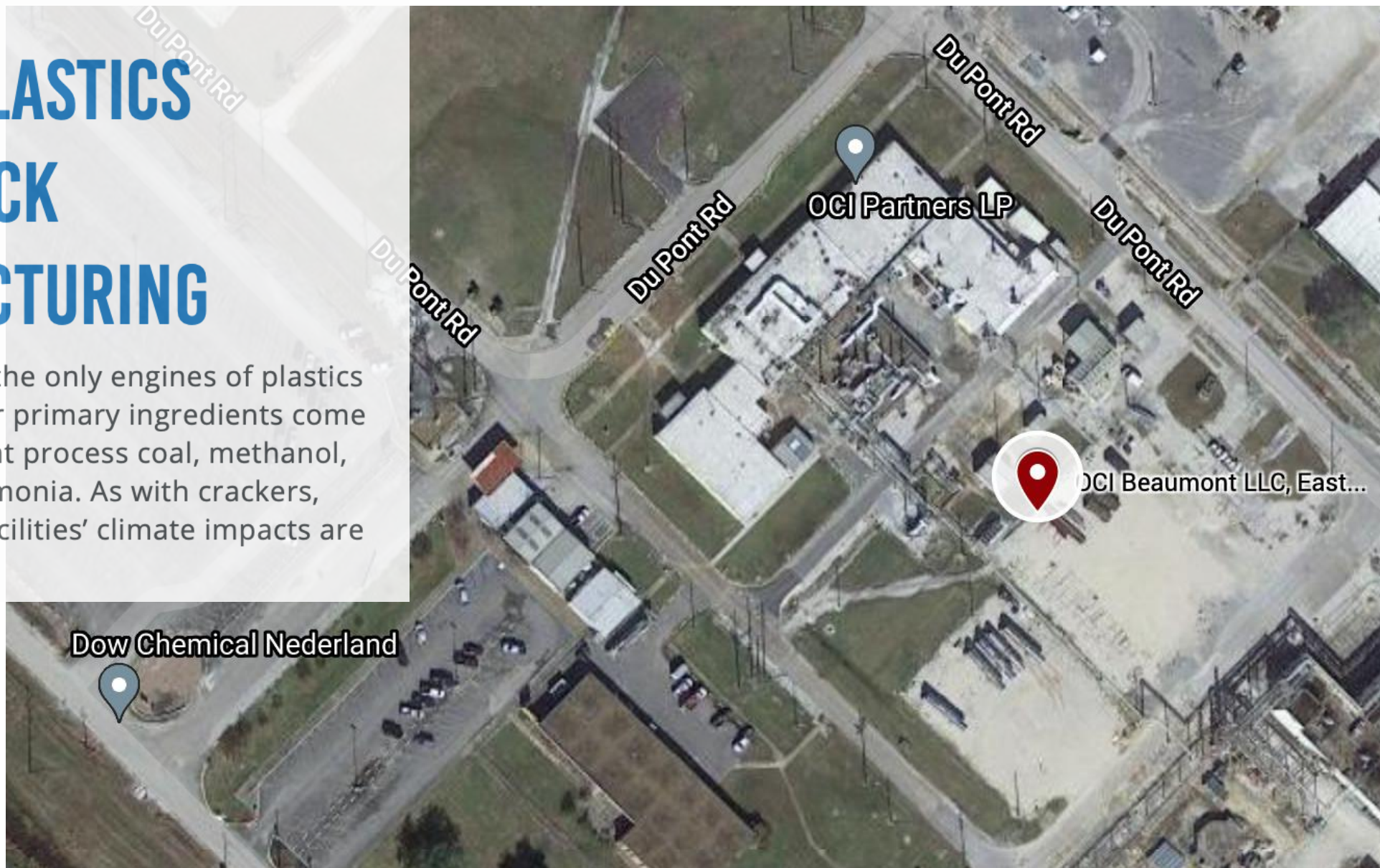
		CO2e/year from Plastics Facilities		People who live within 3 miles of the center of production			
Rank by Plastics CO2e /year	Community	Reported Releases (million tons, 2020)	Share	Number of People	% People of Color	Per Capita Income	Social Vulnerability Index
	U.S. (overall)	114,185,000	-	330 million	40%	\$34,102	0.094
	Top 18 Plastics/Climate intersection communities	109,870,000	96%	388,810	67% (ave.)	\$24,567 (ave.)	0.917 (median)
1	Houston/Baytown, Texas (23 sites)	20.2	17.7%	36,951	75%	\$24,064	0.933
2	Freeport, Texas (8 sites)	16.6	14.6%	16,194	76%	\$23,283	0.949
3	Norco/Taft, Louisiana (3 sites)	10.3	9%	9,509	32%	\$26,656	0.802
4	Plaquemine/St. Gabriel, La. (9 sites)	8.6	7.5%	7,274	59%	\$27,743	0.942
5	Beaumont/Port Arthur, Texas (10 sites)	7.8	6.8%	21,589	50%	\$25,010	0.933
6	Lake Charles, La. (8 sites)	7.7	6.8%	10,076	17%	\$30,043	0.792
7	Baton Rouge, La. (2 sites)	6.3	5.5%	13,866	92%	\$20,460	0.954
8	Geismar, La. (9 sites)	5.2	4.6%	2,148	34%	\$28,619	0.951
9	Point Comfort/Seadrift, Texas (3 sites)	4.8	4.2%	174	34%	\$23,712	0.907
10	Kingsport, Tennessee (1 site)	4.1	3.6%	26,223	10%	\$27,706	0.911
11	Corpus Christi, Texas (4 sites)	4.0	3.5%	8,106	57%	\$32,743	0.744
12	Orange, Texas (5 sites)	3.3	2.9%	7,167	40%	\$27,225	0.944
13	Linden, New Jersey (1 site)	2.7	2.4%	190,186	83%	\$23,703	0.647
14	Longview, Texas (1 site)	2.4	2.1%	7,464	65%	\$22,428	0.68
15	Victoria, Texas (1 site)	1.9	1.7%	472	62%	\$25,684	0.909
16	Decatur, Alabama (4 sites)	1.4	1.2%	4,907	66%	\$22,380	0.923
17	Hopewell, Virginia (1 site)	1.3	1.1%	23,073	48%	\$24,122	0.977
18	Calvert City, Kentucky-- (2 sites)	1.27	1.1%	3,431	5%	\$28,416	0.754



SECTION 4

OTHER PLASTICS FEEDSTOCK MANUFACTURING

Crackers are not the only engines of plastics production. Other primary ingredients come from factories that process coal, methanol, chlorine, and ammonia. As with crackers, these chemical facilities' climate impacts are abundant.





THE ONGOING PLASTICS BUILDOUT IS NOT JUST FOR U.S. CONSUMPTION. PLASTICS COMPANY FLEETS DELIVER ETHANE GAS FROM THE U.S. TO CRACKERS IN INDIA, CHINA, AND EUROPE. SOON AFTER ETHANE IS EXTRACTED FROM BENEATH THE STATE OF TEXAS, IT BECOMES SINGLE-USE PLASTIC PACKAGING IN ASIA.



SECTION 7

OFF-GASSING: FOAMED PLASTIC INSULATION



The use of blowing agents in plastic insulation releases at least 27 million metric tons of carbon dioxide equivalent gas per year from buildings and landfills⁴³. This is as much CO₂e as was released by 13 average-sized coal-fired power plants in 2020. Regulations may eliminate the use of these fluorochemicals in plastics but releases will continue from existing insulation for years.

In the application of spray polyurethane foam, petrochemicals are reacted and create plastic envelopes around buildings.

