



Americans for  
Financial Reform  
Education Fund

**MAY 2022**

(Updated September 2022)

# **PRIVATE EQUITY OWNERSHIP OF U.S. POWER PLANTS: A HIDDEN CLIMATE THREAT**

---

# AMERICANS FOR FINANCIAL REFORM EDUCATION FUND (AFREF)

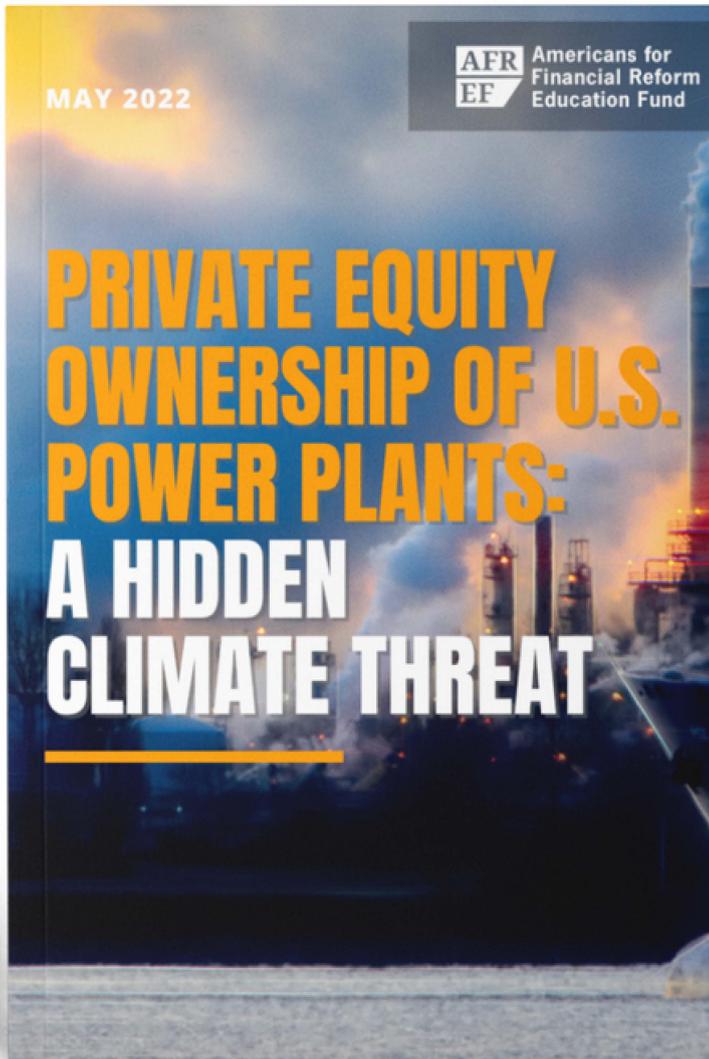
Americans for Financial Reform Education Fund (AFREF) is a nonpartisan, nonprofit coalition of more than 200 civil rights, community-based, consumer, labor, small business, investor, faith-based, civic groups, and individual experts. We fight for a fair and just financial system that contributes to shared prosperity for all families and communities. [www.ourfinancialsecurity.org](http://www.ourfinancialsecurity.org)

Acknowledgments: This report was researched and written by Oscar Valdés Viera, Patrick Woodall, Mariam Zahran, and Stephanie Apollon. Layout design by Isis Kenney.

This report was updated in September 2022 to update the total number of solar facilities and their capacity, and the holdings and emissions of the top 10 polluting private equity firms.



# CONTENTS



## 04 EXECUTIVE SUMMARY

Private equity investment firms have quietly bought up close to 700 predominantly fossil fuel-fired electric power plants, making these Wall Street investment houses major greenhouse gas (GHG) emitters.

## 08 PRIVATE EQUITY INVESTORS

The private equity industry has plowed over \$1.1 trillion into the energy sector since 2010 and it has been overwhelmingly funneled into natural gas, oil, and coal fossil fuel assets.<sup>16</sup>

## 11 PREDATORY PRACTICES

Private equity firms deploy a highly predatory playbook to rapidly extract value from the firms and assets they purchase.

### EXCLUSIVE!

## 15 PRIVATE EQUITY'S POWER PLANT HOLDINGS TILTED TO FOSSIL FUEL AND THREATEN THE PLANET AND PUBLIC HEALTH

As of September 2021, PE firms owned an estimated 683 utility scale power plants that had more than 150,000 MW of electricity generation capacity, which represents 14 percent of total U.S. U.S. electricity capacity.

## 20 CONCLUSIONS

This report shines light on the universe of power plants ultimately owned or financed by private equity funds and outlines the extractive playbook that the industry deploys to loot their target companies and transfer wealth to Wall Street.

## 21 APPENDIX: METHODOLOGY

This analysis identified almost 700 power plants that were owned by private equity firms or their affiliates from January 2020 through the end of September 2021.



## EXECUTIVE SUMMARY

Private equity investment firms have quietly bought up close to 700 predominantly fossil fuel-fired electric power plants, making these Wall Street investment houses major greenhouse gas (GHG) emitters. The opaque nature of private equity ownership shields these major polluters from public scrutiny. Even as activist investors, climate divestment campaigners, and the public push for greater transparency in fossil fuel investments by energy companies and financial institutions like banks, the private equity investments in fossil fuel and climate-destroying companies have been shrouded from the public view.

Private equity's risky and hidden ownership of power plants is generating a tremendous amount of climate destroying carbon dioxide and other dangerous air pollutants into the atmosphere. The 119,553.20 megawatts (MW) of electric capacity at 255 private equity-owned power plants fueled by coal, natural gas, and oil emitted an estimated 200,749,403 metric tons of carbon dioxide (CO<sub>2</sub>) in 2020, the most recent year for which data is available. These fossil fuel emissions at private equity-owned power plants amount to one-seventh (14 percent) of total CO<sub>2</sub> emissions by the entire United States (U.S.) electric power sector.

In addition to CO<sub>2</sub>, these plants emit methane, which is another major GHG with over 25 times the warming power of CO<sub>2</sub>;<sup>1</sup> sulfur dioxide and nitrogen dioxide, which affect the respiratory system, particularly lung function, can harm trees and plants by damaging foliage and decreasing growth, and contribute to acid rain;<sup>2</sup> and several other fluorinated gases that have very high global warming potentials.<sup>3</sup> Electric power plants are a major source of climate emissions, representing one-fourth (24 percent) of all U.S. climate emissions, narrowly behind the biggest carbon dioxide source, transportation.<sup>4</sup>

Power plants are long-lived infrastructure investments—some power plants are a century old—and the sunk investment costs in fossil fuel power plants creates a self-justifying demand for more gas, oil, and coal extraction to achieve a return on investment, extending the dependency on climate destroying fossil fuels. Although many private equity firms tout their investment in renewable energy and other emission-reduction strategies, this analysis found that private equity owned over five times more generation capacity of fossil fuel power plants (119,553.20 MW) than of wind and solar (21,881 MW), with fossil fuel generation capacity making up 80 percent of its portfolio versus a U.S. average of 63 percent.<sup>5</sup>



Through its continued support of fossil fuel-fired energy production in the U.S., private equity power plant investments also pose a significant threat to the human population, in addition to accelerating the climate crisis. Coal, natural gas, and oil-fired power plants emit dangerous air pollutants that worsen air quality and have been proven to increase the risk for various types of cancer, respiratory and cardiovascular diseases, and even “impair blood vessel function.”<sup>6</sup> These health effects have been highlighted by the COVID-19 pandemic, during which studies showed that individuals exposed to higher levels of air pollution were more at risk of experiencing extreme COVID-19 symptoms and suggest that lower levels of fine particulate matter pollution could have contributed to fewer COVID-19 deaths.<sup>7</sup>

Air pollution from power plants disproportionately impacts the health of communities of color. Power plants have long been built in close proximity to Black and Latinx communities because of racist and discriminatory housing, lending, and zoning policies that reinforced housing segregation, exposing these neighborhoods to higher levels of dangerous air pollutants.

Private equity ownership of power plants could pose unique climate and environmental risks. Private equity’s extractive business model

and distorted financial incentives encourage excessive risk-taking that could exacerbate climate emissions at private equity-owned power plants. Private equity firms pile on debt burdens in leveraged buyouts, impose excessive fees, and extract dividends from the companies they take over. Resources that should have gone to operations, maintenance, upkeep, and decarbonization are diverted to Wall Street investors and lenders. And private equity owners are largely shielded from the downside risks of bankruptcy or environmental penalties and fines.

This report presents the first comprehensive review of private equity ownership of power plants and climate warming emissions in the United States. Americans for Financial Reform Education Fund examined the private equity ownership of electric generation companies and individual power plants from the beginning of 2020 to September 2021. These private equity-owned power plants were then matched to the Energy Information Administration’s (EIA) inventory of power plants on the electric grid.<sup>9</sup> Carbon dioxide emissions were matched to EIA and Environmental Protection Agency (EPA) data, and in a few cases estimated based on EIA estimates of capacity-factored (actual generation/total potential generation for the year) emissions by fuel. The Appendix has more detail on the methodology of the paper.<sup>10</sup>

# KEY FINDINGS OF THIS ANALYSIS INCLUDE:

- **Private equity is a major owner of U.S. power plants with more than 150,000 megawatts of capacity:**

Private equity firms own 683 utility-scale electric power plants with 150,225 MW of capacity, including: 217 natural gas plants with 97,385 MW; 15 coal plants with 18,009 MW; 23 oil plants with 4,158 MW; 186 solar plants with 4,259 MW; and 147 wind power facilities with 17,622 MW. A small share of private equity owned power generation capacity comes from hydroelectric, geothermal, biomass, or nuclear power plants (0.8 percent, 0.5 percent, 0.3 percent, and 1.7 percent, respectively).

- **Close to 80 percent of private equity-owned power plant capacity is powered by fossil fuel:**

More than three-quarters (79.6 percent) generation capacity are fossil fuel-fired natural gas, coal, and oil generation facilities—above the 63 percent share of total U.S. utility-scale electricity generating capacity from fossil fuels, as of the end of 2021.<sup>11</sup> The private equity industry's power plant portfolio is heavily tilted to natural gas, with 65 percent of the industry's capacity coming from gas-fired power plants—far above natural gas' 43 percent share of total U.S. electric power capacity.<sup>12</sup>

- **Private equity owns over five times more fossil fuel generation capacity than capacity in wind and solar power:**

Private equity firms own 119,553 MW of natural gas, coal, and oil fueled generation capacity, 5.5 times more than the 21,881 MW the private equity industry owns in solar and wind capacity—total U.S. utility-scale electricity generating capacity from fossil fuels is only 3.7 times greater than from wind and solar.

- **Private equity-owned power plants spewed an estimated 200,749,403 metric tons of carbon dioxide annually:**

Private equity-owned natural gas power plants emitted an estimated 146.8 million metric tons of carbon dioxide, coal plants an estimated 47.5 million metric tons of carbon dioxide, and oil plants an estimated 6.5 million metric tons of carbon dioxide. If it were a country, U.S. private equity power plant emissions would rank 31st among countries' CO<sub>2</sub> emissions, right behind Spain and ahead of Argentina.

- **Private equity-owned coal plants could cause at least 674 deaths a year:**

Private equity firms own at least 16 coal-fired plants which emit fine particle pollution that has been linked to adverse public health and economic effects such as premature death, heart and asthma attacks, bronchitis, and loss of work days due to illness. The 16 private equity-owned coal plants in this study are estimated to cause every year at least 674 deaths, 272 heart attacks, 361 cases of acute bronchitis, 6,873 asthma attacks, and 33,751 lost work days which could amount to \$6.7 million in lost income (see Table 2).

- **Private equity-owned power plants account for 14 percent of U.S. power plant climate emissions:**

Private equity's ownership of fossil fuel power plants accounts for one-seventh (14 percent) of total U.S. power plants CO<sub>2</sub> emissions (1,447<sup>13</sup> million metric tons), despite only owning 14 percent of total capacity.

- **Almost all CO<sub>2</sub> emissions (87 percent) are concentrated among ten private equity investors that own only 64 percent of total generating capacity:**

A handful of the biggest private equity power plant owners hold vast portfolios of generating facilities. The 10 top private equity investors in polluting power plants had 95,552 MW of capacity in 2021 (64 percent of all private equity-owned power plant capacity) and spewed an estimated 173 million metric tons of CO<sub>2</sub> (87 percent of all private equity emissions) in 2020.



IF NOT  
NOW,  
WHEN?  
There is no PLANET B

**The world needs to act immediately to curb fossil fuel emissions and halt a looming climate catastrophe.**

But as public companies and banks and financial institutions face pressure from divestment activists, environmental groups and their own shareholders to slash fossil fuel emissions, private equity firms have emerged as pollution financiers of last resort, using money from institutional investors including pension funds, university endowments, and foundations, to keep pumping greenhouse gases into the atmosphere away from the public eye.

This report shines light on the universe of power plants ultimately owned or financed by private equity funds and outlines the extractive playbook that the industry deploys to loot their target companies and transfer wealth to Wall Street.

# PRIVATE EQUITY INVESTORS HAVE Poured INTO POWER PLANTS, WORSENING CLIMATE RISKS

The private equity industry has plowed over \$1.1 trillion into the energy sector since 2010 and it has been overwhelmingly funneled into natural gas, oil, and coal fossil fuel assets.<sup>14</sup> Private equity firms own assets across the energy sector from well-head to wall socket and everything in between, with substantial investments in fracking, oil and gas production, pipelines, petrochemical refining, export platforms, and power plants.

Americans for Financial Reform Education Fund estimates that private equity firms currently own or have investment stakes in close to 700 power plants, predominantly natural gas power plants. This analysis provides a comprehensive estimate of private equity-owned utility scale electric power generation facilities in the U.S. by matching private equity portfolios, leveraged buyouts, and asset purchases to the Department of Energy annual electric generation survey.

Each gas, coal, and oil power plant creates demand for more fossil fuel production and these sunk costs lock the U.S. into a fossil fuels-driven future that maintains and expands the current climate destructive path that threatens the planet. Over the past few years, especially as natural gas prices fell, reducing the operational costs of gas-fired power plants, private equity firms bought up a fleet of power plants.

Additionally, as activists and investors push public companies, banks and other financial institutions, and energy companies to divest their fossil fuel holdings, less transparent and less accountable private equity firms are buying up these assets—essentially shielding fossil fuel assets from public view.<sup>15</sup>

There have been hundreds of power plant deals over the last two years, including several major purchases of polluting assets that were previously owned by publicly-traded companies in the U.S.<sup>16</sup> For example, the private equity firm ArcLight Capital Partners acquired a portfolio of 13 gas-fired plants that produce 6,750 MW of electricity from the Public Service Enterprise Group (PSEG), one of New Jersey's largest utilities.<sup>17</sup>

While the public utility reduced its emissions footprint and touts its “evolution as a clean energy” company to investors and consumers,<sup>18</sup> the 13 plants—in New Jersey, Connecticut, Maryland, and New York—will continue operating and polluting under Arclight's ownership and away from public scrutiny. That is also the case for another fleet of six natural gas plants with over almost 800 MW capacity that I Squared Capital added to its portfolio by acquiring Atlantic Power and taking it private in 2021.<sup>19</sup>

Private equity also provides critical financing to revive retired plants and build new natural gas plants, expanding the fossil fuel footprint and climate emissions and locking in decades of more pollution. In 2014, Atlas Holdings bought the former coal plant Greenidge Generation in upstate New York and converted it into a natural gas-burning plant that powers Bitcoin mining instead of homes, a development which often yields rising local electricity prices for ratepayers while Bitcoin profits are transmitted instantly to far away speculators.<sup>20</sup>

In 2020 alone, the once-retired Greenidge plant increased its GHG emissions ten-fold, according to a letter from environmental groups Earthjustice and Sierra Club,<sup>21</sup> in addition to threatening Seneca Lake waters by making it “so warm you feel like you're in a hot tub.”<sup>22</sup> New PE-financed gas plants like Ares Management's 665 MW Hill Top Energy Center in Pennsylvania went online in 2021 and others like the 1,250 MW CPV Three Rivers Energy Center in Illinois will soon fire up.<sup>23</sup> Private equity firms' purchase of fossil fuel power plants and financing new natural gas-fired power plants will only calcify and even expand U.S. greenhouse gas emissions.

New gas plants lock in the demand for more fracking and drilling as the investors attempt to recoup the sunk costs of the power plant. This analysis estimates that private equity-owned power plants spewed an estimated 200,749,403 metric tons of carbon dioxide in 2020 (more in Section IV below), representing 14 percent of total U.S. power plant climate emissions in 2020, the most recent year for which plant-level emissions data is available.<sup>24</sup> Private equity's ownership of fossil fuel power plants poses considerable risks to the climate, environment, and vulnerable communities in the U.S. and across the world.

The U.S. is the second largest greenhouse gas polluter after China, and power plants are the second largest emitters of greenhouse gasses (narrowly behind transportation), making up about one-fourth of all U.S. emissions.<sup>25</sup> Greenhouse emissions contribute to global warming and climate change. The evidence of the threats from climate change is overwhelming. In addition to melting ice sheets and glaciers that raise sea levels, climate change has unleashed record extreme weather events, such as permanent droughts, heatwaves, and wildfires.

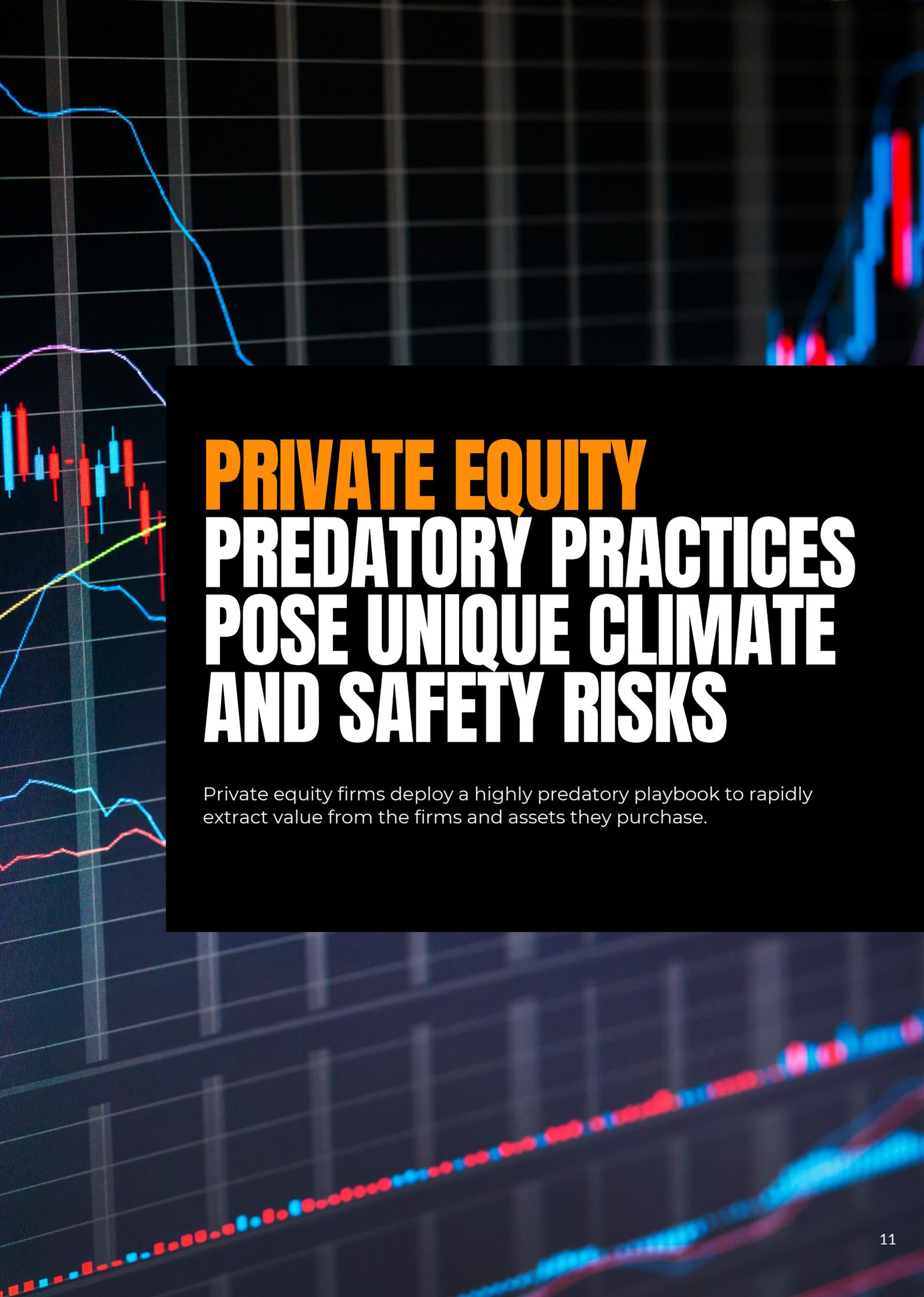
The drought that has afflicted the American Southwest from 2000 to the present was likely made 50 percent more severe because of climate change,<sup>27</sup> and the doubling of the area burned across the West Coast between 1984 and 2015 is also attributed to climate change. Displacement and migration, animal extinction, food and water crises, a widening of the global wealth gap, and more can already be attributed to climate change.<sup>28</sup> In addition, fossil fuel-fired plants dump tons of toxic pollutants and particulate matter into the air and seriously harm the public health of surrounding communities.

Excess pollution leads to respiratory issues, heart diseases, premature deaths in adults, and even reduced overall life expectancy.<sup>29</sup> Pollution-induced smog has been linked to various kinds of cancers, and gas plants leak radioactive material known to be the second leading cause of lung cancer.<sup>30</sup> These disastrous effects of fossil fuel powered energy production are borne disproportionately by disadvantaged communities. Black families, in particular, are 75 percent more likely than other families to live in areas near facilities that produce hazardous waste and are exposed to 1.5 times more particulate matter pollution from fossil fuel-burning plants than the overall population.<sup>31</sup>



Disadvantaged communities often do not have the resources to keep polluters from laying roots in their neighborhoods, or to hold state and local authorities accountable when the health of their communities is jeopardized.<sup>32</sup> Authorities are less likely to keep a close eye on plants in disadvantaged areas or hold them to the same standards as those located in more affluent and white communities, leading to dangerously higher levels of pollution in disadvantaged communities.<sup>33</sup>

Oil refineries committing environmental violations in these communities also receive smaller fines than those in affluent white communities.<sup>34</sup> Communities of color receive less protection against polluting plants and their harmful effects on public health, thus subjecting them to “a disproportionate share of the society’s environmental burdens.”<sup>35</sup>

The background of the page features a dark grid with various financial charts. On the left, there is a candlestick chart with red and blue bars and a green trend line. Above it, a blue line graph shows a downward trend. On the right, a blurred candlestick chart is visible. At the bottom, a red and blue dotted line graph trends upwards.

# **PRIVATE EQUITY** **PREDATORY PRACTICES** **POSE UNIQUE CLIMATE** **AND SAFETY RISKS**

Private equity firms deploy a highly predatory playbook to rapidly extract value from the firms and assets they purchase.

Private equity firms deploy a highly predatory playbook to rapidly extract value from the firms and assets they purchase. Private equity leveraged buyouts load the target companies with debt, which these companies—not the private equity firms—are responsible for repaying. Essentially the purchased companies borrow money to finance their own takeover. Private equity firms also frequently charge the companies under their control exorbitant fees and often extract dividends (funded by still more debt) and impose severe cost cutting to generate profits that are siphoned off to Wall Street.

This financial engineering allows the private equity owners to immediately extract profits from these ventures and to shift to their creditors the uncertainty of future profits from operations. In the meantime, the hundreds of millions in additional debt load imposes severe financial burdens and constraints that can compromise the operational viability and resiliency of companies—potentially even driving them to bankruptcy.

Highly leveraged investments that end in bankruptcies can still be profitable for the private equity owners because they don't commit a lot of their own money—and they are fast to recover what they do invest by imposing fees and paying dividends—and because they are shielded from most financial and legal liabilities. Private equity owners usually hide behind several layers of limited liability corporations that effectively insulate them from the fate of their portfolio companies. Every new acquisition is structured as a separate corporation, with the target company borrowing most of the money for its own acquisition and the debt secured by its own assets.<sup>36</sup>

When private equity firms Blackstone and ArcLight Capital Partners jointly acquired a portfolio of 5,200 MW of gas- and coal-fired assets in 2017—including the Gen J.M. Gavin coal plant, which was the third dirtiest polluter of all GHG emitting facilities in the U.S. in 2020<sup>37</sup>—they financed it with \$1.73 billion in debt and put it on a subsidiary's balance sheet,<sup>38</sup> and about a year later they added another \$375 million in debt to the subsidiary to finance a special dividend the PE owners paid to themselves.<sup>39</sup>

And in 2016, Riverstone Holdings acquired Talen Energy with \$600 million in debt and later paid themselves a \$500 million dividend that Talen was also left to repay.<sup>40</sup> Riverstone Holdings also used Raven Power, the operator of a 1,400 MW portfolio of coal-fired power plants, to pay itself a \$174 million dividend in 2014.<sup>41</sup> Portfolio energy companies can struggle to cover the costs of servicing the buyout debts plus paying high management fees and dividends to the PE owners and still cover their operational costs.

This puts the power plants in a precarious financial position with thin margins of safety to weather any market downturn and with limited resources to make capital investments to improve operations. Private equity-owned firms are considerably more likely to go into bankruptcy. A 2019 California Polytechnic State University study found that 20 percent of the firms taken over by PE went into bankruptcy—a rate ten times higher than other non-private equity corporations.<sup>42</sup> Highly leveraged PE oil and gas producers accounted for more than 70 percent of the energy sector's bankruptcies in 2020.<sup>43</sup>

Several prominent PE power plant takeovers have collapsed into bankruptcy under the weight of the debt from the acquisition. In 2007, private equity firms KKR and TPG Capital led the takeover of Energy Future Holdings, then TXU, a Texas-based electric utility company. The \$45 billion leveraged buyout was the largest at the time,<sup>44</sup> but the acquisition came just before the boom in cheap natural gas that drove prices down.<sup>45</sup> TXU was saddled with debt service payments and hefty management fees and dividends extracted by its owners, including \$35 million a year in management fees and about \$57.3 million for debt deal consulting.<sup>46</sup> In the 12 months that ended in September of 2014, “46 percent of Energy Future’s sales went to pay debt interest.”<sup>47</sup>

By 2014, the company collapsed under the load of \$49.7 billion of debt, and filed for bankruptcy.<sup>48</sup> The TXU case is one of the most infamous stories of private equity-driven collapse to date, but there are other similar stories. In 2013, the PE firm The Blackstone Group acquired Frontera Holdings LLC and its 526 MW natural gas-fired generation facility as part of a package of three Texas gas plants. Blackstone used the plant to pay itself yearly dividends of \$118 million,<sup>49</sup> and by the time Frontera filed for bankruptcy protection in February of 2021, the company was \$944 million in debt.<sup>50</sup>

Importantly, going into bankruptcy doesn't mean the power plants shut down permanently. Bankruptcy proceedings allow these companies to reorganize their finances and receive some debt relief, and then come out from the process to continue operating—frequently under a new private equity owner. During bankruptcy proceedings, private equity firms and other vulture funds swoop in and provide funds to help with the reorganization in exchange for stakes in the companies.

For example, a group of natural gas plants owned by Riverstone Holdings affiliate Talen Energy have gone through bankruptcy proceedings two times since Talen acquired them—and three times overall—and continue their polluting operations.<sup>51</sup> And Longview Power’s 800 MW coal plant in West Virginia has been debt-driven into bankruptcy twice, both times to be revived by private equity and other private funds—and by \$3 million in public money from the Paycheck Protection Program in 2020.<sup>52</sup> Moreover, hiding behind a web of limited liability companies, the private equity owners are also frequently insulated from legal obligations to help communities clean up and properly decommission their dirty plants, which leaves the costs of any environmental cleanup to the public.

**Private equity’s cost cutting could pose added risks at polluting facilities:** Private equity firms pose unique climate risks because of the reliance on debt and financial engineering that divert financial resources to the PE owners that should go towards operating the power plants. Additionally, the profit extraction can come through severe cost cutting, including staff reductions and deferred maintenance and upkeep.<sup>53</sup>

Several private equity-owned power plants have been subject to regulatory actions as a result of their cost-cutting efforts and subsequent disregard for environmental regulations. In 2016, a subsidiary of the private equity firm Avenue Capital Group acquired the 399 MW coal-fired power plant C.P. Crane in Baltimore County, Maryland,<sup>54</sup> and soon after submitted an application requesting to revamp the plant’s units so that coal and natural gas could be burned simultaneously.<sup>55</sup> Two years later, the plant was forced to shut down and pay a \$105,000 penalty under allegations of exceeding particulate matter emission caps and failing to carry out necessary emissions testing.<sup>56</sup>



The explosion of Philadelphia Energy Solutions (PES) was another disaster occurring on private equity's watch. In June of 2019, a leak from a corroded pipe in PES, the oldest and largest refinery on the East Coast, triggered a fire and a series of explosions, injuring five workers and releasing about 5,239 pounds of a deadly chemical.<sup>57</sup>

The U.S. Chemical Safety and Hazard Investigation Board had recommended that refinery operators inspect all pipes for corrosion, after a similar pipe failure led to an accident at a refinery in California in 2012.<sup>58</sup>

But that was not done at PES, and the plant's major maintenance project slated for months before the explosion was significantly scaled back due to lack of money.<sup>59</sup>

PES had filed for bankruptcy in 2018, after the Carlyle Group and other private equity investors had extracted over \$594 million in dividend and fees, which worsened the company's financial condition significantly.<sup>60</sup>

The Port Neches plant in Texas, an asset of the TPC Group owned by private equity firms SK Capital Partners and First Reserve, also burst into flames in November 2019, injuring three workers after 6,000 gallons of deadly liquid vapor leaked from corroded pipes.<sup>61</sup>

The TPC Group had a past of numerous environmental violations, and the Port Neches plant alone had paid about \$570,000 over the five years before the explosion to settle state and federal environmental violations.<sup>62</sup> The corroded pipe believed to be responsible for the fire and explosions was cited as a point of concern multiple times in past violation reports.<sup>63</sup>



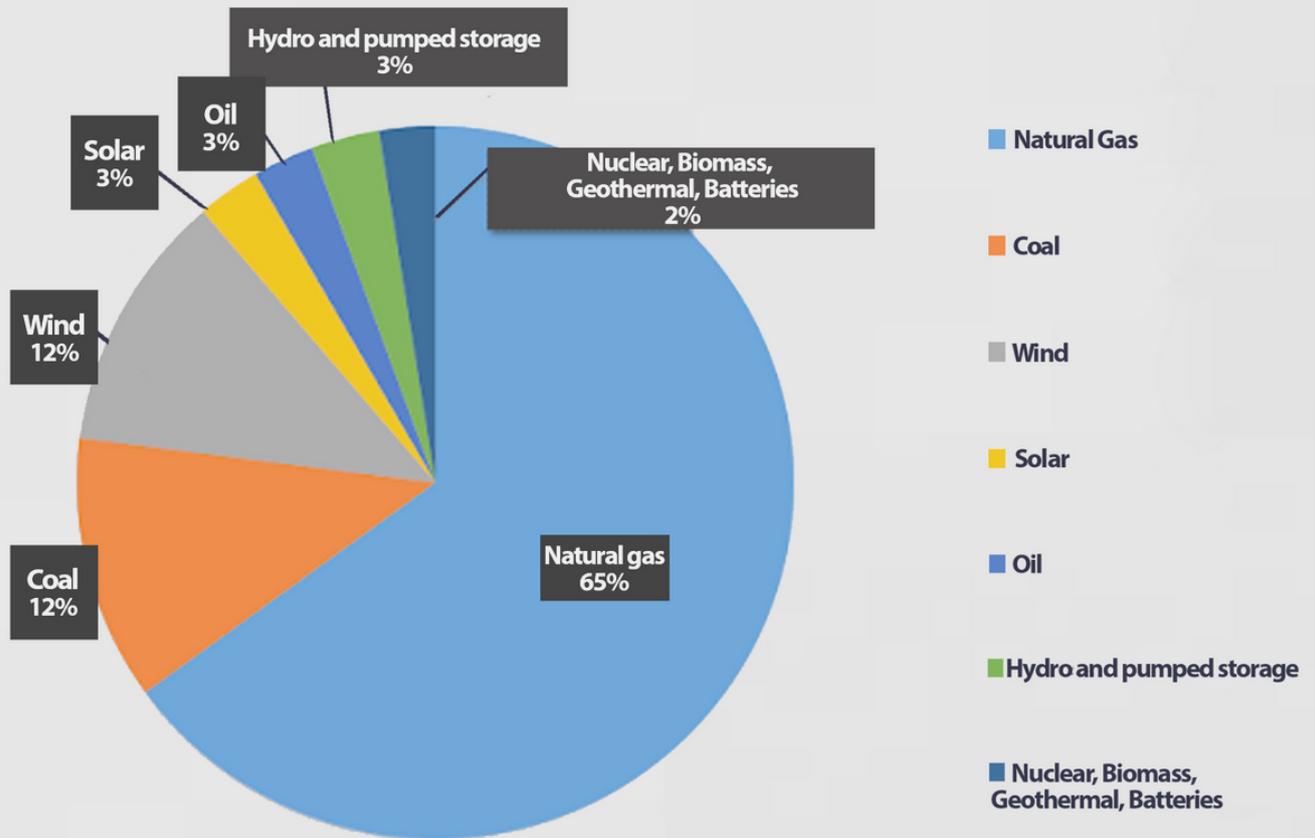
# PRIVATE EQUITY'S POWER PLANT HOLDINGS TILTED TO FOSSIL FUELS AND THREATEN THE PLANET AND PUBLIC HEALTH

As of September 2021, PE firms owned an estimated 683 utility scale power plants that had more than 150,000 MW of electricity generation capacity, which represents 14 percent of total U.S. electricity capacity.<sup>64</sup>

The vast majority (around 80 percent) of the private equity-backed electricity generation capacity is in fossil fuel power plants (see breakdown in Figure 1). Broken down by primary source, private equity-backed fossil fuel power capacity represents one-fifth (20 percent) of total U.S. natural gas power plant capacity, one-fifth (18 percent) of total U.S. oil-fired capacity, and one-twelfth (9 percent) of total U.S. coal capacity.

The private equity fossil fuel capacity is more than 5.5 times that of wind and solar combined (11.8 percent and 2.9 percent, respectively). Hydroelectric plus pumped storage make up only 3.3 percent of the capacity of private equity-backed power plants, nuclear power represents 1.7 percent and less than one percent is in biomass, battery, and geothermal facilities.

# Private equity electricity generation capacity by source in 2021



Source: Authors' calculations. See Methodology section.



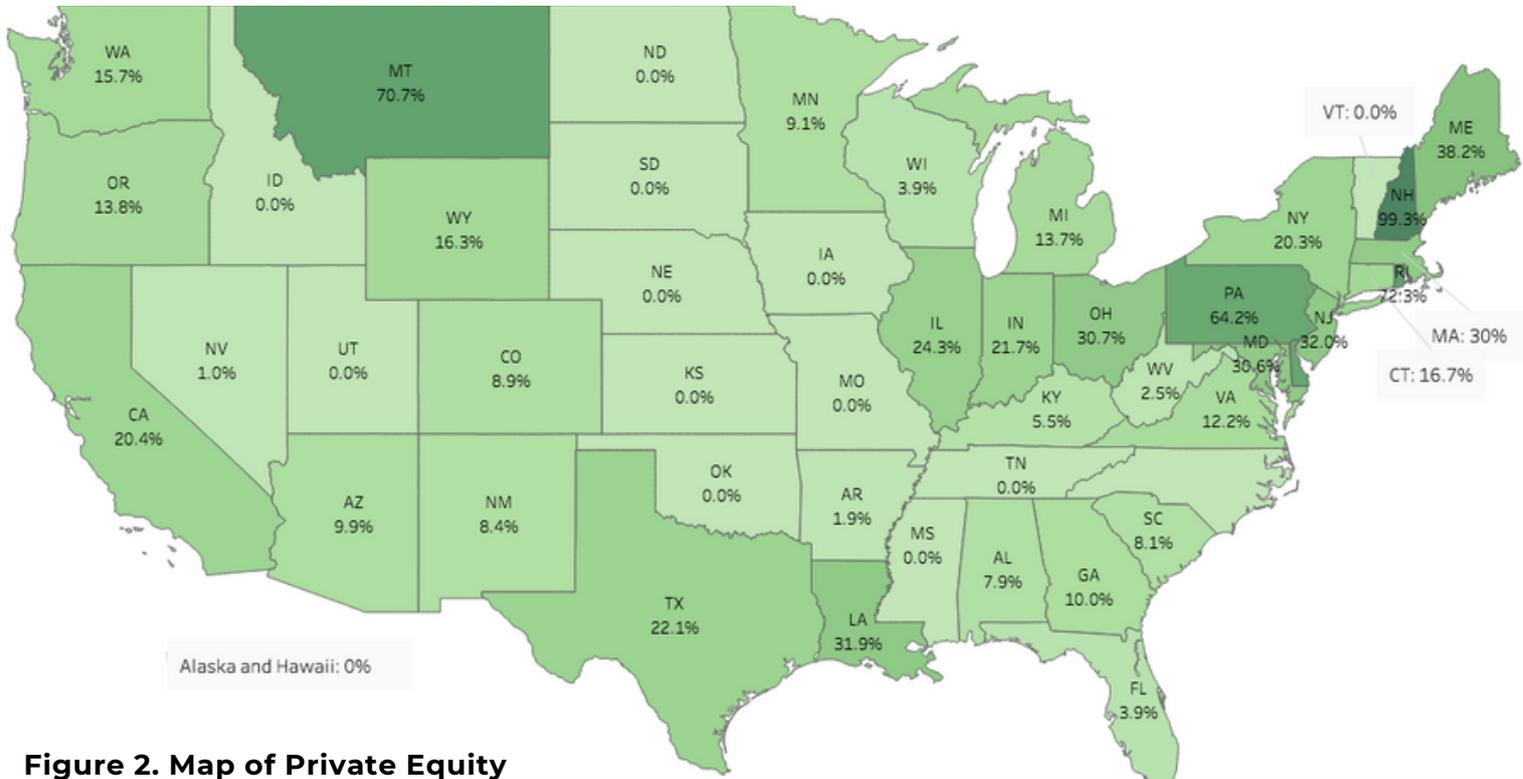
**Figure 1. Private Equity-Owned Utility-Scale Electricity Generating Capacity by Source (2021)**

The private equity tilt towards fossil fuels is greater than the overall U.S. distribution of fossil fuel power plants, with 80 percent of private equity-backed capacity from natural gas, coal, and oil compared to 63 percent of the U.S. electric generation capacity.<sup>65</sup>

This is largely because of the 97.4 gigawatts of capacity at 217 natural-gas fired power plants backed by private equity—almost two-thirds (65 percent) of private equity power capacity.

In many states, private equity-backed fossil fuel power plants make up a sizable share of the state's fossil fuel capacity. Private equity-backed plants make up more than one-fifth of the fossil fuel power capacity in sixteen states, including five states where private equity-backed power plants make up more than 60 percent of the fossil fuel capacity (**see Map below**).

**Figure 2. Map of Private Equity Share of State Fossil Fuel Generating Capacity (2021).**



**Figure 2. Map of Private Equity Share of State Fossil Fuel Generating Capacity (2021).**

The private equity-financed gas, coal, and oil plants spew an estimated 200,749,403 metric tons of CO<sub>2</sub> annually, 14 percent of total carbon dioxide emissions associated with electricity generation in the U.S. in 2020.<sup>66</sup>

If private equity-backed power plants were a country, it would rank 31st in global carbon dioxide emissions—right behind Spain and ahead of Argentina—and private equity emissions from gas-fired plants only would rank 11th among countries' CO<sub>2</sub> emissions from the use of gas—landing between Mexico and Italy.<sup>67</sup>

A handful of the biggest private equity power plant owners hold vast portfolios of power plants. The 10 biggest private equity investors in power plants account for 64 percent of power plant capacity but represent 87 percent of total CO<sub>2</sub> emissions.

These firms, including some of the biggest private equity firms in the world, had 95,552 MW of capacity (64 percent of all private equity power plant capacity) and spewed an estimated 173 million metric tons of carbon dioxide (87 percent of all private equity emissions).

Energy Capital Partners is by far the largest private equity investor in this sector, with almost 24,000 MW capacity and emitting 44.7 million metric tons of CO<sub>2</sub> in 2020, almost all of which from a fleet of over 50 natural gas plants. Riverstone Holdings and ArcLight Capital Partners—including some joint ventures—each have over 10 gigawatts of capacity and emitted more than 20 million metric tons of CO<sub>2</sub> in 2020 (see Table 1).

**Table 1. Top 10 Private Equity Firms Power Plant Holdings by Carbon Dioxide Emissions**

Private Equity Firm	Coal		Gas		Oil		Total Plants	Total MW	MT CO <sub>2</sub>
	Plants	Capacity (MW)	Plants	Capacity (MW)	Plants	Capacity (MW)			
Energy Capital Partners	-	-	51	23,770	6	136	57	23,906	44,739,874
ArcLight Capital Partners *	2	4,391	12	8,832	1	152	15	13,375	32,561,714
Riverstone Holdings	6	8,338	9	4,546	8	250	23	13,134	20,578,709
Caisse de dépôt et placement du Québec *	1	1,711	9	5,126	-	-	10	6,837	15,356,439
British Columbia Investment Management	2	2,368	6	4,077	1	1,542	9	7,988	13,085,057
Carlyle	-	-	19	8,930	-	-	19	8,930	10,747,222
LS Power	-	-	17	7,350	-	-	17	7,350	10,123,582
Ares *	1	244	6	5,118	-	-	7	5,362	9,456,856
Starwood Energy Group	1	330	12	5,068	-	-	13	5,398	8,647,364
Clal Industries *	-	-	4	3,272	-	-	4	3,272	7,605,687
<b>Top 10 Total</b>	<b>13</b>	<b>17,382</b>	<b>145</b>	<b>76,090</b>	<b>16</b>	<b>2,080</b>	<b>174</b>	<b>95,552</b>	<b>172,902,505</b>

\* include joint ventures (capacity and emissions was only added once, in each case it was attributed to the PE firm with the largest footprint)  
Source: Authors' calculations.

In addition to the environmental threat, continued investment and dependence on fossil-fueled power plants could result in tens of thousands of preventable deaths due to air pollution, in addition to other dangerous health problems such as heart and asthma attacks and bronchitis.

The 16 private equity-owned coal plants in this study could cause 674 deaths a year as the result of fine particle air pollution, according to the Clean Air Task Force estimates of deaths and health impact due to coal plant pollution.<sup>68</sup>

Every year, fine particle pollution from these facilities is estimated to cause a combined 272 heart attacks, 361 cases of acute bronchitis, 6,873 asthma attacks, and 33,751 lost work days which could amount to \$6.7 million in lost income (Table 2).<sup>69</sup>

**Table 2. Public Health Effects of Fine Particulate Pollution from Private Equity-Owned Coal Plants**

Plant Name	Private Equity Owner	Location	Deaths	Heart Attacks	Acute Bronchitis	Asthma Attacks	Work-Loss Days	Income Loss from Work-Loss Days
Gavin Power	ArcLight Capital Partners, Blackstone	Cheshire, OH	244	96	123	2,373	11,750	\$ 2,345,300.00
Colstrip	Riverstone Holdings	Colstrip, MT	48	19	29	540	2,526	\$ 504,189.60
Keystone	Riverstone Holdings	Shelocta, PA	160	63	84	1,602	8,062	\$ 1,609,175.20
Conemaugh	ArcLight Capital Partners	New Florence, PA	46	18	25	471	2,367	\$ 472,453.20
AES Petersburg	Caisse de dépôt et placement du Québec	Petersburg, IN	47	21	25	482	2,293	\$ 457,682.80
Brunner Island	Riverstone Holdings	York Haven, PA	27	11	15	285	1,427	\$ 284,829.20
Brandon Shores	Riverstone Holdings	Baltimore, MD	14	6	8	145	726	\$ 144,909.60
Big Cajun 2	British Columbia Investment Management	New Roads, LA	14	6	9	165	746	\$ 148,901.60
Dolet Hills	British Columbia Investment Management	Mansfield, LA	16	7	9	179	824	\$ 164,470.40
Chambers Cogeneration LP	Ares Management	Carneys Point, NJ	12	5	6	123	616	\$ 122,953.60
TalenEnergy Montour	Talen Energy	Washingtonville, PA	14	6	8	146	733	\$ 146,306.80
Merrimack	Atlas Holdings	Bow, NH	1	1	1	12	61	\$ 12,175.60
Herbert A Wagner	Riverstone Holdings	Baltimore, MD	9	4	5	102	508	\$ 101,396.80
Schiller	Atlas Holdings	Portsmouth, NH	1	-	1	10	55	\$ 10,978.00
Brame Energy Center	British Columbia Investment Management	Lena, LA	21	9	13	238	1,057	\$ 210,977.20
<i>Total</i>			<b>674</b>	<b>272</b>	<b>361</b>	<b>6,873</b>	<b>33,751</b>	<b>\$6,736,699.60</b>



Source: Clean Air Task Force. Toll from Coal; for lost income: U.S. Bureau of Labor Statistics. Economic News Release.

Usual Weekly Earnings of Wage and Salary Workers News Release.

**At Table 7.**

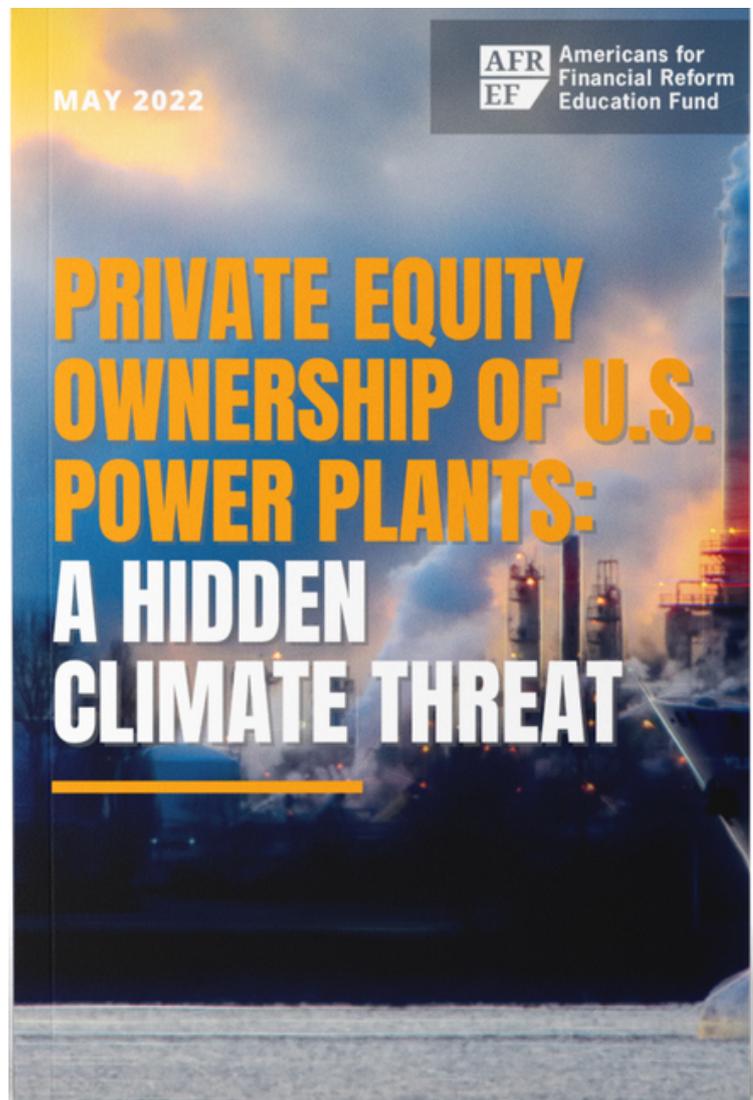
# CONCLUSIONS

This report shines light on the universe of power plants ultimately owned or financed by private equity funds and outlines the extractive playbook that the industry deploys to loot their target companies and transfer wealth to Wall Street. As activists and investors push public companies, banks and other financial institutions, and energy companies to divest their fossil fuel holdings, less transparent and less accountable private equity firms are swooping in and acquiring these assets. The private equity industry has become a major force behind climate change by financing a substantial greenhouse gas emitting sector with little public awareness or regulatory oversight.

---

This analysis estimates that from 2020 to September 2021, private equity firms owned or financially backed at least 683 power plants, of which 255—accounting for 80 percent of total megawatt capacity—were fired by natural gas, coal, and oil. These fossil-burning plants have a capacity of 119,553 megawatts and spewed an estimated 200.7 million metric tons of carbon dioxide, among other greenhouse gas pollutants that accelerate the climate catastrophe and could cause severe adverse health effects in the neighboring communities.

---



Private equity-owned coal plants are estimated to cause every year at least 674 deaths, 272 heart attacks, 361 cases of acute bronchitis, 6,873 asthma attacks, and 33,751 lost work days which could cost workers some \$6.7 million in weekly wages. Private equity's fundamentally predatory and extractive practices pose unique climate and safety risks. The reliance on excessive debt to fund the acquisitions and to finance dividend payments, the high management fees, and the severe cost-cutting frequently leave target companies in a fragile financial position and vulnerable to bankruptcy when optimistic pro-forma profits fail to materialize.

Intense cost-cutting including on staff reductions and skimping on maintenance and capital improvements can create safety hazards which have already led to leaks and fires and have already injured workers and released tons of deadly pollutants to the air. These are likely tip-of-the-iceberg findings. Private equity is a lightly regulated industry that benefits from exemptions under securities laws which allow them to raise funds from outside investors and to operate in vital public interest sectors without disclosing reliable data on the environmental or social impacts of their activities.

# APPENDIX: METHODOLOGY

This analysis identified almost 700 power plants that were owned by private equity firms or their affiliates from January 2020 through the end of September 2021. The private equity-owned power plants and facilities were matched to the Department of Energy's Energy Information Administration's (EIA) 2020 database of utility-scale electric power generation facilities.<sup>70</sup> The lack of transparency in private equity ownership makes it difficult to make determinative assessments, but this analysis provides the most comprehensive possible estimate of private equity-owned power plants.

This analysis only includes utility-scale electric generation facilities—it does not include microgrids, net-metered facility solar panels or windmills, distributed power networks or other smaller-scale electric generation that does not connect to the electric grid. It includes plants that were operational in 2020 and stopped working before September 30, 2021, and excludes proposed generation facilities that were not yet operational as of September 30, 2021. Private equity ownership was identified on the basis of information from Pitchbook, private equity firms' and portfolio firms' corporate websites, and media reports.



This analysis includes ownership and backing of electric generation facilities as of September 30, 2021 as an estimate of the private equity power plant portfolio and emissions. The power plants were identified by matching the name, location, fuel source, and capacity size identified by the private equity firms or companies with the EIA data. The carbon dioxide emissions were matched using EIA emissions data by plant for 2020, the most recent available year. There were 14 plants for which emissions were not included in the 2020 data release.

Ten of those were matched to EPA emissions data using the Facility Level Information on GreenHouse gases Tool (FLIGHT),<sup>72</sup> and the emissions for the remaining four were calculated by comparing the EIA's fossil fuel capacity by type of fuel and EIA's carbon dioxide total emissions by electric power by fossil fuel source for 2020 to estimate carbon dioxide emissions per megawatt of capacity.<sup>73</sup> The EIA estimate for carbon emissions by fuel adjusts for capacity factoring; it only reflects the time the power plants are actually generating electricity.

The estimate of carbon emissions by nameplate capacity of power plants does not account for differences in generator type, efficiencies, or capacity factors of individual power plant generating facilities but adequately estimates the aggregate emissions by the 255 private equity-owned coal, natural gas, and petroleum power plants.

**Table 3. Estimate of Metric Tons of CO2 Emissions per Megawatt of Capacity by Fuel**

Fuel source	MW Capacity 2020	Millions MT CO2 electric generation fuel	MT CO2/MW
Coal	220,623.2	767.2	3,477.4
Natural Gas	483,971.30	642.7	1,342.2
Petroleum	27,619.8	11.7	421.9

**Sources:** EIA Electric Power Monthly (for 2020 capacity); EIA Energy Outlook 2021 (for fossil fuel electric generation emissions).

## ENDNOTES

1. U.S. Environmental Protection Agency (EPA). Global Methane Initiative. [Importance of Methane](#). Accessed April 22, 2022.
2. U.S. Environmental Protection Agency (EPA). Sulfur Dioxide (SO<sub>2</sub>) Pollution. [Sulfur Dioxide Basics](#); U.S. Environmental Protection Agency (EPA). Nitrogen Dioxide (NO<sub>2</sub>) Pollution. [Basic Information about NO<sub>2</sub>](#). Accessed April 22, 2022.
3. U.S. Environmental Protection Agency (EPA). Greenhouse Gas Emissions. [Overview of Greenhouse Gases](#). Accessed April 22, 2022.
4. U.S. Environmental Protection Agency (EPA). [Sources of Greenhouse Gas Emissions](#). Accessed April 22, 2022.
5. U.S. Energy Information Administration. Electricity explained. [Electricity generation, capacity, and sales in the United States](#). Accessed April 22, 2022.
6. National Institute of Environmental Health Sciences. [“Air Pollution and Your Health.”](#)
7. Friedman, Lisa. [“New Research Links Air Pollution to Higher Coronavirus Death Rates.”](#) The New York Times. April 17, 2020.
8. Konisky, David M. “Inequities in enforcement? Environmental justice and government performance.” *Journal of Policy Analysis and Management*. Vol. 28, No. 1 2009 at 104; Lynch, Michel J. et al. “Slippery business. Race, class, and legal determinants of penalties against petroleum refineries.” *Journal of Black Studies*. Vol. 34, No. 3. January 2004 at 423; Bell, Michelle L. and Keita Ebusu. “Environmental inequality in exposures to airborne particulate matter components in the United States.” *Environmental Health Perspectives*. Vol. 120, No. 12. December 2012 at 1699 and 1702; Wilson, Adrian et al. National Association for the Advancement of Colored People, Indigenous Environmental Network, Little Village Environmental Justice Organization. “Coal blooded. Putting profits before people.” November 2012 at 15; Pace, David. “Minorities suffer most from industrial pollution” Associated Press. November 14, 2005; Massetti, Emanuele et al. Prepared by Oak Ridge National Laboratory for the U.S. DOE. “Environmental quality and the U.S. power sector: Air quality, water quality, land use and environmental justice.” January 4, 2017; Clark, Lara P. et al. “National patterns in environmental injustice and inequality: Outdoor No<sub>2</sub> air pollution in the United States.” *PLOS ONE*. Vol. 9, Iss. 4. April 2014 at 1 and 2; OPastor, Manuel et al. Center for Justice, Tolerance & Community, University of California Santa Cruz. Prepared for the Bay AREas Environmental Health Collaborative. “Still toxic after all these years. Air quality and environmental justice in the San Francisco Bay area.” February 2007 at 6; Wilson, Sacoby M. et al. “Assessment of the distribution of toxic release inventory facilities in metropolitan Charleston: An environmental justice case study.” *American Journal of Public Health*. Vol. 102, No. 10 October 2012 at 1974 to 1978.

# ENDNOTES

9. The EIA's data excludes some generation of less than 1 megawatt that provide localized power and some microgrid generation.
10. AFREF analysis of private equity ownership of utility-scale electric power generation facilities in the U.S. Department of Energy, Energy Information Administration's 2020 Annual power generation survey. See Appendix for more information.
11. U.S. Energy Information Administration. [Electricity explained: Electricity generation, capacity, and sales in the United States](#). Last updated: April 19, 2022, with data from the Electric Power Monthly, February 2022. Accessed April 28, 2022.
12. Ibid.
13. U.S. Energy Information Administration. Frequently Asked Questions. [How much of U.S. carbon dioxide emissions are associated with electricity generation?](#) Accessed April 11, 2022
14. Giachino, Alyssa and Riddhi Mehta-Neugebauer. "[Private Equity Propels the Climate Crisis](#)." Private Equity Stakeholder Project. October 2021 at p. 4.
15. Boudreau, Catherine. "[When companies go green, the environment doesn't always win](#)." Politico. March 30, 2021.
16. Authors' estimate.
17. This deal was announced in mid-2021 but it was finalized in 2022, after our dataset was closed. Thus, this fleet of gas plants is not included in the estimate of total private equity megawatts and emissions. See: Public Service Enterprise Group. [PSEG Completes Sale of New Jersey and Maryland Fossil Generating Assets to ArcLight Capital Partners](#). New Release. February 18, 2022. Wade, Malik. "New Jersey Utility PSEG to Sell Fossil Fuels Plants for \$1.92 Billion." Bloomberg. August 2021; Rod Walton. "Pro-nuclear PSEG sells 6.75 GW fossil-fired fleet to ArcLight fund for \$1.92B." Power Engineering. August 12, 2021.
18. Izzo, Ralph. Chairman, President and CEO at PSEG. "[The latest step in our carbon-free evolution](#)." LinkedIn blog post. August 12, 2021. Accessed April 11, 2022.
19. Atlantic Power owns another two natural gas plants (in Canada) for a total 19 power-generating assets in the U.S. and Canada. For portfolio see: Atlantic Power Corporation. [Assets](#). Accessed April 11, 2022; For the public-to-private transaction see: Atlantic Power Corporation. [Atlantic Power Announces Closing of Transaction With I Squared Capital](#). Press Release. May 14, 2021.
20. Kilgannon, Corey. "[A Bitcoin Boom Fueled by Cheap Power, Empty Plants and Few Rules](#)." The New York Times. December 5, 2021. Greenidge Generation became a publicly listed company in September 2021.
21. Earthjustice and Sierra Club. [Letter to the New York State Department of Environmental Conservation](#). April 6, 2021. Morgenson, Gretchen. "[Some locals say a bitcoin mining operation is ruining one of the Finger Lakes. Here's how](#)." NBC News. July 5, 2021; Arnoldy, Ben. "[How Bitcoin is Heating This Lake and Warming the Planet](#)." Earthjustice. June 1, 2021.
22. Morgenson, Gretchen. "[Some locals say a bitcoin mining operation is ruining one of the Finger Lakes. Here's how](#)." NBC News. July 5, 2021; Arnoldy, Ben. "[How Bitcoin is Heating This Lake and Warming the Planet](#)." Earthjustice. June 1, 2021.
23. For Hill Top see: U.S. Energy Information Administration. [Preliminary Monthly Electric Generator Inventory](#) (January 2022). Retrieved April 11, 2022; For CPV Three Rivers see: Competitive Power Ventures. [Our Projects \(CPV Three Rivers\)](#). Accessed April 11, 2022.
24. Total 2020 U.S. power plant emissions at: U.S. Energy Information Administration. Frequently Asked Questions. [How much of U.S. carbon dioxide emissions are associated with electricity generation?](#) Accessed April 11, 2022.
25. U.S. Environmental Protection Agency. [Sources of Greenhouse Gas Emissions](#). Accessed April 2, 2022.
26. Fountain, Henry. "[Southwest Drought Rivals Those of Centuries Ago, Thanks to Climate Change](#)." The New York Times. April 16, 2020 (Updated May 19, 2021). Accessed April 22, 2022.
27. Julia Rosen. NYT. "[The Science of Climate Change Explained: Facts, Evidence and Proof](#)." November 6, 2021.

# ENDNOTES

28. Ibid.; Lustgarten, Abraham. [Climate Change Will Force a New American Migration](#).” ProPublica. September 15, 2020.
29. Kampa, Marilena and Elias Castanas. “[Human health effects of air pollution](#).” Environmental Pollution. Vol. 151, Iss. 2. January 2008 at p. 364; U.S. Environmental Protection Agency (EPA). Office of Air Quality, Planning and Standards. “NO<sub>2</sub>: How nitrogen oxides affect the way we live and breathe.” EPA-456/F-98-005. September 1998 at 2; EPA. “Overview of the human health and environmental effects of power generation: Focus on sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>2</sub>) and mercury (Hg).” June 2002 at Slides 5 and 6; Bravender, Robin. “[Study links smog exposure to premature death](#).” The New York Times. March 12, 2009.
30. Colborn, Theo et al. “Natural gas operations from a public health perspective.” International Journal of Human and Ecological Risk Assessment. September 2011 at 1042; Wong, Chit Ming et al. “Cancer mortality risks from long-term exposure to ambient fine particle.” Cancer Epidemiology, Biomarkers & Prevention. May 2016 at 839.
31. Mikati, Ihab et al. “[Disparities in Distribution of Particulate Matter Emission Sources by Race and Poverty Status](#).” American Journal of Public Health. 108, no. 4. April 1, 2018 at pp. 480-485; Villarosa, Linda. “[Pollution Is Killing Black Americans. This Community Fought Back](#).” The New York Times Magazine. July 28, 2020. Accessed April 11, 2022.
32. Wiygul, Robert B. et al. “Environmental justice in rural communities.” West Virginia Law Review. Vol. 96, No. 40. Winter 1993/1994 at 3; Malin, Stephanie A. and Kathryn Teigen DeMaster. “A devil’s bargain: Rural environmental injustices and hydraulic fracturing on Pennsylvania’s farms.” Journal of Rural Studies. Vol. 47, Part A. October 2016 at 278 to 280; U.S. Commission on Civil Rights. “Environmental justice: Examining the Environmental Protection Agency’s compliance and enforcement of Title VI and Executive Order 12, 898.” September 2016 at 13; Cusick, Marie. “[Don’t frack the rich? Comment puts focus on environmental justice](#).” NPR StateImpact Pennsylvania. June 6, 2016.
33. Lavelle, Marianna and Marcia Coyle. “[Unequal protection: The racial divide in environmental law](#).” National Law Journal. Vol. 15, No. 13. September 21, 1992 at 1, 4 and 5.
34. Lynch, Michael J., et al. “[Determinants of environmental law violation fines against petroleum refineries: Race, ethnicity, income, and aggregation effects](#).” Society & Natural Resources. Vol. 17, No.4. 2004 at 421, 433, 434, 436 and 437.
35. Saha, Robin and Paul Mohai. “[Historical context and hazardous waste facility siting: Understanding temporal patterns in Michigan](#).” Environmental Studies Faculty Publications. Paper 1. 2005 at 618, 623, and 639.
36. For more on limited liability in the context of private equity see: Appelbaum, Eileen and Rosemary Batt. “[A Primer on Private Equity at Work](#).” Center for Economic and Policy Research. February 2012 at pp. 13-15; Levitin, Adam. “[Private Equity’s Abuse of Limited Liability](#).” Credit Slips. August 27, 2019.
37. Gen J M Gavin emitted 13.8 million metric tons of GHG in 2020, the most recent available year: U.S. Environmental Protection Agency. [Facility Level Information on GreenHouse gases Tool \(FLIGHT\)](#). Accessed April 11, 2022.
38. Pitchbook data
39. McLaughlin, Tim. “[How private equity squeezes cash from the dying U.S. coal industry](#).” Reuters. March 2, 2021.
40. S&P Global Market Intelligence. [Moody’s lowers Talen outlook following \\$500M dividend payment](#). March 2, 2018.
41. Pitchbook. [Raven Power Undergoes Dividend Recapitalization](#). January 7, 2014
42. Ayash, Brian and Mahdi Rastad. California Polytechnic State University. “[Leveraged Buyouts and Financial Distress](#).” July 19, 2019.
43. Giachino, Alyssa. “[Private equity-backed companies dominate 2020 oil and gas bankruptcies](#).” Private Equity Stakeholder Project. January 28, 2021.

# ENDNOTES

44. Spector, Mike, Emily Glazer, and Rebecca Smith. "[Energy Future Holdings Files for Bankruptcy.](#)" The Wall Street Journal. April 29, 2014.
45. Mufson, Steven. "[Why are private-equity firms behind Energy Future deal the only ones coming out okay?](#)" The Washington Post. May 2, 2014.
46. Spector, Mike, Emily Glazer, and Rebecca Smith. "[Energy Future Holdings Files for Bankruptcy.](#)" The Wall Street Journal. April 29, 2014; Bravo, Richard and Mark Chediak. "[Energy Future's Profitable Road to Oblivion.](#)" Bloomberg. October 25, 2012.
47. Chediak, Mark and Harry R. Weber. "[Bankruptcy's Silver Lining for Energy Future's Coal.](#)" Bloomberg. May 7, 2014.
48. Ibid.
49. McLaughlin, Tim. "[Blackstone and investors get zapped with bet on Mexico's electricity market.](#)" Reuters. March 11, 2021.
50. New Generation Research. "[Frontera Holdings LLC – Former Blackstone-Controlled Texas Supplier of Electricity to Mexico Notifies Court of July 28th Plan Effectiveness Date; Emerges Minus \\$800mn of Debt and Majority Owned by DIP Lenders.](#)" Bankrupt Company News. July 29, 2021; McLaughlin, Tim. "[Blackstone and investors get zapped with bet on Mexico's electricity market.](#)" Reuters. March 11, 2021.
51. Salamone, Anthony. "[Talen Energy-owned power plants hit with third bankruptcy since 2014. Lehigh Valley company says no changes seen to local operations.](#)" *The Morning Call*. July 2, 2020.
52. Bittle, Jake. "[Private Equity's Favorite Failing Coal Plant.](#)" *The American Prospect*. February 14, 2022; Pitchbook data.
53. Kelly, Jason. "[The magic formula is leverage...and fees.](#)" *Businessweek*. October 3, 2019.
54. PR Newswire. "[Talen Energy Completes Sale of C.P. Crane Power Plant in Maryland.](#)" February 16, 2019; Elias, Malaika. Waterkeeper. "[Gunpowder Riverkeeper, Blue Water Baltimore, Essex Middle River Civic Council Concerned about 'Repowering' of Maryland CP Crane facility.](#)" March 27, 2019.
55. "[Environmental Analysis in Support of an Application for Certificate of Public Convenience and Necessity for Natural Gas Co-Firing Project at Charles P. Crane Generating Station.](#)" June 2016 at 1.
56. Elias, Malaika. Waterkeeper. "[Gunpowder Riverkeeper, Blue Water Baltimore, Essex Middle River Civic Council Concerned about 'Repowering' of Maryland CP Crane facility.](#)" March 27, 2019.
57. Jarrett Renshaw, Reuters. "[One of the oldest U.S. refineries in trouble again in Philadelphia: court filings.](#)" February 12, 2019.; Gambardello, Joseph A., Andrew Maykuth, and Patricia Madej. "[Explosions rip through South Philadelphia refinery, triggering major fire and injuring 5.](#)" The Philadelphia Inquirer. June 21, 2019. Andrew Maykuth. "[Bankrupt Philadelphia Energy Solutions blames 'misabeled' pipe for big blast that led to refinery's closure.](#)" The Philadelphia Inquirer. March 3, 2021; Andrew Maykuth. "[S. Philly refinery blast released 5,000 pounds of a deadly chemical, federal investigators say.](#)" October 16, 2019. The Philadelphia Inquirer.
58. Andrew Maykuth. "[S. Philly refinery blast released 5,000 pounds of a deadly chemical, federal investigators say.](#)" October 16, 2019. The Philadelphia Inquirer.
59. Business & Industry Connection Magazine. "[Before the fire, Philadelphia refinery scaled back big maintenance project.](#)" June 28, 2019; Pitchbook [Philadelphia Energy Solutions](#) Profile. Deal History.

# ENDNOTES

60. Jarrett Renshaw. "[Refiner goes belly-up after big payouts to Carlyle Group.](#)" *Reuters*. February 19, 2018; and Andy Stone, "[After Explosion, Philadelphia Refinery To Be Permanently Shut Down.](#)" *Forbes*. February 17, 2020.
61. SK Capital Partners (SK Capital). Portfolio. Accessed December 2019; First Reserve. Current Portfolio. Accessed December 2019; Simon, Darran, Faith Karimi, and Elliott C. McLaughlin. "[Hours after explosions rocked a Texas chemical plant, a chemical fire continues to burn.](#)" *CNN*. November 28, 2019; Lauren Hensley. "[Federal report analyzes possible cause of TPC explosion amid litigation.](#)" *12NewsNow*. November 27, 2020.
62. EPA TRI. TPC Group LLC. Port Neches. FRS ID No. 110000504801. Available at ECHO database. Accessed December 2019.
63. Lauren Hensley. "[Federal report analyzes possible cause of TPC explosion amid litigation.](#)" *12NewsNow*. November 27, 2020.
64. U.S. Energy Information Administration. [Electricity explained: Electricity generation, capacity, and sales in the United States](#). Last updated: April 19, 2022, with data from the Electric Power Monthly, February 2022. Accessed April 28, 2022.
65. Comparison based on EIA's percentage shares of total U.S. utility-scale electricity generating capacity by primary energy source in 2021, see: U.S. Energy Information Administration. [Electricity explained: Electricity generation, capacity, and sales in the United States](#). Last updated: April 19, 2022, with data from the Electric Power Monthly, February 2022. Accessed April 28, 2022.
66. U.S. Energy Information Administration. FREQUENTLY ASKED QUESTIONS (FAQS). [How much of U.S. carbon dioxide emissions are associated with electricity generation?](#). Last Updated November 2, 2021. Accessed April 10, 2022.
67. [Global Carbon Atlas](#). Accessed April 20, 2022.
68. Clean Air Task Force. [Toll from Coal](#). Accessed April 10, 2022.
69. Ibid. The monetary cost of lost work days is calculated using the average of the quarterly median weekly earnings for 2021—\$998 (in current dollars) and using an average work week of 5 days. See: U.S. Bureau of Labor Statistics. Economic News Release. [Usual Weekly Earnings of Wage and Salary Workers News Release](#). At Table 7.
70. U.S. Department of Energy. Energy Information Administration. Annual Electric Generator Report. [EIA-860](#). Release date: September 9, 2021, Final 2020 data.
71. U.S. Energy Information Administration. [Emissions by plant and by region](#). See: Emissions by plant for CO<sub>2</sub>, SO<sub>2</sub>, and NO<sub>x</sub> (2020 data).
72. U.S. Environmental Protection Agency. [Facility Level Information on GreenHouse gases Tool \(FLIGHT\)](#). Accessed April 11, 2022.
73. Energy Information Administration. Electric Power Monthly. January 26, 2022 at [Table 6.7. A Capacity Factors for Utility Scale Generators Primarily Using Fossil Fuels](#); EIA. Energy Outlook 2021. February 3, 2021 at [Table 18. Energy-Related Carbon Dioxide Emissions by Sector and Source](#).

**MAY 2022**



# Americans for Financial Reform Education Fund