

FT Alphaville Energy sector

## Anything can be a PFASt-growing industry

Even the effort to mitigate “forever chemicals”



© AP

Alexandra Scaggs JANUARY 24 2024

---

### Stay informed with free updates

Simply sign up to the Energy sector myFT Digest -- delivered directly to your inbox.

[Sign up](#)

---

One of the funny things about sustainable investing is that every problem is also a market.

Take the spread of per-and polyfluoroalkyl substances, better known as PFAS or forever chemicals.

Society solves one problem — chemicals' annoying tendency to form bonds when heat is applied, making cookware tough to clean — and in the process creates another problem. In this case, [non-stick-pan coatings cause serious health problems](#) and are now everywhere because they're [indestructible by design](#). Sometimes the new problem is simple to solve, albeit at a cost. Other times, that solution creates *another* problem, and the cycle continues until we create a problem [so big and/or diffuse](#) it can't easily be fixed, and life gets worse for a while.

Either way, workers and money are needed to fix the new problems that come with yesterday's solutions. Three cheers for progress!

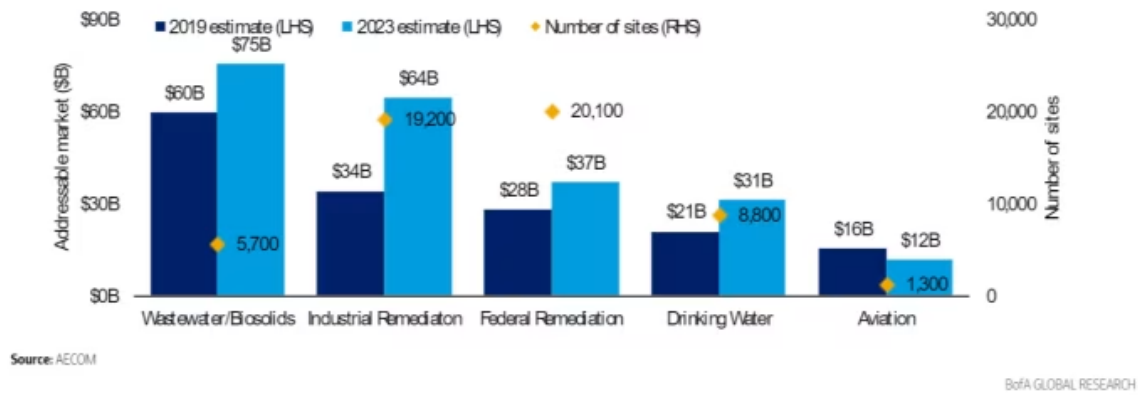
So what's the market for getting rid of PFAS? It's definitely growing, as Bank of America points out in a recent note. The US's Environmental Protection Agency is expected to finalise legally enforceable standards for PFAS in drinking water this year, and 10 states have legally enforceable standards. From the bank:

PFAS remediation encompasses immobilizing, separating, concentrating, or destroying PFAS from water, soil, or air. **AECOM estimates the cost to remediate approx 55,000 PFAS sites in the US at around \$220B.** Wastewater dominates the PFAS market, followed by Industrial Remediation, presenting opportunities for companies involved in engineering, consulting, construction design for water infrastructure, PFAS removal technologies, and waste management. In **PFAS detection and testing, the current market, estimated by BofA's Life Sciences & Diagnostic Tools analysts, is \$175-225M and growing at 10-15% annually.**

With our apologies for wonky text formatting, here's Bank of America's chart showing growth in the ~~projected costs of~~ market for getting rid of forever chemicals, broken down by sector:

**Exhibit 26: The total addressable PFAS market within the US has increased by ~40% between 2019 and 2023**

Estimated addressable PFAS market in 2019 vs. 2023 (LHS) and the number of PFAS sites in the US (RHS)



Who's in line to benefit from this important safety spending market's growth? DuPont is one name on the list (lol). Waste-management companies like Republic Services also say they see an opportunity for profit. From BofA:

Our BofA Global Research sector analysts have identified the US companies in their coverage universe that sell equipment and services used in PFAS remediation and treatment and therefore could be potential beneficiaries of increased PFAS demand . . . Specifically, they highlight that BofA-covered companies specializing in engineering, consulting, and construction design for water infrastructure (like ACM, J, MEG, NVEE); companies that sell PFAS removal technologies (like DD, ECL); and waste management companies with hazardous or chemical waste programs (like CWST, GFL, RSG, and WCN) could benefit from an increase in PFAS-related regulations. Companies that provide PFAS remediation solutions benefit from high barriers to entry and global scale, as many clients tend to prefer a handful of companies with scale and reputation in the field as a hedge to reputational risk given heightened awareness around PFAS.

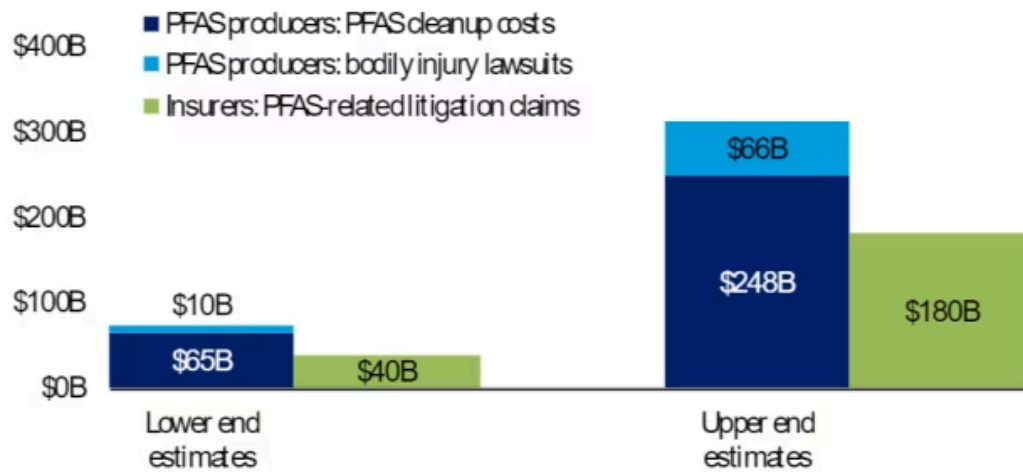
Another obvious question is where exactly that ~\$220bn will come from.

Some of it will be from lawsuits. There has been plenty of litigation already against the biggest manufacturers of PFAS, notably 3M, DuPont **and** Chemours. ~~and~~ Corteva. \***DuPont, Chemours and Corteva** are the spun-off remnants of former US industrial giant EI DuPont de Nemours & Co, founded as [an early domestic munitions supplier](#) (gunpowder mill) by a French aristocrat feeling the Revolution. [*Corrected: Corteva is DuPont’s former agriculture business.*]

Over the long run, BofA’s analysts think that the total settlement size related to PFAS clean-up and exposure could end up in the “Big Tobacco” range (again, apologies for hard-to-read text):

**Exhibit 9: PFAS liabilities could total hundreds of billions of dollars, potentially rivalling the \$200B Big Tobacco settlement in the 90s**

Lower and upper estimates for PFAS-related liabilities



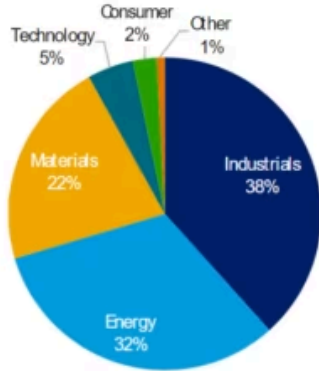
Source: Praedicat, Verisk Analytics

BofA GLOBAL RESEARCH

And when it comes to clean-up, they say oil and gas companies could have “under-appreciated” exposure:

**Exhibit 16: Over 90% of the 150K+ facilities that have potentially used or released PFAS occur within the Industrials, Energy, and Materials sectors...**

Percent of US facilities that have been identified by the US EPA as possibly handling, using, or releasing PFAS chemicals by sector

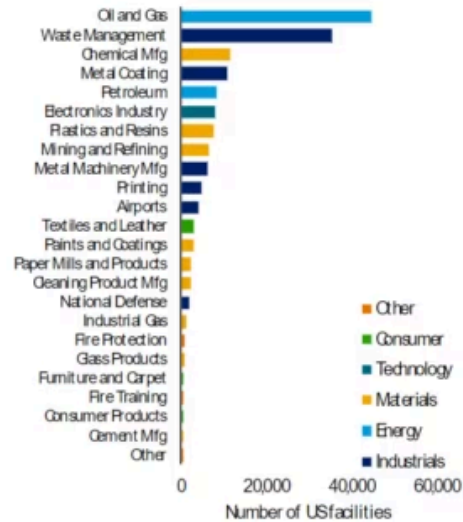


Source: BofA US ESG Research, US Environmental Protection Agency (EPA). Note: These industry sectors were identified from literature reviews and other investigations undertaken by EPA.

BofA GLOBAL RESEARCH

**Exhibit 17: ...specifically led by facilities in the Oil and Gas, Waste Management, and Chemical Manufacturing industries**

Number of facilities that have been identified by the US EPA as possibly handling, using, or releasing PFAS chemicals by industry



While the bar chart on the right looks bad for the oil and gas industry, remember it reflects only *number of facilities* where PFAS are *used*, not estimates of contamination or potential damages.

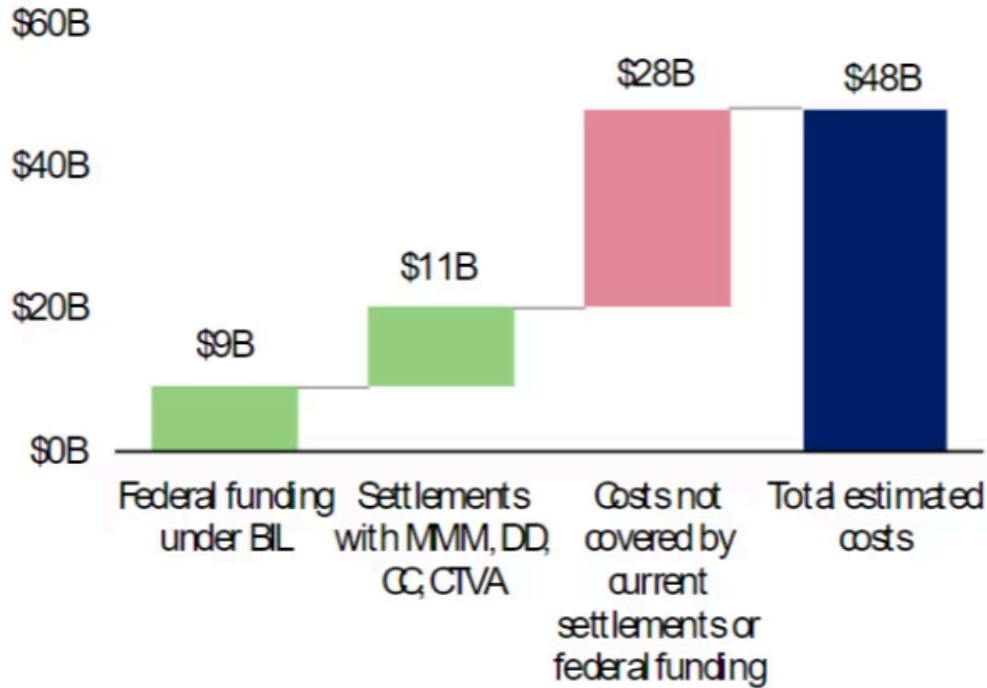
Plus, a very widespread and more pressing set of risks (and mitigation costs markets) is clear: PFAS in drinking water. BofA says compliance with the EPA’s standards could cost a total of \$48bn.

Current legal settlements cover less than a third of that \$48bn sum. Funding from recent US infrastructure legislation should add another \$9bn to the \$11bn in lawsuits, covering around 40 per cent of costs.



**Exhibit 22: ~58% of the costs to comply with the EPA's proposed PFAS drinking water standards are not covered under current settlements or federal funding**

Funding sources for estimated water treatment costs



Source: BofA US ESG Research, American Water Works Association

BofA GLOBAL RESEARCH

As for the remaining 60 per cent? A good portion of that could come from all of us collectively, through our utilities bills. Also a marginally worse climate, as water purification is “highly energy intensive”, says BofA:

The EPA's proposed limits on PFAS in drinking water (via the National Primary Drinking Water Regulation) would require every US municipality to regularly test its water for PFAS and to keep the chemicals at or under the limits. In cases where PFAS levels exceed the limits, water utilities will need to treat the water and/or dilute it with cleaner water. **Per estimates from the American Water Works Association (AWWA), a non-profit association which represents 80% of US water utilities, 5,000 water systems will need to develop new water sources or install advanced treatment technologies, while an additional 2,500 will need to adjust their existing PFAS treatment systems.**

It's pretty clear that an "association which represents 80 per cent of water utilities" means an industry lobbying group, so we can safely guess that the numbers will end up lower than that.

Publicly-listed water companies are starting to report cost estimates as well, and they're expected to be more disciplined with their projections because they're talking to investors.

The good news for ratepayers (ie everyone) is that the water companies are looking for outside financing. From the bank:

- **American Water (AWK)** expects 100+ of its existing drinking water treatment facilities (a 3-4x increase) will need to be upgraded to provide PFAS removal capability. It estimates \$1B in capital investment for PFAS treatment facilities over a three- to -five-year period and \$50M in annual operating expenses related to PFAS testing and treatment. This ~\$1B capex was introduced into the formal plan with 3Q23 earnings when the five-year capital program increased +\$2B to \$16-17B 2024-2028 vs \$14-15B 2023-2027. The spending is concentrated in 2025-2027.

- **Essential Utilities (WTRG)** preliminary multi-year capex estimate is \$450M+ for PFAS, disclosed on the 3Q23 call, relative to \$1.0-\$1.1B annual capital investments in 2021-2022. This estimate is up from \$350Mn previously but again the company is working to assess the ultimate needs. Similar to AWK, WTRG is looking for third party financing (i.e., not from ratepayers), which would reduce the bill impact and thus earnings opportunity. WTRG has disclosed \$40M+ investment to treat for PFAS in its 2022 annual report.

- **SJW Group (SJW)** has estimated that PFAS compliance will cost \$170-190M over the next three to five years.

These companies' capex costs aren't supposed to come from the government, by the way, because they're investor-owned monopolies with guaranteed profits. (But the industry may still end up jockeying for some support anyway.)

Waste-management companies, on the other hand, are expected to pass through most of their extra costs to ratepayers/all of us:

**The waste industry is likely to pass along the costs of PFAS treatment to customers.** Although it's too early to say for sure, some studies indicate that scaling up treatment systems could increase tipping fees (the fees paid to dispose waste in a landfill) by \$1.5 per ton, i.e., by ~2.5%. PFAS treatment costs are also likely to strengthen the trend towards consolidation among landfill operators. Smaller landfills, typically owned by municipalities, are likely to struggle and be at a disadvantage in contending with emergent contaminants like PFAS (due to more limited knowledge, resources, and funding), while larger landfills like public companies WM, RSG, and WCN have large environmental engineering staff and are leveraging new technologies to manage and treat (or pre-treat) leachate.

Property and casualty insurers could also take a hit if PFAS contamination leads to mass tort cases, the way that asbestos litigation and settlements did:



**Verisk Analytics, a risk analytics firm, has estimated US property and casualty insurers could face \$40-180B in losses related to PFAS litigation.** While these are staggering sums, there are debates whether PFAS litigation will reach the same degree as severity as the asbestos issues of years past and whether insurers should begin reserving for this potentially emerging liability today. It is expected the litigation related to PFAS will take a long time to play out, especially considering that most people are likely to have various PFAS in their bloodstream.

With the ever-increasing flood of claims being filed, increased focus from the current administration, and potential upside risks to claimant payouts from social inflation, the end result could prove material to commercial insurers, requiring many to strengthen their loss reserves and apply upward pressure on liability.

These costs would presumably be reflected in property and casualty insurance rates, along with [many other pressures](#) that are [affecting the world right now](#). In privatised America, it's starting to seem like utilities and insurance costs are the way everyone pays to fix yesterday's mistakes.

---

[Copyright](#) The Financial Times Limited 2024. All rights reserved.

---