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The EPA sends a powerful signal on ending fossil fuels

The US Environmental Protection Agency is right to mandate huge emissions cuts from fossil-fuel power plants.

Last month, operators of the main fossil-fuel power plants in the United States were put on notice: if they want to continue operating after 2040, they would need to reduce their carbon footprint by at least 90%. In the case of power plants that run on coal, the dirtiest of the fossil fuels, that potentially leaves only one option to avoid closure: these plants must capture and bury their emissions using carbon-capture and storage (CCS) technology.

The proposed rule, announced by the Environmental Protection Agency (EPA), is a belated but welcome step. It is not enough to expand clean-energy technologies: governments must also tackle existing sources of emissions. If implemented, the EPA plan would, albeit slowly, do just that. It would also send a powerful signal that one of the world's largest greenhouse-gas emitters is serious about phasing out conventional fossil-fuel facilities. If anything, the EPA's rule could be strengthened by bringing the end date forward and applying these requirements to more power plants.

Over little more than a decade, the United States has cut the quantity of electricity it generates using coal by more than half, from 1.7 trillion kilowatt-hours in 2011 to 828 billion in 2022, a trend that is set to continue. But the use of natural gas for electricity generation has been rising steadily in recent years, alongside renewable sources such as wind turbines and solar panels. As it stands, the United States still counts on fossil fuels for around 60% of its electricity — of these fuels, two-thirds is gas and one-third coal. That is why the EPA's rule is so important. By setting such a high bar for emissions reductions by power plants, it effectively mandates the use of CCS, if the highest-emitting facilities are to continue operating, and that would be a game-changer.

Long-standing research and development efforts suggest that CCS is a viable technology to reduce power-plant emissions — indeed, it has been trialled at numerous pilot plants around the world. Some have encountered snags: equipment problems have frequently limited carbon-capture operations at SaskPower's Boundary Dam, a coal-fired power plant in Saskatchewan, Canada, for example. But researchers say that such technological kinks can be straightened out as operators gain experience. The main reason CCS has never taken off commercially — and has only rarely been operated at full scale — is economic. Unless governments actively step in to mandate CCS or put a sufficiently high price on carbon emissions, it will be cheaper to emit carbon into the atmosphere. The proposed regulation would shift that calculation.

> **"To be clear, carbon capture and storage is not a panacea for the power sector."**

Not surprisingly, a coalition that includes states that rely on fossil-fuel extraction industries is preparing to challenge the EPA in court. There is a precedent: under former president Barack Obama, the EPA had crafted a regulation that sought to broadly shift power generation across the grid towards cleaner forms of energy. However, the Supreme Court ruled last year that the EPA doesn't have the authority to oversee the restructuring of the entire electrical grid, and that its remit is limited to mandating technologies that can be used at individual power plants.

The EPA's current proposal seeks to comply with that ruling by arguing that CCS represents a viable technology that power-plant operators can install to slash the emissions of their facilities. The EPA's challengers are expected to argue that the technology is too costly and unproven. This means that whether the proposal stands up will depend mostly on whether the court agrees that CCS is ready for prime time.

To be clear, CCS is not a panacea for the power sector. Even if power plants are able to capture 90% of their emissions, the remaining 10% will continue to be pumped into the atmosphere. At the same time, the costly and environmentally damaging extraction of fossil fuels would continue. In most cases, it would make more sense to shut down fossil-fuel power plants and transition to truly clean energy.

And that could indeed be the effect. In the case of coal-fired power plants, many will probably close down instead of complying with the proposed regulation, as EPA administrator Michael Regan acknowledges. The same could be true for many large gas-fired power plants, faced with the choice of adopting CCS or a costly conversion to burning 'green' hydrogen to meet the requirements.

Other regulatory requirements on fossil-fuel burning are also growing, even as the price of renewable-energy generation is tumbling. This means both pain and challenges as communities, states and businesses make decisions about which fossil-fuel plants to close, and where and how to fill the gap with clean energy. Many jobs will be lost, and others created. Those that are created will require new skills and won't necessarily be in the same location.

The administration of President Joe Biden seems to be aware of these social and economic (and political) realities. In April, the White House announced that new policies have already directed more than US$14 billion in federal investments towards communities struggling with the loss of fossil-fuel-related jobs, with more investments to come. Managing the social costs of the clean-energy transition must remain a priority in the United States, and worldwide.

Everyone will all be better off for it. The simple fact is that fossil fuels are dirty, from end to end. The air pollution they create kills millions of people each year around the globe. The greenhouse gases they pump into the atmosphere are driving a climate crisis that is already threatening people and natural ecosystems worldwide. Ultimately, to halt global warming, greenhouse-gas emissions must be eliminated or offset by carbon uptake elsewhere. This means making difficult choices — and beginning, with intent, to tighten the chokehold on fossil fuels.