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ENVIRONMENT

A Better Way to Cut Power-Plant Emissions

APR 21, 2014 1:23 PM EDT

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On June 1, the Environmental Protection Agency will deliver its plan to curb carbon dioxide emissions from existing power plants, and environmentalists and electricity providers are counting the days. The agency has already drafted regulations for limiting CO2 emissions by new power plants. If adopted, they will limit CO2 to 1,000 pounds per megawatt-hour of electricity generated.

This regulatory approach misses the mark, because it doesn't put the U.S. on a viable path to meet President Barack Obama's long-term goal of reducing carbon emissions 83 percent by 2050. Any mandate for existing power plants to lower emissions will require costly retrofits, even though most of these facilities will be retired over the next 20 years, and the proposed CO2 limits would ensure that coal-fired power plants could no longer be operated as they are today. Nevertheless, if, in 2050, fossil-fuel power plants still produce most of the electricity in the U.S. (which seems likely, given the abundance of shale gas), these changes would still leave the U.S. far short of the Obama administration’s emissions goal.

We suggest an alternative approach that would give electricity producers more time -- about 10 years -- to develop less expensive technologies to reduce emissions, but then set much more stringent carbon limits. Specifically, we advocate an EPA-imposed ceiling of 175 pounds of CO2 per megawatt-hour by the end of 2027, applicable to facilities that come online after 2017. To meet the standard, future natural-gas power plants would need to emit 80 percent less CO2 than today's models do, while coal-fired plants would need emit 90 percent less.

To comply with this standard, fossil-fuel-based power plants would have to be built to capture carbon dioxide before it reaches the atmosphere and store it permanently in underground geological structures. The technology to do this has been demonstrated but not deployed at commercial scale, in part because it remains expensive. Lacking either a direct mandate or any financial incentive, power producers have understandably not wanted to spend money on these first-of-a-kind facilities.

In the years ahead, however, as the industry accumulates experience with the technology, the cost of installing and operating carbon capture units is poised to come down significantly, engineering studies have shown. Thanks to this future cost savings, by 2027, the stringent emissions limits we propose would add a mere 1.2 cents to the full cost of generating one kilowatt hour of electricity.

Our plan works on the assumption that all new natural-gas power plants that come into use in the intervening years would have carbon-capture capabilities. To give electricity producers the incentive to make this happen, we propose a targeted package of investment and production tax credits.

The tax credits we propose would be substantially smaller than the ones presently available for solar, wind and other renewable-energy technologies. And they would diminish over time, as the price of carbon capture falls, and expire entirely in 2027. The total cost in lost taxes would be about $6.6 billion over 10 years -- comfortably in the ballpark of various clean-energy tax breaks under consideration in Congress. The benefit to U.S. taxpayers would be carbon-capture technology affordable enough to keep electricity price increases below 1.2 cents per kilowatt hour in the years leading up to 2027.

The economic and environmental advantages of our proposal would become even greater if China, India and other countries that also rely heavily on fossil fuels for power were to follow suit. The learning we anticipate in our calculations would be accelerated, too. In addition, U.S. companies could have important first-mover advantages and profit from the export of carbon-capture equipment and technological expertise.

To get the needed research and development moving, the EPA should first set a stringent prospective emissions standard for 2027. Targeted tax incentives could then be enacted by Congress, and the U.S. power sector would be on course to reduce carbon emissions by 83 percent, in a way that everyone can afford.

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