

CATF Blog *AHEAD OF THE CURVE* – June 15, 2015

Let's Go EPA – Remain Strong on Power Plant Rules!

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10, 9, 8, 7.... The countdown to the release of EPA's final new and modified power plant carbon dioxide ("CO₂") rules has begun – the package of performance standards is now under review at the White House Office of Management and Budget. Over our northern border, Canada's CO₂ performance standards for power plants become effective July 1, 2015. It's an important moment in the ongoing effort to get some meaningful reductions in manmade CO₂ — and the sooner the better, as a significant amount of each ton of CO₂ persists, causing climate damage, for centuries after it is released.

What will the final rule require? The standard under the Clean Air Act provisions on which it is based demand it to be forward looking, and technology forcing – looking to what can be done over the next decade, not what could have been done in the past. EPA's proposal was a great start – requiring a 30-50 percent reduction in CO₂ emissions as compared with uncontrolled coal plants. The proposed rate reflected only partial carbon capture and sequestration ("CCS") control technology. Full capture and sequestration would mean a zero or near zero-emitting coal plant. Close to full capture and sequestration is already happening at many projects – and planned for others – in the Americas alone.

Half of the world's 54 large-scale CCS projects are located in the Americas – 19 in the US, 7 in Canada, and 1 in Brazil. Canada has an operating *retrofit* project on an existing full sized conventional coal-fired power plant unit in Saskatchewan. [SaskPower's CCS retrofit](#), captures and sequesters 90 percent of its CO₂ emissions. That project avoids emitting 1.1 million metric tons of CO₂ *every year*.

And despite the fact that the only news that ever seems to be reported is bad news, there's a lot of good progress in the adoption of this essential technology in the U.S. since our last [blog post](#) in the fall of 2014. For example, in March of this year, the [Kemper project](#) – a coal gasification technology power plant in Mississippi – tested its gasifiers. That project has been slowed by its innovative generating technology – *not by the capture and sequestration portion of the project*. When fully operational, in late 2015-early 2016, Kemper will avoid emitting 65 percent of the CO₂ it produces. Also in the U.S., the [W.A. Parish/Petra Nova power plant in Texas](#) is moving forward and will capture 90 percent of its emissions, preventing the release of 1.4 million metric tons of CO₂ annually. And the [Texas Clean Energy/Summit Power Project](#) also is steadily moving forward. This project will not only generate electricity but also produce fertilizer and will capture 90 percent of the CO₂ that it would otherwise release.

While recent reports have focused on the cost of the electricity *generating* technology, enhanced oil recovery sequestration is a major economic driver for the capture and sequestration portion of U.S. projects, as the price of the captured CO₂ offsets the cost of the technology – for new plants and retrofits as well. And other industrial projects that capture CO₂ and sequester it in enhanced oil recovery are continuing to run without incident, as they have for years – for example, the [Dakota Gasification/Great Plains synthetic fuel facility](#) has captured 50 percent of its CO₂ emissions *for over ten years*, sending the CO₂ to enhanced oil recovery sequestration in Canada – another 1.6 million metric tons per year of avoided CO₂ emissions. A million metric tons have been sequestered as part of the Illinois [Basin-Decatur/Archer-Daniels Midland Project](#), as of January 2015. The [Air Products Steam Methane Reformer Project](#) in Texas has captured nearly 2 million metric tons of CO₂ (1 million metric tons per year) as of April 2015.

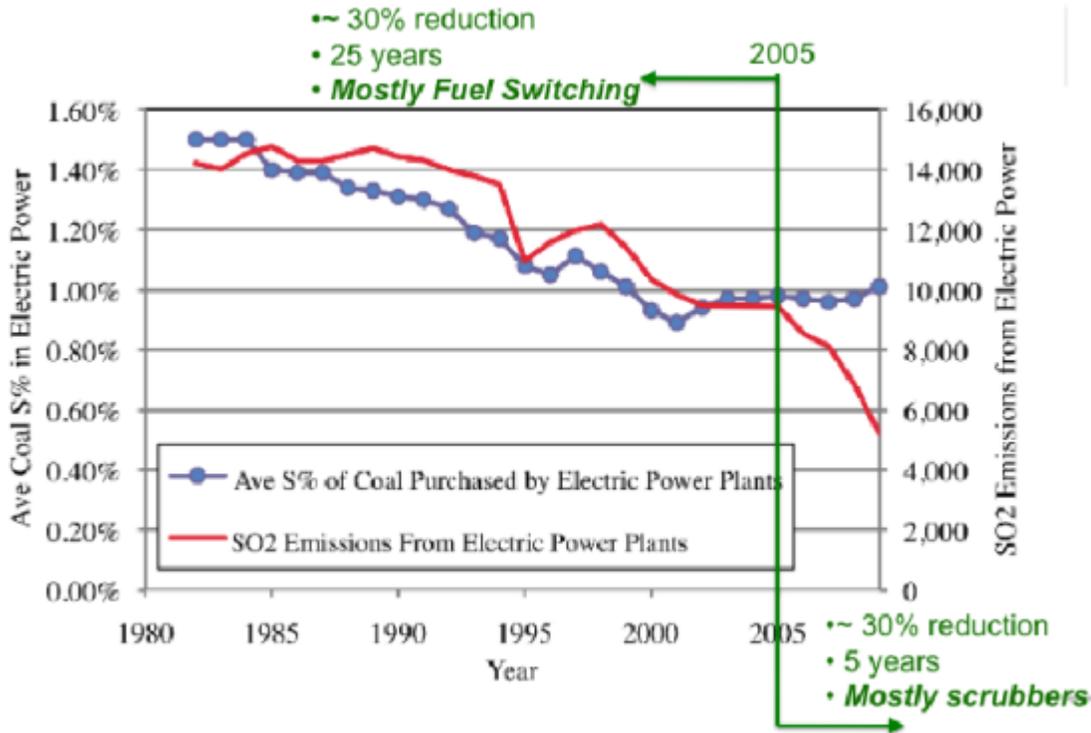
Texas's growing onshore CO₂ hub includes natural and captured CO₂ sources, EOR-CO₂ capacity, onshore geologic storage capacity and pipeline infrastructure. And recently the University of Texas completed a four-year [assessment](#) of geologic formations offshore of the Texas Gulf coast, which suggests an additional subsea deep geologic carbon storage capacity the equivalent of about 75 years of power plant CO₂ emissions.

Let's get real—let's get on with it! This technology is critical to the future of the planet. Electricity produces about 40 percent of all U.S. CO₂ emissions. Coal-fired power production is a large share of that – and every ton lasts a very long time. The [U.S. Energy Information Agency](#) estimates that total electricity generated around the world just from coal (nevermind from natural gas which is also abundant and ever cheaper) will *grow upwards of 70 percent* in the coming decades.

Technology for the control of CO₂ stack emissions has got to become widespread – on new and existing coal plants – and eventually on new and existing natural gas plants – if modern society is going to win the climate fight. That is true no matter how many old coal plants we retire, no matter how much renewable energy is developed, no matter how efficiently we are able to consume the electricity we produce. Lots of the CO₂ we release now hangs around a long, long, time. Our CO₂ emissions need to get down towards zero, as quickly as possible. And the capture and EOR sequestration elements of this essential technology have all been in use for over 40 years.

So why aren't we doing this now on every coal plant – What's missing? Answer: so far the U.S. has been without the political will, expressed through a regulatory requirement to **do something about power sector emissions of CO₂**.

Our country has *much* cleaner air than when the Clean Air Act was enacted in 1970, because under the Act we have required power plants to lower their SO₂ emissions, NO_x emissions and particulate matter emissions to the extent potential control technologies allow. Innovators stepped up to the plate and developed technologies to do the job – technologies got cheaper and cheaper as they were deployed more broadly. Sounds like old hat now, but history tells us that when our government demands pollution control to protect the public health of our citizens, innovation happens. When the U.S. required control technology for SO₂, we saw about a 30 percent reduction in that pollutant in 5 years.



Power Sector Emissions: CO2 Is Analogous to SO2. Source: Adapted from "Anthropogenic Sulfur Dioxide Emissions: 1850-2005 Supplementary Material" S.J. Smith et. al.

Let's go, EPA! Stay strong on a rule that requires *at least* partial CCS on new coal-fired power plants. Anything less will allow millions of tons of avoidable CO₂ to be released.

Tags: [Boundary Dam](#), [carbon capture and storage](#), [Clean Air Act](#), [enhanced oil recovery](#), [EPA](#), [Kemper](#), [power plant rules](#), [SO2 emissions](#)