

Argus Q&A with Duke's Stowell

Argus interviewed John Stowell, vice-president of Environment, Health and Safety for Duke Energy, formed from the merger of Cinergy and Duke Energy announced in May 2005.

Cinergy's James Rogers has taken over as president and chief executive of Duke Energy, while Duke's Paul Anderson will serve as a non-executive chairman of Duke Energy's natural gas operations, to be named Spectra Energy beginning January 1, 2007. Rogers is also chairman of the Edison Electric Institute.

Both Cinergy and Duke Energy were proponents of a mandatory carbon cap for the US, and their combined generating assets make them well placed in a future greenhouse gas trading scheme as Cinergy's heavy coal fleet is balanced by Duke's lower-carbon intensive gas and nuclear assets.

Stowell talked about Cinergy's voluntary GHG commitment and how the newly formed company will reconcile the two executives' different views on how best to manage a carbon mitigation program.

Can you outline Cinergy's GHG reduction target?

The legacy Cinergy operation had a goal of a 5 pct reduction below 2000 levels from 2010-2012, bringing total greenhouse emissions from Cinergy-owned assets down 3.4 million metric tonnes/yr to 63 million mt/yr, assuming 1.0 pct growth over the next 15 years.

Does the new Duke Energy have a commitment?

We are in the process of evaluating that — the intent is we will have one. It's been a busy year putting together the merger and now spinning off the gas transmission and processing business! A committee has been working on a plan and we will shortly be putting our recommendations for a new Duke Energy committee to Jim Rogers.

What is your motivation behind having a voluntary GHG program?

We were motivated by several things. In the first term of the Bush presidency, the administration proposed the Department of Energy program that became Climate Leaders. They challenged industries to come up with voluntary commitments and we wanted to do our part to support the president's plan. At that time, in mid-2003, it became obvious that there would not be a

legislated requirement any time soon, although we believed there would be at some point. In addition to wanting to support the administration's early goals, we also wanted to figure out how to run our business in a carbon constrained world. While voluntary measures do not even come close to what it would be like under a mandatory program, it gave our strategic planners and power plant operators some good experience in how one might operate under carbon constraints. It was a bit like doing calisthenics before a big game. We also believed we could identify some low-hanging fruit in terms of improving our efficiency and gaining experience with sequestration, mostly tree-planting, as well as introducing some renewables.

What are the most important lessons you learned from your climate initiative?

What we did find was really interesting. Many of the efficiency projects we selected actually paid for themselves. We used less fuel and the power plant efficiencies had the effect of creating more SO₂ and NO_x allowances. As we moved deeper into the program, the lower-hanging fruit got higher and so the projects were more expensive. In the real world of mandatory carbon regulation, we expect that the costs we'll incur will be higher than what we saw in the voluntary program. But, as we expected, we learned some lessons internally that I think will be important as we move forward. We also built awareness in the communities we serve as we did projects we probably would not have done, certainly not from an economic standpoint, such as solar. We did a small wind demonstration project which led to a contract with Orion for up to 100 megawatts of wind in Indiana. But for our greenhouse gas program, we probably would not be where we are today in trying to move into renewables. Renewables are not as cheap as fossil fuel generation and you cannot think of them in same way as baseload coal but they still make sense, and customers there are interested in buying them. I believe when carbon has a value, the delta between renewables and fossil fuels will narrow.

What were your average costs?

Averaged over one year they were \$8.28/mt in 2004 and \$12.49/mt in 2005, but spread over the five-year life of the pro-

gram they are \$1.66/mt. Of course, as I said before, in a mandatory program the number of entities involved will affect the cost. In the voluntary program, too, these costs were not passed on to the ratepayer, but the ratepayer gets the full advantage of any fuel saving.

I see you achieved 349,882 tons reduction from heat rate improvements, costing just \$1.11. Are there more opportunities to do this?

Most of the coal-fired plants Cinergy owned outright were considered for heat rate improvements, but we had to be careful not to trigger New Source Review. Nothing has been done yet in the Carolinas, and the Duke plants there are known for their low heat rates. But, our engineering and power plant operating groups have already come up with several ideas for on-system improvements. Once we get our budget finalized, we will organize a GHG management committee to consider projects on a case-by-case basis.

Do you support a price cap for a potential US trading program?

Yes. A cap addresses economic concerns by fixing a price for carbon. The science we leave to the experts, but we start with the premise that man-made GHGs are a problem. In our view it is inevitable there will be a GHG management program, and we like cap-and-trade. We know how it works. What we are looking for is a carbon price signal so we can plan for the future. We need to begin factoring in CO₂ as a cost so we can consider it in our least cost resource planning. We also support a price cap at least in the early years of the program, which is often referred to as a "safety valve". A safety valve allows for emissions growth to be slowed, stopped and reversed in such a manner as to not cause disruption to the economy. We would be concerned to see Congress enact a program that tries to do too much, too fast and run the risk of damaging the economy. We are also concerned that Congress be careful to not cause a disproportionate economic hardship on any region of the country. This is especially important in the Midwest where coal dominates electric generation. The Midwest is already lagging behind the rest of the country economically and a disproportionate hit on coal would further damage the fragile economy.

Where would you set the price cap?

The price cap needs to be high enough to drive action but not too high to get economic dislocation which we worry could cause Congress to pull back from its commitment because of angry voters. Sen. Bingaman suggested \$7/mt with a 5 pct/yr escalation for a safety valve. It will be interesting to see if that price holds. But it will probably come off in five to seven years, it is just to get us started.

How could such a price signal drive a change in the energy mix?

It had better not in the short term. You cannot change the generation mix by snapping your fingers. There are hundreds or thousands of megawatts of coal, some still being paid for. Do we want to say it cannot be used? Think of the reliability issue if all of a sudden this generation is made obsolete. We have to think of addressing climate change like a long-term war. Where we want to be in 2050 and not in 2015 is what policymakers should be thinking about. The price signal will, over the long haul, have an impact on both the energy mix and technology.

Where do you see investments being made first?

Think of high efficiency, low intensity equipment. We talk about the need for energy efficiency. We recently created a new department of energy efficiency led by a vice-president, Ted Schultz. But you still have to have a place for coal so technology is vital. And you will not get the technology without a price signal.

We are proposing two fossil fuel plants and some renewables. One integrated-gasification combined-cycle (IGCC) plant in Indiana, and a supercritical pulverized coal (PC) plant in North Carolina, that also includes the retirement of four older coal units. We hope there will be the ability to capture and sequester CO₂. We are in the front end engineering and design phase for the IGCC facility. For the supercritical plant we reasoned they need generation in North Carolina desperately, but the geology there is not conducive to sequestration. We are looking for the most efficient way as that still remains the lowest cost. As for renewables, we are developing wind in Indiana and looking at biomass, and doing a little bit of work with solar, and some wood waste in St Paul, Minn. The kind of thing if you were to ask us 15 years ago, we would not have been doing.

Are you looking at any of the emerging back end CO₂ control technologies for pulverized coal plants?

In the design for the supercritical plant we have made room for placement of back end controls or what we might think of as a "carbon scrubber". Right now, it appears it will be easier to extract CO₂ from IGCC, but with all the PC plants being planned and so many that will still be in operation for the foreseeable future, there will be a critical need for development of technology that will address CO₂ emission reduction from PC plants. Again, we believe this technology will be jump started only if there's a regulatory program that develops a carbon price signal.

How are the IGCC projects progressing?

We have a milestone coming up with Edwardsport in Indiana and Cliffside. Both facilities applied for investment tax credits

Methodology

Argus publishes daily NO_x allowance prices for current vintage (spot), forward market prices for three additional years and previous year (banked) allowances. It also publishes spreads between the spot and forward and banked allowances. *Argus* publishes daily SO₂ allowance prices for current vintage (spot). Each Friday on a weekly basis, *Argus* publishes forward market prices for seven additional years. The forward SO₂ prices reflect the value on the Friday assessed, not a value representative of the entire week.

The *Argus* prices published daily are intelligent assessments of the bid/ask range at the timestamp of 5:00pm Eastern Time. The "price" represents the midpoint between the assessed bid and ask. The assessed range takes into account deals done, bids, offers, spreads between current and future vintages, and other assessments of the market gathered through a wide survey of participants. The assessment represents the range within which deals traded or could have traded at the close of the trading day for that particular vintage. *Argus* holds as a guiding principle that our assessments should be the product of intelligence, skill, and diligent investigation.

Each week on Friday, *Argus* publishes a Weekly Index for SO₂ and NO_x. These indices are the arithmetic average of the daily "Price" published for current vintage allowances for each day on which prices were published during that week. On the last business day of each calendar month, *Argus* publishes a Monthly Index for SO₂ and NO_x. These indices are the arithmetic average of the daily "Price" published for current vintage allowances for each day on which prices were published during that month. Monthly indices for forward and previous year NO_x vintages are also published. *Argus* publishes a monthly Broker Index as well, based on a methodology suggested by the Emissions Marketing Association.

The US Environmental Protection Agency (EPA) publishes transfers of SO₂ and NO_x allowances every business day. *Argus* publishes details on daily transfers between non-affiliated companies or organizations. Separately, *Argus* collects details on transactions completed in the over-the-counter market for emission allowances and publishes them in the "Deals Done" table in *Argus Air Daily* each business day. These transactions are typically completed two weeks or more before they are finalized and processed through the EPA's allowance tracking system. Therefore volume and type of trades in the "Deals Done" table will not match up with the same day's transfers in the EPA tables.

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(ITCs) under the Energy Policy Act of 2005. The applications have been reviewed by DOE and are now being reviewed by the Department of Treasury. We should know by the end of November if either or both of these plants receive ITCs. This is particularly important for the IGCC plant because it would help in our efforts to narrow the cost differential between a PC and an IGCC facility, but the tax credit is also very important to the PC plant due to higher than expected construction costs.

How will the merger with Duke affect your climate position? How will you reconcile the trade vs. tax opinions of the two companies?

Our positions were more similar than dissimilar. Both proposals expressed the need for a mandatory program now. While Jim Rogers spoke about a cap and trade program and Paul Anderson a carbon tax, both plans went after the same thing: the need for a carbon price signal. From Cinergy's standpoint, we talked about a cap and trade because we believed that would be easier to get through Congress. A tax would be very hard. Look at President Clinton's Btu tax proposal that ripped the Democrats apart in 1994. That was a lesson well learned. It's very hard to pass a tax. Paul Anderson's idea was revenue neutral. You would raise a carbon tax but there would be a repeal of some payroll taxes and maybe other taxes. I would not say this idea is off the table going forward, but my fear is that from a practical standpoint, it would prolong the debate. What is important is both Jim and Paul agree that we need to move forward.

How do you know early action will be credited in any future regime?

We do not. Sometimes you've got to gamble. We have tried to be very transparent and taken opportunities to publicly disclose our reductions. But when it comes down to it you do not know what the baseline will be, that's why our GHG program had to be modest and why you cannot rely on a voluntary program.

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