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Climate bill could double power sector CapEx, create \$2B allowance cost in 2013

By Jay Hodgkins

Digesting a nearly 1,000-page Senate climate and energy bill is no swift task, but industry analysts and experts are starting to grasp exactly what the recently proposed American Power Act will cost the power sector in total dollars, and how it compares to previous climate proposals.

Sens. John Kerry, D-Mass., and Joseph Lieberman, I-Conn., released the bill May 12; on May 20, the Peterson Institute for International Economics provided one of the first comprehensive studies of the draft legislation, predicting the bill would prompt \$41.1 billion in annual electric sector investment from 2011 to 2030. That level of investment is \$22.5 billion more per year than under a business-as-usual case, the institute said, meaning the bill will essentially drive the power sector to double its capital expenditures in the next two decades.

While \$822 billion of investment over 20 years is no small mountain for the industry to climb, Point Carbon in a May 19 report said increased emphasis on reducing costs of the bill for consumers means reduced subsidies for clean energy and energy efficiency compared to previous climate bills.

The Peterson Institute report also predicted the Kerry-Lieberman bill will result in a CO₂ allowance price starting at \$16.47/tonne in 2013 — when its carbon market is scheduled to begin regulating the power sector — and rise to \$55.44/tonne by 2030, the final year in which CO₂ allowances are freely distributed to emitters after a steady phase-out period. Filling in some of the years between 2013 and 2030, Point Carbon projected an average carbon allowance price of about \$26/tonne from 2013 to 2020.

Point Carbon's allowance price prediction for the period was down \$5/tonne from its previous estimate based on Kerry-Lieberman's proposed price cap of \$25/tonne in 2013, growing at the same rate as the consumer price index plus 5%.

Emilie Mazzacurati, head of Point Carbon's North American Research division, on May 19 told SNL Energy that her team is still working on developing estimates for the costs of the bill to individual U.S. power companies, but said it is realistic to assume that the electric sector may have to buy 100 million to 150 million CO₂ allowances and offsets in 2013.

ClearView Energy Partners in a May 12 report predicted that the Kerry-Lieberman cap-and-trade system would result in 2,372 million free allowances being distributed to the electric sector. Assuming electric sector CO₂ emissions rise from 2,400 million tons of CO₂ in 2008 to 2,500 million tons of CO₂ by 2013, ClearView's estimate of free allowances for the electric sector would result in the sector needing to acquire about 128 million CO₂ allowances.

Using the Peterson Institute's prediction of \$16.47/tonne of CO₂ in 2013, the electric sector would have to pay \$2.11 billion in the first year of the cap to comply.

By comparison, Sanford C. Bernstein & Co. LLC analyst Hugh Wynne in a May 14 report predicted 2,408 million free allowances will be distributed to the electric sector in 2013, which would create a need for the sector to acquire 92 million allowances and offsets if sector emissions are 2,500 million tons of CO₂.

Mazzacurati said much of the CO2 credit need will be filled by cheap international and domestic offset credits. She predicted that the U.S. domestic offset industry will quadruple or quintuple in size, from 20 million CO2 offset credits today to the range of 80 million to 100 million by 2013, and said all of those offsets will be used as demand should easily consume the full supply.

Should secondary market prices for CO2 offsets happen to remain below the \$12/tonne price floor established in Kerry-Lieberman, Mazzacurati predicted that offset owners will hand their offsets over to the federal government to sell in its quarterly auctions because the government is obligated to sell them at no lower than the \$12 price floor, which would boost revenues for the offset producers.

While Point Carbon has not come out with an exact list of power sector winners and losers yet, Mazzacurati said they will be essentially the same as those identified in Point Carbon's November 2009 winners and losers [report](#) based on the climate bill proposed by Kerry and Sen. Barbara Boxer, D-Calif., because much of the design of the carbon market remains the same.

Point Carbon said coal-heavy utilities [Southern Co.](#), [American Electric Power Co. Inc.](#) and [Duke Energy Corp.](#) were most vulnerable to the highest allowance costs to comply with Kerry-Boxer. However, Mazzacurati said Kerry-Lieberman tilts more in favor of those carbon losers because it distributes free allowances 75% based on prior CO2 emissions and 25% based on sales, compared to a 50-50 split in Kerry-Boxer. The heavier bias toward doling out allowances based on emissions means emissions-heavy utilities will receive more free allowances.

Renewable- and nuclear-heavy generators like [Exelon Corp.](#) may see a slightly smaller benefit under Kerry-Lieberman, but will still be clear winners, Mazzacurati said, because the price of CO2 will drive up market power prices without driving up their costs to generate. For clean regulated utilities like [PG&E Corp.](#), Mazzacurati said Kerry-Lieberman, like Kerry-Boxer, dictates that no utility can be given more allowances than total emissions, limiting any potential windfall of profits from allowance sales.

Wynne said the first three years of the cap-and-trade system, from 2013 through 2015, will be much easier on the power sector, but compliance becomes tougher when free allowances to the sector take a major drop, from 51% to 35%, as other sectors are brought into the carbon market.

Compared to the House-passed Waxman-Markey climate bill, Wynne predicted that regulated utilities will need to seek much smaller rate increases in the early years of Kerry-Lieberman, but the needed rate increases eventually balance out by 2030. Wynne said the regulated utility of [AES Corp.](#) will need to seek the biggest percentage rate increase of any regulated utility as a result of the bill, at 3%, but that is only half of the 6% rate increase AES would have needed to recover costs to comply with Waxman-Markey.

Following AES, Wynne said AEP's regulated utilities will need a 2% rate increase, compared to 5% under Waxman-Markey; [DPL Inc.](#)'s regulated utilities will need a 2% increase, compared to 5%; and [Allegheny Energy Inc.](#) and a host of other investor-owned utilities will need to seek a 2% rate increase to recover costs, compared to 4% under Waxman-Markey. By the time Kerry-Lieberman and Waxman-Markey equalize in 2030, Wynne said AES will need a 41% rate increase to recover its CO2 costs at its regulated business, followed by AEP at 37%, Allegheny at 34% and [Westar Energy Inc.](#) at 33%.

On the merchant side of the equation, Wynne said the market's initial three years are much more generous with free allowances to the power sector than previous proposals, which is a short-term benefit to coal-heavy merchant generators like [RRI Energy Inc.](#), [Dynergy Inc.](#), Allegheny, [NRG Energy Inc.](#) and [Mirant Corp.](#) Like in Waxman-Markey, Kerry-Lieberman proposes that merchant coal generators receive free allowances for about 50% of their emissions in 2013, before the amount steadily dwindles to zero by 2030.

Getting into the nuts and bolts of how carbon will be priced into the market, Wynne said he conservatively expects the market to reflect 80% of the price of CO2 in power prices. Therefore, for every \$10 per tonne of CO2, market prices will rise \$4/MWh in areas where coal and gas set the marginal cost of power, because gas-fired generation

only emits 0.5 tons of CO₂ per MWh and coal-fired generation emits 1 ton of CO₂ per MWh and will recover half the cost through free allowances.

With such an increase in power prices, Wynne said merchant nuclear generators such as Exelon, [Constellation Energy Group Inc.](#) and [Entergy Corp.](#) will see a major boost in gross margins from the start, as they have no increased generating cost due to CO₂ emissions.

As the free allowances for coal generators dwindle over time, Wynne said merchant coal generators will feel the financial pinch more and more, particularly in areas where gas sets the marginal price of power, because those generators will have an increasing level of CO₂ they have to pay for, while the amount of CO₂ gas generators pay for will remain the same.

"From 2026 through 2030, therefore, carbon-intensive utilities, such as the coal-fired generators of the Midwest, will incur significant increases in their cost of supply. The local electric distribution companies, being regulated utilities subject to cost of service-based rates, will seek to recover this cost through rate increases," Wynne wrote. "The coal fired merchants, however, enjoy no such regulatory mechanism for cost recovery. Rather, they will seek to push these cost increases through to the wholesale price of power. If they operate in regions where coal fired generators are the marginal, price-setting units, they may succeed in doing so. If, however, they operate in markets where gas fired generators are the price setting units, then they are unlikely to recover their costs in full."

Wynne predicted that RRI's EBITDA as a percent of its last 12 months EBITDA will be down 37% in 2013 assuming a \$12/tonne price of CO₂, which is an improvement from the 41% decrease he projects for RRI under the Waxman-Markey model. RRI's EBITDA will fall 136% by 2030 assuming a CO₂ price in that year of \$27/tonne, Wynne predicted.

Wynne said Dynegy's EBITDA under Kerry-Lieberman will be down 10% in 2013 and 31% by 2030; Allegheny's EBITDA will be down 7% in 2013 and 27% by 2030; Mirant's EBITDA will be down 7% in 2013 and 24% by 2030; and NRG's EBITDA will be down 6% in 2013 and 26% by 2030.

On the bright side of Kerry-Lieberman, Wynne predicted Exelon's EBITDA will increase 12% from its last 12 months EBITDA in 2013 and 34% by 2030 thanks to the impacts of the bill. Wynne said Entergy's EBITDA will grow 6% in 2013 and 14% by 2030, and [FPL Group Inc.](#)'s EBITDA will grow 3% in 2013 and 7% by 2030.

However, given that Wynne's estimates are based on a conservative \$12/tonne price of CO₂ in 2013, \$17 in 2020 and \$27 in 2030, compared to the Peterson Institute's prediction that CO₂ prices will rise from \$16.47/tonne in 2013 to \$55.44/tonne in 2030, the EBITDA and rate increase impacts for the power sector could be significantly more dramatic.