S1-3 New Energy/Climate Change Directions in the Obama Administration

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In order to avoid the potentially catastrophic impacts of global warming, the current 3% CO_2 global emission growth rate must be transformed to a 2 to 3% declining rate, as soon as possible. This will require a rapid and radical transformation of the world's energy production and end use systems. The current generation of energy technologies are not capable of achieving the level of mitigation required. Next generations of renewable, low carbon generation and end use technologies will be needed. It will be necessary to substantially upgrade and accelerate the current worldwide RDD&D effort on both emerging energy technologies and those enabling technologies needed to improve mitigation effectiveness and economics. The importance and unique challenges for rapidly developing countries, such as China and India are also discussed.

The presentation discusses the new direction taken by the Obama administration on climate change. Obama has stated: *"The issue of climate change is one that we ignore at our own peril....what we can be scientifically certain of is that our continued use of fossil fuels is pushing us to a point of no return. And unless we free ourselves from a dependence on these fossil fuels and chart a new course on energy in this country, we are condemning future generations to global catastrophe."*

His administration is committed to a cap-and-trade program to reduce GHGs 14% below 2005 levels by 2020 & 83% below 2005 by 2050. The US House of Representatives passed American Clean Energy and Security Act: a cap & trade bill to reduce GHGs 17% below 2005 levels by 2020 & 83% below 2005 by 2050. The Senate bill just released out of committee calls for a ceiling on GHG emissions in three years, to be tightened annually so emissions would be 20% lower in 2020 than in 2005 & 83% lower by 2050.

Although the timing & details of a final consolidated climate bill are uncertain, his administration will use the Clean Air Act (CAA) as an interim mechanism to mitigate GHG emissions. In fact, on September 30, 2009, EPA, utilizing CAA authority, thresholds for new & modified stationary sources of GHGs were proposed, requiring the largest sources to establish GHG limitations. Under this rule, such facilities are required to adopt the best, most efficient technologies available when constructed or upgraded, helping reduce GHGs from sectors that account for nearly 70% of non-vehicle emissions.

Relevant initiatives announced by the Obama Administration include:

- $1.2 billion in basic research for DOE's national labs; also funding to upgrade national lab facilities, for research in renewable energy, such as solar & biofuels, as well as in nuclear energy, underground CO_2 storage, & H_2 production,
- The restoration of the FutureGen IGCC CCS project,
- Setting aside $59 billion in direct spending and in tax incentives to promote clean energy and energy efficiency; primary focus: green buildings,
- New vehicle fuel efficiency (CAFÉ) standards; by 2016, 35.5 mpg fleet average for cars & trucks (to grow 5%/yr from 2011).