

November 29, 2007

Analysis reveals scope for US to reduce greenhouse gas emissions

Early, economy-wide action required to minimize total costs

The United States could reduce projected emissions by between one-third to one-half in 2030 at manageable costs to the economy and without requiring big changes in consumer lifestyle, according to a report published today.

Reducing US Greenhouse Gases: How Much at What Cost?, published jointly by McKinsey & Company, the management consulting firm, and The Conference Board, the business research organization, is based on detailed analysis of 250 opportunities for reducing emissions of carbon dioxide and other gases thought to contribute to global warming.

On the present path, annual US greenhouse gas emissions will increase by 35 per cent to reach 9.7 gigatons of carbon dioxide equivalent (CO₂e) in 2030, according to an analysis of government forecasts. At this level, emissions would overshoot by 3.5 to 5.2 gigatons the targets implied by economy-wide climate change bills introduced in Congress. A gigaton is one billion metric tons.

The report shows a reduction of 3.0 to 4.5 gigatons in 2030 is achievable at manageable cost using proven and emerging high-potential technologies - but only if the US pursues a wide array of options and moves quickly to capture gains from energy efficiency.

Almost 40 per cent of the opportunity for greenhouse gas reduction identified comes from options that more than pay for themselves over their lifetimes, thereby creating net savings for the economy. For example, improving energy efficiency in buildings, appliances and industry could yield net savings while offsetting some 85 percent of the projected incremental demand for electricity in 2030.

However, the report warns that private sector innovation and policy support will be necessary to unlock these and other opportunities.

“Without forceful and coordinated action it is unlikely that even the most economically beneficial options would realize their full potential,” said Ken Ostrowski, a Director in McKinsey’s Atlanta office.

The McKinsey team worked with leading companies, industry experts, academics, and environmental nongovernmental organizations to examine opportunities to reduce greenhouse gas emissions across the main carbon-emitting sectors of the

US economy. Analysis focused on options likely to yield greenhouse gas reductions at a cost of less than \$50 per ton of CO₂e.

Among the main findings:

- Opportunities to reduce greenhouse gas emissions are highly fragmented and widely spread across the economy. The largest single option - carbon capture and storage (CCS) for coal-fired power plants - offers less than 11 percent of total potential identified. The largest sector, power generation, accounts for less than one third of the total.
- Reducing emissions by 3 gigatons of CO₂e in 2030 would require \$1.1 trillion of additional capital spending, or roughly 1.5 percent of the \$77 trillion in real investment the US economy is expected to make over this period.
- Investment would need to be higher in the early years, in order to capture energy efficiency gains at lowest overall costs and accelerate the development of key technologies, and would be highly concentrated in the power and transportation sectors.
- If pursued, such investment would likely put upward pressure on electricity prices and vehicle costs. Policymakers would need to weigh these added costs against the energy efficiency savings, opportunities for technological advances, and other societal benefits.
- Five clusters of initiatives, pursued in unison, could create substantial progress towards the targets implied by bills currently before Congress. From least to highest average cost, they are: Improving energy efficiency in buildings and appliances (710 to 870 megatons); Increasing fuel efficiency in vehicles and reducing carbon intensity of transportation fuels (340 to 660 megatons); Pursuing various options across energy-intensive portions of the industrial sector (620 to 770 megatons); Expanding and enhancing carbon sinks, such as forests (440 to 590 megatons); Reducing the carbon intensity of electric power production (800 to 1,570 megatons.)

The report was produced in association with the following organizations: DTE Energy, Environmental Defense, Honeywell, National Grid, Natural Resources Defense Council, PG&E, Shell.

The full report will be available at www.mckinsey.com/greenhousegas after 12 noon ET on November 29th. For further information, please contact: Mark Garrett (212 415 1971) or Humphry Rolleston (212 415 5321), McKinsey & Company.