

For CommentVisions
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The Question: By how much should we expect renewables to replace fossil fuel over the next twenty years?

The answer will differ on a country-by-country basis and will depend upon each country's perceived need to reduce dependence on fossil energy, whether it is to reduce the impacts of global warming, diversifying the energy mix, improving energy security, achieving a better balance of trade or to improve the quality of life. Two key factors to the success of renewable energy and the rate of its adoption will be the long term price and availability of oil and natural gas. When fossil energy prices are high then the motivation to develop substitutes is strong. As these fossil fuels become cleaner, this also will affect the adoption rate of renewable energy.

Government support also is a key component in the success of the adoption of renewable energy technologies. Looking at the 27 European Union countries as an example (where there is an EU-legislated target of 20% renewable energy use by 2020) many countries are adopting renewable energy policies that will help drive them to the EU targets*:

- 21 countries have feed-in tariffs for electricity;
- 24 countries provide a variety of grants, capital subsidies and rebates for renewable energy technologies;
- 18 provide renewable energy investment or tax credits;
- 22 have created incentives through sales tax, energy or excise tax, or VAT reductions.

And the achievements of some of the leading European renewable advocates are already impressive, judging from some of the national reporting to the Directorate General for Energy in response to the 2009 Renewable Energy Directive:

- Austria anticipates 34% of gross final energy consumption to be based on renewables by 2020;
- The Swedish Energy Agency forecasts 50.2% renewables energy use by 2020;
- Germany claims it will reach its national target of 18% share of energy from renewable sources in gross final energy consumption by 2020 and may exceed that to 18.7%.
- Other countries are less ambitious, however, the concept of replacing fossil fuels with renewable resources is 'on the agenda' and there will be more governments hopping on the renewable energy bandwagon, even if it is only to help solve employment problems by creating new industries.

To answer the question of 'how much' is a matter of speculation, however, it is clear that policies and actions relying strictly on fossil fuels will change. Fossil fuel technologies will improve and be cleaner (look at the automobile industry as a prime example); the price of renewable energy technologies will drop significantly; energy networks over time will adapt to be energy consumers as well as energy delivery systems (i.e. natural gas and electricity networks); and fossil fuels, so long as their industries are not overly subsidized, will become more expensive.

Renewable energy could follow a steady upward trajectory before it achieves a leveling off to parity with fossil fuel production and consumption, a balance that is inevitable. Putting a “finger to the wind” it would not be surprising if, on a global scale, 20% replacement of renewable energy could be possible by 2030; 30% by 2040; and 40% by 2050, assuming there continues to be a basic balance in world economic systems and geopolitical order. But renewable energy alone is only part of the story. Fossil fuels will continue to hold a powerful share of the energy markets and energy efficiency and energy conservation, in balance with renewable energy, should result in an improved pathway for world society into the future.

(“Renewables 2010 Global Status Report,”* Renewable Energy Policy Networks for the 21st Century, (www.ren21.net))