

# Talking Points

## Renewable Energy in Europe

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The development of renewable energy in Europe faces a host of environmental, economic and political hurdles.

Imported fossil fuels represent more than half of European energy consumption. At projected growth rates, the share of imported hydrocarbons will rise to 70 percent of total energy consumption by 2020.

Europe's heavy reliance on oil, gas and coal hinders international efforts to mitigate greenhouse gases, which if unabated threaten to boost global temperatures by two to six degrees Celsius by 2100<sup>1</sup>. The environmental repercussions of global climate change (including rising sea levels and growing incidence of extreme weather events) not only imperil local populations, but place a mounting burden on the insurance industry.

Europe's continued dependence on imported hydrocarbons also raises serious concerns about energy security. The Russian Federation is Europe's foremost energy supplier, accounting for one-third of the European Union's oil imports and nearly 40 percent of natural gas imports. For some small EU countries (e.g., Bulgaria, Estonia, Finland, Latvia, Lithuania), dependence on imported Russian gas exceeds 90 percent. Even larger, better-endowed EU countries such as Germany and Poland rely on hydrocarbon imports from Russia.

This article addresses the following questions:

- How well are European countries performing in the renewable energy arena?
- What measures is the European Union taking to

promote the expansion of renewable energy sources in member countries?

- What role does Norway (a non-EU country that aspires to leadership in alternative energy technologies) play in Europe's renewable energy future?

### EU's 20/20/20 Mandate

In response to growing anxieties about Europe's energy future, the EU issued a Renewable Energy Directive (2009/28/EC) setting the following targets for 2020: 20 percent energy consumption from renewable sources; 20 percent reduction in primary energy use; 20 percent reduction of greenhouse gases below 1990 levels.

EU member states are formulating National Renewable Energy Action Plans covering the key

segments cited in the Directive (electricity, heating/cooling, and transport). National governments are obliged to apprise the European Commission of their progress toward the 20/20/20 targets. While not formally bound by the EU's Renewable Energy Directive, the three members of the European Economic Area (Iceland, Liechtenstein, and Norway) are participating in the programme.

As shown in the exhibit below, current shares of renewable energy vary widely among the 27 EU member countries, ranging from renewable energy leader Sweden (44.4 percent of gross final consumption) to laggard Malta (0.2 percent).

These variations in the starting positions of member states, together with large differences in national income levels and resource endowments, prompted the European Commission to negotiate individual country

targets within the broader 20/20/20 framework. Wealthy EU states with well established renewable energy sectors received aggressive 2020 benchmarks (Denmark 30 percent, Finland 38 percent, Austria 40 percent) while coal-dependent countries in Central and Eastern Europe secured more forgiving targets (Czech Republic 13 percent, Slovak Republic 14 percent, Poland 15 percent).

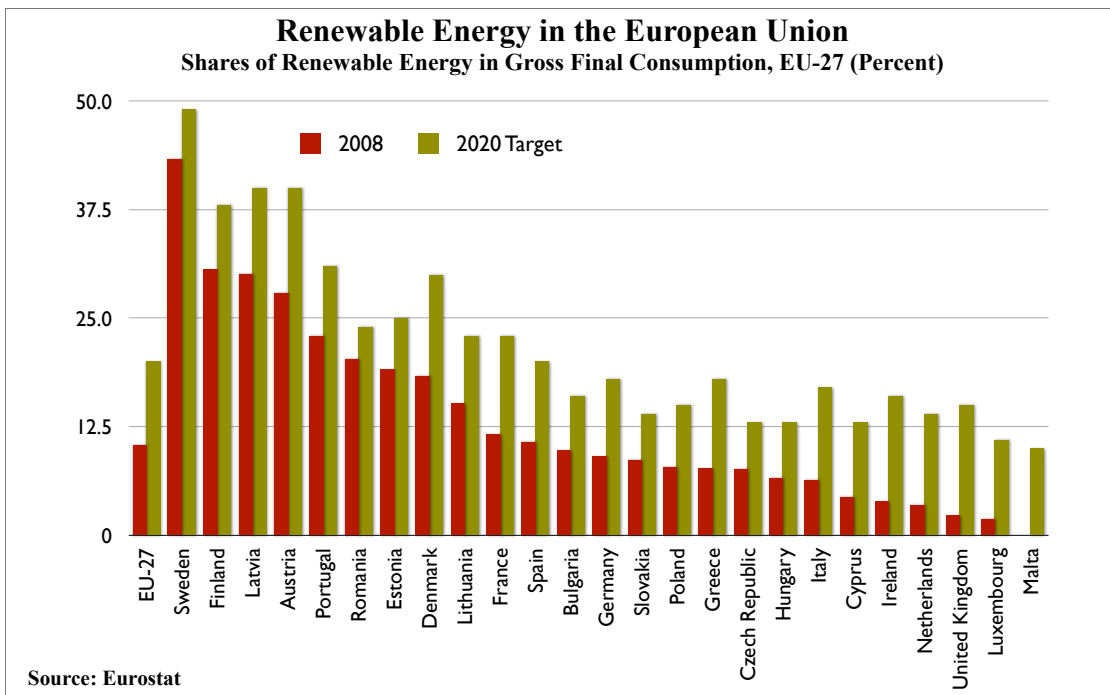
**Cooperation Between EU States**

Recent progress reports submitted to the Commission raise doubts about the EU's ability to fulfill the Renewable Energy Directive. These reports indicate that ten member states (Bulgaria, Estonia, Germany, Greece, Lithuania, Poland, Portugal, Slovak Republic, Spain, Sweden) expect to surpass their 2020 targets. Five member states (Belgium, Denmark, Italy, Luxembourg, and Malta) anticipate falling short. The

remaining members (Austria, Cyprus, Czech Republic, Finland, France, Hungary, Ireland, Latvia, Netherlands, Romania, Slovenia, United Kingdom) are on track to meet their national targets by 2020.

In light of these varying rates of renewable energy development, the European Commission is focusing on the joint goal of 20 percent renewable energy while promoting collaboration between member states to accommodate country-level differences.

For example, countries exceeding their targets can transfer renewable energy surpluses to sub-performing countries and thereby smooth out national discrepancies. The Commission is also encouraging groups of member states to undertake joint energy projects to boost country-level renewable energy shares and hasten movement toward the aggregate EU goal.



## Renewable Energy in Norway

Norway (which as a non-EU state is not legally bound by the 2020 mandate) outperforms the rest of Europe in renewable energy. Renewable energy accounted for 62 percent of total energy consumption in Norway in 2008, a share reflecting the preponderant role of hydropower (which generates nearly all of domestic electricity) and the country's strong wind and biomass capabilities. Norwegian authorities hope to raise this share to 70 percent by 2020 through ongoing investments in clean technologies. In addition to its achievements

in renewable energy, Norway is a leader in carbon sequestration and other advanced hydrocarbon technologies that serve as a bridge to a fully renewable energy platform. The Norwegian energy company Statoil pioneered the application of CO<sub>2</sub> sequestration for enhanced oil recovery, a technique that simultaneously lowers greenhouse gas emissions and facilitates the productivity of offshore oil rigs.

As a participant in the EU's Renewable Energy Directive, the Norwegian government is making

large budgetary commitments (NOK 40 million in fiscal 2011) to energy efficiency and expanded use of renewables for heating and electricity. Norwegian authorities are also prioritizing the expansion of renewable energy sources in transportation. Transportation accounts for 25 percent of final energy consumption in Norway, but renewables represent just 3.3 percent of energy consumption in the country's transport sector. Realising the government's declared objective of 10 percent renewable energy share will require greater use of electrically-powered public transportation and higher penetration of electric passenger vehicles.

Norway's successes in alternative energy create opportunities for Norwegian companies to undertake foreign investments in clean technologies in other European countries as well as regions outside Europe. Norway is also playing an increasingly visible role in renewable energy partnerships with EU member states. For instance, Norway and Sweden have signed an agreement to introduce a cross-border market for "green certificates". The Norway-Sweden Green Certificate

Scheme (scheduled for launch in January 2012) aims to promote investments in clean technology by enabling renewable energy producers to sell tradable green certificates to downstream energy companies.

## Conclusion

The European Union's 20/20/20 mandate establishes clear goals for individual member states and the community as a whole. The critical question in the next decade is whether and how those objectives will be met. From a practical standpoint, it will be difficult for some member states to attain renewable energy targets that require extensive changes in national infrastructures.

Overcoming these barriers to execution of the 2020 Directive demands increased cooperation between EU member states. Norway, a non-EU country with high ambitions in the clean technology arena, figures to play an important role in the pan-European drive toward renewable energy.

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#### About the Author

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#### About RSM Hasner AS

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