

## **Climate Regulation Series – Driving the Growth of Renewable Energy**

By Kenneth Markowitz, *Akin Gump Strauss Hauer & Feld LLP*, on 14 September 2007

Pressured to strengthen national security, reduce reliance on fossil fuel imports, spur economic development, improve global competitiveness, and respond to international climate challenges, governments throughout the world are implementing regulatory programs to remove barriers and drive investment in renewable energy technologies and markets.

They are designing these laws and policies to reduce risks, commercialize innovative renewable energy technologies, and sustain robust renewable electricity markets. These initiatives are contributing significantly to the strong growth and promising future of the renewable energy industry, where investment is expected to exceed \$90 billion in 2007, a 27% increase over last year.

Renewable portfolio standards (RPS) (production quotas) and feed in tariffs (FIT) (pricing mandates) have emerged as the primary large-scale regulatory solutions to fuel a profitable and sustainable renewable energy industry. These policies are designed to develop capacity beyond the existing mixes of production tax credits, research and development subsidies, net metering, and other investment drivers.

These renewable energy schemes complement and, at times, overlap regulatory approaches specifically designed to reduce greenhouse gas emissions, such as trading systems and carbon offset programs created under the Kyoto Protocol and in voluntary markets. To avoid potential conflicts that may impact the integrity of these programs, legislation must clearly define the attributes of renewable energy projects that fall within its scope.

### **Quota Systems: Mandatory Supply of Renewable Energy**

In quota systems, like those in the United States and United Kingdom, a regulator requires that a percentage of the electricity in a retail seller's portfolio comes from renewable sources, such as wind and solar. The retailer can satisfy this obligation either by generating the renewable energy itself or by purchasing credit for renewable electricity generated elsewhere.

To ensure that the electricity is accurately counted and verified, a unique Renewable Energy Certificate (REC) is assigned to each megawatt-hour (MWh). RECs, which are tradable assets, provide revenue to offset the higher production costs of renewable energy.

In the U.S., many states have set very ambitious renewable capacity targets of 20% or more of the total electricity portfolio, phased in over the next two decades. Historically, RPS favors investment in the lowest cost technology, generally wind. To encourage diversification, 10 states now have specific solar requirements. The Energy Bill recently passed in the U.S. House of Representatives requires that an increasing amount of electricity sold comes from renewable

sources (solar, wind, ocean, tidal, geothermal, biomass, landfill gas, and incremental hydro) each year, eventually reaching 15% by 2020.

How these targets will be met remains a big question. As of the end of 2006, the cumulative qualifying renewable capacity in the U.S. was roughly only 2.2% of the nation's overall retail capacity. Compliance with the targets will require groundbreaking technological innovation, massive infrastructure development, and, as a Goldman Sachs report recently emphasized, strong enforcement of existing state RPS.

Many quota systems allow retailers to make Alternative Compliance Payments (ACPs), a per MWh charge imposed on those who fail to fulfill REC requirements. ACPs serve as a safety valve by creating a price ceiling for the renewable portfolio.

Most RPS, including that proposed in the House Energy Bill, direct ACP revenue toward renewable and energy efficiency projects. However, an ACP can undermine the renewable targets and the environmental and security benefits of the RPS if the ACP is not set high enough to act as a penalty.

Results from RPS have been mixed. In some places, targets have consistently been met or exceeded, but, in others, shortages in the supply of renewable electricity have closely tied the price of RECs to a level set by the ACP. For example, the UK's Renewables Obligation (RO) has resulted in limited new capacity and few technological advances, while costing consumers £1.7 billion (US\$3.8 billion) over its first four years.

### **Feed In Tariffs: Guaranteed Demand For Renewable Energy**

In a feed in tariff, electricity suppliers are required to purchase electricity from renewable generators at a fixed price over a fixed period, in some cases exceeding 20 years. Policymakers encourage investment in a broad range of renewable technologies by assigning different rates for projects with particular attributes, and by periodically adjusting rates for new installations to control the pace of development. FITs are used in many European Union Member States, Brazil, China, Indonesia, Israel, Nicaragua, Norway, Ontario, Sri Lanka, Switzerland, Turkey, and elsewhere.

Many European countries are experiencing rapid investment in renewable generating capacity as a result of FITs. In Germany, over 12.5% of the total electricity consumed is from renewable sources, and the low-risk inherent in a FIT has led to low cost loans. Other early adopter countries, including Spain and Denmark, also demonstrate high levels of success. China recently introduced a FIT and is committed to setting premiums for renewable energy at a level that produces "reasonable profits."

The guaranteed price and purchase requirement ensure an available market for renewable energy and enable participation by small-scale generation facilities (farms, households). France's program awards a high payment to energy generated from building-integrated photovoltaic systems.

### **Future Developments**

Regardless of the specific design elements, RPS, FITs, and other policies will continue to drive demand for and investment in high quality renewable energy projects and technologies.

Project developers should closely monitor emerging opportunities, including the adoption of national and sub-national policies outside of the traditional markets in the U.S. and Western Europe, changes to existing policy frameworks (e.g., the U.S. energy bill proposals), and the integration of renewable energy policies with carbon emissions markets and offset mechanisms, including the Clean Development Mechanism (CDM) under the Kyoto Protocol and voluntary schemes. China and India have played host to the majority of wind energy projects under the CDM, which are anticipated to deliver over 60 million tons of CO2 equivalent Certified Emission Reductions (CERs) for use in emission trading compliance markets in Europe, Japan, and elsewhere.

During the next four years, the carbon emissions markets along with the rapidly expanding voluntary carbon markets will place tremendous demand for high quality renewable energy projects and technology. The credits generated under a RPS or FIT could be used to qualify for credit in voluntary carbon markets, voluntary green power markets, and similar systems.

In order to avoid double counting and instill consumer confidence, governing regulations must clearly define the attributes of the renewable energy projects covered.

Ultimately, the success of these regulatory drivers for the renewable energy market depends on the level of compliance with the targets; how credits are calculated, verified and registered; and, the extent to which safety valves such as the ACP are permitted.

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