

ENERGY & UTILITIES SECTOR | BY MINORU OTA

Trends in new energy deployment technologies in Japan

In Japan, renewable energy sources, such as sunlight, wind, and biomass, not widely used for economic reasons (and thus requiring government support to promote wider use), are classified as 'New Energy'. In promoting New Energy, the national government has recently revised various laws and introduced new legislation. Such legislative activity appears to emphasise promoting the adoption of solar and biomass power.

The Japanese government's seemingly increased attention to solar power and biomass may be in response to global trends. The world solar power market is expected to grow to 10 trillion yen (around US\$100bn) by 2015, as countries enhance their solar power policies to encourage adoption. Until subsidies were cut-off in 2005, Japan was the world's leading producer of solar power panels. However, the Japanese government, hoping to increase domestic production tenfold by 2020, has restarted the subsidies and introduced a feed-in tariff equal to roughly double current electricity prices for solar power generated electricity.

Similarly, biomass power production across the world appears to be increasing, and in Japan, biomass power represents a high proportion of New Energy supplied. However, the Japanese biomass-related market lacks vitality and it is hoped recently passed biomass legislation will cause the market to grow in the mid-to-long term.

However, despite government subsidies and other public support, unless costs are reduced while this support is available, further expansion of the solar power market will be difficult. Further, in Japan there are additional obstacles to growth of solar power, such as the lack of open land to erect solar panels and the changeable climate in Japan with frequent stretches with little or no sunshine. As with solar power, the key to the spread of biomass energy is commercial profitability, subsidies and public support to ensure profitability.

In addition, the global financial crisis may pose a serious risk to New Energy because its impact may limit the government's ability to provide subsidies and other support. Further, general deterioration of the global economy may reduce domestic energy demand, further inhibiting market expansion of solar power and biomass.

Unfortunately, commercial financing for biomass-related businesses is difficult to obtain. Environmental problems related to biomass have recently received much attention. Thus, despite a variety of public support for the biomass industry to reduce the risk, because a biomass power plant requires not only a huge investment but also entails a high business risk, it is difficult to obtain commercial financing for these projects.

Going forward, the effects of recent legislative activity may be discernable in the solar power market, if there are prospects for profitability, by the first half of next year. In contrast, because measures required by new legislation have not yet been introduced, effects on the biomass power market may not be visible in the short term.

Recent and significant legislative developments related to New En-

ergy are summarised below.

First, the Act for Promoting the Development and Production of Fossil Fuel Alternative Energy: (i) required energy-intensive sectors, such as steel-making, pulp/paper, cement, and aluminium production, to attempt to reduce energy consumption and use alternative energies; (ii) required power, gas and heat suppliers to attempt to use alternative energies; and (iii) provided for the formulation and public announcement of alternative energy supply targets. The 11 June 2009, amendment changed the energy sources for which development and production will be promoted from fossil fuel alternative energies to non-fossil fuel energies (namely, energy from sources other than crude oil, petroleum gas, natural gas, carbon and fuels produced from the foregoing).

Second, the Act for Promoting Use of Non-Fossil Fuel Energy Sources and Effective Use of Fossil Fuels by Energy Suppliers was passed on 1 July 2009, and stipulates that: (i) the Minister of Economy, Trade and Industry must formulate and publish 'basic guidelines' regarding measures to be taken by electricity, heat, petroleum and gas suppliers ('Energy Suppliers'); and (ii) Energy Suppliers of a certain size must prepare and submit a plan for use of non-fossil fuel energies, and if such plan is markedly insufficient in light of the 'basic guidelines' standards, the Minister may issue a warning and order, and Energy Suppliers not complying with such order are subject to a fine. Within this framework, a feed-in tariff equal to roughly twice current electricity prices was introduced, with resulting costs to be added to electricity charges under a new fixed-price purchase system. Further, power companies must expand their solar and nuclear power production by at least 50 percent by 2020 and oil and gas companies must supply a certain volume of plant-based bio-fuels and biogas. The Ministry of Economy, Trade and Industry will soon appoint a panel of experts to develop the fixed-price purchase system, with implementation intended within this calendar year.

Third, the Special Measures Law Pertaining to Promotion of New Energy Use and its implementation order stipulated financial support and other measures for businesses using New Energies. The implementation order was revised on 1 April 2009, to include geothermal energy (binary cycle power plants only) and hydroelectric energy (1000 kilowatts or less) as forms of New Energy, and use of fuel and heat from renewable resources to generate power, as well as natural gas, methanol, electric automobiles, natural gas cogeneration and battery cells are no longer considered New Energy.

Fourth, pursuant to a February 2009 Cabinet decision, solar power and solar heat systems were added as procurement items under the Act for Promotion of Procurement of Environmental Goods by the National Government.

Fifth, to facilitate production of bio-fuels, ensure proper quality of gasoline and kerosene mixed with bio-fuels and ensure consumer safety and confidence, the Act Pertaining to Ensuring Quality of Volatile Oils, ►►

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Etc., was revised in February 2009 to create a registry of businesses that mix bio-fuels to gasoline and kerosene. Such businesses must now also implement quality control measures.

Sixth, to accelerate production of bio-fuels, between 25 February 2009 and 31 March 2013, gasoline to which bio-ethanol or ETBE has been admixed are not subject to gasoline tax (volatile gas tax and local road tax) for such admixed quantity. For ETBE produced from ethanol made from biomass, the tariff rate of 3.1 percent was reduced to 0 percent for one year starting April 2008.

Seventh, the Act for Promoting the Use of Organic Matter from Agriculture, Forestry and Fisheries as Starting Material for Bio-fuels was promulgated in October 2008 and provides for an extension of the term for repayment of agricultural improvement funds obtained based on a production collaboration plan jointly prepared by a producer of agriculture, forestry and fishery products and by-products of such production

and processing and a business that produces fuel using the foregoing. The law also stipulates special tax treatment, including halving the fixed asset taxes on biomass fuel production facilities for three years.

Finally, the Basic Law for Promoting the Utilization of Biomass was promulgated on 12 June 2009 to comprehensively and systematically promote measures to promote biomass utilisation. Basic principles regarding biomass utilisation promotion are stipulated, and the responsibilities of the national and local governments for planning and implementing necessary measures are clarified. In addition, fundamental matters regarding biomass utilisation promotion measures are stipulated. ■

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