

5 December 2002

Japan's energy policies: the need for stable promotion policy for renewables

The In-Depth Review of Japan's Third National Communication
Under the United Nations Framework Convention on Climate Change

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Overview: Japan's Energy Situation

Japan's primary energy supply heavily relies on fossil fuel, more than 50% is from oil (87.1% of oil is from Middle East, 2000). Dependency on oil has been reduced in these 10 years, but the dependency on coal and nuclear has increased, as well as natural gas. In the electricity sector, Japan has been aggressively promoting nuclear power, in the 90's, Japan added 15 nuclear power plants in their operations.

See attached profiles;

1. Japan's primary energy supply in 1990 – 2000
2. Transition of Japan's primary energy supply from 1990 to 2000
3. Japan's energy R & D budget in 1999

Japan's Renewable Energy Policies

Energy supply and demand structures in Japan are very centralized. The "pillar" of the national energy strategy is oil, and the national government has been seeking alternative sources of energy, such as nuclear power. In those Japanese contexts, renewable energies are regarded as an alternative energy source, included in the category of "new energy." In this category, municipal waste generation, natural gas fired CHP, clean energy vehicles, etc., are also included, but without geothermal and hydro. Renewables, such as solar, wind and modern biomass are not evaluated their environmental and socialistic benefits, but regarded as an "appendage" to the national energy supply, and has mainly been focused on research and development, but not on practical promotion.

A Small Daybreak of Renewables in Japan

Backed by heavy industries and the central government, the promotion of PVs was started, in 1994, the government started financial support for the installation of PVs on individual roof tops. Combined with the utilities' voluntary program; purchasing of surplus of electricity from individual PV generation, this subsidies scheme significantly succeeded, and now Japan's installation and shipment of PV system marked No.1 in the world.

On the other hands, despite the recent breaking records of expansion of wind power in other countries and high potential of resources, however, Japan's policy for wind power still remains ambiguous.

There we can consider several explanations for the context; 1. the governmental support scheme for renewables are based on subsidies scheme for installation, not based on the efficiency of

the power plants, the innovative competition in the industry or energy provider including local authorities has not occurred. This also made very bad examples of inefficient wind power plants (discouraging wind power providers to get into market once they installed power plants), 2. each wind power manufacturer is basically small, the Japanese big industries are not interested in the market (lack of pressure from industries), 3. structure of Japan's transmission systems are very centralized, and need additional investment to change into decentralized energy system (possession by the utilities which own transmission systems), etc. Those backgrounds bring uncertainties of wind power market and disinterests of investors for the market, but some wind power providers have entered to the market, wind power capacity in Japan has been doubling for these several years.

1997: Long Term Purchase and Contract for Commercial Wind Power

1999: Tendering for Commercial Wind Power (in Hokkaido)

2000: Tendering for Commercial Wind Power more than 20MW (all ten utilities)

2003: Governmental Quota + trading electric credit system to be introduced in April

See attached profiles;

4. Production of PVs and Wind Turbine by Countries

5. Expansion of Wind Power Capacity in Japan

New New Energy Policy in Japan

The Japanese government decided to introduce Quota system for electricity from renewables in 2003. This obliges power suppliers, mainly utilities, to supply electricity from renewables at certain percentage. The target is set for **1.35%** in electricity supply in 2010.

Definition of renewables under the governmental scheme is as followings; PV, wind, small scale hydro less than 1MW excluding dam and pumped storage, modern biomass, the portion of biomass from municipal waste generation and geothermal (but no new additional capacity).

Last year, the government decided the target of each renewable resource in 2010, but under the new scheme, renewable energies have to compete each other under the same condition at the market. Renewables have very different peculiarities, the combined quota is not appropriate to be introduced in the market at the initial stage such as we have in Japan. Also, the government will dominate the trading system and not disclose the status of trading. Some fears that it brings disinterests of investors and domination by utilities have much potential in their own supply area. And also, some afraid that even this low target will not be reached, or it will be reached but with waste incineration.

Japan is still at very initial stage in renewable energy promotion, so we believe that we need more stable scheme encourages investments flow into the renewable energy market. It also needs to harmonize with other environmental policies and to encourage public participation in the energy policies.

See attached profile:

6. New Energy and Geothermal