



Tokyo Renewable Energy Strategy

Create a Sustainable Future by choosing renewable energy

(Summary)



Tokyo Metropolitan Government

Background

The Tokyo Metropolitan Government (TMG) has developed pilot projects, including wind generations in Tokyo waterfront area, equipping a water treatment plant with one of Japanese largest photovoltaic power systems .

Renewable energy use and energy efficiency are the keys to measure to reduce the emission of greenhouse gases. Also, as a city facing the risk of periodic earthquakes, an effective integration of energy policy and disaster preparedness/ mitigation policy is needed. Furthermore, growing renewable energy market can create new business opportunities.

Therefore, TMG formulated its “Renewable Energy Strategy” to go beyond the level of on-going pilot projects and increase renewable energy use in Tokyo.

The situation of renewable energy around the world

The situation in Germany

German feed-in tariff, which guarantees the purchases of the electricity generated by renewable resources with high prices for a long period, promotes the investment in renewable energy.

The total installations of wind generation in Germany has been topped the list. The total installations of PV generation might excel Japan in near future.

The situation in US

In the 2006 State of the Union Address, the president announced the Advanced Energy Initiative to promote bio-fuel production in the US in order to reduce dependence on oil imports from Middle East.

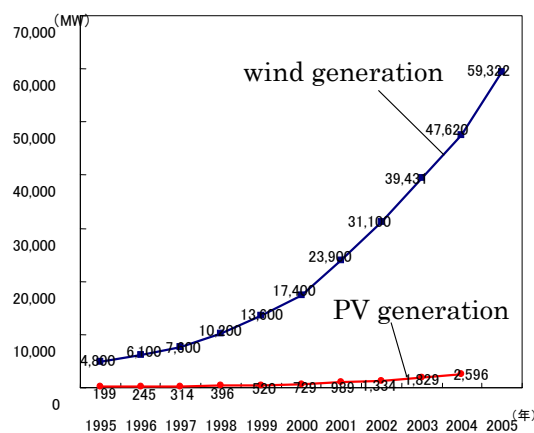
More than 20 states have the Renewable Portfolio Standard (RPS), which imposes upon electric utility companies a duty of using more than a fixed quantity of electricity generated by the renewable energy.

The situation in Japan

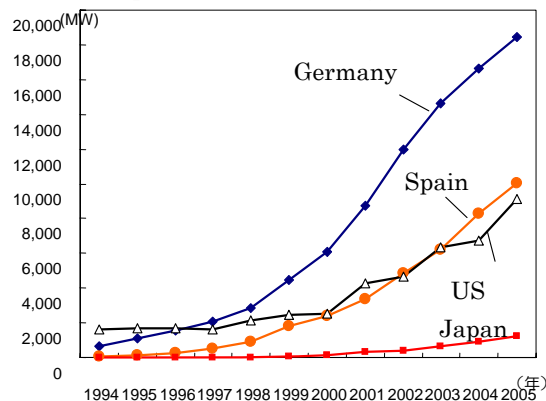
The RPS Law imposes upon electric utility companies a duty of using more than 1.35% of electricity generated by renewable energy by 2010.

The total installations of PV generation in Japan has been topped the list, but in 2004, the number of single-year installations in Germany excelled that in Japan.

Development of the wind and PV generation in the world



Development of the wind generation



The present situation and significance of renewable energy in Tokyo

The present situation of renewable energy in Tokyo

Renewable energy supplies about 2.7% of Tokyo's total energy consumption. (830,000 TJ : 2003)

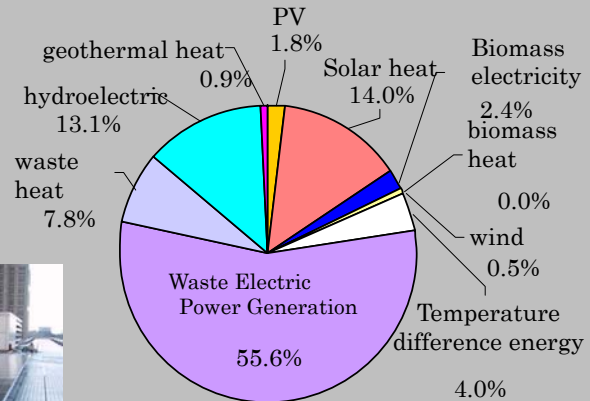
Renewable energy generated within Tokyo accounts for only 0.7% of Tokyo's total energy consumption.



wind generators in the waterfront area



PV generators on the top of metropolitan assembly building



The significance of renewable energy in Tokyo

1. A big city's responsibility, which emits a large amount of CO2

- Tokyo emits a large amount of CO2, which causes global warming (equivalent to Sweden or New Zealand)

- Basically renewable energy is carbon free and we need it in order to soft-land a drastic low carbon society.

2. Energy policy and disaster countermeasure

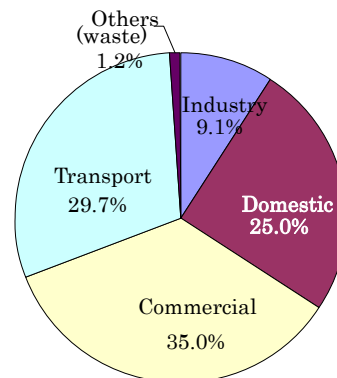
- Most of the energy consumed in Tokyo (830,000TJ) is generated outside Tokyo. (The ratio of electricity generated in Tokyo is only 11% (2003 estimate)

- Renewable energy, which is decentralized energy, is effective in a time of disaster.

3. Renewable energy businesses stimulate economy

- World renewable energy investments reached 3.5 trillion yens. Renewable energy market is growing rapidly.

- Expansion of renewable energy market stimulates local economies and creates employments.



CO2 emissions in Tokyo (2003)
71,300 thousand tons

Tokyo's view point of setting a goal

Tokyo's view point of setting a goal

1. Avoid dangerous risks of climate change

- EU is committed to preventing temperatures by rising more than 2C in order to avoid dangerous climate change. EU set a goal to reduce CO2 emissions by 60 - 80% below 1990 level by 2050.
- TMG raised the goal of utilization of renewable energy by adapting a backcasting approach.

2. Promote the world trend toward the expansion of renewable energy

- The target is proposed from the view point of being in line with other advanced countries and regions on renewable energy use to promote the world trend toward.

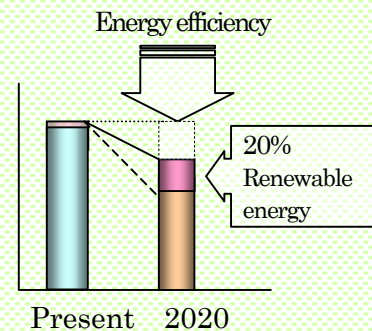


Tokyo's goal of utilization of renewable energy

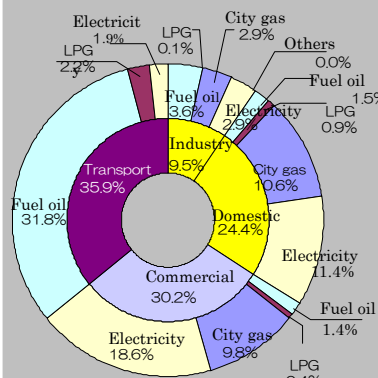
TMG proposes to increase the proportion of renewable energy use out of Tokyo's total energy consumption to aim at around 20 percent by 2020.

TMG proceeds to a discussion and aims at setting a specific goal in the Tokyo Metropolitan Environmental Master Plan, which is planned to be revised in 2007.

- In order to reach the goal, it is needed to promote drastic energy efficiency measures first, then shift from the conventional energy to renewable energy.
- Promote the renewable energy generation not only within Tokyo but also outside Tokyo.
- The magnitude of demand in Tokyo is used to increase the nationwide supply.



Each sector's measures



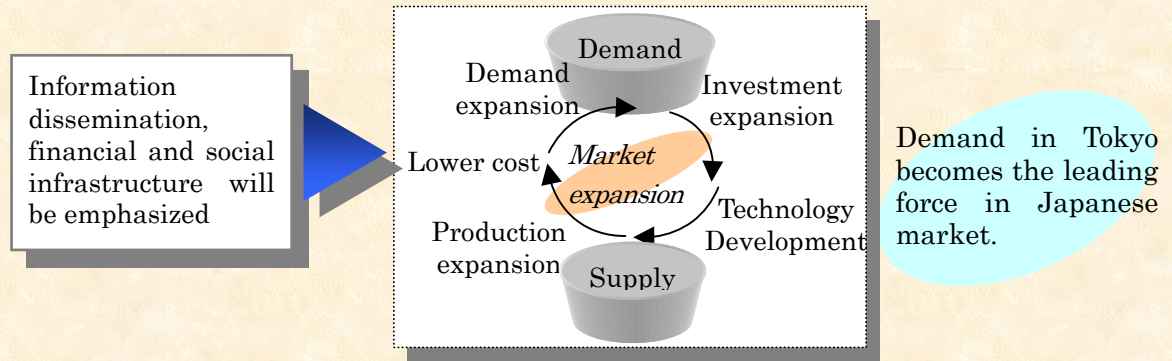
- **Industry** : bio-fuels, renewable energy generation on sites, green electricity certifications
- **Domestic** : solar heating systems and photovoltaic power generations for heating and hot-water supply
- **Commercial** : photovoltaic power generations, green electricity certifications, bio-fuels, solar heating systems
- **Transport** : bio-fuels

Policy directions

1) Create demand—Demand-pull policies

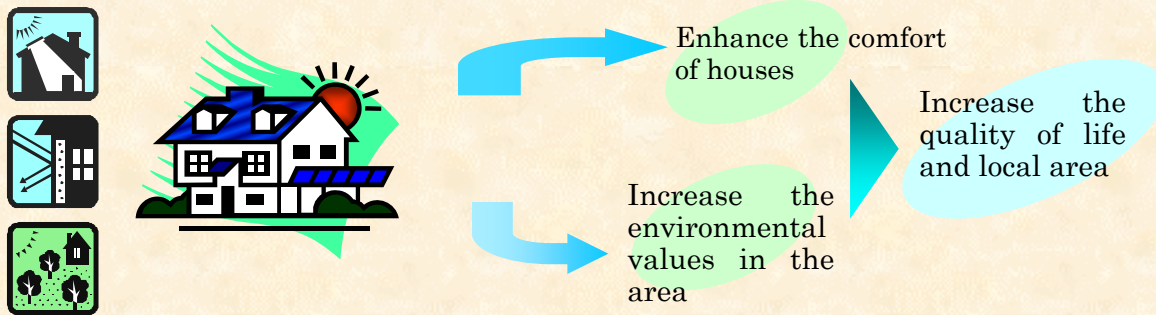
Conventional measures have focused on subsidies for renewable energy equipments or technology developments to expand the supply of renewable energy.

◆Tokyo is one of the largest energy consumption centers in the world. Policies to stimulate demand for renewable energy will drive the market, not only in Tokyo but throughout Japan as a whole.



2) Utilize the character of the natural energy

We will focus on energy use by Tokyo citizens to promote the use of renewable energy sources in housing – the passive and active use of natural energy sources in particular. Through the combination of use of natural energy, better insulation, energy-efficient facilities, and even greenery around the house, citizens will enjoy greater comfort with less energy use.



3) Local energy choice

Renewable energy, small-scale and decentralized renewable energy sources in particular, lets individuals and communities create and consume energy locally. TMG will promote the renewable energy projects so that citizens can have more choices of energy options and be active players in environmental policies.



Policy measures and model projects toward the target

Establishing the system to promote utilization

Efforts to enable to choose renewable energy

- Establishment of the system to provide information and disclosure
- Establishment of the green heat certification

Establishment of the system to magnify the demand

- Investigate and examine the desirable system , such as RPS or feed-in tariff
- Consider the system, which promote the use and the generation of certain amount of renewable energy

Incentives by the economic approach

- Consider the tax system and encourage the national government
- Encourage the financial institutes

Projects that promote further utilization

Promote further utilization of renewable energy

- ① Promote the green electricity purchase
- ② Establish “the natural energy accumulation club”
- ③ Introduce renewable energy in the public facilities
- ④ Promote the shift to the bio-fuels
- ⑤ Promote the fuel cell vehicles

Introduce renewable energy in houses

- ① Low energy house project
- ② Promote the installation of solar heating system in houses

Promote further utilization of citizen-participation-type renewable energy

- ① Introduce citizen-participation-type renewable energy
- ② Introduce renewable energy in local shopping area
- ③ Develop and disseminate the energy education soft in collaboration with NGOs

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■ Issue

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