

## **The Activities of Promotion of Photovoltaic Power Generation by the Japanese citizens.**

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### **1. Background of Promoting Photovoltaic (PV) Systems in Japan.**

Subsidary to PV systems, started in 1994, and permission to connect to a utility grid accelerated installation of PV systems in Japan. From 1994 to 1996, 50% of installing cost was subsidized, therefore number of applicants exceeded accepting limit. In 1997, although the budget of subsidiary increased, percentage of subsidiary went down to 30%. As a result, number of applicants decreased, and the budget was left unused.

The following year, number of installation has increased because house makers started to sell preinstalled PV panels within roof. However, number of installation has began to decrease in recent years.

The subsidize system to aid 50% of the installation cost was effective for increasing number of PV installation at the time when price of PV panels was very high. As its price has become relatively low, subsidiary system does not function well any longer. For further expansion of PV installation, new policies and measurements are needed, such as a law which assures high purchasing price for PV power generation by utilities.

Number of PV systems in Japan became the highest in the world in 1999, and production share became up to 40%. In addition to advancement of technology and the subsidiary system, citizens' effort has significantly contributed to the drastic increase of PV systems indeed.

### **2. Reasons for Promotion of PV Installation by the Japanese Citizens**

Japanese citizens contributed to the increase of PV installation although they have to pay extra cost and not expected to retain it. There are the following reasons to do so.

- From large technology to appropriate size and citizen owned energy

Sources of renewable energy, especially solar energy, are supposed to be owned and utilized by local people. Citizens who installed PV systems prefer to avoid monopolization of energy by a utility company.

- From anti movement to alternative proposal activities

After 1990s, anti-nuclear power movement has changed to proposing alternatives, particularly promotion of renewable energy. This changing occurred at many developed countries known as a soft-energy movement. Japanese citizens also try to promote renewable energy to lead a sustainable society.

- Social change through renewable energy promotion

Local utilization of energy leads to de-centralization as well as to the more democratic society. Therefore, Japanese citizens integrate promotion of renewable energy and social change movement.

### 3. Development of Citizens Movement

Expansion of PV systems in Japan developed along with social movement. There are prominent efforts by groups of citizens as described below.

- Renewable Energy Cooperatives

- Renewable Energy Pioneers Network

- Renewable energy schools

- Community based cooperative Installation

This community based cooperative installation flourished more than 50 sites all over Japan. As this effort expanded to different areas and developed into various projects to create more suitable systems to the each areas.

Individual project adopted different management and financing systems such as:

1) Co-investing

2) Community based donation

3) Citizens cooperative company

4) Owned by local unions or organizations

#### 4. Establishing Renewable Energy Networks

Recently, these citizens groups and creative projects are cooperating to establish networks to increment social influence and to accelerate momentum.

#### 5. Towards the Next Step

Until now, expansion of PV systems depended on citizens' scarification and strong aspiration in Japan. By the accumulation of these citizens' movements, promotion of renewable energy is facing the next step in Japan, along with social change movements. In order to meet the needs of Japanese citizens and to sift to a sustainable society, energy policy should be changed and effective measurements should be adapted at both national and local levels.