

Iida City, Japan

An eco-energy city through partnership

Iida City is a leader in the promotion of renewable energy innovation. A strategic partnership between the local government and a power company funded by local citizens promoted the installation of citizens' solar panels. The Ohisama ('Sunshine') Fund Program is an excellent example of local citizen participation in the development of sustainable energy utilization. The percentage of Iida's households with solar power has increased from 0.17 percent in 1997 to 3.61 per cent in 2010.

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Abstract

An innovative partnership, between the local government and a power company funded by local citizens, promoted the installation of 'citizens' solar panels in Iida. The Ohisama ('Sunshine') Shinpo ('Progress') Energy Co. Ltd. motivated individual investors from all over Japan via the Ohisama Fund Programs. From 2005 to 2011, 758,600,000 JPY (US\$ 9.5 million) was raised for investment in solar power panel installations in the Iida area. Ohisama Shinpo Energy Co. Ltd. used these funds to install solar power panels on public buildings and private rooftops.

Furthermore, the city government contracted the company to purchase electricity at a fixed price which is generated by the solar power panels and a new version of the Ohisama Fund Program was established. The Ohisama Zero-yen Solar Electricity System helps citizens without the adequate funds to install solar power panels. These achievements increased citizen's confidence in the energy strategy of Iida City while increasing the amount of renewable energy utilization in Iida.

Importance of urban renewables in energy generation

Energy security is a serious concern in Japan. Electricity production is the source of many environmental risks, and while renewable energy technologies are crucial for a clean energy strategy they can be difficult to implement. At the same time, the electricity market in Japan is dominated by a small number of companies. Japanese electricity companies, both electricity generation and electricity transmission have been protected by the government. Since 1995, the electricity business market has been partially liberalized. However, the electricity market continued to be dominated by big electricity companies. As a result of this situation, local governments in Japan have discussed the reduction of energy use but rarely energy generation dynamics.

Under those circumstances local governments had difficulty developing their own local energy policies. Most of the Japanese Local Agenda 21 agenda could not show a specific and possible energy generation policy, not to mention renewable energy promotion. In response, Iida established a system that actively engaged citizens in the financing of a renewable energy program which has proven to be a very successful approach. This new system developed local partnerships to promote local energy policies and electricity power generation.



Population / Land area

~105,000 (June 2011)
659 km²

Municipal budget

Yen: 12.4 million
US\$ 507 million

Iida City joined ICLEI in 2009

Case Study

City context

Iida City government is a member of the 'National Coalition of Local Governments for Environmental Initiatives', participates in the 'Eco-Capital' competition in Japan and ICLEI. Exchanges of information and experience through these outlets encouraged Iida City government to become an eco-energy city.

Iida City government and elected mayors took the leadership in policy making in terms of local energy generation. They recognized the importance of involving stakeholders and ensuring public participation in the development of any subsequent strategies. Among the private companies involved, Ohisama Shinpo Energy Co. Ltd. was a strong partner of the city government.

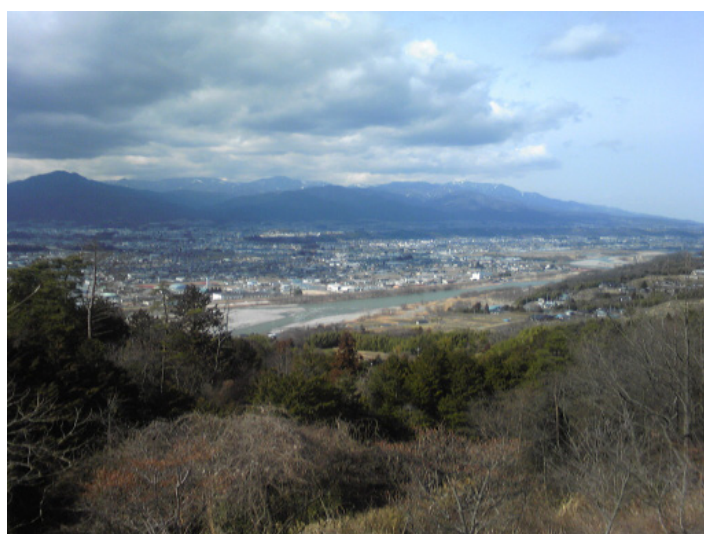


Photo: © Katsutaba Shiraishi

The Valley of Iida City - 2,000 hours of sunshine per year.

When the city government received funding from the Ministry of the Environment in 2004, Ohisama Shinpo Energy Co. Ltd. was established as a social business funded by local citizens. Ohisama Shinpo Energy Co. Ltd. is organized as a non-profit company and seeks to encourage local citizens to use solar energy.

The central government decided to select Iida City as one of the 'Eco Model Cities' (EMC) in Japan, thus ensuring Iida's eco-energy city strategy gained strong momentum. This enabled the city government's department responsible for global warming to play a key role in promoting sustainable development policies in the urban area through an integrated holistic approach. The city government could now design its own policies, which also including frameworks for public-private partnerships and inter-organizational partnerships.

Iida as an Eco-model city in Japan:

Solar energy policies for an Eco-energy city

Local Agenda 21. In 1996, Iida City Government adopted the '21 Iida Environmental Plan'. It was conceived as a Local Agenda 21 action plan. Among other projects, it started the financing of solar power panel installations. In 2002, the plan was revised to include changes to ensure methods that reduce greenhouse gas emissions. In 2007, the 21 Iida Environmental Plan was revised for the third time to include more comprehensive policies on local energy and the specialized division on global warming was established in the city government. The city government successfully applied for and received funds from the 'Maharoba Project' offered by the Ministry of the Environment in 2004. The Maharoba Project attempted to link economic development and the use of renewable energy sources.

Solar energy programs through partnership. The city government and Ohisama Shinpo Energy Co. Ltd. created a series of Ohisama Fund Programs. Ohisama Shinpo Energy Co. Ltd. financed the costs to install the solar power panels through a social investment fund, by raising small amounts (approximately US\$ 1,300)

from all over Japan. In 2005, the fund was able to raise the targeted amount of 201,500,000JPY (US\$ 2.5 million). In addition, the company distributed part of the business income to its investors.

Local government involvement. As part of this social business program, the city government allowed a private company to install solar panels on government buildings, which had previously been prohibited. The main electricity supplier (Chubu Electricity Power Co. Ltd) had no obligation to buy the electricity generated from these solar power panel plants. The city government therefore developed a contract to buy electricity from the Ohisama Shinpo Energy Co. Ltd. for 20 years (see text box). Based on this collaborative arrangement, the city government and Ohisama Shinpo Energy Co. Ltd. could install solar power panels on public buildings as well as privately owned facilities. By 2010, the Ohisama Shinpo Energy Co. Ltd. owned 162 solar power plant sites in Iida City and its suburbs.

Subsidies. In Iida the installation of home solar power panels on houses was subsidized by the city government. However, the subsidy could only be used by people who contributed to the initial investment for the full installation cost therefore not everyone could afford the upfront costs. In 2009, the city government and Ohisama Shinpo Energy Co. Ltd. launched a system to install solar power generators at no initial cost on the roofs of ordinary households - the 'Ohisama Zero-yen Solar Electricity System'. Instead of having to pay the large upfront cost for installing a solar power system, households pay a small fixed amount over a nine year period. To cover the cost households can sell the surplus of electricity generated. After the tenth year the ownership of the solar panels passes on to the households without further costs.

The Ohisama Shinpo Energy Co. Ltd. was entrusted with this project by the city government. The company created a new Ohisama Fund - Ohisama Zero-yen Solar Electricity System. A local credit union provided finance to fund the initial costs to Ohisama Shinpo Energy Co. Ltd. The city government provided subsidies and these funds further advanced this project.

An Eco City. In an effort to commit further to renewable energy technologies, the city government also supported research on the construction of small scale hydroelectricity plants. The city government plans to increase the use of solar water heaters and the utilization of wood biomass as a heating source. In 2009, these successes helped Iida City to be selected as one of the 'Eco Model Cities' (EMC) in Japan. This designation was crucial for Chubu Electric Power Co., Inc. (a large energy supplier in the region) to invest Mega Solar Iida.

Results

Large amount of funds raised: Ohisama Shinpo Energy Co. Ltd. raised a series Ohisama Funds. Ordinary citizens became social investors. Together with other large and small scale funds, sufficient finance were raised for installing the solar power panels. The total amount raised added up to 758,600,000JPY (US\$ 9.5

Contract with Ohisama Shinpo Energy Co. Ltd.

The system available is the net metering purchase system of home solar power panels which was introduced in 2009. This ensures that the major electricity companies have to purchase electricity at a fixed price. The system only covers the home solar panels.

The solar panels owned by Ohisama Shinpo Energy Co. Ltd were not a target of this net metering purchase system. However, the city government contracted the company to purchase the generated electricity for a period of 20 years.



Mega Solar Iida: Large scale power plant.

Photo: © Iida City government office

million). This provided the necessary finance to build 'Citizens' Solar Power Stations'.

Increase to 4 per cent within 10 years: The percentage of Iida's households with solar power panels has increased from 0.17 per cent in 1997 to 3.61 per cent in 2010, the highest among similarly sized cities in Japan. Approximately 30 per cent of the total houses are now equipped with lower-priced solar water heaters.

Large number of sites: Citizens' Solar Power Stations owned by Ohisama Shinpo Energy Co. Ltd. accounted for 162 sites. The total generated output of these plants is 1,400,000 kW. This reduced CO₂ emission by the 777 tons in 2010.

Local government buildings used: In a short space of time, solar power panels were installed on almost all available rooftops of city government owned buildings. Some solar panels were purchased and installed by the city government itself. However, most of them were purchased and installed by Ohisama shinpo. Co. Ltd. Within two years 48 buildings were equipped with solar power panels under the Ohisama Zero-yen Solar Electricity System.

The solar power plan: 'Mega Solar Iida' was constructed and operated by Chubu Electricity Power Co. Inc. in 2011. The city government encouraged the company to invest in the plant. It is a large-scale centralized power plant with a generation output of 1,000,000 kW (estimation), equivalent to approximately 400 tons of CO₂ reduction per year. The solar panel cells were manufactured by a factory in Iida City, therefore also making a contribution to the local economy.

Lessons learned

Policy leadership from the elected mayors, as well as environmental policy experts, was vital to the Ohisama Fund Program. Through this program, policy leaders developed public-private partnership. This enabled a solid foundation for local governance in Iida. Furthermore, Iida City government aims to develop a wider local energy policies for home solar water heaters, the effective utilization of wood biomass and the construction of small hydroelectricity generation plants.

A social business funded by local people brought a dynamic change to the program. The Ohisama Shinpo Energy Co. Ltd. played a key role in the planning and running of this project. The company drove the installation of 'Citizens' Solar Power Stations' with a series of Ohisama Funds, whereby ordinary people could become investors in the solar panels installation process. It succeeded in attracting investors from all over Japan to the funding initiative by mobilizing the national network of nonprofit organizations engaged in renewable energy production.

A bottom-up approach characterized the series of Ohisama Fund programs established. The city government undertook efforts to develop the public-private partnership among non profit organisations), private companies and neighboring community organizations. It became a multi-stakeholder partnership, which allowed citizens to see the program as a bottom-up initiative rather than top-down policy.

A comprehensive and integrated policy was required. The implementation of the projects through the involvement of the private sector eliminated vertically divided administrative functions. It shows that a comprehensive integration with local policies needs to be established can be established through public private partnership as suggested under Local Agenda 21.

Governmental subsidies provided incentives for policy innovation which can be useful to overcome institutional and financial barriers to the successful implementation of a strategy. By applying for the competitive subsidies from the Ministry of the Environment and obtaining the necessary funds, the city government created the opportunity to discuss how to maximize the use of these external funds. This was possible, because the purpose of the governmental project was the simultaneous pursuit of environmental and economic goals.

The **lack of a feed-in tariff system** for renewable energy has been a constraint in developing the program. Iida's subsidy policies were formulated to overcome the high upfront costs involved in installing solar power panels. If the purchase of the total amount of electricity at a fixed price is secured, local policy can be further developed.

Strong Communication was essential. Mayors and city government experts became involved in a series of conferences and meetings throughout Japan. By attracting the attention of experts and the media, local officials could share the city government's positive experiences as well emphasizing its goal to become an eco-energy city to a wider audience.



Photo: © Ohisama ashinpo Energy Co.Ltd.

Example Solar Panels on a day nursery, Iida City.

Replication

This unique program where solar plants owned by Ohisama Shinpo Energy Co. Ltd. which utilizes social investments from citizens nationwide is operated through partnership with a social business company. This ensures a strong stakeholder commitment and involvement in the form of citizens and private companies to the program. It could be replicated across Japan if the key factors for success are understood and the key lessons from the Iida example are learnt.

In terms of project scale, the current achievements of Iida are a symbol of how a renewable energy project can be successful. Iida's programs are inspiring many other local governments to fund-raise and it is seen as best practice in terms of public-private partnership. Successful partnerships are essential, if the successes of Iida's are to be replicated elsewhere.

Budget and finances

Ordinary citizens who acted as social investors invested their money in a series of Ohisama Fund Programs. The total amount of funds raised amounted to 758,600,000JPY (US\$ 9.5 million).

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Iida City government offered subsidies to install solar power panels to 200 houses in 2011. The subsidy (excluded the central government subsidy is 30,000 JPY (US\$ 3,700) per kW, max 150,000 JPY (US\$ 11,000) to every house. The city government also subsidized to Ohisama Zero-yen Solar Electricity System.

Sources

- <http://ecomodelproject.go.jp/en/ecomodel/E2>

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