

## Japan: Villa Garten Shin-Matsudo & Tiara Court Kasukabe

### BIODATA

<b>PV community name:</b>	Villa Garten Shin-Matsudo	Tiara Court Kasukabe
<b>Kind of urban area:</b>	Residential – urban	Residential – urban
<b>Main building type in community:</b>	Houses - single houses	Houses - single houses
<b>New/Retrofit/Added:</b>	New district/community building integration	– New district/community building integration –
<b>Type of project:</b>	Commercial project	Commercial project
<b>Start of operation:</b>	Year 1999	Year 1999
<b>City, state, etc.:</b>	Matsudo, Chiba	Kasukabe, Saitama
<b>Country:</b>	Japan	Japan
<b>Latitude:</b>	N35 49' 22"	N35 58' 21"
<b>Longitude:</b>	E139 55' 27"	E139 45' 32"

### PV SYSTEM CHARACTERISTICS

<b>Total PV power:</b>	123 kW	101 kW
<b>Number of houses/buildings:</b>	41 houses	35 houses
<b>PV power per unit:</b>	2,86 – 3,1 kW/house	2,88 kW/house
<b>Energy yield per year:</b>	2 800 – 3 050 kWh/3kW/year (calculated)	2 840 kWh/3kW/year (calculated)
<b>Main PV system type:</b>	Grid-connected - demand side	Grid-connected - demand side
<b>Main PV application type:</b>	Inclined roof – mounted	Inclined roof – mounted
<b>Main PV module type:</b>	Framed regular module	Framed regular module
<b>Main PV cell type:</b>	Crystalline silicon	Crystalline silicon
<b>PV module manufacturer/brand:</b>	Sharp corporation	Sharp corporation
<b>Inverter manufacturer/brand:</b>	Sharp corporation	Sharp corporation
<b>Investment for PV systems:</b>	1 000 000 JPY/kW	1 000 000 JPY/kW

### OWNERSHIP

<b>Building owner:</b>	Inhabitant
<b>PV owner:</b>	Inhabitant
<b>PV energy user:</b>	Inhabitant

< Villa Garten Shin-Matsudo >



< Tiara Court Kasukabe >



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## PV COMMUNITY DESCRIPTION

### PV Community Brief

A target for the project was to deploy residential PV systems with the housing sector playing a role in PV system installation in a residential area and to create a practical case study. The target was achieved and a massive and creative project where all houses are equipped with PV systems was launched in two areas of the Tokyo metropolitan region, e.g. 36 PV houses in Matsudo, Chiba, and 35 PV houses in Kasukabe, Saitama.

These projects set a precedent for concentrated installation of residential PV systems, e.g. 'PV community', and were given 'New Energy Award in FY1999' in Japan.

The projects were practical case studies of developing a community equipped with PV systems and since then, similar projects were launched in various regions.

As for the Matsudo project (Villa Garten Shin-Matsudo), five additional houses equipped with PV systems were constructed and the community now consists of 41 PV houses in total.

### Grid issue

Because there was no experience of such a high-density PV systems installation into a limited area, a precise negotiation with a utility company (Tokyo Electric Power corporation) was implemented to avoid negative influences against a grid network. Although the negotiation required much time, the PV system provider prepared preliminary test data on grid-connection with multiple inverters and no negative impacts were forecasted in their operation.

These preparatory efforts by project members made the project successful.

### Urban planning and architectural issues

A harmonization between a house and PV system was well discussed at the beginning of planning.

Insolation condition, azimuth orientation and inclination of roof, appearance of house, etc. were considered house-to-house and the design for obtaining a maximum electricity generation from PV system was adopted basically.

In addition to PV systems, various kinds of facilities for energy conservation, reducing demand of air-conditioning were designed thus improving availability of equipment.

### Economic / financial issues

Installing lots of PV systems in a limited area, as well as bulk buying, worked for reducing installation cost.

The PV system received a governmental subsidy, available through Japan's residential PV program. After starting operation, a net-metering scheme was applied so that surplus PV is traded between the inhabitant and the utility company, at the same price of the residential electric tariff.

### Other remarks

This project was a 'Pioneer' of concentrated installation of residential PV systems and has been contributing to deploying residential area PV system installations.

House sector's positive action for environmental protection has realized increasing consumers' concerns for energy conservation and environmental problems.

In addition, publicity for the project companies was increased.

## COMMUNITY INFORMATION

**Project leader company:** Chuo Jutaku Co., Ltd.

**Other project company:** Sharp corporation

**Project's www:** -

**Contact address:** POLUS group

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