PVT flagship projects in four countries

Fri, 2 February 2024

In 2023 PVT collectors were used for a wide variety of different applications. In this article we present some PVT flagship projects from four different PVT manufacturers. Some of the projects were chosen because of their large size, others because of special customers such as industrial companies. The photo shows the roofs of the Barcelona Swimming Club with 1,041 PVT panels, inaugurated in August 2023 – the largest project realized so far by Abora Solar from Spain. You can also read the news about Europe's growing PVT industry.
Photo: Abora Solar

Spain: Large PVT field for Swimming Club pays back in 1.5 years

After more than 5 years of preparation the large 2,082 m^2 PVT field on the roofs of the Swimming Club on Barcelona's coastline became reality. First and foremost, the solar heat is used to keep the outdoor pool at reasonable temperatures for training all year round. But it is also used to heat the indoor pools and the showers. The solar electricity is 100% consumed in the Swimming Club buildings, without the use of electric batteries.
The solar elements are covered PVT collectors. This means the units are insulated from the back and covered with a glass cover on the front. They perform like a flat plate collector, only with a slightly lower thermal performance because the PV cells absorb some of the sunlight. On the electrical side the slight reduction in the amount of electric kilowatt hours due to transmission losses in the glass cover is offset by the effect of cooling the PV cells. "Although the peak power of the PV panels is 2.8 % lower due to the front glass, the electricity generation in this project is higher because the working temperature in the solar thermal circuit connected to the pools is lower," explained Alejandro del Amo, founder and Managing Director of Abora Solar. The temperature of the fluid inside the panels varies between 25 and 45 °C, which increases the annual solar electricity generation by 3.6 %.

Number and type of PVT collectors	1,042	Units of PVT-2
PVT area	2,082	m^2
Total peak electricity	390	kW_p
Total thermal capacity	1,428	kW_{th}
Storage tank volume for hot water for showers	20,000	litres

reduction in the amount of electric kilowatt hours due to transmission losses in the glass cover is offset by the effect of cooling the PV cells. "Although the peak power of the PV panels is 2.8 % lower due to the front glass, the electricity generation in this project is higher because the working temperature in the solar thermal circuit connected to the pools is lower," explained Alejandro del Amo, founder and Managing Director of Abora Solar. The temperature of the fluid inside the panels varies between 25 and 45 °C, which increases the annual solar electricity generation by 3.6 %.

Number and type of PVT collectors	1,042	Units of PVT-2
PVT area	2,082	m^2
Total peak electricity	390	kW_p
Total thermal capacity	1,428	kW_{th}
Storage tank volume for hot water for showers	20,000	litres
Annual irradiation on site	1,666	kWh/m^2a
Total annual solar electricity generation	622,518	kWh_{el}
Total annual solar thermal energy generation	1,925,850	kWh_{th}
Specific solar electricity generation	1,638	kWh/kW_p
Specific solar thermal yield	925	kWh/m^2a
Total investment	2.57	million EUR
Subsidy from EU Next Generation programme (70 % of the total investment)	1.8	million EUR
Annual monetary savings	326,930	EUR
Payback period without subsidies	5	Years
Payback period with subsidies from EU Innovation fund	1.5	Years

Key figures of the installation at the Barcelona Swimming Club. Source: Abora Solar

France: 465 apartments heated with PVT + boreholes + brine heat pumps

KEYWORDS
PVT
COUNTRY
France Germany Netherlands Spain Switzerland
APPLICATIONS
SEARCH AGAIN
Search by keyword
Type here...
Market Drivers
All Six Pillars
Applications
All Market sectors
Country/Region
All Countries
Date from
Date to
Search Reset

PVT manufacturer Dualsun from France reported a 1,030 PVT panel installation in Switzerland as its largest project in 2023. Four new blocks with 465 apartments in the town of Bussigny benefit from space heating, hot water and air conditioning via an innovative heating system. It includes 1,030 PVT panels of the type Spring3, which are connected via a cold district heating grid with 150 boreholes and six brine heat pumps. The PVT panels are unglazed with a polymer thermal absorber clamped to the PV module? Cotegate, the owner of the housing area, offers the flats for rent promoting the highly energy efficient building envelope standard, known as Minergie-P.
Photo: Cotegate

Netherlands: PVT collectors preheat epoxy for yacht production

The Dutch project developer Next Source has demonstrated that PVT panels in combination with heat pumps can also be used by industrial customers. A yacht manufacturer in IJmuiden preheats epoxy resin with the thermal energy provided by 150 m^2 of PVT panels (50 kW) on its roof and uses the excess heat for space heating. The absorber is glued to the back of a PV panel, with the copper piping pressed into the aluminium absorber. Next Source (formerly HR Solar Projects) was renamed in March 2023 through a rebranding of the HR Solar group to HR Energy group. Next Source is the commercial project developer of this group.
At the end of 2023, HR Energy launched a thermal absorber that can be retrofitted to existing PV installations and is called Qpanel.
Photo: Next Source

Germany: Nursing home heated with PVT + geothermal baskets + brine heat pumps

A new German project shows that PVT in combination with geothermal baskets and brine heat pumps can provide enough thermal energy for a nursing home, which is usually a building type with high energy needs. The German PVT manufacturer Pa-ID was responsible for the installation of the 66 2Power collectors on the roof together with the two modulating heat pumps with a maximum capacity of 22 kW each. Furthermore, 12 geothermal baskets were buried in the garden. The building was built by a private investor and is now rented to a social institution.
Photo: Pa-ID

Websites of organizations mentioned in this news article:
Abora Solar: https://abora-solar.com/
Dualsun: https://dualsun.com/en/
Next Source: https://www.nextsource.nl/
Pa-ID: https://2power.de/

Bärbel Epp

Bärbel Epp is Founder and Director of the German communication and market research agency solrico and editor-in-chief of solarthermalworld.org

We use cookies on our website to give you the most relevant experience by remembering your preferences and repeat visits. By clicking “Accept All”, you consent to the use of ALL the cookies. However, you may visit "Cookie Settings" to provide a controlled consent.

Cookie Settings Accept All Reject All