# PV Financing Best Practice: SPAR Shopping Centre (Austria)

## General project Description

The following example presents a new concept for financing and operating a photovoltaic system in the application segment of shopping centres. An interesting aspect of the project is the financing method of the two PV systems which is based on crowdfunding.

The PV systems are located in Vienna in an urban region, one in Siemensstraße, the other one in Wagramer Straße.

## Business case description / economic parameters

These particular PV systems have been installed on top of a grocery shop in Vienna and have solely been financed by civic participation. In that case SPAR, an Austrian grocer, offers its customers the possibility to take part in this photovoltaic project. Even though they might not be able to install a PV system on their own roof, this option enables them to invest their money into renewable energy nevertheless. Instead of a profit distribution annually the investors receive coupons for their financial participation each year which can be used against purchases made in the grocer. Two of these systems were implemented in autumn 2013.

The grocer's reasons for installing PV systems on its buildings by civic participation are miscellaneous: the first is to use the building as a power plant for clean energy, the other one is to create and keep up a positive image and the last one is to obtain customer loyalty upright by distributing coupons.

Apart from that the grocery shops are the perfect consumers for solar energy. They need most of their electrical power if and only if the sun is shining. 75 percent of the total energy demand accumulates during opening hours.

When the PV systems were installed, regional (Viennese) subsidies were used. There was a one-time subsidy granted in the amount of 400 € per kWp. Its application as well as its

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handling was assessed as easy. Considering the applications there is sufficient funding budget available.

## Technical project parameters

Both PV systems are located on the roof-top of the grocery shop and both systems together add up to a size of 176.3 kWp. The systems have either a size of 80 kWp in Siemensstraße or 96.3 kWp in Wagramer Straße. The systems generate 184 MWh of electrical energy. The PV systems can meet up to 20 percent of the total power demand.

Both PV systems were installed elevated on flat roof tops. A non-penetrable installation was used, whereby only ballasting ensured its connection. In order to yield monitoring and optimize the system, a remote monitoring system was installed. In addition to that the monitoring system also controls various parameters, like the solar irradiation, wind speed, ambient temperature, and module temperature. The use of storage devices was forgone.

Both PV systems generate a quarter of the total energy demand at each particular location. The entire illumination and all of the baking ovens in Siemensstraße, for instance, can solely be operated by solar power.

Apart from the two described PV systems, SPAR operates up to 30 PV systems with an output of 1.5 MWp meanwhile.

## Stakeholders / companies / PPA

The two PV systems on the grocery have been operated by the energy provider Wien Energie GmbH and have been financed through crowdfunding.

Every single individual residing in Austria could order a SPAR-voucher-package (share) via the following internet homepage www.buergersolarkraftwerk.at/spar. One package/share costs 950 €. Each shareholder can participate with a maximum of 5 shares. After ordering the participants received a personal offer including a payment form and the eligibility requirements via email or mail. With the incoming payment the contract between the participant and Wien Energie entered into force, which enabled the implementation of a PV panel.

Participants receive during this 25-year-term coupons up to an amount of 60 € per package and year. This corresponds to an annual remuneration of 5.1 percent plus a portion of the

purchase price. The remaining amount of 400 € will be paid at the end of the 25-year-term either in form of coupons or in cash. There is a minimum duration of five years and the possibility of an early termination (the management fee for an early termination is 75 €).

All together 691 solar panels were up for sale for both grocery shops. The shareholder enabled the implementation and operation of a PV system simply by taking part in this project.

There was an enormous demand for the participation in this project. Within a few days only the share certificates were sold out completely.

The PV systems have been implemented, operated as well as regularly maintained by the energy provider Wien Energie. For an indexed price the generated electrical power is leased to the grocery for a duration of 25 years.

Contracting authority is the energy provider, who is responsible for the project management at the same time.

## Replicability / Outlook

This project could be implemented in other countries just like that. Getting in touch with the investors in order to market their participation might be a challenge at first. A locally or even nationwide known company would certainly be given preference, or a company from another line of business who can draw on a big circle of interested people.

Therefore Wien Energie and SPAR have the perfect preconditions for getting into contact with as many interested parties as possible.

## Contact:

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For further information:

www.wienenergie.at/eportal2/ep/channelView.do?channelId=-48445

www.buergerkraftwerke.at/eportal2/ep/channelView.do/pageTypeId/67349/channelId/-47875

www.spar.at/de_AT/index/nachhaltigkeit/klima_und_umwelt/energie/kunden-solarkraftwerk.html

## Photos


Picture 1: Grocery with PV system on the building; source: SPAR / Johannes Brunnbauer

Picture 2: PV panels on the roof; source: SPAR / Johannes Brunnbauer


Picture 3: Source Wien Energie/Demner, Merlicek & Bergmann

Picture 4: PV panels on the roof; source: SPAR / Johannes Brunnbauer