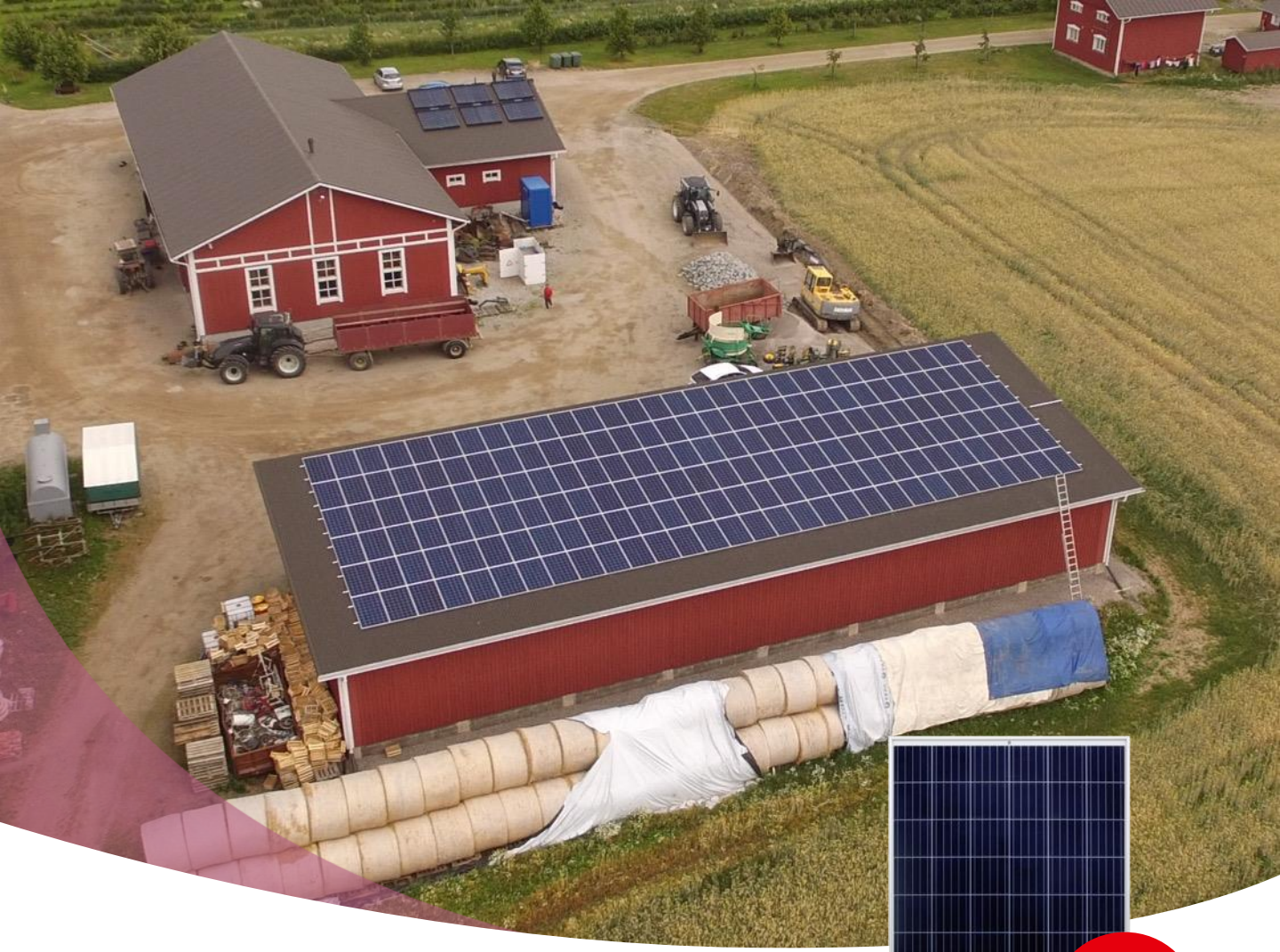

Case Study
Panel: ND-RB275

Operating a strawberry farm with Sharp PV panels

Installation of the reliable 60-cell Sharp modules with the possibility of reducing the size of the main circuit breaker

Project: Strawberry farm, Saaren Tila Oy, Paimio, Finland
Installation by: PlayGreen
www.playgreen.fi

PlayGreen

www.sharp.eu

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PV Panels

Product:	Sharp ND-RB275
Number of Modules:	180
Rated power:	275 Wp
Cells:	60
Size:	1,650x992x35 mm
Efficiency:	16.8%

Solar Power Plant

Plant size:	49.5 kW
Roof orientation:	South
Mounting condition:	Installed on a metal profile roof

The project:

- 180 Sharp ND-RB275 modules were installed in this project.
- The modules were chosen because they perform outstandingly well in Finland's demanding climatic conditions.
- The size and layout of the facility have been scaled to eliminate the seasonal peak load because much of the electricity needed is now generated and consumed on site during the summer months.
- The current system produces 5-8% more energy than similarly sized solar panel systems in the region.
- The National Agricultural Energy Assistance Fund supported this project.

The module:

- The Sharp ND-RB275 modules are delivered with up to 5% more power, which could mean increased yield for this project.
- The ND-RB275 module has a tested snow load of 5400 Pa, which roughly correlates to 540 kg/m^2. The tested snow load is very important when choosing the right modules so that they can withstand harsh Finnish weather conditions.

The installer says:

'We chose Sharp for the sake of product quality, performance and warranty. Sharp also has a good stock of these panels so we can trust its availability when we need it. Also, its performance in our demanding and harsh weather conditions guarantees the best possible energy production compared to any other product we have used so far'.

Antti Kostiainen, PlayGreen

The operator says:

'We are very pleased with the project overall. The power plant is still too new to say a lot but the first days have shown it is performing very well and we are producing 5-8 % more energy than same-size solar power plants in the same area'.

Janne Suominen, Saaren Tila Oy

The produced energy is used to operate water pumps, storage coolers and supply the pickers' houses

Saaren Tila Oy, a strawberry farm located in Paimio, Finland is the location of this unique photovoltaic system. The purpose of the project was to design and build a high-quality solar power plant to reduce the electricity purchase from the grid. On the farm, the solar energy generated is used in various forms: to operate the water pumps, to supply the berry pickers' housing with electricity and to operate the storage coolers. Started in June 2017, the project received governmental support from the agricultural energy support funds and was then finalised in early August 2018.

Reducing the seasonal peak load due to an optimized system size

Local power generation and local consumption can significantly reduce monthly grid connection costs. A smaller main switch was installed since farmer Saaren Tila Oy only has to provide a lower amount of connection power. The solar panel system now covers the majority of the peak load during the summer months. The system operator thus saves on the one-time acquisition costs for the main switch as well as on the monthly fees to the network operator. This in turn increases the profitability of his business and lowers its carbon footprint. Especially during the summer months, the solar energy production perfectly matches the cold stores' and the irrigation pumps' high consumption. The project team and PlayGreen designed the system's size in such a way that on the one hand that it can handle its own high consumption and on the other hand, the operator can expand the plant.
The Sharp ND-RB Series modules met the exact requirements of the project and were particularly impressive in terms of performance, reliability and ruggedness.

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