



Case Study

Module: 60 Cells, Polycrystalline, 270W (ND-RJ270)

Cost saving string design with Sharp PV panels and SolarEdge inverters

Solar energy for 500 Hungarian households

Project: Szeged Solar Power Plant, Hungary

Installation and operation: 3 Comm Line Kft.

www.3comm.hu



www.sharp.eu

SHARP
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Using Sharp PV panels in combination with SolarEdge technology

The free-field solar power installation is the first in Hungary and one of the first 10 in Europe to combine Sharp solar PV panels with SolarEdge smart photovoltaic technology. A winning combination: over the first twelve months since its installation, the plant consistently exceeded yield expectations and generated enough power for 500 households.

The installer chose polycrystalline, 60-cell modules from Sharp for their high reliability, excellent price-performance ratio and perfect compatibility with SolarEdge technology. SolarEdge inverters fix the string voltage at 750 V DC, regardless of the number of panels in the string. This allowed the installer to connect strings of 40 and 38 panels, thus saving on cables. The fact that Sharp panels yield up to 5 % more power also contributed to the excellent results.

The plant was completed as the first of four projects the installer will be realizing with Sharp modules in Hungary as part of the country's planned boost in solar energy generation. All of the power generated by this installation will feed into the grid.

The module

- Highly reliable and robust, Sharp ND-RJ270.
- Module efficiency 16.5%.
- According to the installer, ND-RJ270 modules fit particularly well with SolarEdge's long string concept and BOS saving was 50% on cables & combiner boxes.
- Passing extensive and discerning tests exceeding industry standards.



Available now!

New Sharp polycrystalline panels with 270 and 275 Wp: **Sharp ND-AK Series**

PV Panels

Product:	Sharp ND-RJ270
Rated power:	270 Wp
Cells:	60
Compact size:	1,654 x 989 x 40mm
Module efficiency:	16.5 %

Further components

Inverters:	SolarEdge SE27.6K three-phase inverters
Mounting frames:	Szerman
Power optimizers:	SolarEdge



Solar Power Plant

Plant size:	2 x 546 kWp
Total number of panels:	4,044
Panels per string:	<i>6 inverters with two 38-panel strings and one 40-panel string, respectively</i> <i>12 inverters with one 38-panel string and two 40 panel-strings, respectively</i>
Total power:	1,092 kWp
Acreage:	2 x 15,000 m ²

Earnings

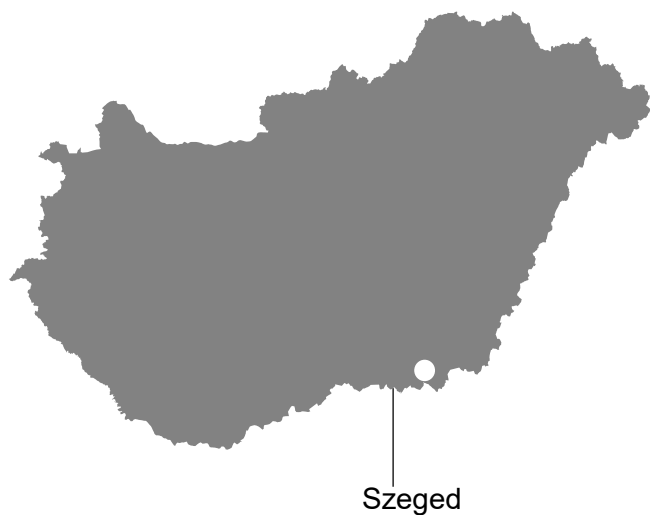
Total production over 12 months: 737,837 kWh / each ~ 1.5 GWh total

The production of the 1 MWp solar power plant is equivalent to a year's energy consumption of 500 average-sized households.(3,000 kWh/year).



Summary

- First free-field solar power plant in Hungary and one of the first 10 in Europe with Sharp solar PV panels in combination with SolarEdge smart photovoltaic technology.
- Installation exceeded yield expectations consistently over first 12 months.
- Power yield over the first 12 months equals the average annual consumption of 500 households.
- Sharp panels yield up to 5% more power, thus contributing to great result.
- Savings on cable as more panels can be connected in one string.
- A total of 4,044 Sharp ND-RJ270 60-cell modules were installed.
- All of the power generated by this installation will feed into the grid.



The location

Also known as “the city of sunshine” (*Napfény városa*), Szeged in Southwest Hungary has a high number of sunshine hours, which make it an ideal location for this PV installation project. The site of the new solar power plant was once used as a transshipment hub for vehicle imports, as indicated by the railroad tracks visible in the aerial images.



What the installer and operator say about...

... Sharp's polycrystalline PV modules:

"Sharp modules have proved highly dependable in the past, with a very good price-performance ratio. What's more, this installation demonstrates that ND-RJ270 modules and SolarEdge inverters are a perfect fit. We were able to install strings of 38 and 40 panels, saving on cable while improving the yield. The high yields over the first twelve months is proof of that."

... their collaboration with Sharp:

"Over the almost seven years of our partnership, Sharp has been consistently reliable and supportive. It is clearly a win-win situation. Szeged is the first of four field installation projects we're currently building with Sharp modules. Another one is just completed, two more are under construction."

Sándor Harcsa-Pintér, 3 Comm Line Kft.





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