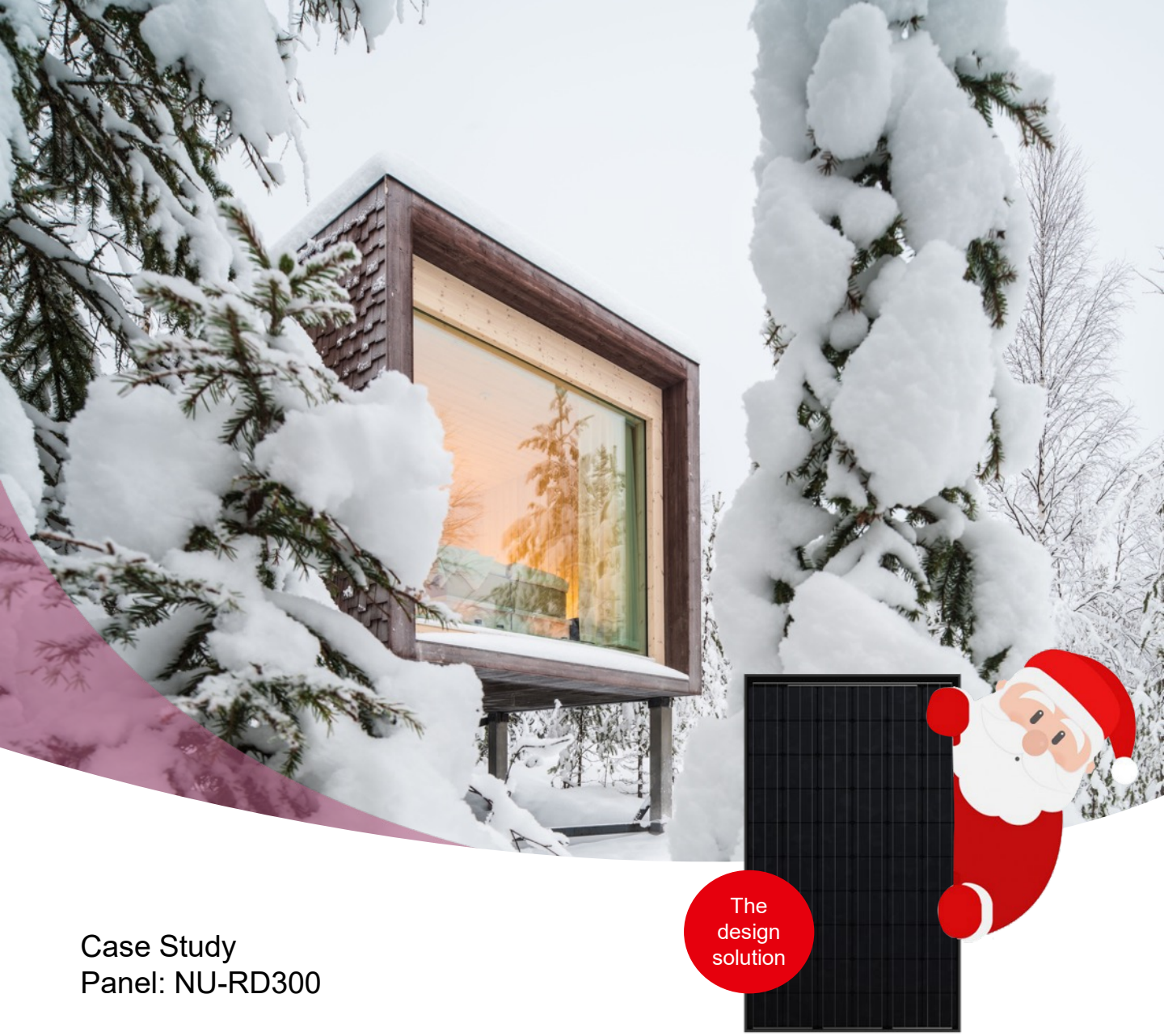


Case Study
Panel: NU-RD300

Santa goes green this Christmas

Powered by Sharp Solar Panels

Project: SantaPark and Arctic TreeHouse Hotel, Finland
Installation by: PlayGreen
www.playgreen.fi

PlayGreen

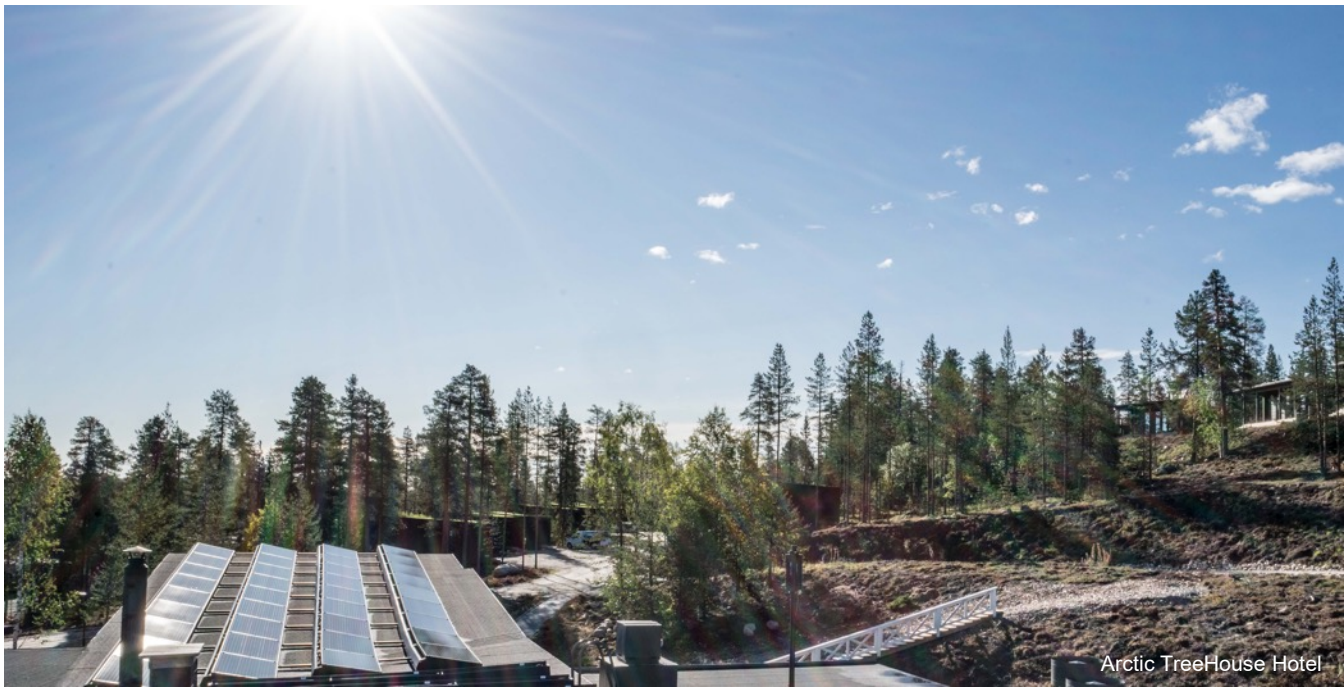
www.sharp.eu

SHARP
Be Original.

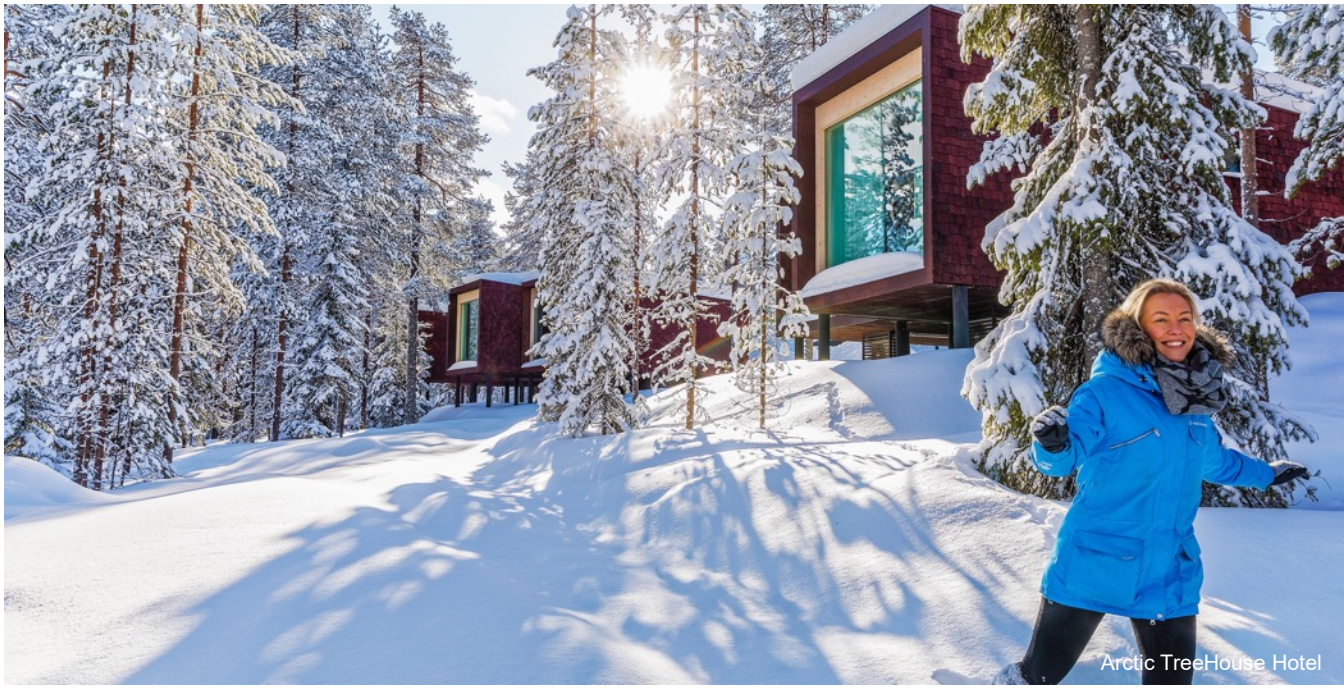
SantaPark, Finland

Summary:

- 135 NU-RD300 panels with a total power plant size of 40.5 kW were installed on three different buildings.
- The goal of the project was to deliver a premium solar photovoltaics (PV) system to a client in the Arctic Circle that required the modules to withstand extreme temperature conditions.
- The panels of the NU-RD series were chosen because of their ability to withstand those conditions as well as their sleek, black design. As the panels on the roofs are seen by the hotel guests, they should be visually appealing as well.
- The cost of the whole project will amortise within nine years.



Arctic TreeHouse Hotel

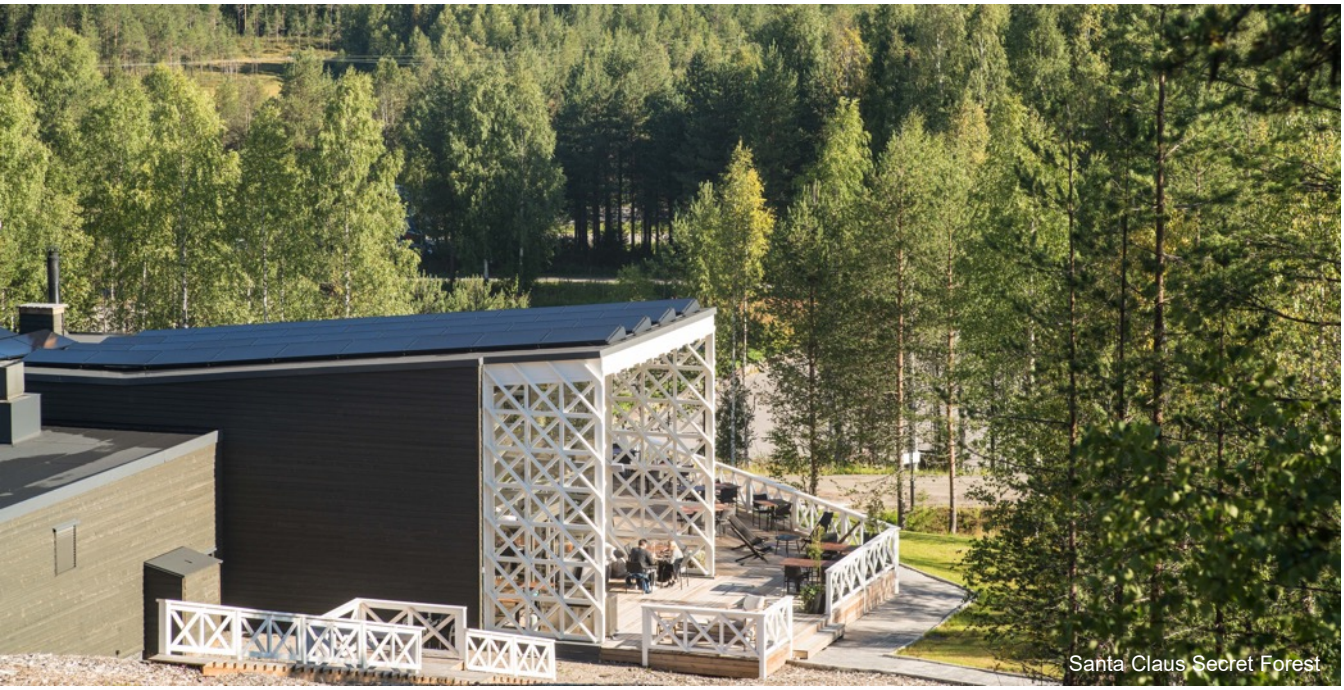

Arctic TreeHouse Hotel

Using sustainable energy-sourcing in Santa Claus's hometown

SantaPark is located in the capital of Lapland, Rovaniemi, known as the official hometown of Santa Claus in Northern Finland. The city offers a wide variety of Christmas-related attractions, including SantaPark and the Arctic TreeHouse Hotel. Both depend on snowy white winters to be enjoyed to the fullest; therefore, they care deeply for the fragile nature of the Arctic region. The installation of the solar panels drastically decreases the carbon footprint of the attractions, thereby also reducing the energy costs.
The project started in April 2018, when Ilkka Länkinen (CEO SantaPark) met with Jouni Penttinen (CEO PlayGreen Finland Oy) at a Solar Fair in Helsinki. PlayGreen offered a design draft and a few weeks after the first contact, the deal was finalised. The installation was finished by early August 2018.

24/7 energy production with 135 NU-RD300 panels on three different buildings

Two main goals were set for the project: Firstly, the northern location in the Arctic Circle puts enormous stress on the technology due to the extreme weather conditions; therefore, it requires a high-quality photovoltaic system. Secondly, the photovoltaic panels can be seen by guests, which means they should be aesthetically pleasing and fit the premium design standards of the locations. Sharp NU-RD300 panels meet these requirements optimally.
In total, 135 panels were installed on three buildings: 90 panels on the Arctic TreeHouse Hotel, 30 on "Santa Claus Secret Forest" and 15 on the "Arctic Forest Spa".
Due to the regional weather conditions of the Arctic Circle, there are many sunlight hours during the summer months but very few during the winter. The panel layout of the hotel was, thus, designed to be effective and to ensure energy production from early morning to late evening with one half of the panels facing southeast and the other one facing southwest. As the sun does not set for more than a month in mid-summer, the production goes on for weeks non-stop. The installer PlayGreen calls this 'the non-stop solar plant in the Arctic'.


Santa Claus Secret Forest

PV Panels

Product:	Sharp NU-RD300
Number of modules:	135
Rated power:	300 Wp
Cells:	60
Size:	1,660x990x50 mm
Efficiency:	18.3%

Solar Power Plant

Plant size:	40.5 kW
Roof orientation	Southeast, 19°
and pitch:	Southwest,13°

Earnings

System costs without governmental support equals a ROI of nine years.

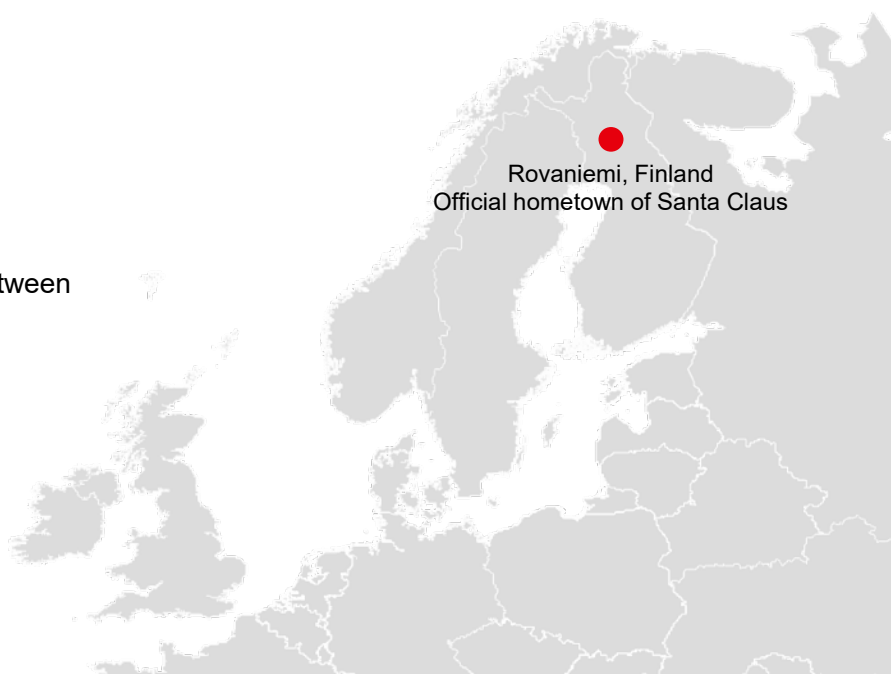
Other Components

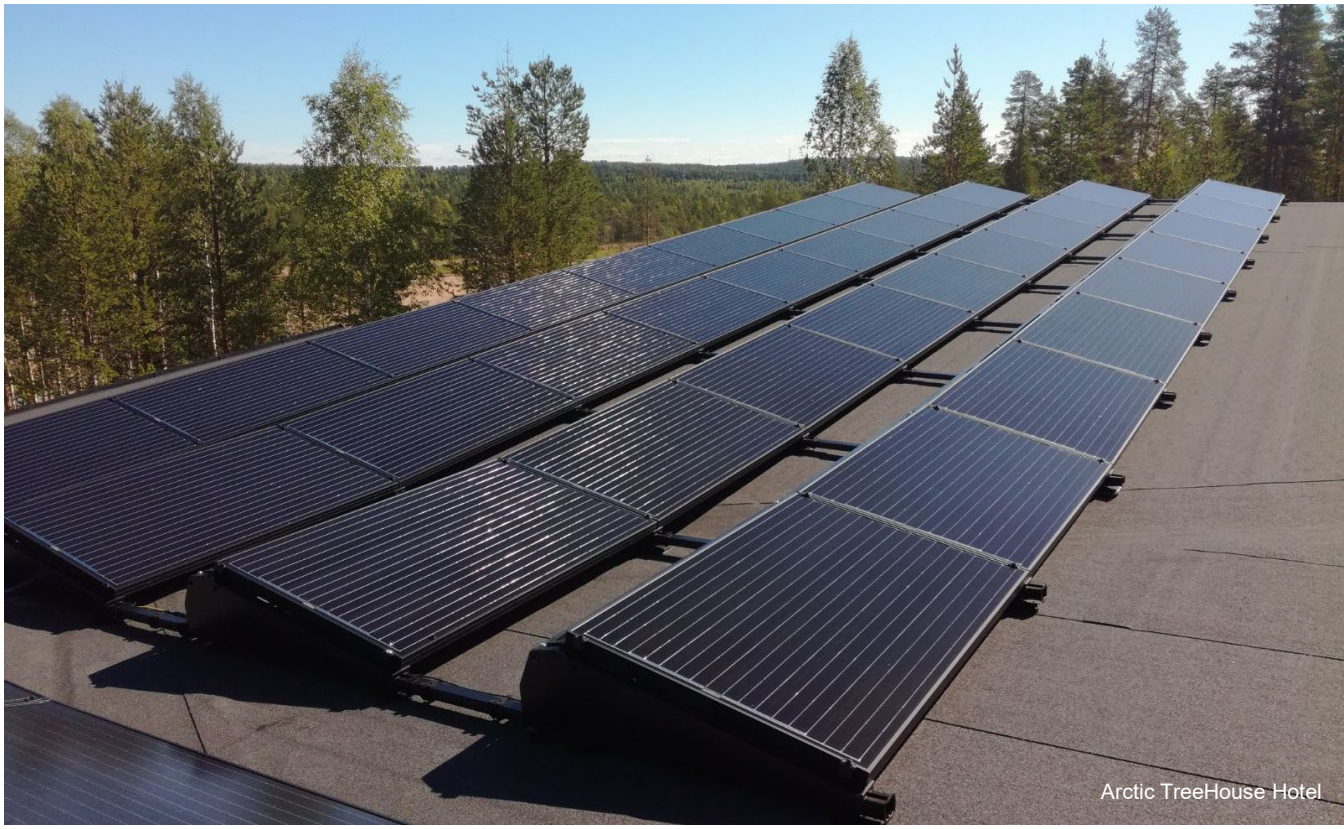
Roof mechanics:

Esdec FlatFix Fusion all black.
The system was chosen because it withstands temperature changes between -40° and +50° and it is lightweight.

Inverters:

SMA

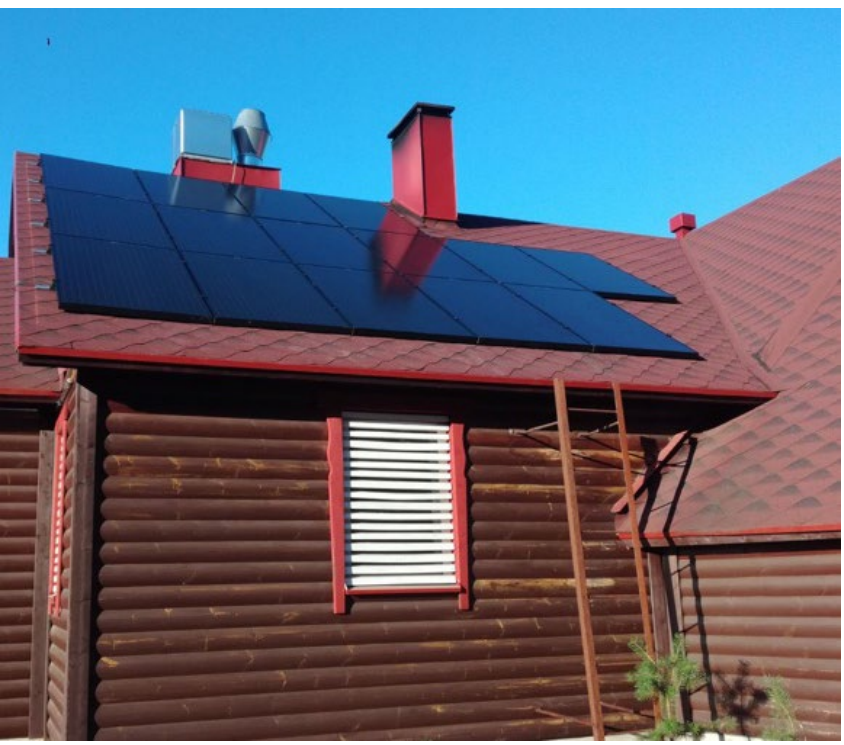



Arctic TreeHouse Hotel

The operator says:

“Arctic TreeHouse hotel’s values are authentic and based on the fragile nature of the Arctic region. Since we care so much about nature, we do whatever it takes to treat it accordingly. The solar energy plant saves hundreds of kilo carbon daily, helping us reduce our carbon footprint tremendously”.

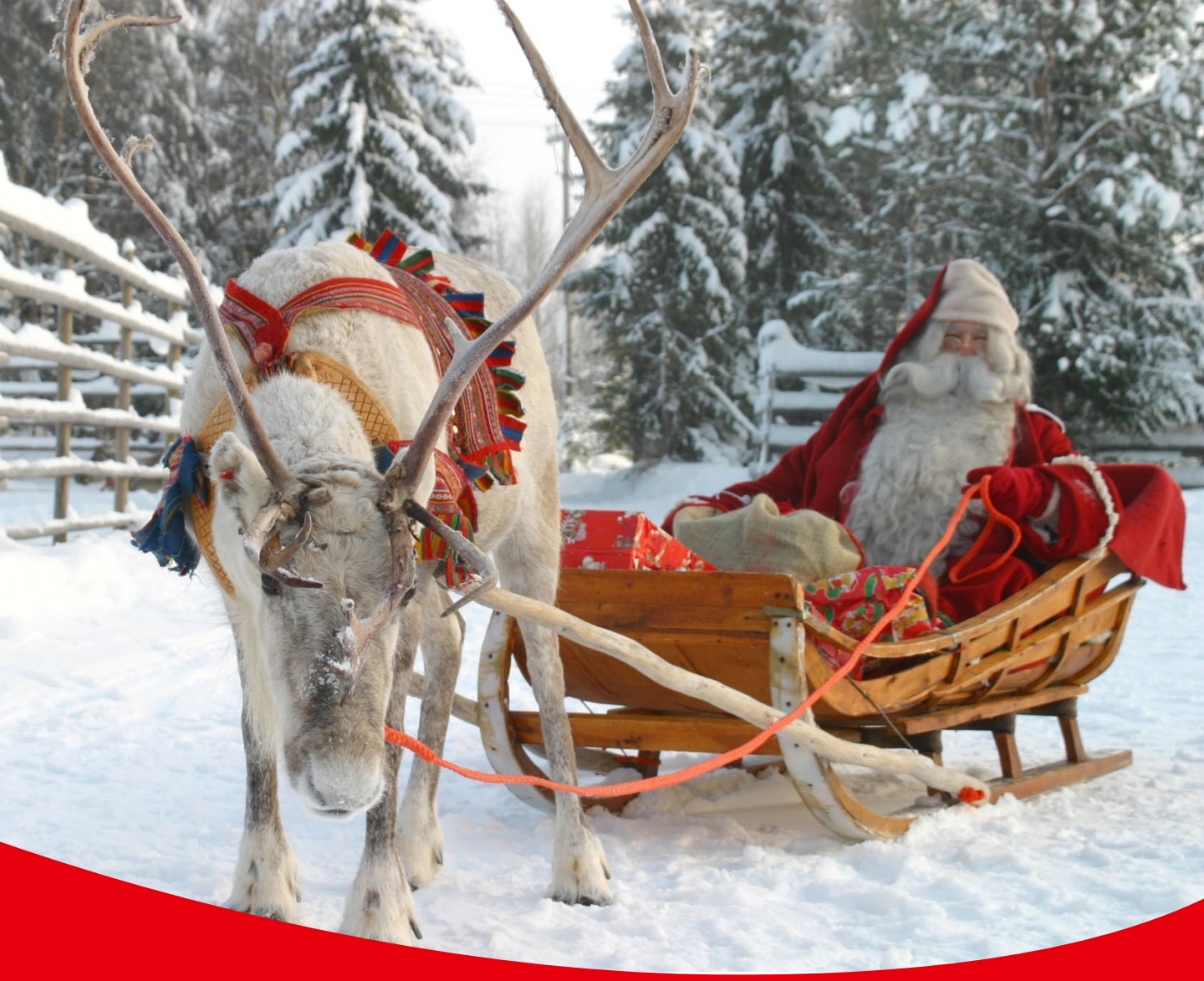
Arctic TreeHouse Hotel



The installer says:

“The panel layout of the hotel was designed to be effective and to ensure good production from early morning to late evening. As the sun does not set for more than a month in mid-summer, the set-up will continuously produce energy 24/7. We could call this “the non-stop solar plant in the Arctic”.

Jouni Pentinen, CEO
PlayGreen



With the effects of climate change directly impacting his hometown, the official Santa Claus of Finland takes environmental protection very seriously. He commented:

“Christmas is just around the corner and it is time to remember to take care of your friends, loved ones and those in need. Christmas is a time of giving, and for us, Christmas is more of a mind-set and feeling to cherish and hold dear, all year round. Taking care of each other, as well as taking care of the environment, is very important. It starts by taking small steps and making the right choices to ensure a better and safer environment for everyone.”

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Season‘s Greetings!

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