



Solar-PV-Meter: Monthly Report September 2016

System

Nickname: Lars_Korsager System

Publicly visible on www.solar-pv-meter.com

Panel Module #1

Solar Panel

Max.Capacity 6,400 W *)

Area 42.0 m²

Panel direction: Azimuth: 20° Panel tilt: 35°

*) Max. panel capacity is higher than inverter max. capacity – results in 'Peak cutting'.

Inverter

Max.Capacity 6,000 W *)

STATISTICS

September 2016

Last 12 months

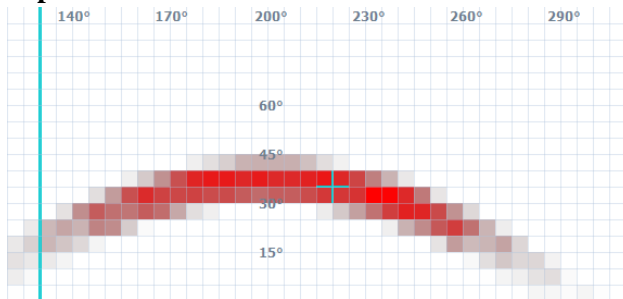
Solar Hours	411 h	4,454 h
Total Solar Energy *	10,824 kWh	104,403 kWh
Projected Solar Energy **	6,383 kWh	56,777 kWh
AC Production kW/h	507 kWh	4,294 kWh

*) Total energy in solar radiation, if solar panels were perpendicular towards the sun in every hour

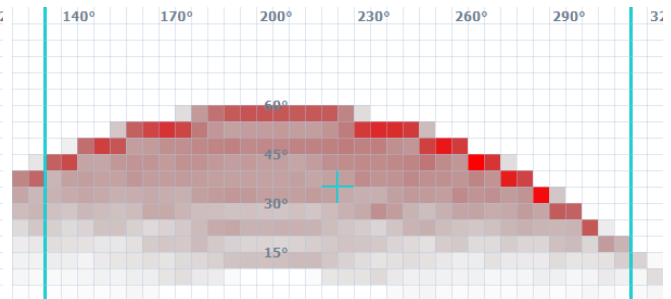
***) Total energy in solar radiation that hits the panel with its fixed installation angles (azimuth and panel tilt)

AC-production & solar positions - September 2016 and last 12 months

September 2016



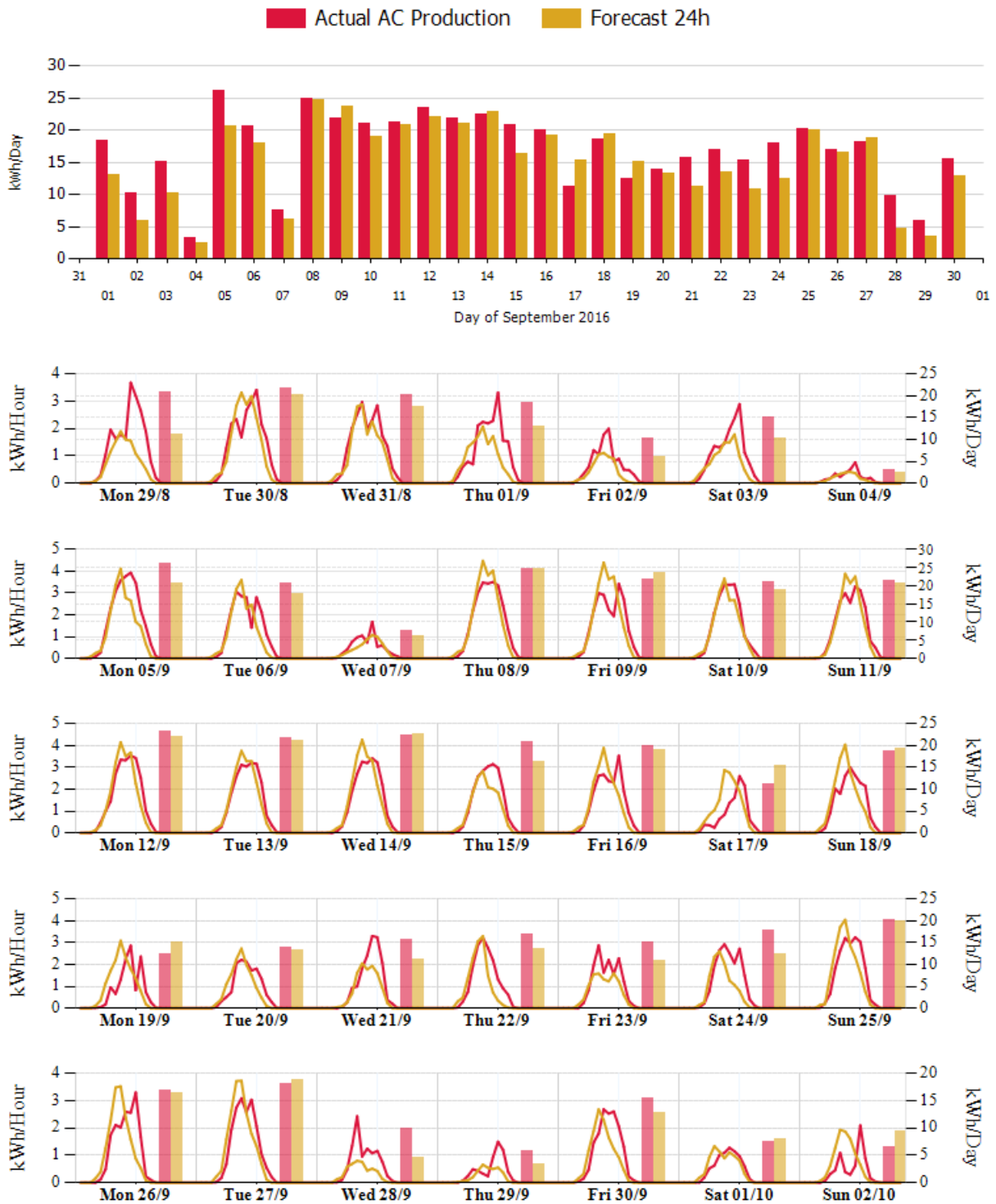
Last 12 months





AC-production per Day in September 2016

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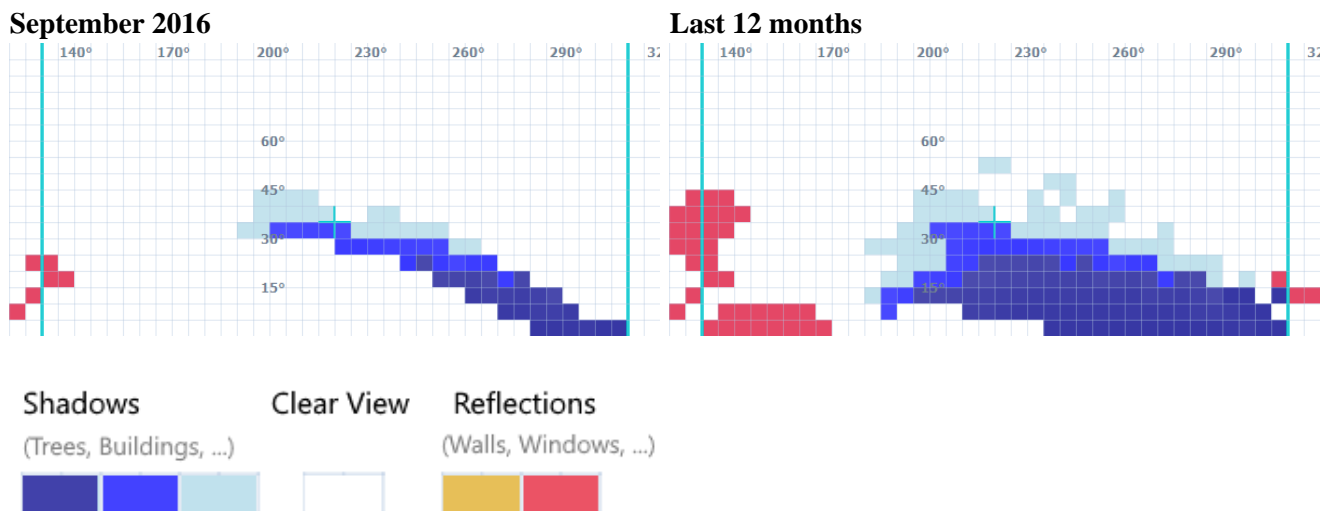
EFFICIENCY September 2016

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	September 2016	Last 12 months
Potential DC-production based on actual calculated efficiency	1,450 kWh	13,844 kWh
Losses due to projection – since panels not 90° against the sun	-595 kWh	-6,326 kWh
Losses due to shadows and reflections	-315 kWh	-2,929 kWh
Losses due to inverter conversion	-32 kWh	-295 kWh
<i>Actual AC production kWh</i>	<i>507 kWh</i>	<i>4,294 kWh</i>

Shadows and Reflections Index

The blue lines indicate Solar positions where direct solar radiation hits the panel.





Solar-PV-Meter - a new Cloud-service to analyze the actual efficiency of solar panel systems and to deliver forecast for the DC/AC hour-production in the next 48 hours.

Solar-PV-Meter provides:

- Cloud-service to upload, visualize and store your power production, solar and weather data
- 'Big Data' analysis of the efficiency of your Solar PV including effects of local shadows
- Forecast for expected AC hour-production 48 hours ahead, and
- Full data access for users by Web & smartphone and monthly reports (see example above)

Data protection, public data and spam

- Your data is your own property, secured with login function and personal password.
- Solar-PV-Meter has only access to use your data to produce *statistics* - not to view or share with other.
- You can 'publish' your data on the Web demo-site making them visible for other users - Please do so!
- No spam – Solar-PV-Meter do not distribute commercial information's to the its users

Upload of data from your solar-PV-plants or inverter

The Cloud service is open for solar panel systems in Europe. The technical requirement is that your panels or inverter automatically can upload DC/AC-production data with at least one measurement per hour – optimum with 5. Minute data. Solar-PV-Meter introduces standard upload procedures for the most common inverters and Cloud-services.

Sign up as new user on www.solar-pv-meter.com and answer some basic information regarding you solar plant (type, size, angles, area, capacity etc.).

Scientific background

Solar panels produces electricity when the sun is shining. The amount of energy produced is a result of the energy in the solar radiation, the angle that the radiation hits the solar panels, local shadows and reflections, panel temperature and the efficiency of panels and inverter. Local shadows from buildings, trees flagpoles etc. may only shade a small area of the panels, but can reduce AC-production with up to 50 – 70%.

The Solar-PV-Meter Cloud-services uses 'Big Data' statistic methods to analyze the energy transformations and the effect of local shadows and reflections.

The result is a number of internal matrix's that characterizes the solar plant, and an algorithm to calculate the AC hour-production, 48 hours ahead, based on the key figures and local weather forecasts.

The concept has received grants for EUDP, the Danish Energy Agency.

More information on www.Solar-PV-Meter.com

Solar-PV-Meter – Cloud Services that analyzes Solar PV efficiency and delivers 48 hours AC-production forecast