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Project name: **Dehaqan**
Project number: ---

Location: Iran / Isfahan

Grid voltage: 230V (230V / 400V)

System overview

1440 x Yingli Green Energy Holding Co. Ltd. YL 315 P-35b (03/2017) (PV array 1)
Azimuth angle: 0 °, Tilt angle: 30 °, Mounting type: Ground mount, Peak power: 453.60 kWp

16 x STP 25000TL-30

PV design data

Total number of PV modules:	1440	Annual energy yield*:	913.82 MWh
Peak power:	453.60 kWp	Energy usability factor:	98.7 %
Number of PV inverters:	16	Performance ratio*:	87.1 %
Nominal AC power of the PV inverters:	400.00 kW	Spec. energy yield*:	2015 kWh/kWp
AC active power:	400.00 kW	Line losses (in % of PV energy):	---
Active power ratio:	88.2 %	Unbalanced load:	0.00 VA

Signature

*Important: The yield values displayed are estimates. They are determined mathematically. SMA Solar Technology AG accepts no responsibility for the real yield value which can deviate from the yield values displayed here. Reasons for deviations are various external conditions, such as soiling of the PV modules or fluctuations in the efficiency of the PV modules.

Evaluation of design

Project name: Dehaqan
Project number:

Subproject 1

Location: Iran / Isfahan
Ambient temperature:
Annual extreme low temperature: -10 °C
Average high Temperature: 33 °C
Annual extreme high temperature: 42 °C

16 x STP 25000TL-30 (PV system section 1)

Peak power:	453.60 kWp
Total number of PV modules:	1440
Number of PV inverters:	16
Max. DC power (cos φ = 1):	25.55 kW
Max. AC active power (cos φ = 1):	25.00 kW
Grid voltage:	230V (230V / 400V)
Nominal power ratio:	90 %
Dimensioning factor:	113.4 %
Displacement power factor cos φ:	1

STP 25000TL-30

PV design data

Input A: PV array 1
45 x Yingli Green Energy Holding Co. Ltd. YL 315 P-35b (03/2017), Azimuth angle: 0 °, Tilt angle: 30 °, Mounting type: Ground mount

Input B: PV array 1
45 x Yingli Green Energy Holding Co. Ltd. YL 315 P-35b (03/2017), Azimuth angle: 0 °, Tilt angle: 30 °, Mounting type: Ground mount

	Input A:	Input B:	
Number of strings:	3	3	
PV modules per string:	15	15	
Peak power (input):	14.18 kWp	14.18 kWp	
Typical PV voltage:	✓ 499 V	✓ 499 V	
Min. PV voltage:	471 V	471 V	
Min. DC voltage (Grid voltage 230 V):	150 V	150 V	
Max. PV voltage:	✓ 763 V	✓ 763 V	
Max. DC voltage:	1000 V	1000 V	
Max. MPP current of PV array:	✓ 25.7 A	✓ 25.7 A	
Max. operating input current per MPPT:	33 A	33 A	

PV/Inverter partly compatible

PV array and inverter type are only conditionally compatible, since the inverter is undersized in this combination (< 99 %).

Wire sizing

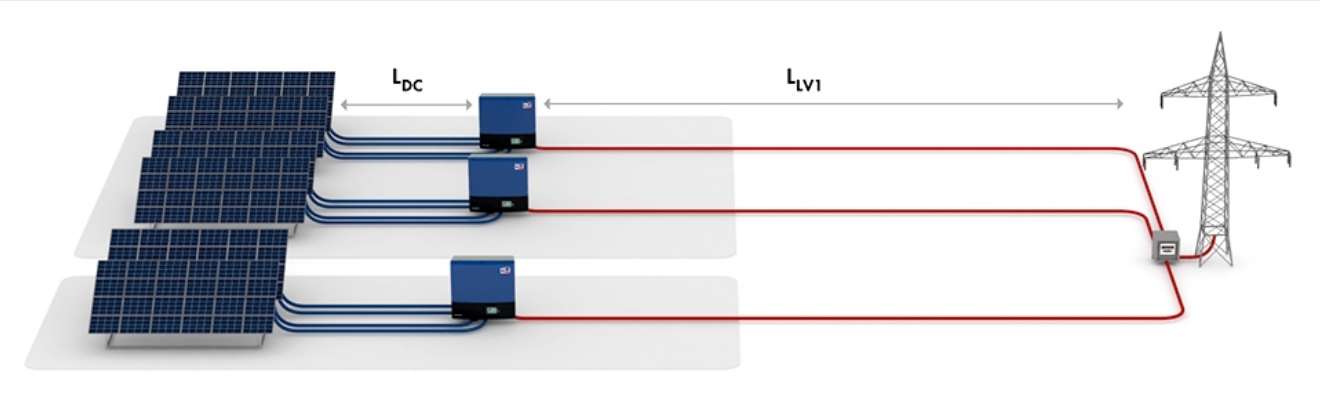
Project name: Dehaqan **Location: Iran / Isfahan**

Project number:

Overview

	DC	LV	Total
Power loss at nominal operation	2.14 kW	7.23 kW	9.37 kW
Rel. power loss at rated nominal operation	0.42 %	1.81 %	2.23 %
Total cable length	1920.00 m	160.00 m	2080.00 m
Cable cross-sections	1,5 mm²	1,5 mm²	1,5 mm²

Graphic



DC cables

		Cable material	Single length	Cross section	Voltage drop	Rel. power loss
Subproject 1						
16 x STP 25000TL-30 PV system section 1	A	Copper	10.00 m	1,5 mm²	2.3 V	0.42 %
	B	Copper	10.00 m	1,5 mm²	2.3 V	0.42 %

Lines LV1

	Cable material	Single length	Cross section	Line resistance	Rel. power loss
Subproject 1					
16 x STP 25000TL-30 PV system section 1	Copper	10.00 m	1,5 mm²	R: 38.222 mΩ XL: 0.750 mΩ	1.81 %

The displayed results are approximate values to give a general indication to users of possible operating results. The results are determined mathematically based on standardized assumptions. The actual operating results will be dictated significantly by the actual irradiation conditions, the actual efficiency, the genset operating conditions and the individual consumption behavior and can deviate from the calculated results. SMA SOLAR TECHNOLOGY AG THEREFORE ASSUMES NO LIABILITY FOR YIELD SHORTFALLS IN THE EVENT OF DEVIATIONS BETWEEN THE CALCULATED- AND ACTUAL OPERATING RESULTS.

System Monitoring

Project name: Dehaqan **Location: Iran / Isfahan**
Project number:

PV system	System Monitoring	
Subproject 1		
 **16 x STP 25000TL-30** PV system section 1		

Information

Project name: Dehaqan **Location: Iran / Isfahan**
Project number:

Dehaqan

Subproject 1

16 x STP 25000TL-30 (PV system section 1)

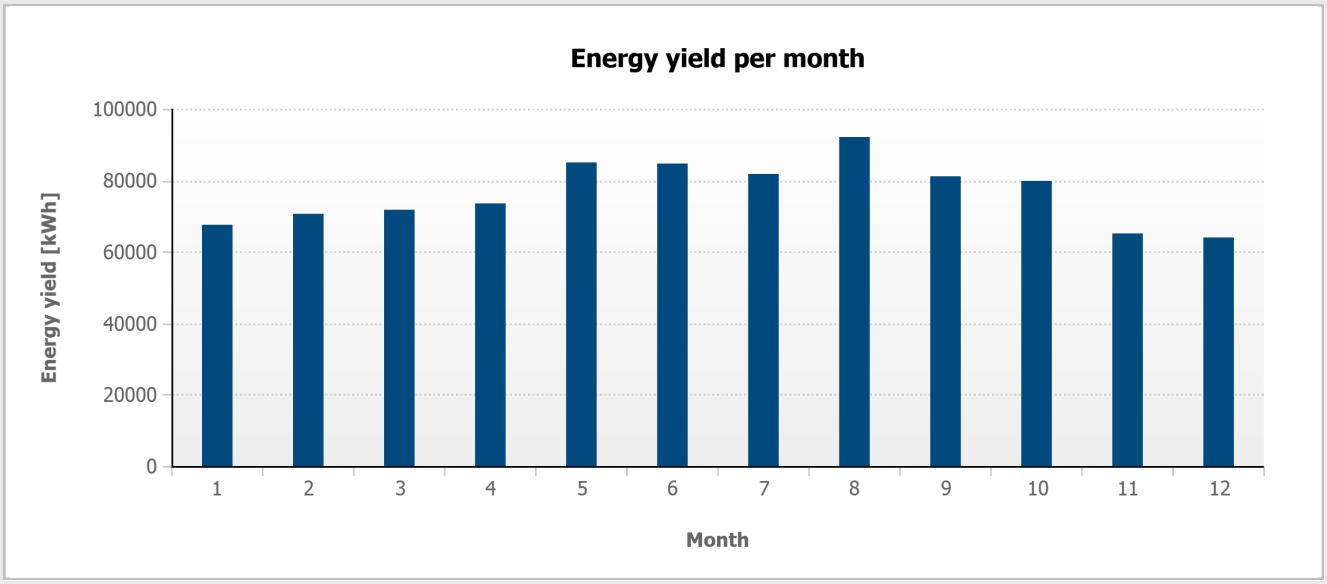
PV array and inverter type are only conditionally compatible, since the inverter is undersized in this combination (< 99 %).

Monthly values

Project name: Dehaqan **Location: Iran / Isfahan**

Project number:

Diagram



Table

Month	Energy yield [kWh]	Performance ratio
1	67353 (7.4 %)	92 %
2	70369 (7.7 %)	89 %
3	71474 (7.8 %)	88 %
4	73299 (8.0 %)	87 %
5	84745 (9.3 %)	86 %
6	84461 (9.2 %)	85 %
7	81417 (8.9 %)	84 %
8	91756 (10.0 %)	84 %
9	80885 (8.9 %)	85 %
10	79502 (8.7 %)	86 %
11	64827 (7.1 %)	90 %
12	63735 (7.0 %)	92 %