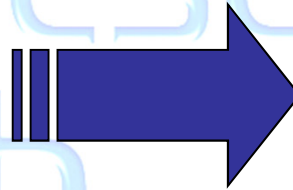




Die Energie an Ihrer Seite.
The energy by your side.

Our services

- engineering planning
- project controlling
- site management
- construction
- operation & maintenance
- TÜV evaluation



On-grid Solar plants

- rooftop and free area
- Storage solutions
- e-mobility integration

Off-grid solutions with storage systems

Integrated energy

About us

Harry Rauch

State-certified management expert – commercial informatics
Certified engineer for electrical engineering

CEO

Executive partner



Acquisition, project controlling, engineering planning, site management

DGS specialist photovoltaics

DGS specialist off-grid solutions

TÜV Rheinland PV evaluator

Silvio Hauenschild

Certified engineer for electrical engineering
Thematic priority
Renewable Energy

Procurator

Partner



project controlling, engineering planning, site management, IT

Specialization:

Off-grid solutions

Integrated energy

About us

Energieschmiede – Rauch:

Founded April 2007

Owner: Harry Rauch

ESR GmbH

Energieschmiede – Rauch

Founded as SGN Projekt GmbH 2009

Rebranding to ESR GmbH 2013

CEO : Harry Rauch

Registered office:

04668 Grimma near Leipzig

Neuer Weg 12 & Weinbergstr.21

Country:

Germany / Saxony

Fon office:

+49(0)170 - 9622673

Website:

<https://esr-se.de>

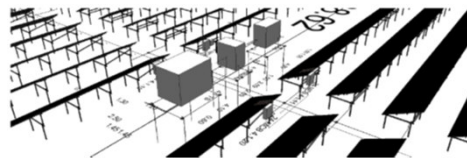
Email:

info@esr-se.de

CEO Harry Rauch



*Evaluator
photovoltaic plant
TÜV Rheinland“*



qualifications in the renewable energy / solar:

- 1994 Certified electrical technician engineer for energy and process automation
- 1998 Solar Energy consultant for photovoltaic systems
- 2005 Certified business economist for Computer Science in Economics
- 2005 self-sufficient energy supply for pressure measurement point in the Berlin

Water Supply Network

2007 foundation Company „Energieschmiede“ (a second job)

- 2007 DGS photovoltaic specialist
- 2008/2009 initiate, public invitation to tender for largest pv plant „Berliner

Wasserbetriebe“ Berlin Water Supply Waterworks Berlin Tegel

- 2010 foundation Company SGN Project GmbH to realize
large pv plant outside from Berlin Water Supply in own responsibility

Qualification in Renewable Energy / Solar:

- 2011 lecturer DGS Solar School for large pv - plant
- 2013 TÜV Rheinland authority for photovoltaic as Evaluator
- 2013 change the Name from SGN Projekt GmbH to ESR GmbH Energieschmiede Rauch to expansion in Hybridplant PV + Wind + Electrical Energy Storage
- has been working internationally since then with more then 790 MWp

Photovoltaik · Solarthermie · Wärmepumpe

2008 Germany Berlin Water Supply „Berliner Wasserbetriebe“ rooftop pv plant 192 kWp



activity / responsibility:

- arrange project document to decision from board of directors
- initiate, public invitation to tender
- project management
- construction site management
- check quality and quantity to verify invoice from the subcontractors
- the whole monitoring system

2009 Germany Berlin Water Supply „Berliner Wasserbetriebe“ free area plant 364 kWp



Realität und Plan stimmen überein. Der Projektleiter der Berliner Wasserbetriebe, Harry Rauch (2.v.l.), und der Projektleiter der Solar Gruppe Nord, Dirk Gnausch(2.v.r.), die die Anlage nach den Plänen der Wasserbetriebe montieren, bei einer Beratung vor Ort. Im Hintergrund die neue, zum Teil fertiggestellte Photovoltaikanlage am Tag der Aufnahme Anfang Juni.

Foto: Hen



activity / responsibility:

- arrange project document to decision from board of directors
- initiate, public invitation to tender
- project management
- construction site management
- check quality and quantity to verify invoice from the subcontractors
- the whole monitorings system

2010 Germany - Stedten chicken farm rooftop pv - plan 870 kWp



activity / responsibility:

- detail planning
- project management
- construction site management
- monitoring system
- check energy production

2010 Germany - Trebsen cowshed rooftop pv –plant 860 kWp



activity / responsibility:

- detail planning
- project management
- construction site management
- monitoring system
- check energy production

2010 Germany - Bremen dump free area pv – plant 860 kWp



activity / responsibility:

- detail planning
- project management
- construction site management
- monitoring system
- check energy production



2010 Germany – Glauchau rooftop pv - plant 2.417 kWp



activity / responsibility:

- detail planning
- project management
- construction site management
- monitoring system
- check energy production

2010 Germany – Radeberg rooftop pv – plant 857 kWp



activity / responsibility:

- detail planning
- project management
- construction site management
- monitoring system
- check energy production

2010 Germany – Sonnefeld rooftop pv – plant 2.383 kWp



activity / responsibility:

- detail planning
- project management
- construction site management
- monitoring system
- check energy production

2011 Germany - Ferropolis rooftop pv -plant 21



activity / responsibility:

- detail planning
- project management
- construction site management
- monitoring system
- check energy production

2012 Germany - Werdau free area pv - plant 1.330 kWp



activity / responsibility:

- detail planning
- project management
- construction site management
- monitoring system
- check energy production

2012 Germany - Sömmerda free area pv - plant 1.300 kWp



activity / responsibility:

- detail planning
- project management
- construction site management
- monitoring system
- check energy production

2012 Germany - Umpferstedt free area pv - plant 1.000 kWp



activity / responsibility:

- detail planning
- project management
- construction site management
- monitoring system
- check energy production

2012 Germany - Demmin rooftop pv - plant 1.542 kWp



activity / responsibility:

- detail planning
- project management
- construction site management
- monitoring system
- check energy production

2013 Germany - Demmin free area pv -plant 1.401kWp



activity / responsibility:

- detail planning
- project management
- construction site management
- monitoring system
- check energy production

2013 Germany - Röllfeld Freifläche 2.445 kWp



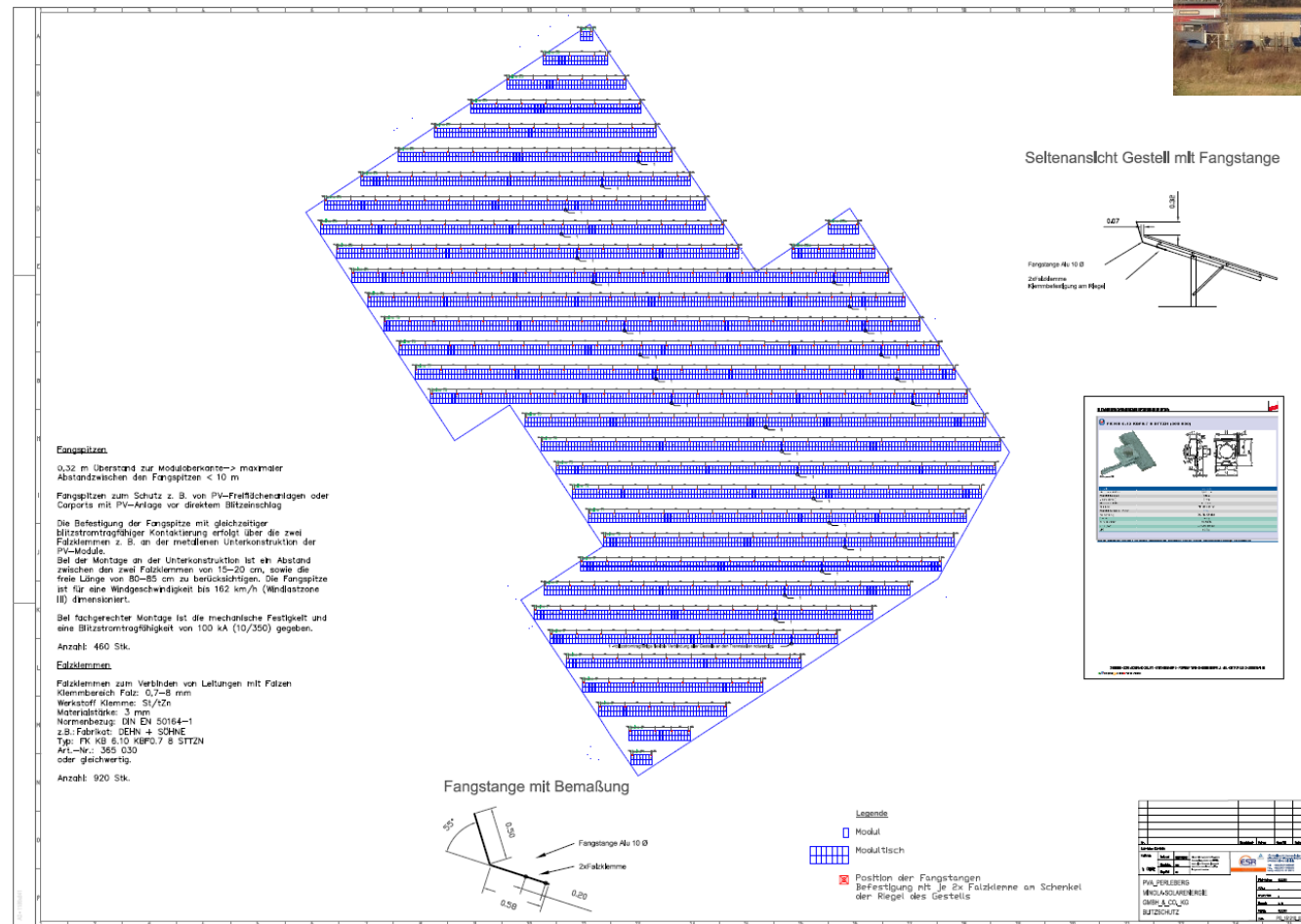
miede

activity / responsibility:

- detail planning

Wärmepumpe

2014 Germany - Perleberg free area plant 1.680 kWp



niede

activity / responsibility:

- detail planning
- project management
- construction site management
- monitoring system
- check energy production

2014 Pakistan – Cholistan Bahawalpur Feasibility Study QuaideAzam free area plant 500 MWp

activity / responsibility:

- Forecast
 - 800,5 GWh/a
 - 1.601 kWh/kWp
 - 650 ha
 - 2 year building time

+ Feasibility study
+ Output forecast

Turkey 500 MWp Photovoltaic system
Elbistan

Report PV-2014-9961-025

Version 1.0 – 27th May 2014

Figure 4: TGT substructure drawing with ballast [ZMW Elbistan]

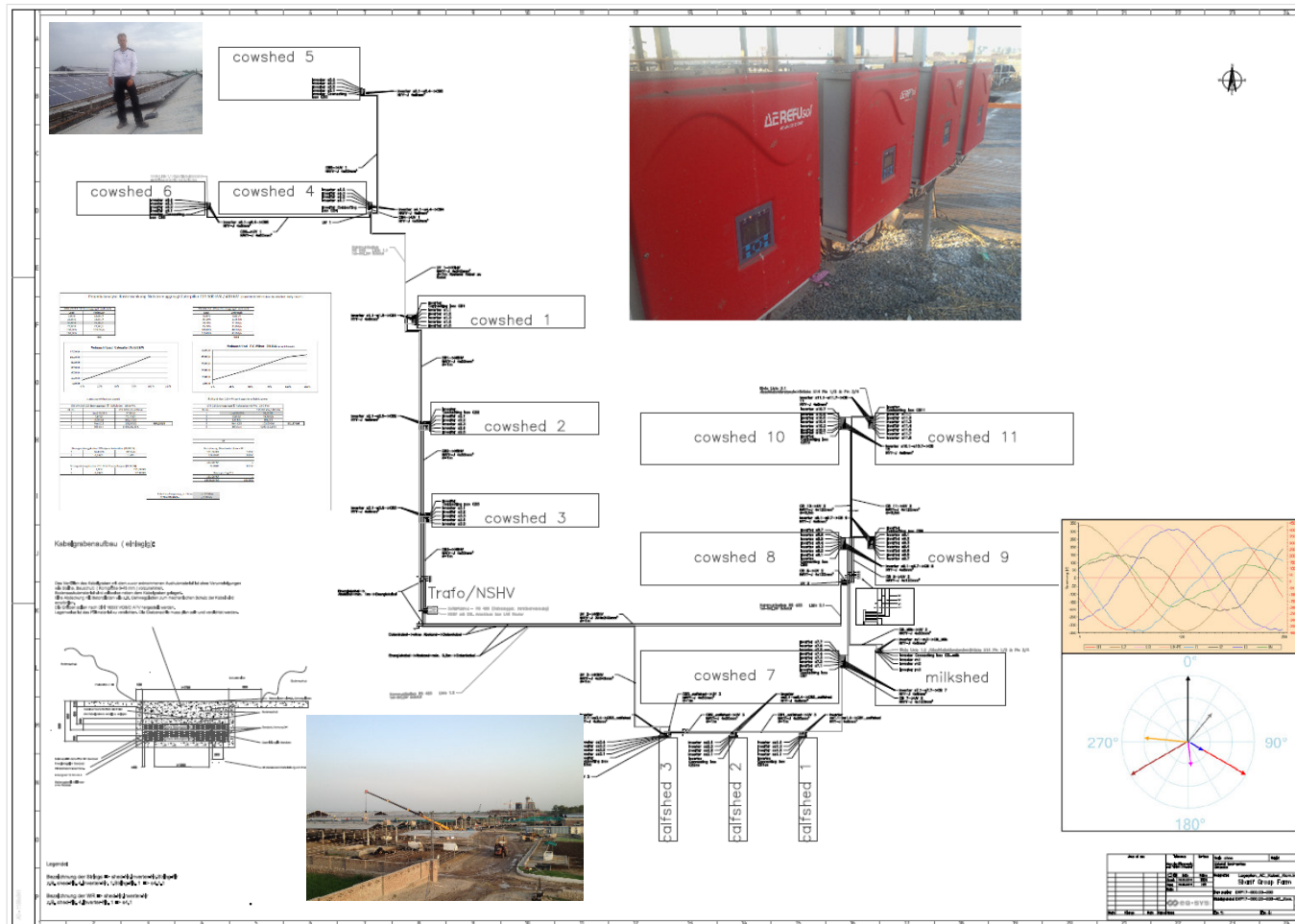


Figure 5: Representative PV module [ZMW Elbistan]



EPC from China
ESR no responsibility
in all other steps!

2015 Pakistan – Punjab Chinot Dairy Farm rooftop plant 1.692 kWp



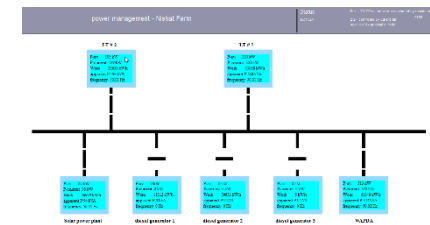
activity / responsibility:

- detail planning
- project/construction site management
- monitoring system
- check energy production
- analysis the
- custom current grid network
- cost potenzial analysis decrease DG + PV Hybrid plant

2015 Pakistan – Punjab - Hafizabad Dairy Priv. Ltd. free area plant 1.080 kWp

activity / responsibility:

- detail planning
- project/construction
- site management
- monitoring system
- check energy production
- analysis the
- custom current grid network
- realize PV + DG Hybrid plant



2016 Pakistan – Punjab - Lahore Mills Ltd. rooftop plant 1.495 kWp

ESR GmbH, Weinbergstr. 21, D – 04668 Grimma

Nishat MILLS LIMITED.
1ST FLOOR KARACHI
CHAMBERS
HASRAT MOHANI ROAD

74000 KARACHI, PAKISTAN



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HRB 27416
USt-ID:
DE 270164885
Bank:
Sparkasse Muldentale
IBAN: DE58860502001041042139
BIC: SOLADES1GRM



activity / responsibility:

- check the whole pv plant according to
DIN EN 62446-1
DIN VDE 0100-712
- write TÜV report



technical TÜV standards

authority audit certificate

power construction project

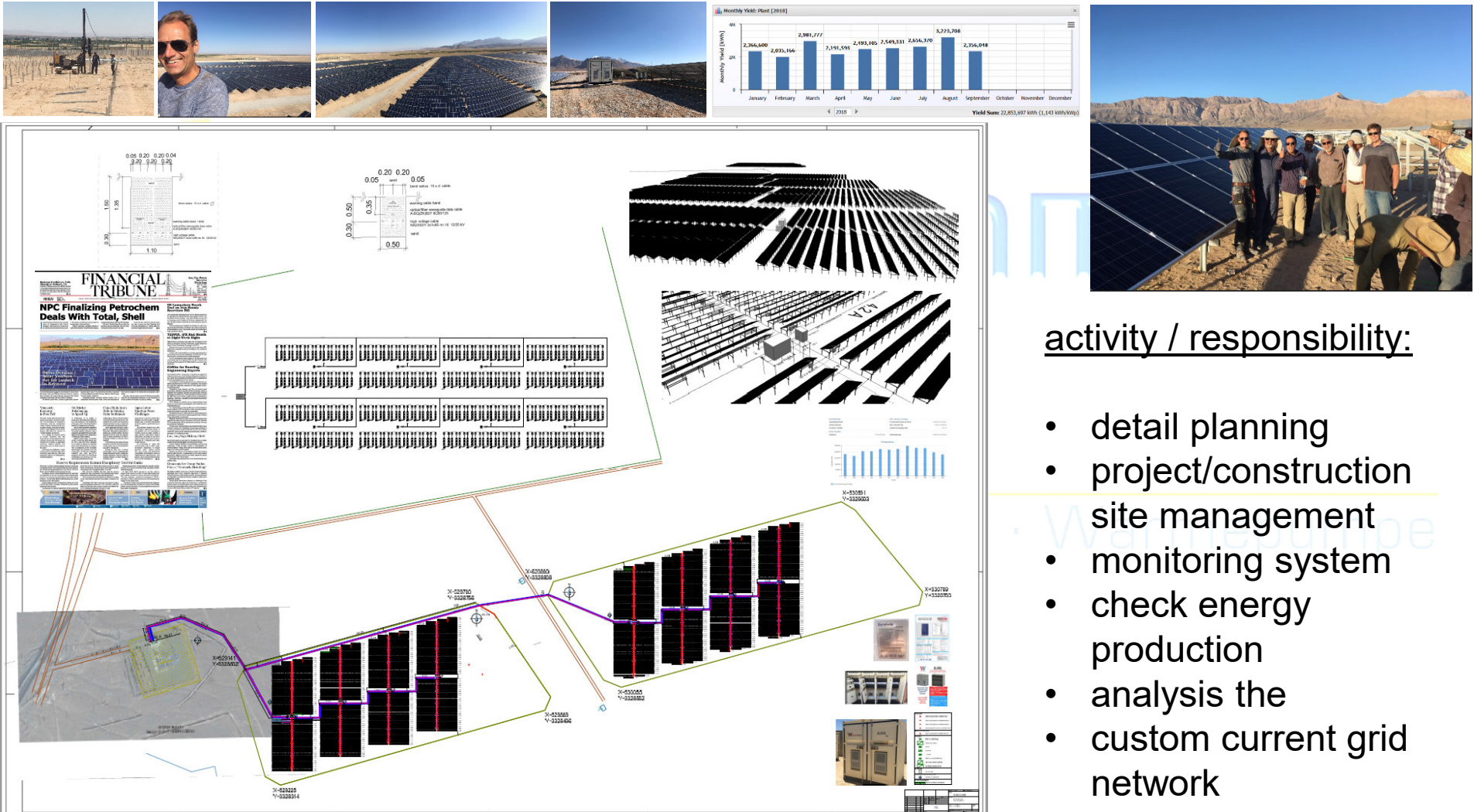
Pakistan Nishat Apparel Unit 2

roof top pv plant

1.495 kWp



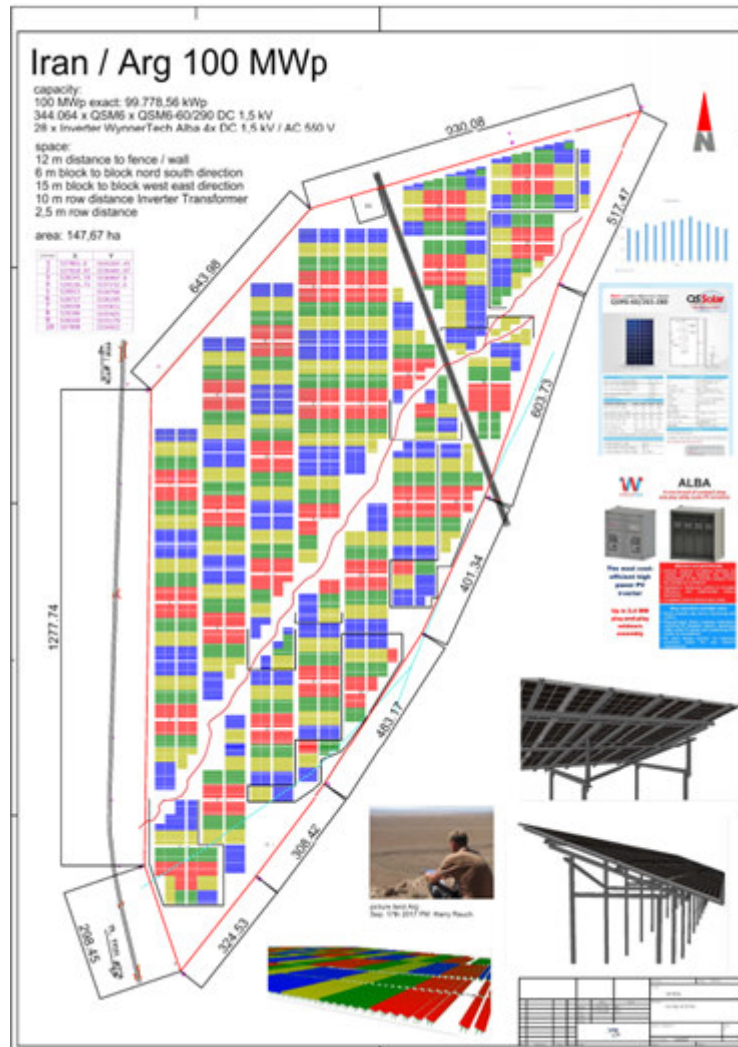
2017 Iran - Kerman - Mahan free area plant 19.997,20 kWp



activity / responsibility:

- detail planning
- project/construction
- site management
- monitoring system
- check energy production
- analysis the
- custom current grid network

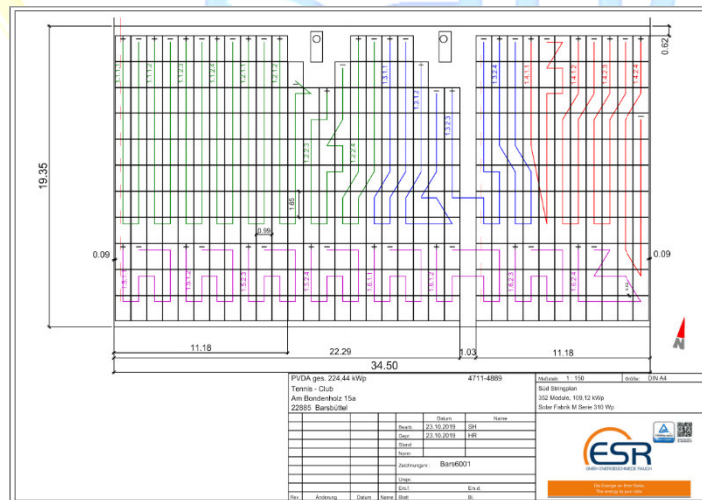
2018 Iran - Kerman - Mahan free area plant 99,779.56 kWp



activity / responsibility:

- detail planning
- project/construction site management
- the project was stopped by the USA sanction and has not been completed

2019 Germany Schleswig – Holstein, Barsbüttel roof top pv plant 224kWp

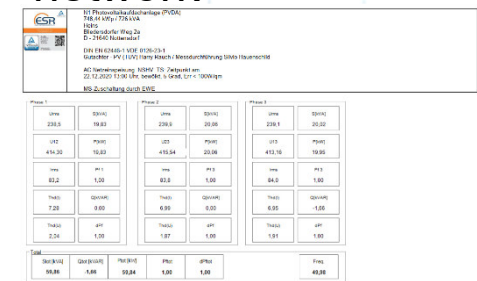
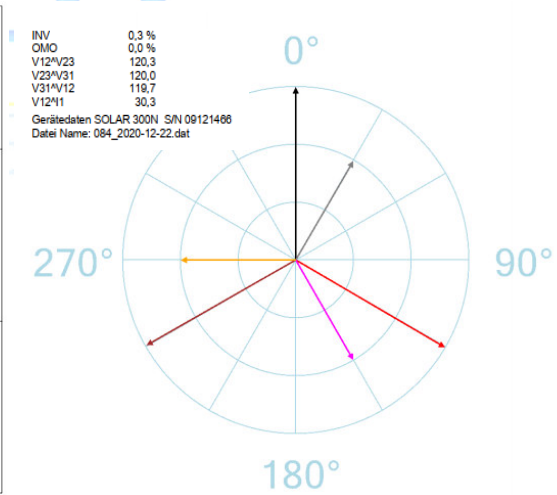


activity / responsibility:

- detail planning
- project/construction site management
- monitoring system
- check energy production
- analysis the
- custom current grid network



- | | |
|---|---|
| | 111 Photovoltaikaufdachanlage (PVDA)
788,64 kWh = 776 kWh |
|---|---|

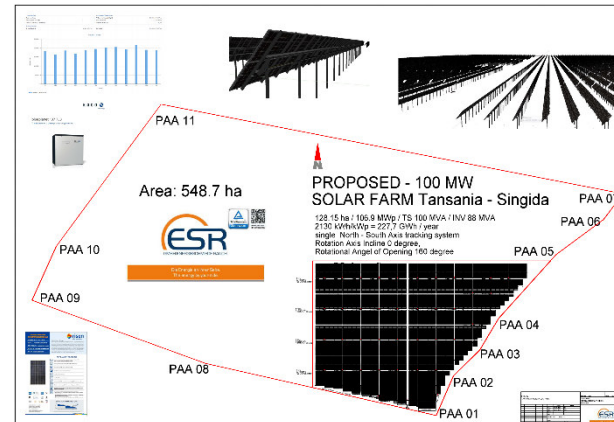


2020 Tanzania – Singiad Feasibility Study free area plant 106.9 MWp

activity / responsibility:

+ Feasibility study Output forecast

Tanzania Singida 106.9 MWp / TS 100 MVA / INV 88 MVA
Azimut 0 degree, Indination 10 degree
Photovoltaic system none tracking
128.15 ha



- Forecast
- 181.73 GWh/a
- 1.700 kWh/kWp
- 128 ha
- 1 year building time

Report PV-2020-01

Version 1.0 – 20th Jan. 2020

Prepared on behalf of the



Weinbergstr.21
D – 04668 Grimma

Sign:

CEO Harry Rauch
Jan. 20th 2020

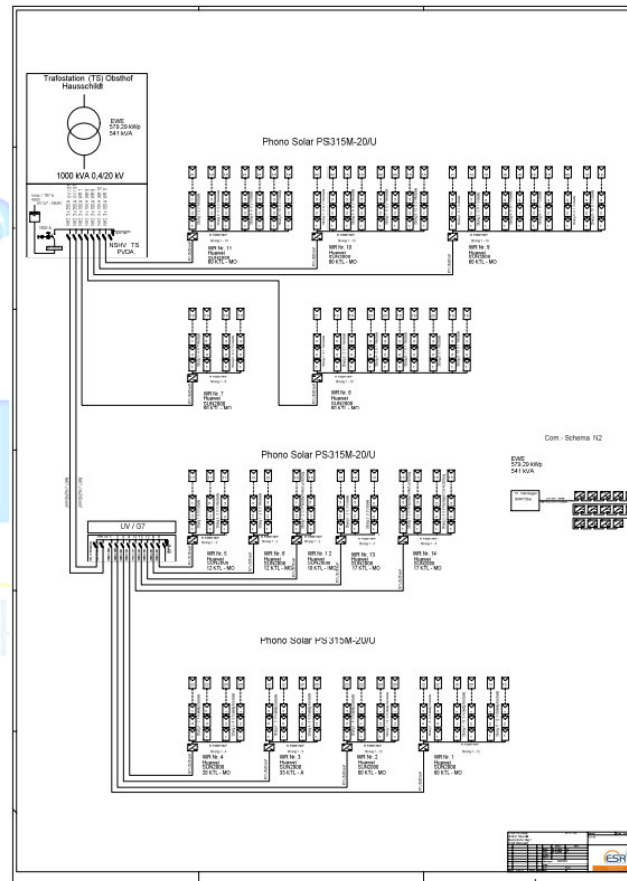


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email: h.rauch@sun-steel.de
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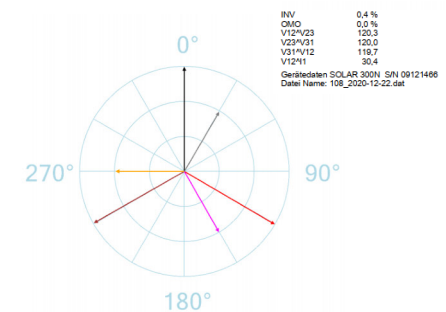


2020 Germany Niedersachsen, Nottensdorf roof top pv plant 579 kWp



activity / responsibility:

- detail planning
- project/construction site management
- monitoring system
- check energy production
- analysis the
- custom current grid network



Die Energie an Ihrer Seite
 Ihre Energie an unserer Seite

2022 Tanzania – Pembe Feasibility Study free area plant first 15,89 MWp from total 30 MWp

Proposal for a Solar Power Plant

in Pemba

30.096 MWp Photovoltaic system

Proposal PV-2022-02

Version 1.0 – 13th Sep. 2022

Prepared on behalf of the



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ESR GmbH

Neuer Weg 12

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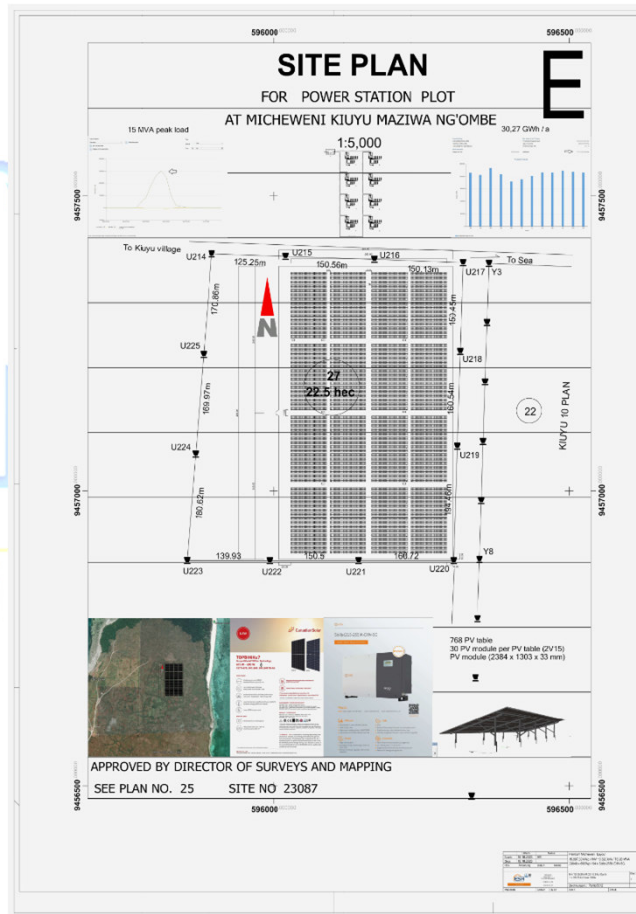
web: www.esr-se.de

Sign:

CEO Harry Rauch

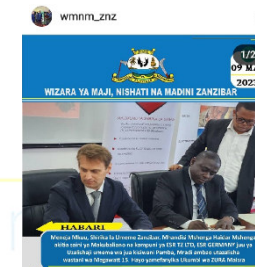
Sep. 13th 2022

Proposal ESR in Germany.



activity / responsibility:

- Forecast
- 32 GWh/a
- 1.900 kWh/kWp
- 22,5 ha
- 1 years building time





Rooftop plant Lamellar-systems company

463 kWp

Germany, Schleswig-Holstein, Ahrensburg

2022 Germany Bavaria, Oening free area plant 14,711 kWp



activity / responsibility:

- project/construction site management

2022 Germany Bavaria, Altenschwant free area plant 10,434 kWp

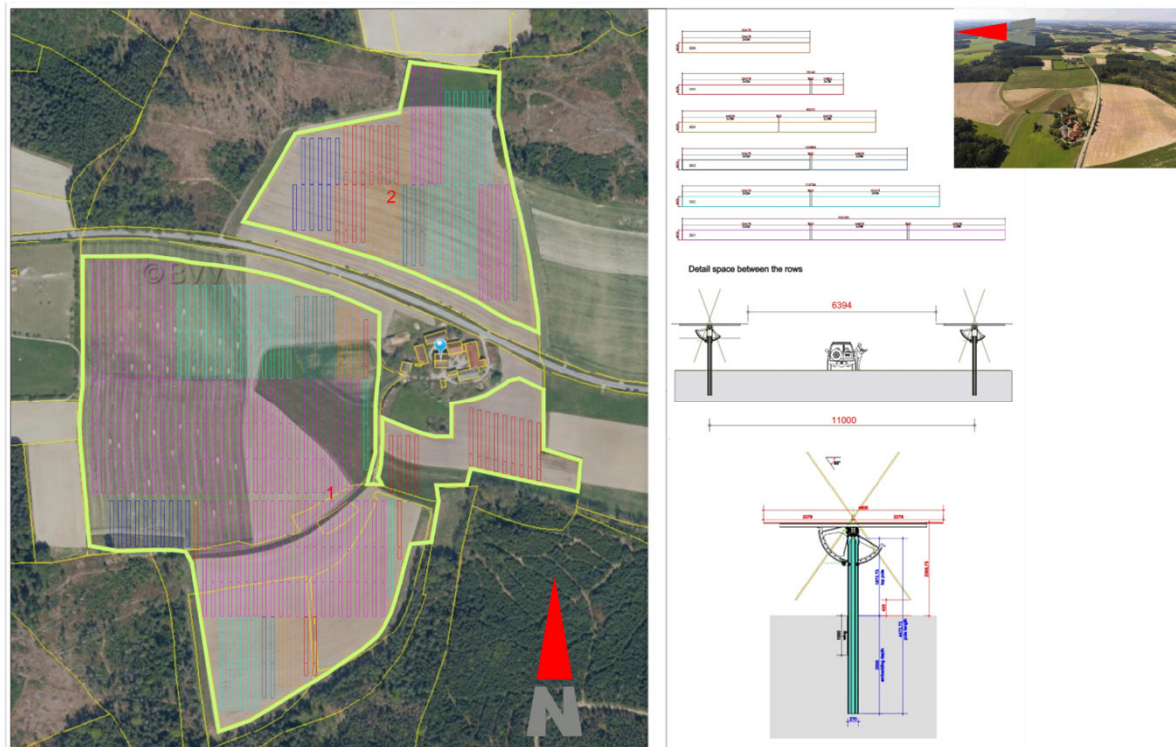


activity / responsibility:

- project/construction
site management

Wärmepumpe

2023 Germany – Bayern Johanniskirchen / Oberstadl Freifläche 20.036 kWp



niede

activity / responsibility:

- preliminary design

- detail planning

still in progress

- construction

will be in 2024

- opening

will be in 2025

incl. 40 MVA 33/110 kV

Substation and 9 km

Transmission Line

our reference

lfd.-Nr.:	photovoltaic plant reference between 2007 - now ESR GmbH			type	power (STC)
1	Germany	Sachsen	Trebsen	rooftop	680 kWp
2	Germany	Berlin	Berlin - Tegel	rooftop	556 kWp
3	Germany	Berlin	Berlin - Tegel	free area plant	364 kWp
4	Germany	Sachsen - Anhalt	Stedten	rooftop	870 kWp
5	Germany	Thüringen	Sömmerda	free area plant	1.300 kWp
6	Germany	Thüringen	Umpferstedt	free area plant	1.000 kWp
7	Germany	Sachsen	Werdau	free area plant	1.330 kWp
8	Germany	Mecklenburg Vorpommern	Demmin	rooftop	1.542 kWp
9	Germany	Sachsen	Glauchau	rooftop	2.417 kWp
10	Germany	Sachsen	Radeberg	rooftop	857 kWp
11	Germany	Bayern	Sonnefeld	rooftop	2.383 kWp
12	Germany	Bremen	Bremen	free area plant	827 kWp
13	Germany	Mecklenburg Vorpommern	Burow-Weltzin	free area plant	1.401 kWp
14	Germany	Bayern	Röllfeld	free area plant	2.445 kWp
15	Germany	Mecklenburg Vorpommern	Perleberg	free area plant	1.680 kWp
16	Pakistan	Punjab	Chinot	rooftop	1.692 kWp
17	Pakistan	Cholistan	Bahawalpur	Feasibility Study	500.000 kWp
18	Pakistan	Punjab	Hafizabad	free area plant	1.080 kWp
19	Pakistan	Punjab	Lahore	rooftop	1.495 kWp
20	Iran	Kerman	Mahan	free area plant	20.000 kWp
21	Iran	Kerman	Arg	detailed planning	99.779 kWp
22	Germany	Schleswig-Holstein	Barsbüttel	rooftop	224 kWp
23	Germany	Niedersachsen	Nottensdorf N1	rooftop	748 kWp
24	Germany	Niedersachsen	Nottensdorf N2	rooftop	577 kWp
25	Germany	Schleswig-Holstein	Ahrensburg	rooftop	463 kWp
26	Germany	Bayern	Oening	free area plant	14.711 kWp
27	Germany	Bayern	Altenschwant	free area plant	10.434 kWp
28	Germany	Bayern	Johanniskirchen / Oberstadl	free area plant	20.036 kWp
29	Tanzania	Singida		Feasibility	100.000 kWp
30	Tanzania	Zanzibar		Feasibility	256.000 kWp
31	Tanzania	Pemba	Micheweni progress	free area plant	15.890 kWp
32	Germany	Sachsen	Heinsdorfergrund	rooftop	950 kWp
33					1.063.732 kWp

thank you for your attention

