

IBC SOLAR

THE LEADING ENERGY COMPANY

Smart Systems
for Solar Power



SIDE BY SIDE FOR A WORLD FULL OF ENERGY

'We are proud of our many trustworthy and long-term partnerships with local Premium Partners all over the world. We are renowned for our excellent Premium Partner support.'



Udo Möhrstedt,
Founder and Chief Executive Officer



IBC SOLAR 2017 – FACTS AND FIGURES

1000

Partners

50

countries

160.000

systems worldwide

3.3

GWp

360

employees in
11 countries

10

subsidiaries

OUR SOLUTION – PV – DIESEL HYBRID SYSTEMS

■ What are typical application scenarios for diesel hybrid systems?

- Areas with no or poor electrical grid
- Even fuel supply is complicated due to poor logistic infrastructure
- Typically in third world countries



OUR SOLUTION – PV – DIESEL HYBRID SYSTEMS

■ A case study – initial situation :

- Printing company located in Germany
- Operating hours of the company within 5:00 – 21:00 (250 days/year)
- Electricity needed for operating hours generated by a 300kVA diesel genset
- Additional use of diesel motor heat for work area warmth and process heat
- Steady increase of already high diesel procurement costs



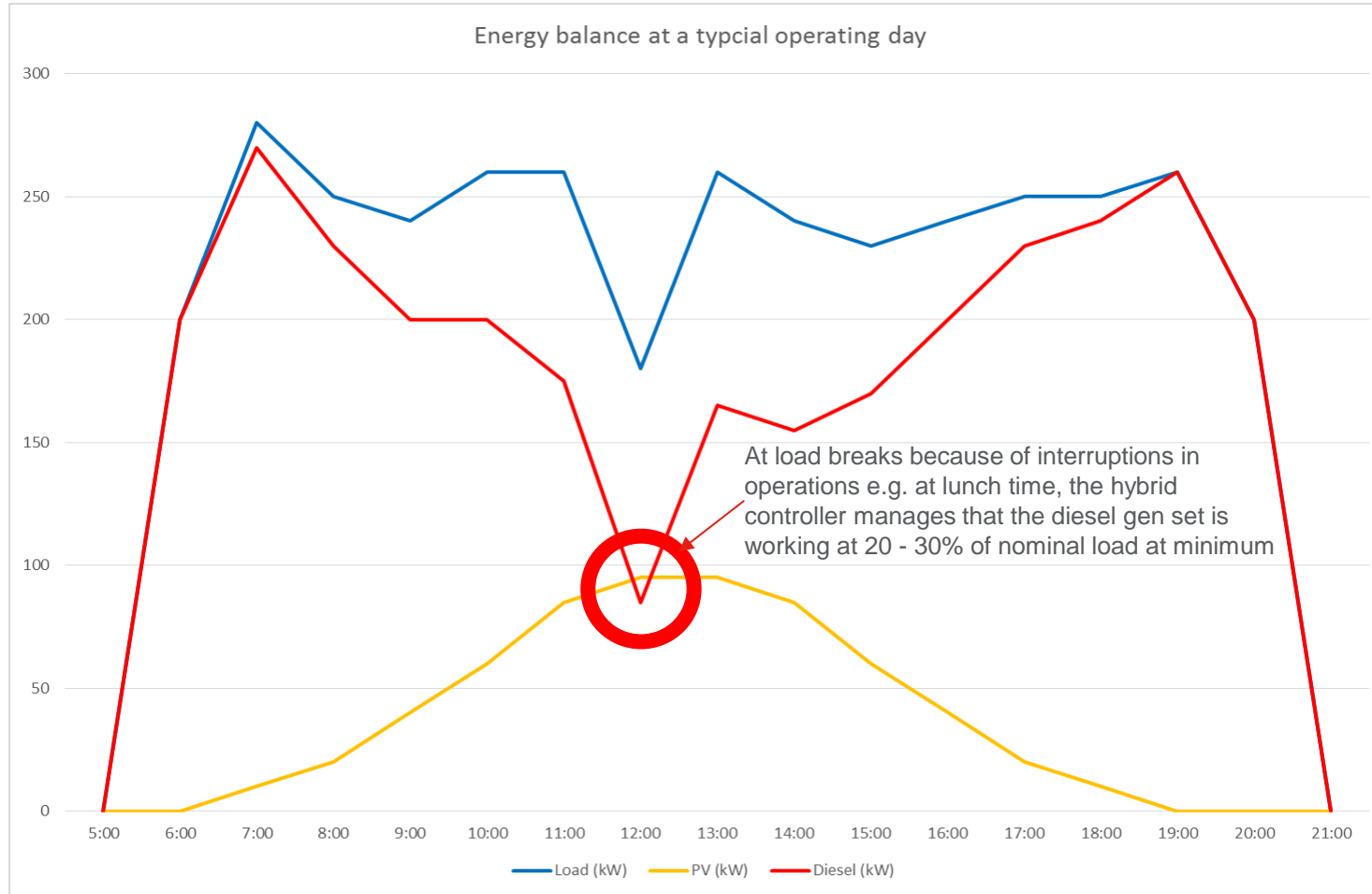
Source: <http://regler-druckzentrum.de/>

OUR SOLUTION – PV – DIESEL HYBRID SYSTEMS

▣ A case study – PV-Diesel Hybrid solution:

- IBC SOLAR designed a **95,4 kWp PV-Diesel hybrid solution** in which the energy generated by the PV system is **directly fed into the diesel grid**. The **operating range** of the **diesel genset** is at **minimum 20% of nominal load** to avoid increase in fuel consumption and shorter maintenance intervals. This is secured by a control unit. But the energy generated by the PV-system only can be used during the operating hours when the diesel genset runs. Therefore, the investor already thinks about installing a **commercial storage solution in a second phase**

OUR SOLUTION – PV – DIESEL HYBRID SYSTEMS



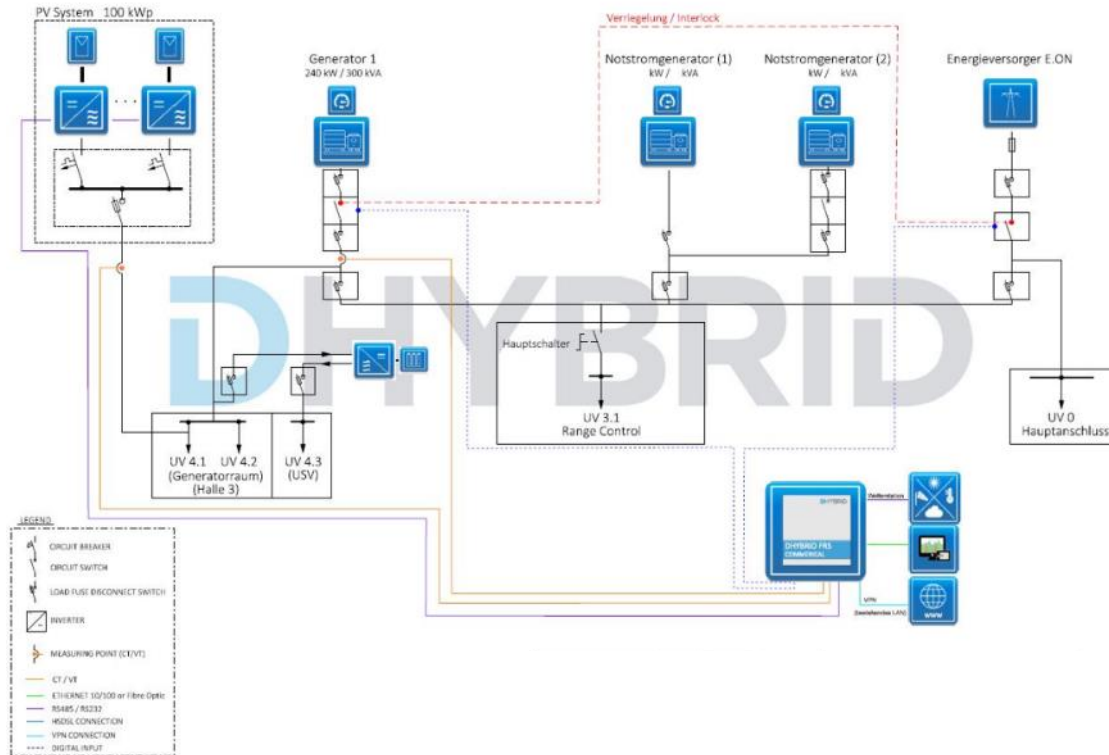
OUR SOLUTION – PV – DIESEL HYBRID SYSTEMS

■ A case study – PV-Diesel Hybrid solution:

- PV-installation:	95,4 kWp
- Estimated yields on plant:	950 kWh/kWp
- Estimated energy production in 250 operating days:	62.100 kWh/year
- Typical consumption of a diesel gen set:	0,28 liters/kWh
- Estimated reduction in fuel consumption:	17.400 liters
- Estimated fuel procurement costs over running time:	1,00 Euro/liter
- Estimated annual savings (based on average fuel pricing):	17.400 Euro
- Estimated share in PV-energy utilization:	90%
- Estimated amortization time (without financing costs):	7 years
- Investment sum:	110.000 Euro

OUR SOLUTION – PV – DIESEL HYBRID SYSTEMS

■ A case study – PV-Diesel Hybrid solution:



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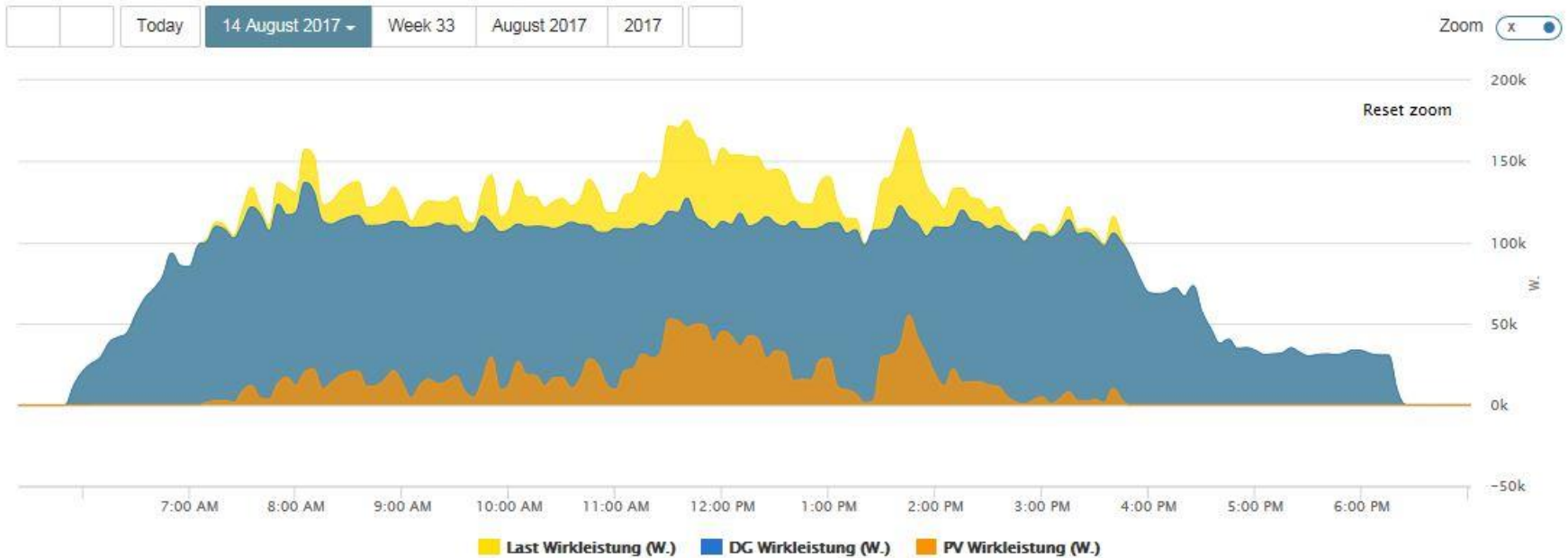
■ A case study – PV-Diesel Hybrid solution:



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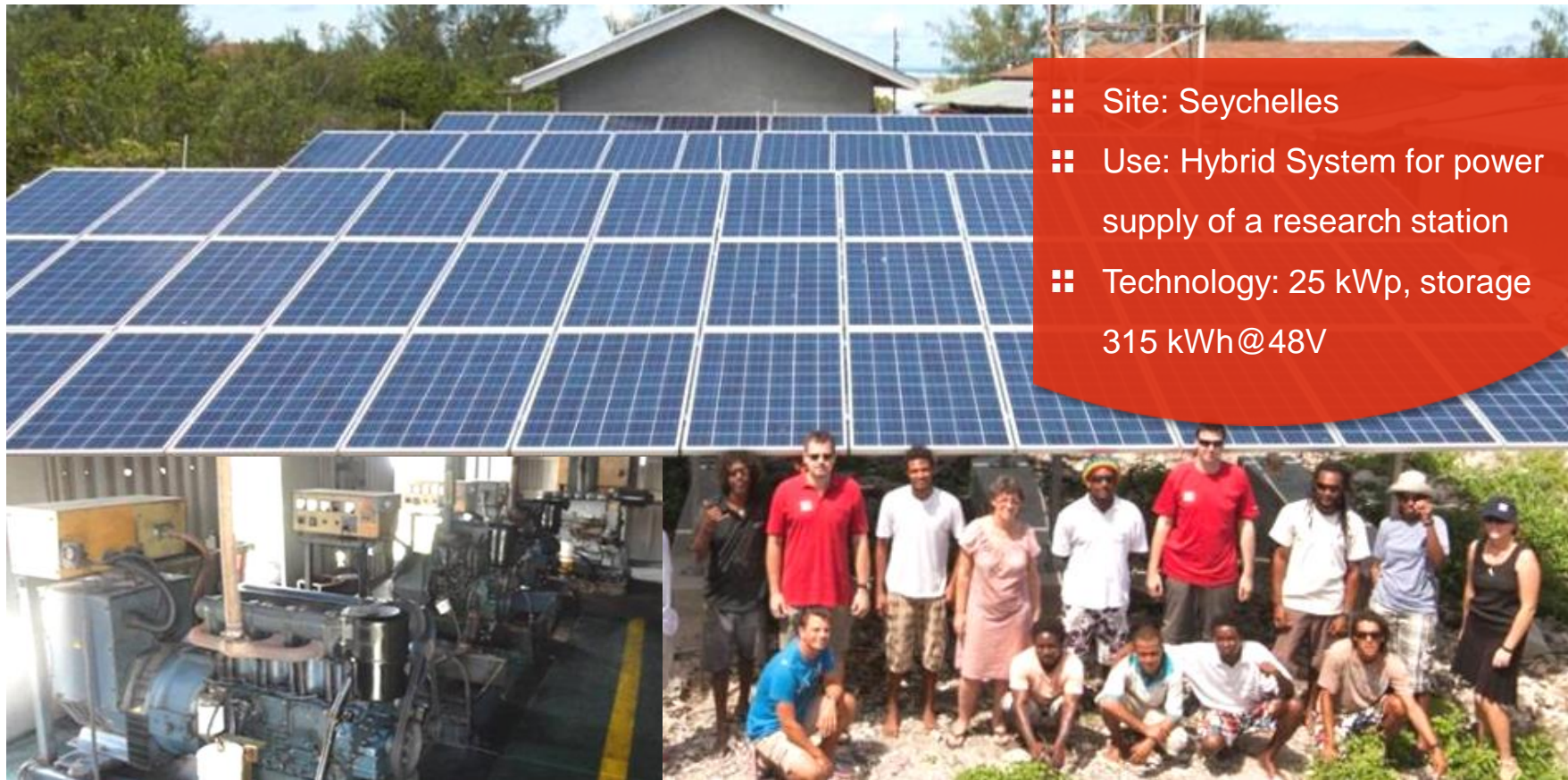
■ A case study – PV-Diesel Hybrid solution:

DHYBRID | UPP | LASTPROFIL



EVIDENCE OF SUCCESS

PV – DIESEL HYBRID SYSTEMS - REFERENCES



- ❑ Site: Seychelles
- ❑ Use: Hybrid System for power supply of a research station
- ❑ Technology: 25 kWp, storage 315 kWh@48V

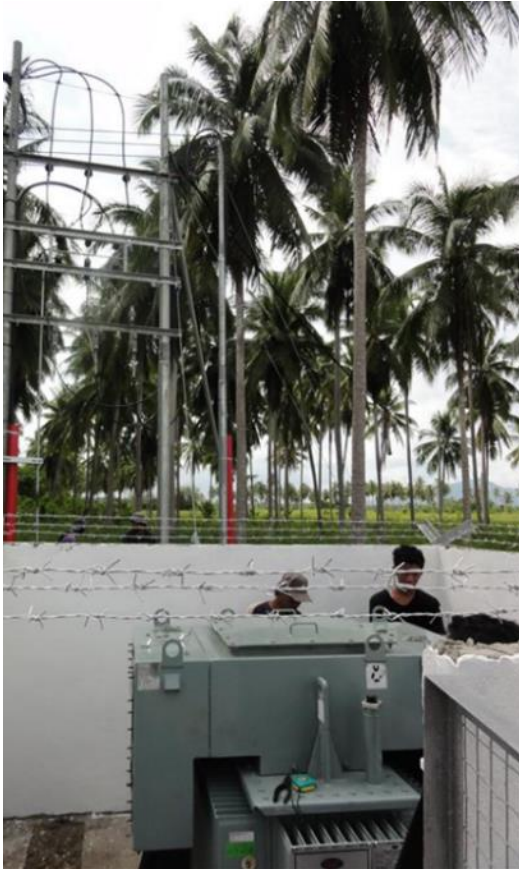
PV – DIESEL HYBRID SYSTEMS - REFERENCES



- ❑ 9 Site: Malaysia 1500kwp
- ❑ Use: Hybrid system for school and village electrification
- ❑ Technology: effective power from 150kWp up to 276 kWp



PV – DIESEL HYBRID SYSTEMS - REFERENCES



- ❑ 9 Site: Malaysia 1500kwp
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IBC SOLAR AG

Am Hochgericht 10
96231 Bad Staffelstein
www.ibc-solar.com

Solutions International Department

Email: solutions-international@ibc-solar.com

www.ibc-solar.com