

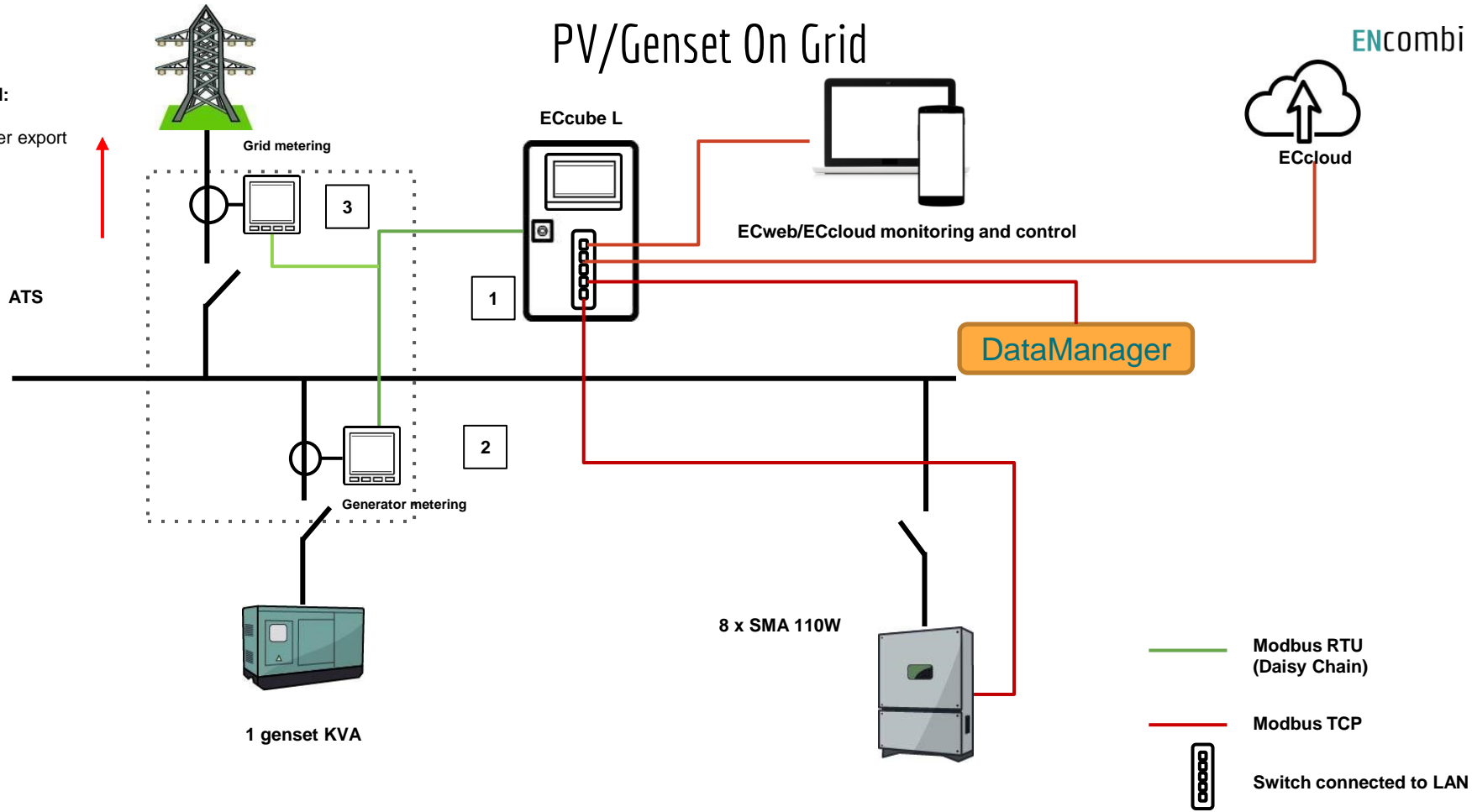
# ENcombi

*221207\_8\_110KW SMA PV/Genset*  
*DEFY, South Africa*

# PV/Genset On Grid

**FUNCTION:**

- Zero power export



- Modbus RTU (Daisy Chain)
- Modbus TCP
- Switch connected to LAN

**FUNCTION:**

- 30% Minimum genset load protection

# Operation mode: PV/Genset On Grid

While paralleling PV with the gensets, the ECpv will control the injection of active power to maintain the gensets at their minimum operating load and the reactive power in order to keep the gensets within their operating capabilities.

While paralleling PV with the grid, the ECpv is able to control the injection of active and reactive power towards the grid. This can be used for ensuring zero or a only a set amount of power is exported to the grid.

The genset will have a Gen meter with a Modbus port. The grid connection will have a Grid Meter and the inverter string will be connected through Modbus TCP. SMA Data logger and Ecpv will communicate with the inverters through the Modbus TCP. Grid and Gen meters will be connected on Modbus RTU. All communication lines will be connected to the ECcube through the bottom plate.

The inverters will be controlled through **a Modbus TCP through Built in SMA Speedwire INTERFACE.**

On site monitoring, alarms and summary logs can be done by connecting a PC to the ECcube switch. Optionally the ECpanel 7" HMI can be added as operator interface. Remote monitoring can be done with an ECcloud license through a local router or modem as an option.

Go to: [www.encombi.com/ecpv](http://www.encombi.com/ecpv) for more product information

## Bill of ENcombi materials

Pos.	Product	Units needed	Notes
1	Kath Eccube	1 pcs.	<i>Pre-wired board with all communication and Power protection, to be connected to 230V, 2 x RS-485 lines and Ethernet to LAN.</i>
2	Ecpv_2_L	1 pcs.	Supplied by Encombi
3	SPM33 Meter	2 pcs.	Supplied from ENcombi. CT´s not included
Option	ECpanel7	1 pcs.	HMI Touch screen for operator at site
Option	ECcloud	1 pcs.	Product Lifetime Cloud Access. Minimum 5 years

# Tech Details

Cloud, ECcube and SPM33

# ECcloud - overviews

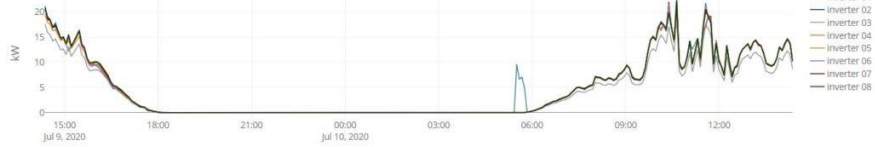
## Overview

Accessible sites

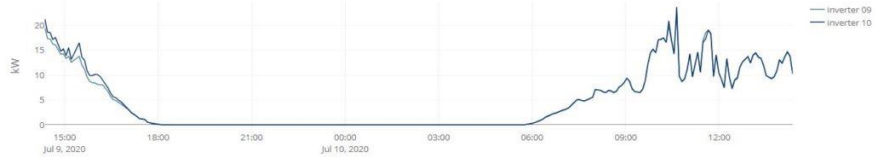


MAC	Site	Country	Region	City	kWp
t00305690C4D9	Holstebrovej 75	Denmark	Midtjylland	Viborg	2000
t0030569108A2	NothSide	Denmark	Nordjylland	Thisted	20
t0030569113CC					150

## Inverter Detail



## Inverter power



## Live Overview



Cap.: 36.0 kW  
Ref.: 4.39 kW  
Act.: 0.0 kW



Cap.: 0.0 kW  
Ref.: 0.0 kW  
Act.: 0.0 kW

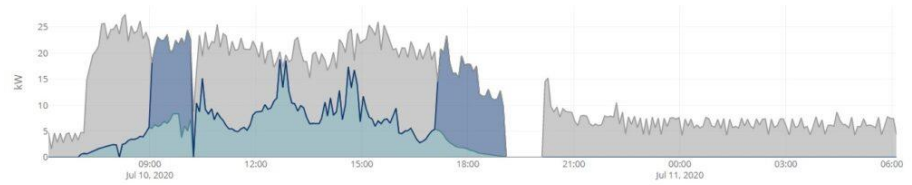


Cap.: 100.0 kW  
Act.: 4.388 kW



Poa: N.A  
Ghi: N.A  
Bom: N.A  
Amb: N.A

## Production



## Executive Overview



PV production	1 kWh	Fuel save	0 liter	Grid import save	75 Naira
PV curtailed	1 kWh	Fuel save	0 Naira	Grid export	0 Naira
PV revenue	0 Naira	Emission save	0 kg		



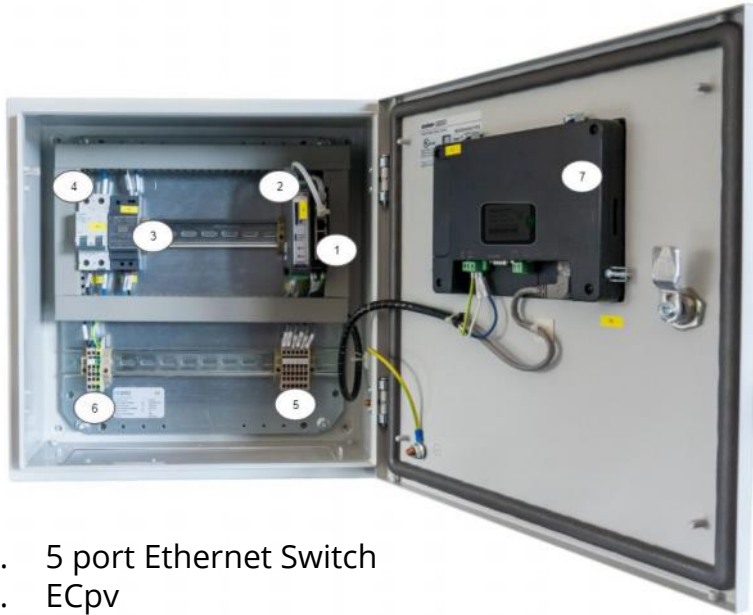
Genset production	0 kWh	Fuel consumed	0 liter
Emission generated	0 kg	Fuel consumed	0 Naira

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Grid import	29 kWh	Grid import	1459 Naira	Grid export	0 kWh
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# ECcube layout and design



1. 5 port Ethernet Switch
2. ECpv
3. Power Supply
4. Circuit Breaker
5. Terminals for mounting communication cables
6. Terminals for mounting power cables
7. HMI - ECpanel7



Dimensions: 40x40x21cm  
Weight: 11kg with HMI



## Power Meter

- SPM33, Front mounted with display (5A secondary)
- RS-485 modbus communication with [ECpv](#)
- Digital inputs for breaker feedback
- Relay outputs for breaker trip

CTs not available from ENcombi