



SYNERGi – Smart Integrated Energy

Real Situations Demand Real Solutions

36kW MAX

12V OUT

24V OUT

48V OUT

110V_{AC} OUT

220V_{AC} OUT

GREEN ENERGY

SYNERGi is unique as it dynamically detects conditions to optimize the operation of existing capital, extending the generator and battery lifetimes with significantly reduced OPEX.

It minimizes the dependency on fossil fuels by dynamically maximizing generator output to improve efficiency. The SYNERGi solution is universal, allowing it to be easily deployed and commissioned at multiple sites. It will adapt to optimize output variables so the expensive dimensioning and on-going visits necessary in deploying and maintaining other typical hybrids are avoided. It also tracks site equipment health so maintenance can be pre-empted.

Intelligently and efficiently, SYNERGi optimizes energy sources to ensure a minimalist infrastructure footprint to lower CAPEX.

Patented SYNERGi control algorithms dynamically take care of site anomalies and changing conditions.

KEY FEATURES

- Maximizes site uptime and limits human intervention
- Remote site management, reporting and control
- Dynamically optimizes any AC generator
- Self-healing and automatically adapts to varying conditions
- Allows rapid deployment to multiple sites
- One touch control, installer friendly, 'drop in' solution capable
- Intuitively combines renewables
- Solar optimization technology



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Specifications

In order to augment the economics of hybrid solutions, the goal is to maximize the battery time and minimize the charging time. SYNERGi is compatible with various battery storage mediums, yet it is those designed specifically for highly cyclic fast charging regimes that will provide the best battery life and diesel fuel savings. Battery life is dependent on the amount of energy discharged at each cycle. Maximizing the cycle life is possible at the expense of increasing battery capacity: targeted payback calculations and balancing desired CAPEX and OPEX benefits play a major role in determining the optimum battery size. Enatel Energy has developed an advanced dimensioning tool that is based on real-world data sets to simulate anticipated benefits such as generator life, maintenance, fuel savings and payback. This allows users to understand the trade-offs and idiosyncrasies, and evaluate against different battery types/configurations and solar integration, and coordinate extended services etc.

ADD SYNERGi TO AC GENERATOR SITES

	1	2	3	4
Average Daily Site Power (kW)	1	2	3	4
Genset Size (standby power) (kW peak)	11	17.6	24	24
Battery Hours (generic OPzV) (Ahrs)	600	1500	2000	2500
Battery Life (years)	4.05	5.47	5.39	4.02
Genset Runtime Saving (%)	80	81	81	71
Fuel Usage (L/Day)	13.32	17.83	21.89	34.28
Potential Fuel Saving (%)	70	72	71	55

Renewables are added simply and effectively with SYNERGi building blocks – the solar and wind charger modules tightly couple with the rest of the DC power system ensuring optimum power delivery, cohesion between energy sources, and ease of integration. The below are the expected improvements by adding Enatel's modular solar chargers.

ADD SOLAR TO A SYNERGi DIESEL GENERATOR SITE AND REAP THE BENEFITS OF RENEWABLES

	3	4	6	8
Solar Size (out of solar converter) (kW)	3	4	6	8
Battery Life (years)	8.62	7.07	6.44	6.06
Genset Runtime Saving (%)	91	86	84	81
Fuel Usage (L/day)	6.0	13.8	18.3	22.7
Potential Fuel Saving (%)	86	78	76	70



Contact Enatel for datasheets and characterization details. Due to product development, specifications are subject to change without prior notice. Pictures may be representative: actual products may differ.

