PV STORAGE INVERTER

PVSITES CATALOGUE OF PRODUCTS AND APPLICATIONS
24 JUNE 2020

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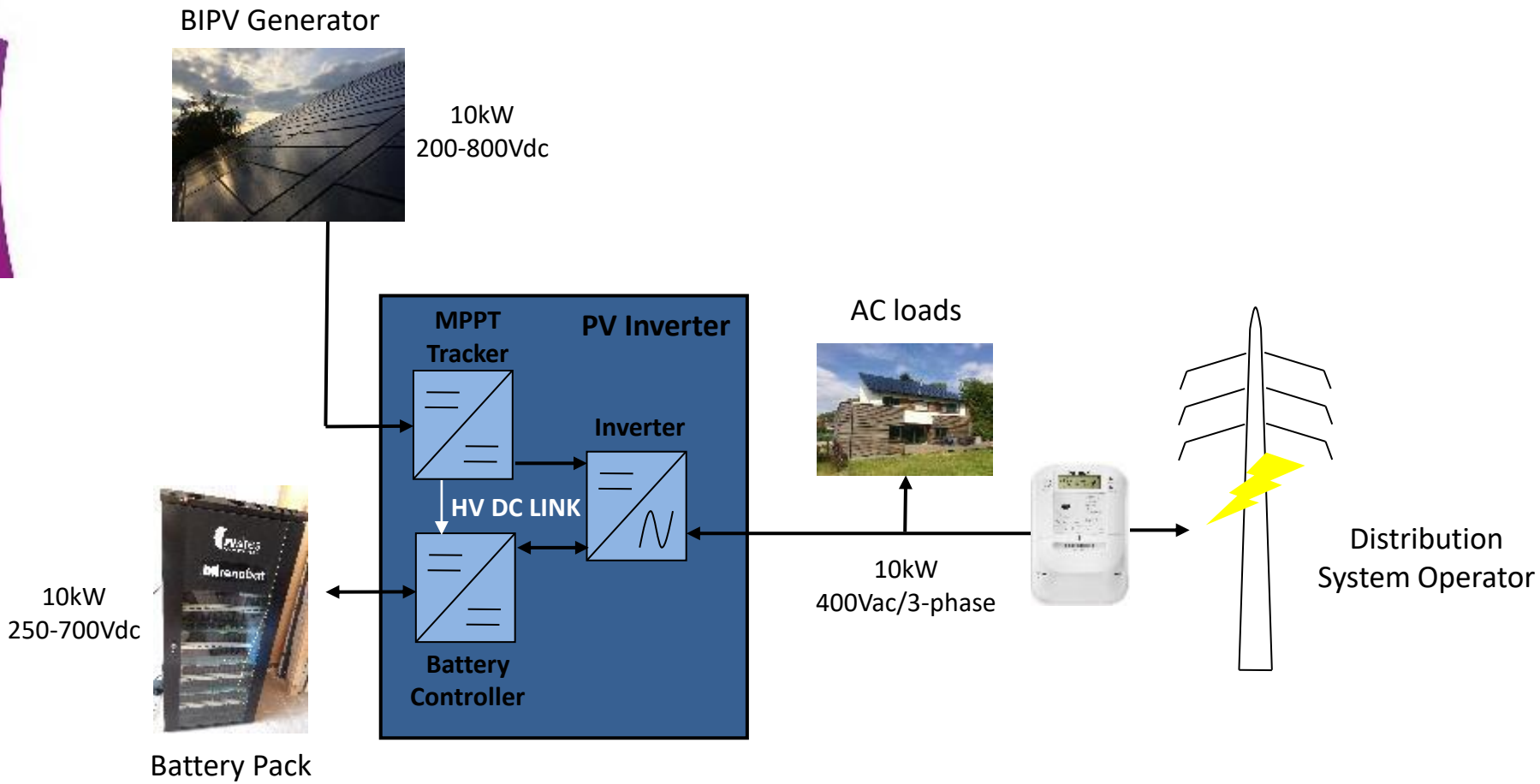
PV Storage Inverter



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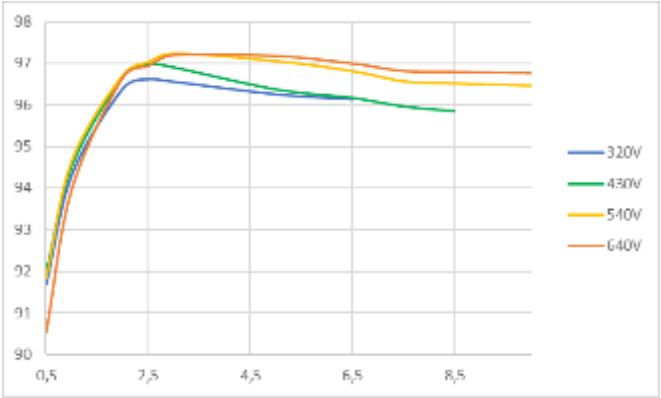
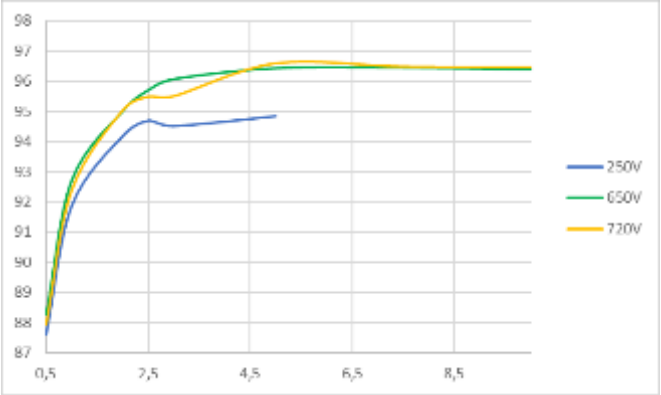
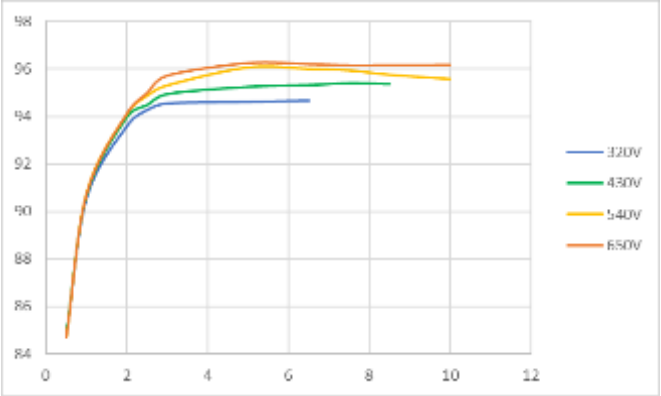
High conversion efficiencies



PV to Battery
European Efficiency >96%
Peak efficiency >97%



PV to Grid
European Efficiency >95%
Peak efficiency >96%



Battery to Grid
European Efficiency >95%
Peak efficiency >96%

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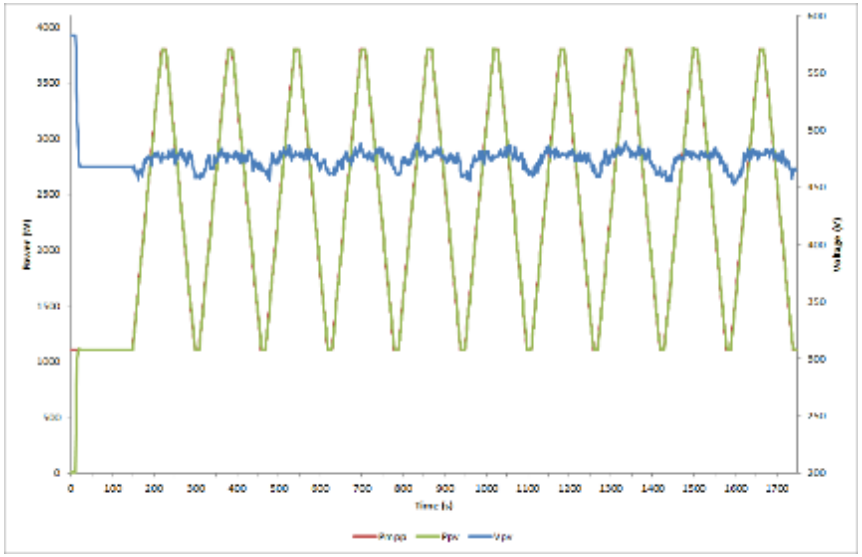
High static and dynamic MPPT efficiency

EN50530 Static MPPT efficiency

		V_{PV_MPPT}	V_{MPP}	ΔV (%)	P_{PV_MPPT}	V_{MPP}	η_{MPPT}(%)
Power Level (W)	500	475.09	478.9	-0.79%	531.51	531.57	99.989%
	1000	478.87	478.9	-0.01%	1025.14	1025.16	99.998%
	2000	478.52	478.9	-0.08%	2011.83	2012.36	99.973%
	3000	479.78	478.9	0.18%	2998.50	2999.55	99.965%
	3800	479.69	478.9	0.17%	3796.60	3796.90	99.992%

EN50530 Dynamic MPPT efficiency

#	$T_{waiting}$ (s)	T_{test}(s)	E_{PV_MPPT} (Wh)	E_{MPP} (Wh)	η_{dyn_MPPT}
1	150	1750	1092.79	1093.36	99.948%
2	150	1350	820.11	820.77	99.919%
3	150	1150	614.89	615.42	99.914%
4	150	820	447.90	447.66	100.000%
5	150	630	327.81	327.91	99.969%
6	150	490	232.73	232.99	99.888%



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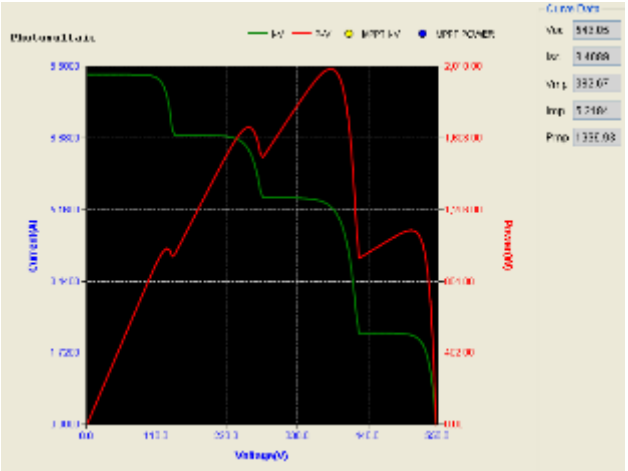
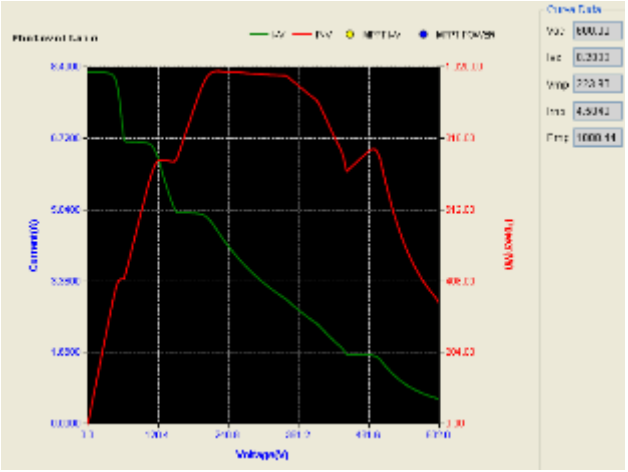
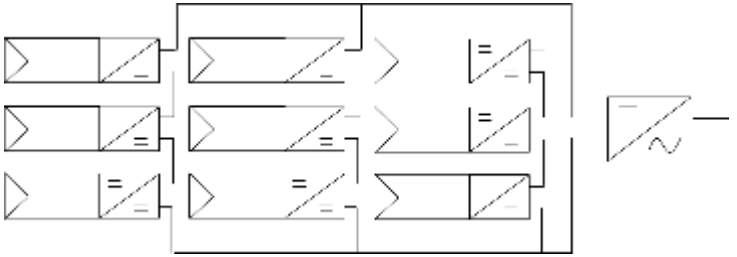
BIPV adapted MPPT



GMPPT able to cope with partial shadowing and other mismatching sources



MPRT able to cope with power optimizer limitations



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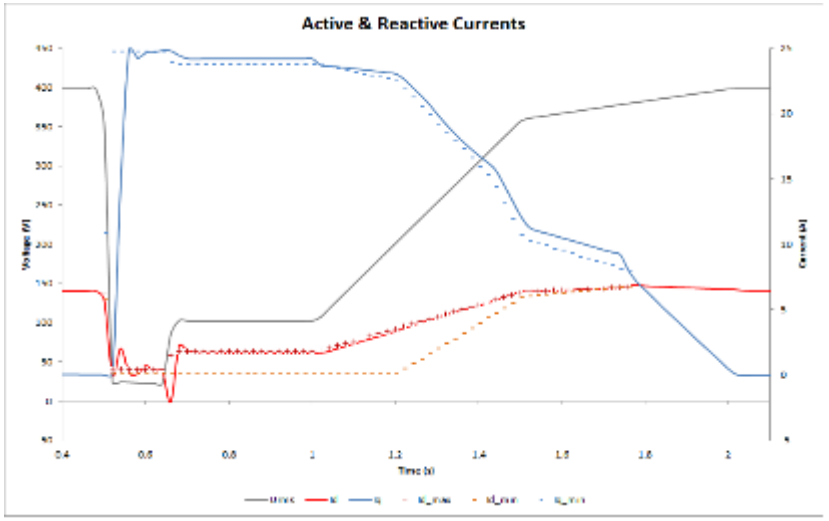
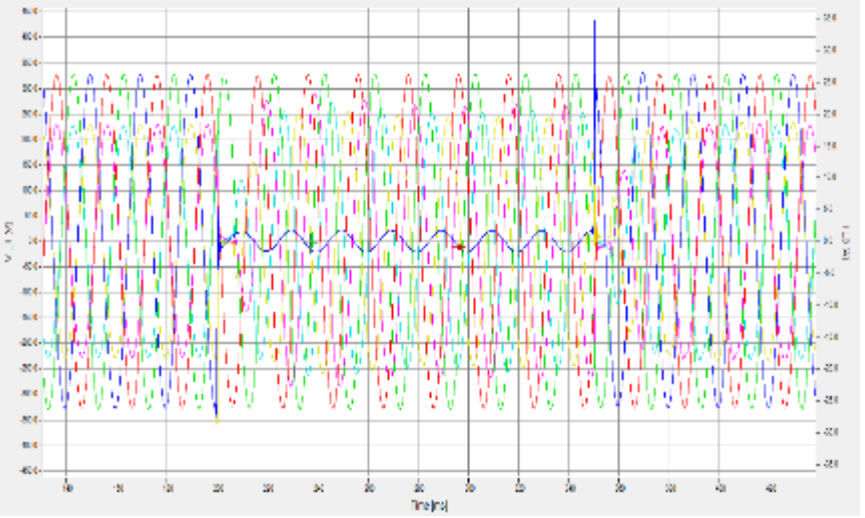
Grid codes compliance

- Maximum and minimum variations in grid voltage and frequency (EN50438).
- Active and reactive power regulation (EN50438).
- Connection and reconnection conditions verification (EN 50438).
- Very low THD (IEC 61000-3-2).
- Very low voltage fluctuations and flicker (IEC 61000-3-3).
- Low direct current injection (EN 50438).
- Islanding prevention measures (IEC 62116).
- Low Voltage Ride Through measurements (IEC 62910).





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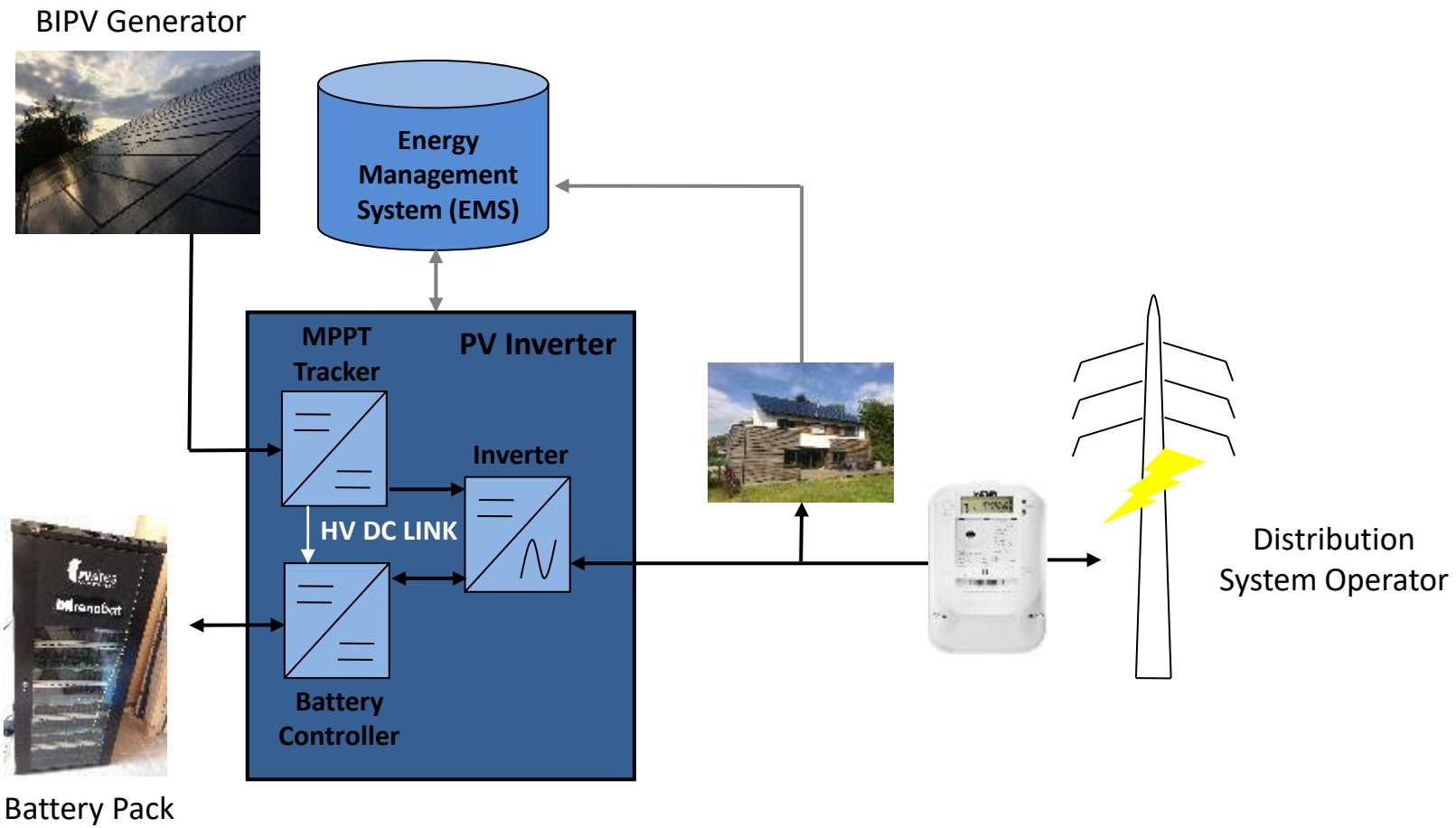
Advanced EMS capabilities



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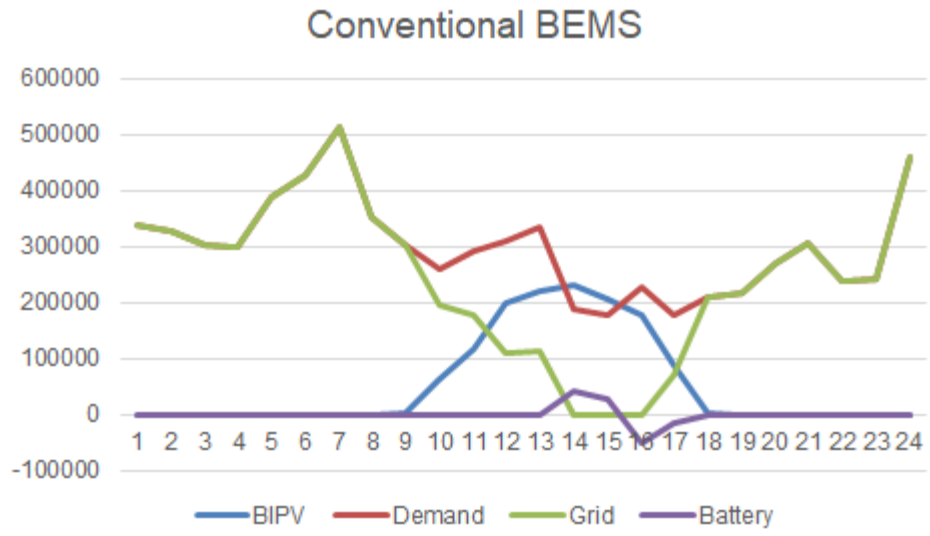
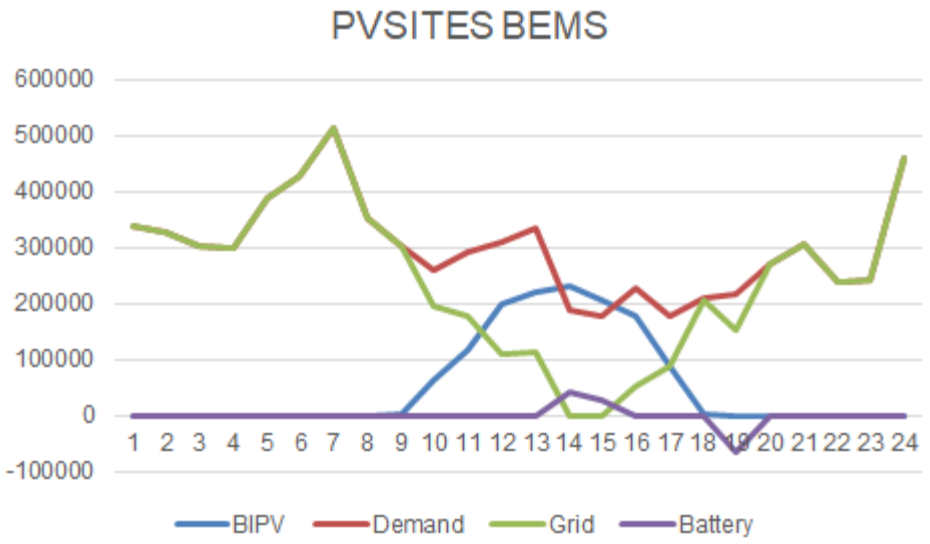
Predictive EMS: Self-consumption Optimization





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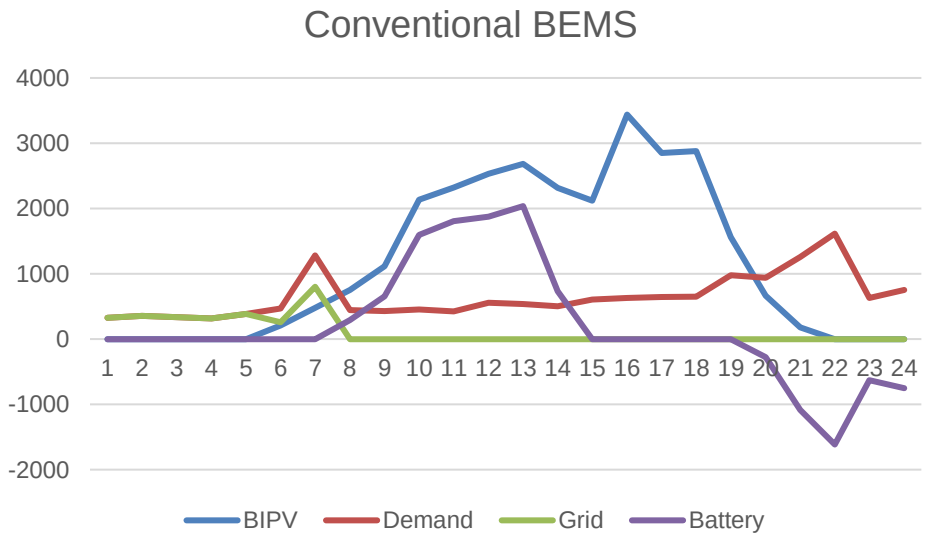
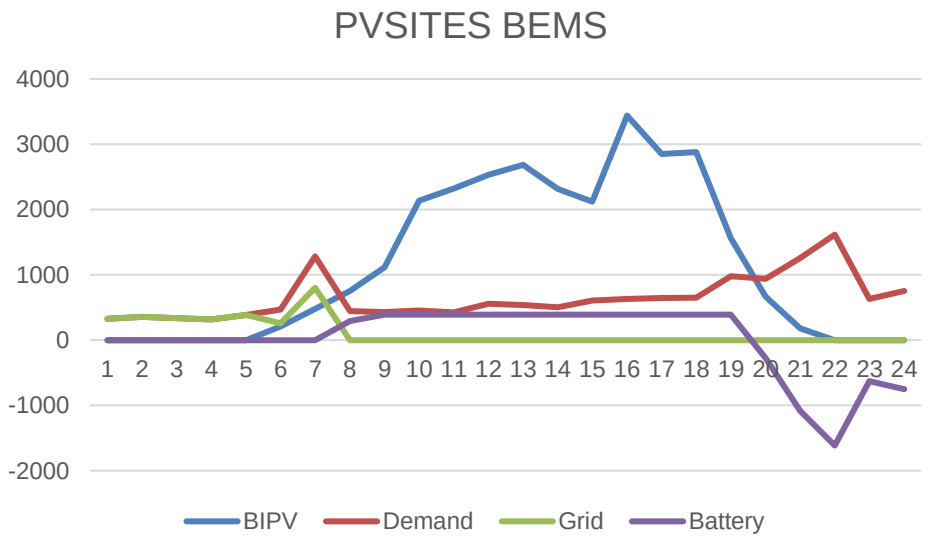
Predictive EMS: Battery Charge Optimization





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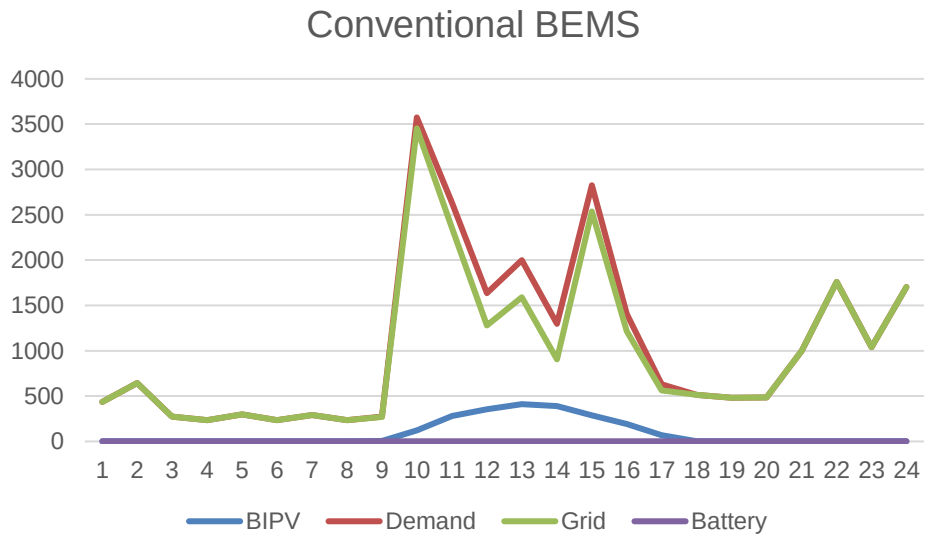
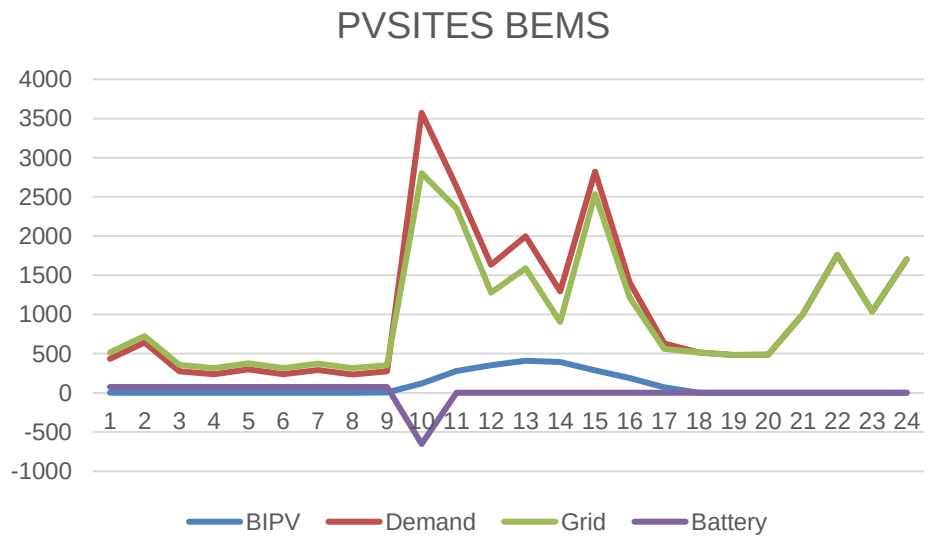
Predictive EMS: Peak-shaving





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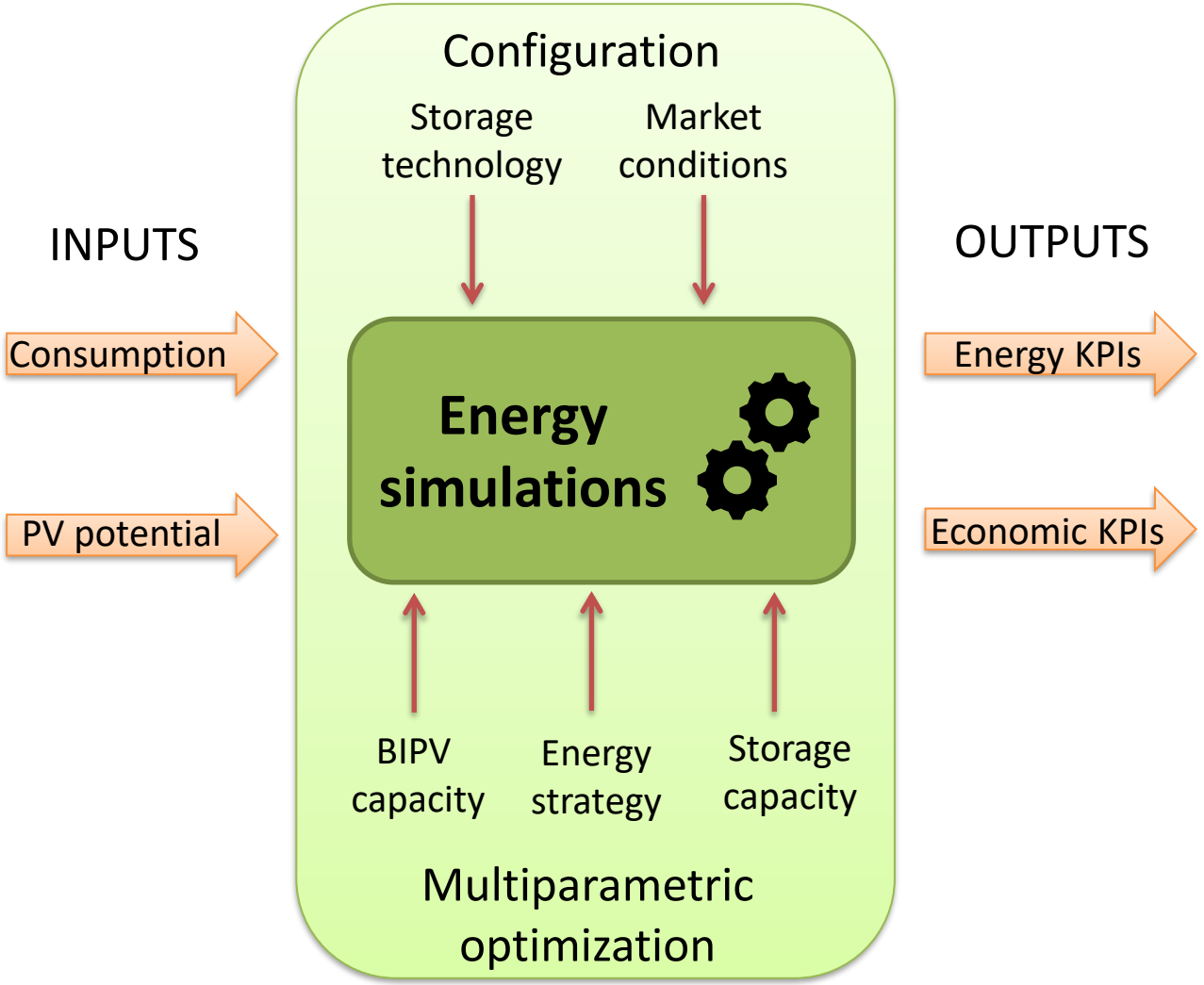
How much storage capacity is worthwhile?



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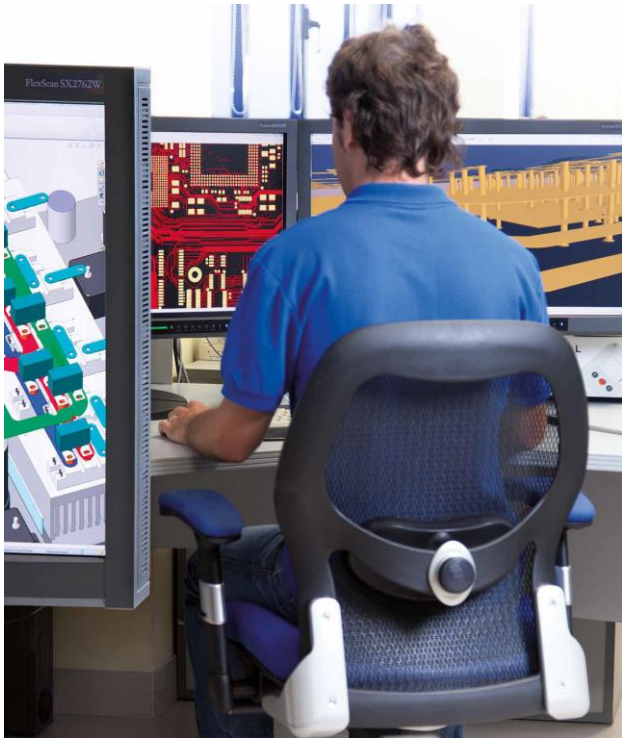
Validated in real environment…

…and commercially available soon.

elson electrónica



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