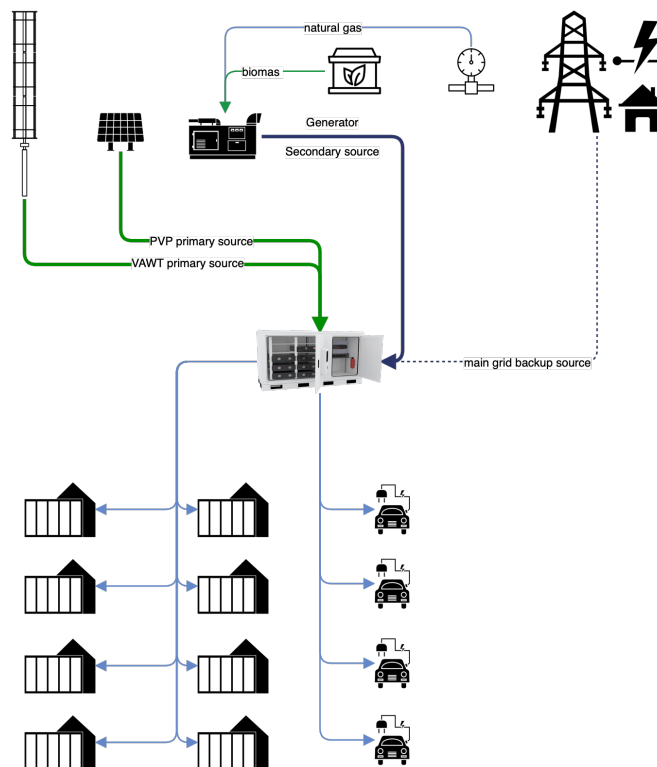


### Off Grid System with Mains Backup

These systems use bi-directional inverter/chargers to give perfect sine wave off-grid electricity with high efficiency, robust power and outstanding reliability.

- Very simple and flexible design of off-grid systems is possible since different electrical generators and loads can be connected on the AC side.
- Using this system wind & solar generation can be sited at the most appropriate locations and connected directly to the AC network.
- A centralised battery and inverter system is employed yet several different properties or loads can be easily accommodated.
- Power from any generators is first supplied to the loads and any surplus goes into battery charging. If loads increase, power is taken out of the batteries.
- Depending upon the current balance of consumed and generated power the battery is discharged in order to support the loads or charged with any surplus.
- If battery becomes low a back-up gas generator set can be controlled to charge the battery.
- The inverter charger effectively creates a 'mini-grid' for the properties.
- In situations of break down the system can be charged from the Main Grid.



### Generation

Solar PV panels or other generation sources, such as Vertical Axis Wind Turbines are connected to the system as if it was a grid connect system. This is the most efficient method of connecting the generation, as it allows the generation to first power loads and additional power will charge the batteries. Alternatively generation sources can be connected directly to the battery but in order to power loads the energy must pass through the battery incurring a large loss of energy.

### Overview of PV & ES System

NO.	ITEM	SPEC	QTY	TOTAL	NOTES
1	PV Panels	540 w	60	32.4 kw	Selected
2	MPPT	60/120 kw	1	60/120 kw	Included in inverter
3	Invert	30/50 kw	1	30/50 kw	The follow is detail
4	Battery System	105 kwh	1	105 kwh	The follow is detail

### What it can power

This system can comfortably power everything you would expect in a small to medium sized residential or commercial development.

- A centralised battery and inverter system is employed yet several different properties or loads can be easily accommodated.
- With high continuous and surge power capability they will comfortably energise households with a mixture of appliances.

Different sizes of inverter chargers can be chosen to meet your requirements, several can be used in parallel for bigger applications or multiples of three can be used for three phase.

