

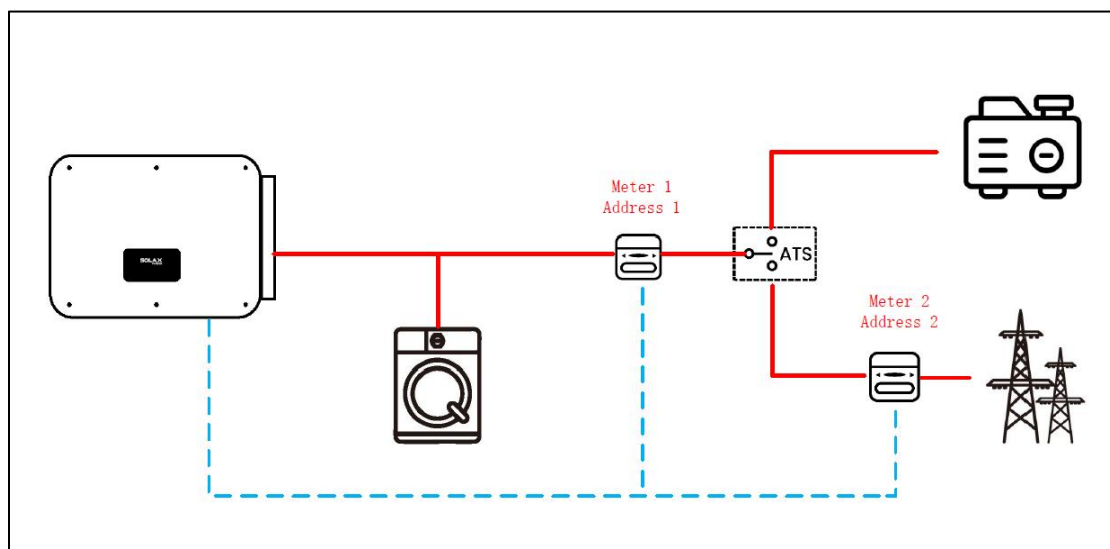
Fuel Saving Solution with On-grid Inverters



Thinking to save fuel consumption for your house or commercial site with green energy? In some countries, due to unstable grid supply, the usage of fuel generators is necessary for house owners to keep their home appliances running in case of power shortage. However, the global diesel price has been badly affected by multiple factors and it could be a headache for diesel generator owners to keep an eye on the fluctuating price. Thanks to the micro-grid and fuel saver solution, SolaX now has integrated generator supporting function into the latest solar inverters to save the fuel cost.



System Diagram



The generator's rated output power shall be greater than the sum of load power in case of overload.

$$P_{Total\ Load} < P_{Generator}$$

Device List

Device	Model	Note
Inverter	SolaX On-grid Inverters	Please refer to the last table
Meter/CT	Single Phase: <ul style="list-style-type: none">- SolaX DDSU666 or DDSU666-CT&CTs- SolaX standalone 100A/33.33mA CT <i>(Alternative for Address 001 Meter only)</i> Three Phase: <ul style="list-style-type: none">- SolaX DTSU666/DTSU666-CT&CTs	Address 001 - required, for AC port measurements and reflux power control Address 002 - required, for grid monitoring and detection
Generator	Prepare additionally	1. Diesel/gas generator (1 or 3 phase); 2. Select those with rated power enough for all loads on site.
ATS	Prepare additionally	1. Switch seamlessly between grid and generator 2. With output dry contact to activate the generator.

How can SolaX Inverters help to save fuel consumption?

SolaX Fuel Saving solution, is developed to have solar energy introduced into On-grid or Off-grid sites to reduce the power consumption from grid supply(On-grid) and generators(Off-grid) during the day. In this case, the saved cost can quickly compensate the initial investment of solar system.

The operating states are as below:

State 1: During On-grid situation, generator will be in standby mode, ATS device in the system will connect SolaX inverter with the grid. All power generated from solar panels can be supplied to home loads in the first place, and the surplus will be exported to the grid if exporting is allowed in the settings.

State 2:

When it comes to power-cut situation,

- ① ATS device in the system will automatically disconnect with the grid side, and send a start

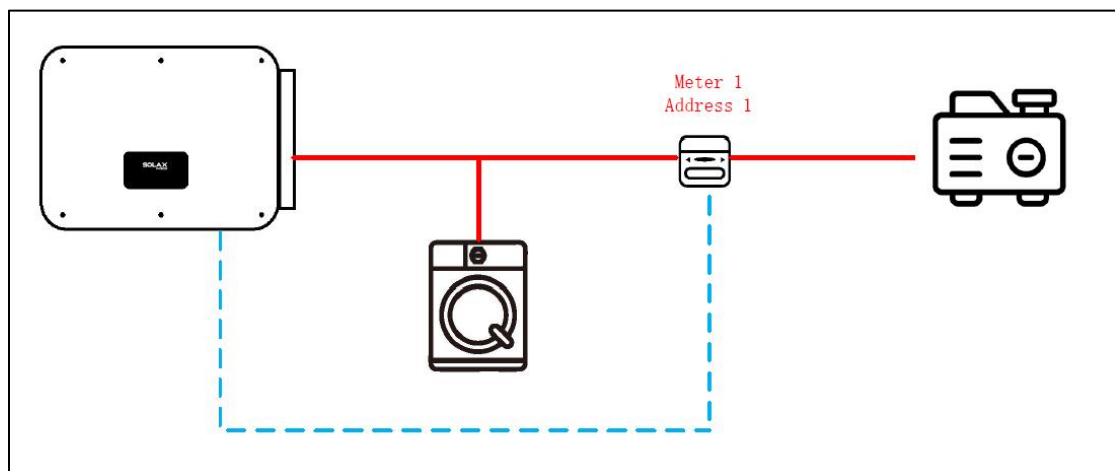
- signal to generator (for ATS with auto gen starter) to warm up and start generating.
- ② ATS will automatically switch to generator side when the generator output is stably within the operating range of ATS.
 - ③ Then SolaX inverter will automatically recognize and switch to the generator mode with the widest AC voltage/frequency range.
 - ④ In this case, SolaX inverter will supply solar power to home loads in priority, and if the load consumption is higher than inverter output power, generator will supply the rest.

State 3: When the grid is back, the ATS device will then switch back to the grid side, and in this case, the operation state will be same as State 1.

Micro-grid solution:

This diagram is similar to the ATS scheme, the difference is there's no grid at all so inverter work with generator all the time for fuel saving.

1. Generator in the system will keep running to power up main panel or sub panel all the time.
2. SolaX inverter will be set as generator mode which has the widest AC voltage/frequency range.
3. Generator will maintain a minimum operating output power to home loads in priority, and if the load consumption is higher than minimum output power, SolaX inverter will supply the rest.



How to configure Fuel Saving function?

The following options shall be set in the inverter settings. The menu structure is as below:

Main Page → Setting → Enter Password → Dry Contact → Generator → ATS

The Generator here is activated by ATS. Once it's selected, the fuel saving function will be activated and ready to work from **State 1-3**.

Features

1. High AC voltage tolerance range supported
2. Save your fuel cost by harvesting more solar energy
3. Remotely monitor solar generation via SolaX Cloud Web&APP
4. Compatible with single-phase & three-phase generators
5. Suitable for micro-grid applications

Fuel Saving Compatible On-grid inverters List

Single Phase/ Three Phase	Series	Power Range
Single Phase	X1-MINI G4/X1-BOOST G4/ X1-SMART G2	0.6 ~ 10kW
Three Phase	X3-MIC G2/X3-PRO G2 X3-MIC G2 LV/X3-PRO G2 LV	3 ~ 30kW
	X3-MGA G2/X3-FTH X3-MGA G2 LV/X3-FTH LV	20 ~ 150kW