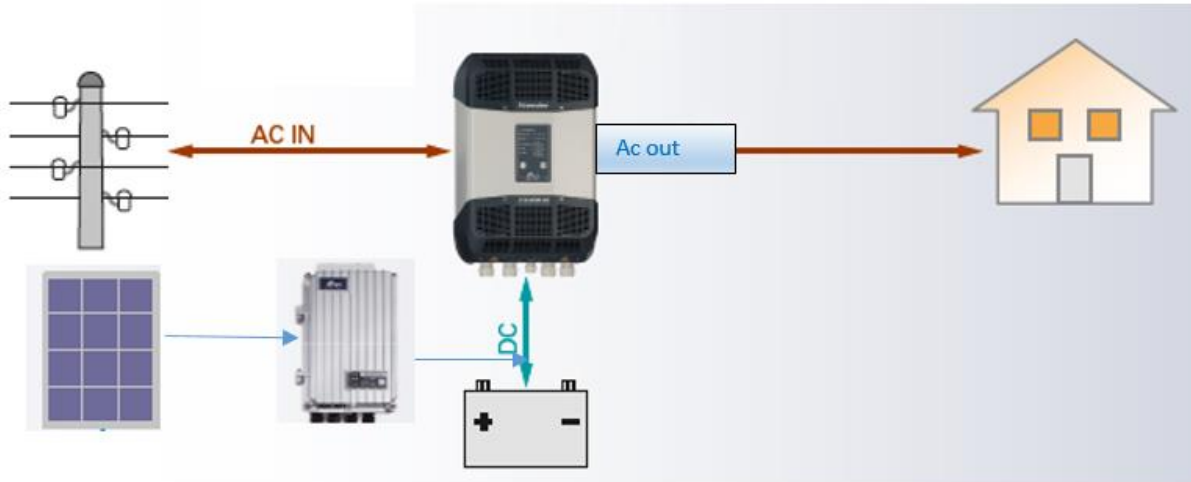


German Technology Inverter:

Synchronizes & Adjusts with Dynamic Load behaviors of Residential / Industrial / Commercial buildings.

Off-grid solutions: Instance 1 - General Wiring



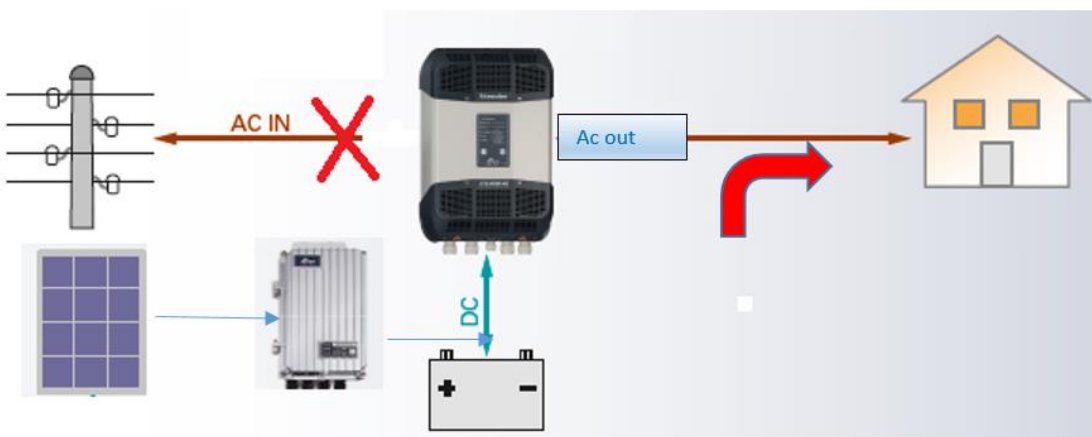
Xtender Series Application.

Grid= present, Solar = Present

Conditions: Grid will be powering the load

Grid charging of battery: Programmable, Priority charging: solar power

Instance 2 - Pure off-grid topology

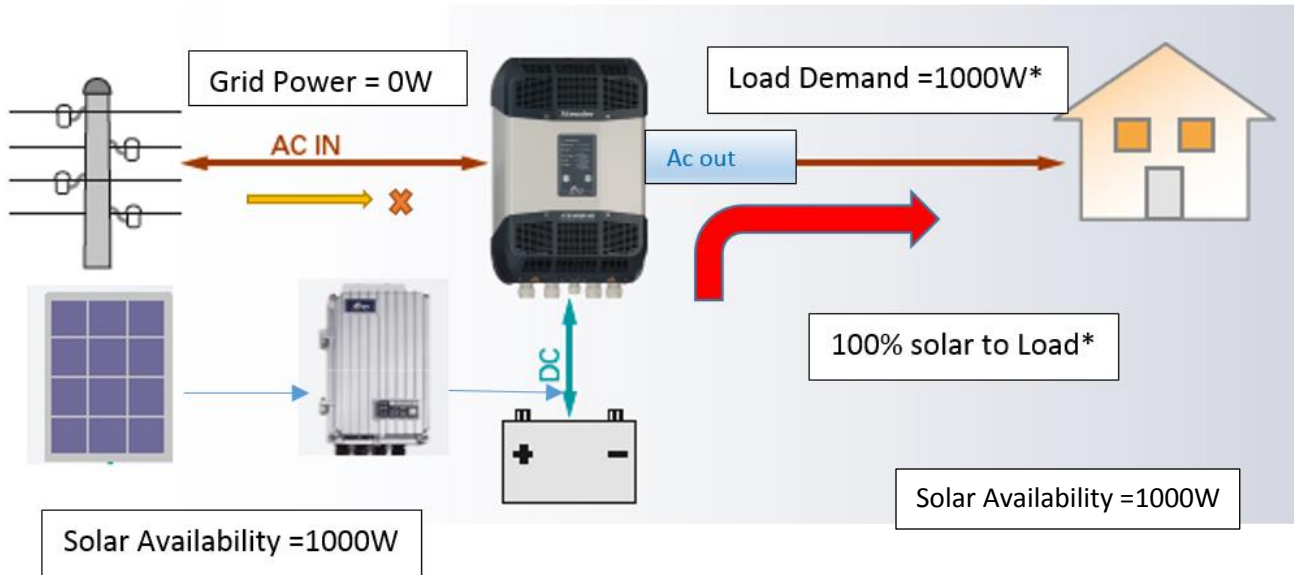


Grid = absent, Solar = present

Conditions: Solar (+ Battery) will be powering the load. Grid charging of battery: NA

Instance 3 - Load sharing with grid power - topology, with FULL solar availability

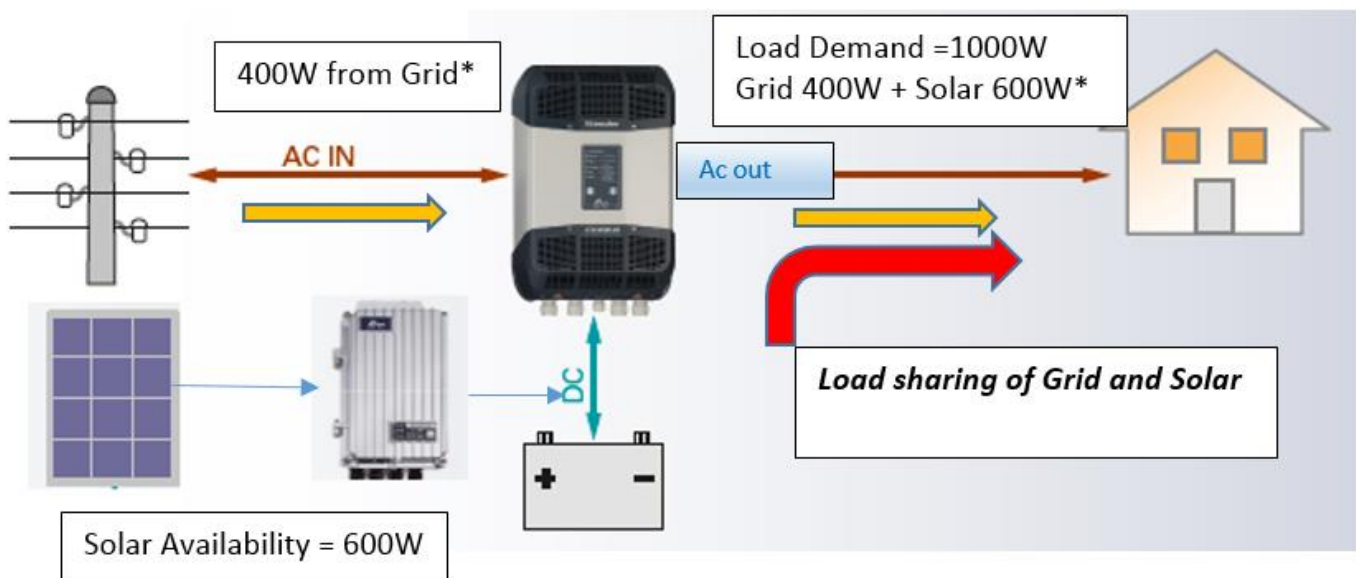
Grid: Present, Solar: Present



Grid power will not be consumed even though the grid is available, Complete generation will be diverted to Load, post charging of the Battery.

Instance 4 - Load sharing with grid power - topology with partial solar availability

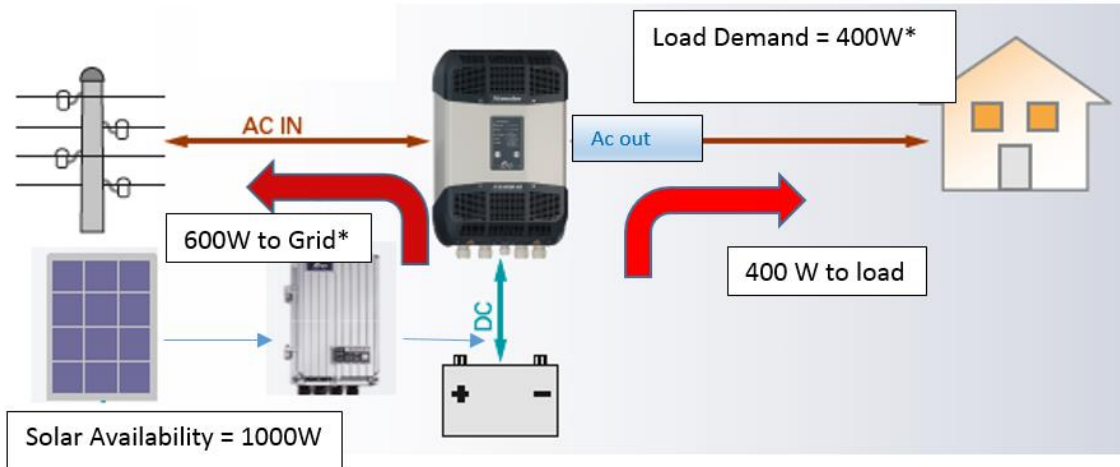
Grid: Present, Solar: Present



Load Shares the solar power and the grid power, thereby reducing the grid utilization

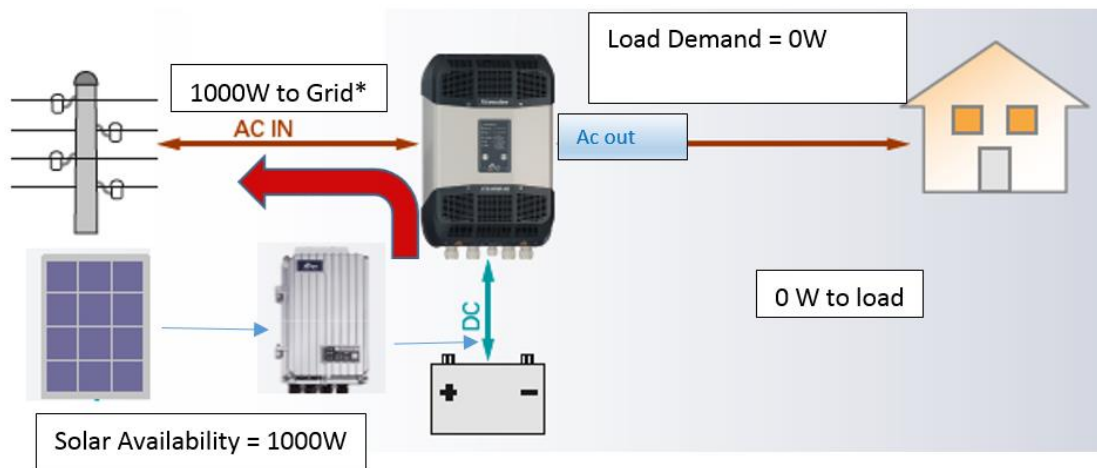
Instance 5 - Load sharing with grid power - topology with full solar availability with partial load demand.

Grid: Present, Solar: Present



The excess power generated by solar will be fed back to the grid.

Instance 6 - Load sharing with grid power - topology with full solar availability with NO load.

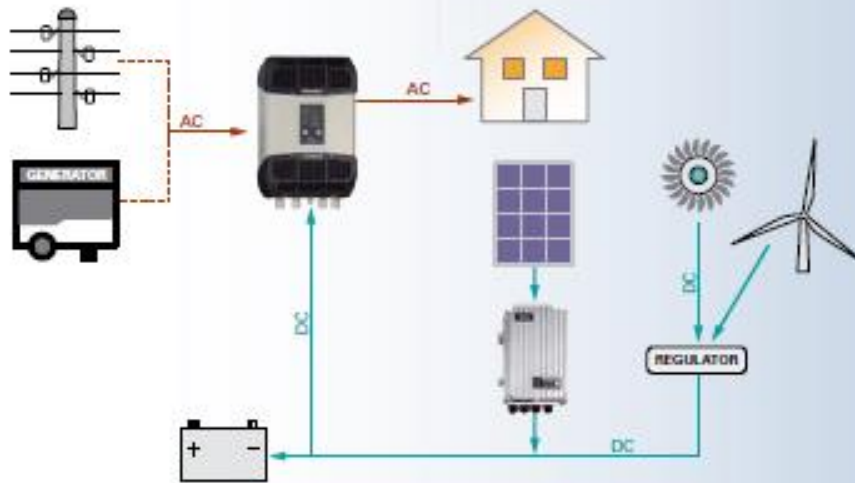


Grid: Present, Solar: Present

Export 100 % Electricity Generated from Solar/ Renewable Energy to Grid.

Instance : 7 :

Priority to renewable energy without grid-injection



When it is forbidden or there is no incentive to inject energy into the public grid, an Xtender inverter-charger combined with a VarioTrack MPPT solar charge controller will minimize the grid consumption in favour of the locally produced energy. They will also guarantee an energy supply in case of grid-failure. This solution is easy to set-up using Studer products.

Sl no	Parameter	Synchronized Hybrid system Solar System	Grid Tie Solar System	Benefits
1	Grid feeding possibilities	yes	yes	Can be used as power generation and feeding back to grid
2	Off - grid capabilities	yes	No	Can be used as back-up power
3	Grid power requirement to feed power back to grid	yes	Yes	
4	Feeding the Load with solar power during grid failure	Possible	Not possible	Solar power can be used even during power failures, with Studer hybrid inverters where as Ongrid inverters fail to feed power during power outages, though solar is available in abundance
5	Feeding the load with solar power during grid fluctuations	yes	no	It is possible with Studer inverters
6	Utilization of solar power based on client's requirement	Can be used at night, based on client's requirement	Not possible, power dependent of Sun	Client can use the stored power based on the requirement, but this feature is not applicable for on-grid inverters
7	Auto switch on of DG during power failures	Possible	Not possible,	Diesel Generator can be switched on in case of emergency with Studer inverters
8	Load sharing facility with	yes	yes	

	solar and Grid			
9	Storage using Batteries	Battery is used. (sizing is either minimal or need based)	No	Since Studer inverter used DC-coupling concept, the solar power will be stored in Battery, simultaneously the Load or the grid feeding can happen.
10	Single phase input to 3 phase conversion	yes	No	
11	Surge handling capacity	Yes	No	
12	Village electrifications	Decentralized village electrification concept (Off grid +On-grid + Wind + Micro hydro integration)	No, only works for power generation during sunny hours	
12	Modular concept	Yes	Yes	
13	Line imbalance handling for 3 phase supplies	yes	No	
14	Load Power factor handling	0.1 to 1	0.9 to 1	
15	Real time programming for operation (Time of day and Day of week programming)	Yes	NO	
16	External contacts programming based on customer utility	yes	No	
17	Grid feeding disable option	yes	No	

Features of German Inverter

1. Least No load Loss (1.8W)
2. Very high conversion efficiency (95%)
3. Auto no load shut down
4. Auto load detection and restart
5. High surge handling capacity
6. Small foot print
7. Low frequency inverters with transformers
8. Very wide range PF [Power Factor] handling
9. All inverters are of wall mounting type