

Electrical microgrid (minigrid)

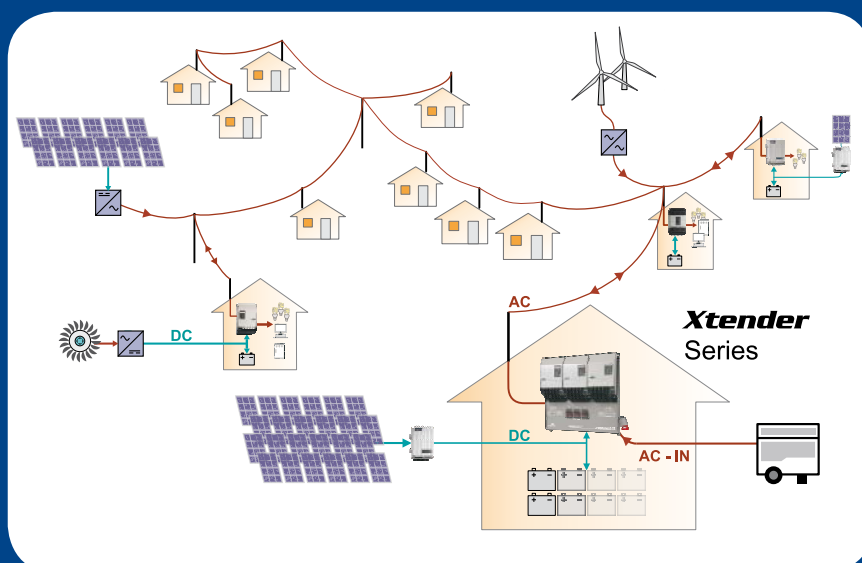


► An electrical grid at your fingertips

To meet the growing demand for larger and more complex rural electrification systems, Studer Innotec offers a new concept for microgrids (figure 1). This concept brings a **very robust solution**, which is **simple to implement** while providing **flexibility in both its design and management**. A standard hybrid unit is at the core of the system and decentralized units can provide redundancy, storage service, power assistance, and interface with other renewable sources to the microgrid.

This concept offers the following advantages :

- **Independence**
Each decentralized unit is independent from the rest of the system and can supply its own load in case of non-availability of the central unit. Each decentralized unit is also protected against the mal-functioning of other participants of the system if they have excessive energy consumption. Energy and power allocations can be managed for each distributed group.
- **Flexibility**
Each decentralized unit can add its own power to what is allocated from the central unit.
- **Sharing**
Each distributed system with its own energy source can share the excess with other participants of the minigrid on a “share the excess, keep the essential” principle. It also has a given quota of energy available from the minigrid.



► System Extension...

The minigrid is an **open and modular network** that can easily be extended, in case of village growth for example, to accommodate new consumers and energy producers.

In addition, the minigrid can integrate and feed its excess energy into the public grid, if it would become available, making it a sustainable investment. In this case it would participate as an energy producer and stabilizer of the grid and have a backup function in case of mains failure.

Figure 1: Minigrid example