High Altitude Power
Energy for a better life

Smart and Flexible Energy

swiss made power
High up in the craggy rock, in barren landscapes far above the tree line, they stand: the mountain huts of the Alps. For ambitious mountain climbers, they are an important starting point on big mountain tours beyond the 4'000 meter mark. These mountain huts provide shelter from bad weather as well as space to sleep or dine.

They all have one thing in common, the energy supply equipment must be reliable and work flawlessly so that protection of the alpinists is guaranteed at all times.

In recent years, the demands in the alpine huts have risen sharply. The guests have become more demanding and want the comfort they know from home. With our products, we have also adapted to these needs, so that at any time an optimal and sufficient power supply is guaranteed.

In the following examples, a few of these alpine huts which already fully rely on this technology are briefly described.

Studer Innotec is a Swiss company which has more than 30 years of experience in autonomous power supplies. Whether for alpine huts, border guards, alpine dairy farms or private huts, which have already been realized by the thousands, Studer Innotec offers a highly efficient and reliable solution for everyone.
**Energy for a better life**

**HÖRNLIHÜTTE - 3260m -**

**SWITZERLAND / Valais / Zermatt**

45.982298, 7.677073

**Hut information:**
- 120 beds
- Toilets & shower on each floor
- Community room for 130 persons
- WiFi
- Opening: July - September

**Energy Production:**
Solar (16kWp) + diesel generator (30kVA)

**Studer Products:**
9 x Xtender XTH 8000-48
3 x VarioString VS-120

**CAPANNA SCALETTA - 2205m -**

**SWITZERLAND / Ticino / Val Camadra**

46.607632, 8.940516

**Hut information:**
- 52 beds
- Fire place and gaz cooking
- Community room
- Emergency room
- Opening: June - October

**Energy Production:**
Solar (12.10kWp) + diesel generator

**Studer Products:**
3 x Xtender XTH 6000-48
4 x VarioTrack VT-80
CABANE DES DIX - 2640m -

SWITZERLAND / Valais / Arolla

46.607632, 8.940516

Hut information:
- 120 beds
- Community room
- Emergency Room
- Opening: March - September

Energy Production:
Solar (3.64kWp) + diesel generator (15kVA)

Studer Products:
1 x Xtender XTH 6000-48
1 x VarioString VS-120

CAPANNA GNIFETTI - 3647m -

ITALY / Valle d’Aosta

45.899867, 7.849910

Hut information:
- 176 beds
- Community room
- Emergency Room
- Opening: March - September

Energy Production:
Solar (15kWp) + diesel generator

Studer Products:
3 x Xtender XTH 6000-48
2 x VarioString VS-120

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MONTE ROSA HUT - CH - 2883m -

SWITZERLAND / Valais / Zermatt
📍 45.956931, 7.814544

Hut information:
- 120 beds
- Emergency room (12 beds)
- Community room
- Opening: March - September

Energy Production:
Solar (30kWp) + diesel generator as back-up

Studer Products:
3 x Xtender XTH 6000-48

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LE REFUGE DE L’AIGLE - 3454m -

FRANCE / La Grave / 05 Hautes-Alpes
📍 45.011300, 6.324562

Hut information:
- 30 beds
- One community room
- Opening: June - September

Energy Production:
Solar (3.3kWp) + diesel generator as back-up

Studer Products:
2 x Xtender XTM 2400-24
1 x VarioTrack VT-65
1 x VarioTrack VT-80
1 x AJ 350-24
**PASANG LHAMU-NICOLE NIQUILLE HOSPITAL - 2850m -**

**Project information:**
- Foundation Nicole Niquille
- Hospital at the bottom of the Mount Everest

**Energy Production:**
- Hydraulic Turbine (20kVA)
- Solar (6kWp)
- Diesel generator as back-up

**Studer Products:**
- 9 x Xtender XTH 8000-48
- 2 x AJ

**Location:**
Nepal / Lukla / Solukhumbu
- 27.687841, 86.731598

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**PUAGJANCA - 5305m -**

**Project information:**
- Communication system, Telecom

**Energy Production:**
- Solar (3.3kWp) + diesel generator as back-up

**Energy Storage:**
- Sonnenschein, A602/750, 727 AH

**Studer Products:**
- 2 x Xtender XTM 2600-48
- 1 x VarioString VS-70

**Location:**
Peru / Huaral Province
- -11.168334, -76.513063
INVERTER / CHARGER

**XTENDER 2 - 72kVA**

Changing batteries, supplying diesel and maintenance work at high altitude is extremely costly. The Xtender is the central power supply unit which generates the 230/400Vac and charges the batteries via the diesel generator if the sun’s rays are insufficient. But more than this the Xtender will control the generator, thus optimizing diesel consumption and runtime. The fully automatic charge management ensures optimal battery charge which prolongs significantly the lifetime of the battery.

Models: **XTM 2600-48 / XTM 4000-48 / XTH 6000-48 / XTH 8000-48**

**MPPT SOLAR CHARGE CONTROLLER**

**VarioString 2 - 105kWp**

The VarioString is a highly efficient and robust MPPT solar charge controller. In the high alpine region, extreme weather conditions prevail. Strong temperature fluctuations on the solar generator surface and snow reflections greatly affect the operating voltage of the solar generators. In these extreme fluctuations, it is important that the solar charge controller can handle a high voltage field precisely and highly efficiently. With the MPPT solar charge controllers VarioString, Studer Innotec offers a unique and proven solution.

Models: **VS-70 / VS-120**

**MONITORING**

For monitoring, we offer a LAN or GSM based solution so that the system can be monitored remotely at any time.

Thanks to the clear user interface, the huts can be displayed in a group or individually. The ingenious communication system allows to share a hut with several users so that, for example, the guardian, the installation company, and the Alpine Club have access. These so-called access rights can be defined and restricted depending on the user.

The integrated remote alarm system reports reliably as soon as a technical problem should occur so that it can intervene immediately.

**Accessories:** **Xcom-LAN / Xcom-GSM**
«I will come again and conquer you because as a mountain you can't grow. But as a human I can.»

Sir Edmund Hillary