



SIRA NAT ADVANCED TACTICAL NANOGRID

SIRA is an Italian company established in 1992.

Critical Power Systems (NANOGRID) from 2009 for telecom infrastructures in NO-GRID and BAD-GRID situations.

Special version : NAT (Tactical Advanced Nanogrid) for military very high mobility, patented in 2015.

Current versions:

- 6/12 kVA
- Dual AC energy sources (grid or camp network and controlled genset)
- DC sources (PV and wind turbine)
- Batteries
- Advanced load management
- Unattended operations. Indoor and outdoor.
- Remote fault analysis and maintenance support from NOC





NAT 

Quality of energy.

- Black start
- Energy generated with double conversion
- Energy stabilized even with high input voltage fluctuations
- Absolute continuity

Autonomy.

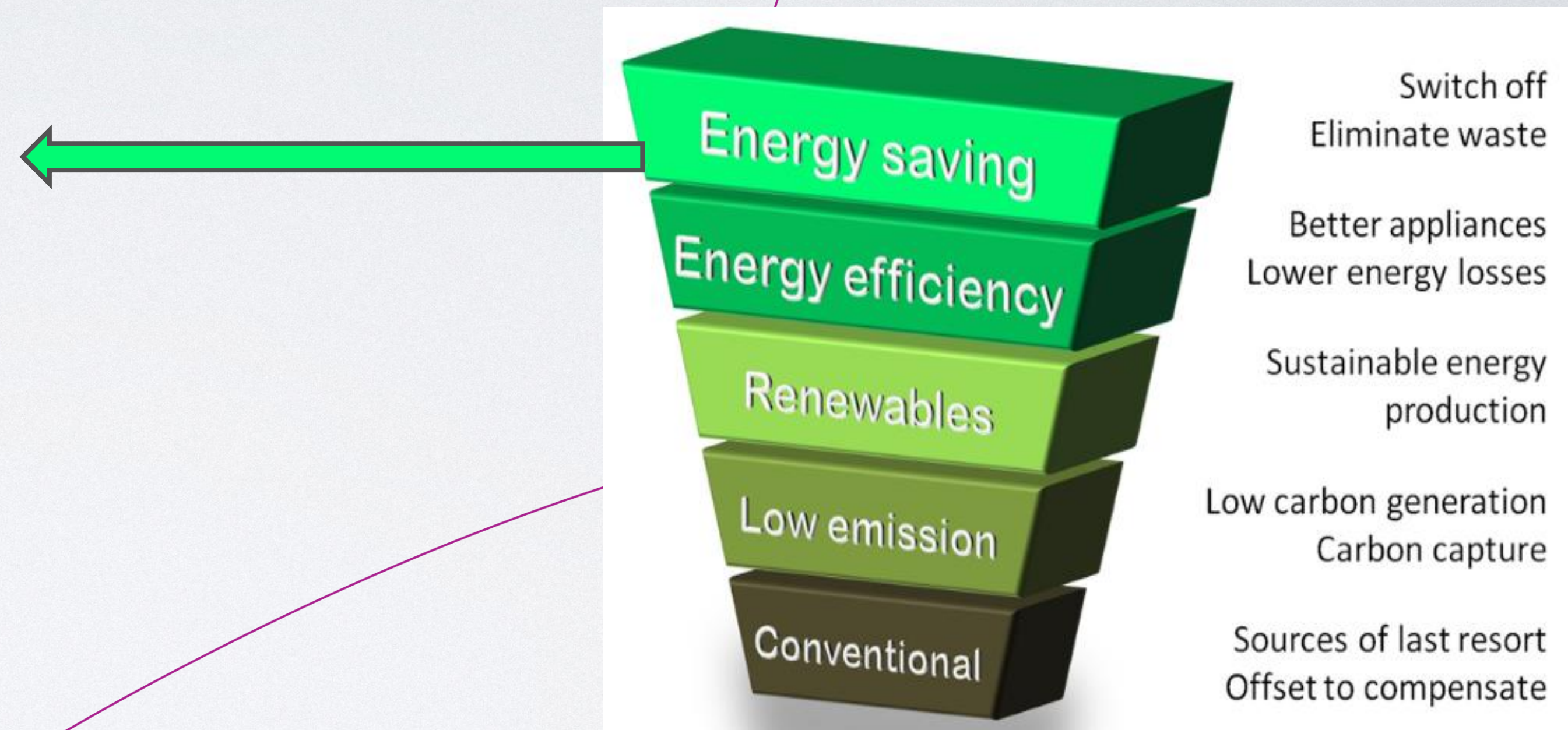
- Dynamic autonomy depending on fault conditions
- Designed for very frequent loadshedding
- Ultrafast battery charge (Charge time less than discharge time)
- Extended autonomy for critical loads (Weeks)

Renewables

- PV panels and wind turbines

Optimization

- Advanced Genset Control, Optimization and MGMT
Genset working at the highest efficiency conditions
- Load control and management
Critical and priority load management
HVAC control and optimization
Battery charge control and optimization.



COMPARISON WITH HYBRID STANDARD SOLUTIONS



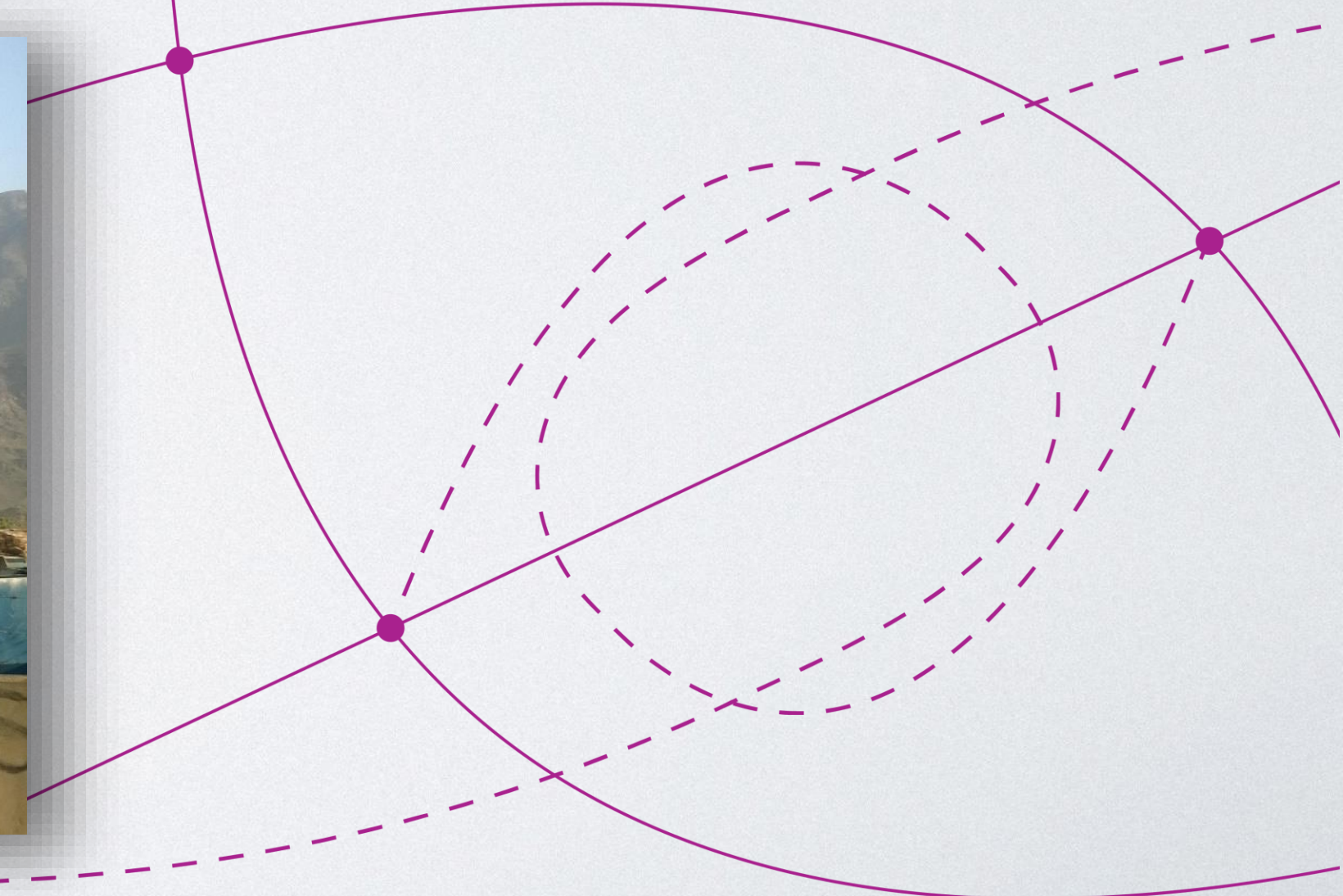
CMPAK 2G OFFGRID BALOCHISTAN
(HUAWEI)



UFONE 2G OFFGRID BALOCHISTAN
(ZTE)



UFONE 2G BTS FATA (SIRA)





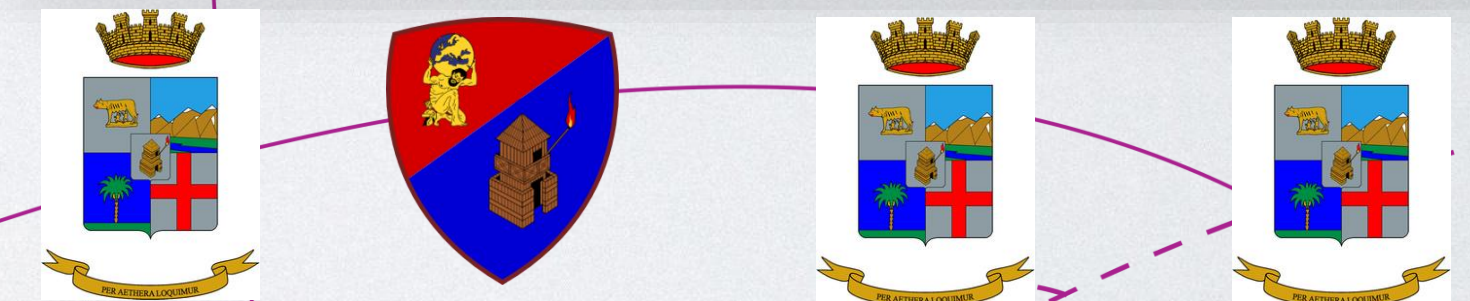
CIVIL REQUIREMENTS

- Genset Operating hours saving more than **50%** in OFFGRID with reduced logistic support and operating cost
- Genset Operations reduced **100%** in badgrid situation till 12 hours of loadshedding and capability to connect to highly unstable electrical networks.
- Electricity to load in absolute continuity
- Energy availability at top level (**99.99% = 50 minutes per year**)
- Output AC 110/230 V 50/60 Hz, 48V DC and Hybrid AC+DC
- Outdoor or indoor installation (IP55)
- Remote monitoring from command and control center, remote fault analysis and maintenance support



ADDITIONAL MILITARY REQUIREMENTS

- Land, sea and air transports (not-hazardous goods).
- High mobility and ready to use.
- Operated even while on board of a small truck in 5 minutes.
- Full separation between external sources (electrical network or Genset and the electrical load (encryption equipment)
- Extended Autonomy for critical loads
- Easy to use by not skilled technicians (Genset operators)



TRL9





MICROGRID

2 DIFFERENT OPERATION MODES:

- MAX ENERGY SAVING
- MAX ENERGY RELIABILITY

ISOLATED LOADS

