

SOLAR ENERGY

to Serve the Protection
of Karatau State Nature Reserve



The GEF
Small Grants
Programme



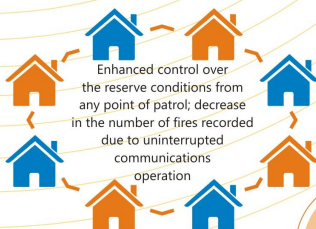
Solar batteries
generate electric power
from direct sunlight



SOLAR BATTERIES –
are the technology to generate
electric power from solar energy

The benefits of transfer from generators to the solar
batteries as illustrated by Karatau Nature Reserve

Solar electric plants have been
installed with in the project
at the cordons of Karatau Reserve



(5-hours' operation)

Current
generator
capacity

2-2,5 kW



1752 kW

Uninterrupted
solar battery
operation ensures
the annual generation



10,4 tn
carbon
dioxide

The annual
reduction of
carbon dioxide
emission

annual
gasoline
consumption

600
liters

Gasoline
saving

Improvement
of living conditions
for inspectors



THE ADVANTAGES OF SOLAR BATTERIES

- Solar batteries may be installed and put into operation in a short space of time
- Installation of solar batteries in the reserve is more environmentally friendly and cheaper compared to electric mains that may cause the disturbance of migration paths of endangered animal species enlisted in the Red Book and damage the natural landscape of the reserve
- Supply cheap electric power to the consumer in all seasons

For additional information concerning the project please refer to:
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OPERATING PRINCIPLES AND TECHNICAL SPECIFICATION OF SOLAR PLANT

The Operating Principles are based on as follows:

- Direct conversion of solar energy into electricity;
- Accumulation and storage of electric power into the accumulator battery;
- Proper power supply of consumers either directly or via voltage converter (inverter) and switch gear

To ensure the reliable and isolated operation the solar systems (solar power plants) are assembled from the elements as listed below:

- 1) Photoelectric transducers (PET) i. e. solar batteries;
- 2) Accumulators;
- 3) Charge/ discharge controller;
- 4) Inverter (DC-to-AC current converter).

Solar battery modules are designed to charge the accumulator batteries.

To ensure the required capacity and operating voltage the solar modules and accumulators are connected either in series or in parallel.

Solar plants refer to the renewable sources of primary power supply.



SOLAR PLANT ARRANGEMENT:

