



## Hybrid Power Control Unit

to minimize the fuel  
consumption and the  
CO<sub>2</sub> emission



Hybrid Alir control system to optimise local grids with solar, wind, water energy combined with a diesel generator to reduce diesel consumption.



## When to use a HPC, Hybrid Power Control unit?

When a diesel generator is used as one of the power sources in a power system . The HPC can be used in different system configurations.

A 24 or 48V battery must be included in the system.

## Why use a HPC, Hybrid Power Control unit?

The HPC will minimize the fuel consumption by running the diesel generator as little as possible without stressing the batteries too much. The unit is also suitable in systems with additional mains, sun and wind power sources. Additional energy sources will further decrease the fuel consumption.

## How is it possible?

The load will be supplied from the batteries or the additional energy sources as long as possible. The unit monitors the battery , at the low battery limit, the diesel generator is started.

The diesel generator runs at high efficiency for a short time to fill up the battery.

## System dimensioning

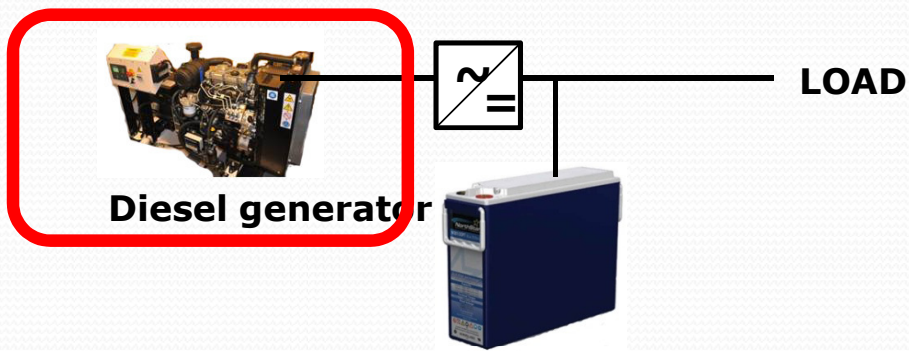
Along with the HPC the dimensioning of the included parts in the power system is the key to minimize the fuel consumption .

Alir Power has long experience of dimensioning power systems.



## The HPC can manage different system configurations

Basic system parts:  
Dieselgenerator, rectifiers and battery



The HPC also can manage additional Eco-friendly energy sources like solar and wind power



The HPC also can manage systems connected to the mains grid



## HPC functionality



- Monitor battery capacity level and battery status
- Start/stop generator
- Different control modes depending on battery type
- Parameter logging, monitor system performance
- Monitor fuel level and fuel consumption
- Store the amount of refilled fuel
- Show active and historic alarms
- Analog inputs (currents, voltages, temperatures, fuel level)
- Digital in and outputs
- Remote communication via GSM modem.
- Serial communication is also possible.
- Mains/diesel generator switching control



## Hybrid site in Sweden

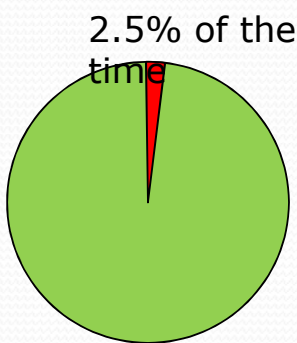
An off grid Radio Base Site placed on a mountain in Sweden.

Powered by a diesel generator, solar panels and a wind turbine.

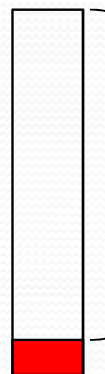
The power is controlled and monitored by a HPC.



## Statistics after one year operation



Diesel generator runtime



Fuel consumption reduction