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## **Resources saving control of hybrid power system**

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Modern hybrid power systems include diesel generators, microturbines, storage batteries and renewable sources such as wind turbines and solar cells. All of the power sources with converters provide timely and reliable power supply.

An important task is to provide resources saving control, which includes minimizing fuel consumption when operating diesel generators, maximizing profits from the operation of all devices and minimizing energy consumption of the power system.

In order to minimizing fuel consumption in the transition process used energy from storage batteries. Taking it into account and efficiency factor of charging and discharging converters is calculated optimal time of transient process for diesel generator. In carrying out the profit maximization of the power supply system transition process is calculated taking into account the tariffs of fuel and electricity.

Regulation of reactive power by using matrix converter enables to minimize energy consumption in the power supply system. At the same time it increases the stability of the system.