

RECP Best Practice Catalogue

Replacing the well pump

*Developed within the framework
of MED TEST II*



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION



switchmed



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Best Practice - Replacing the well pump

SECTOR:	Food & Beverage
SUBSECTOR:	Manufacture of other food products
PRODUCTS	Ketchup
CATEGORY	Technology upgrade/Eco-innovation
APPLICABILITY	Utilities
COMPANY NAME	---
COMPANY SIZE	Medium

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Description of the problem (Base scenario):

The energy assessment shows that there is a need to replace the well pump by more efficient type in order to reduce the operating hours and accordingly the electricity consumption.

Description of the solution

Replacing the well pump (7.5 kW) with (5.5 kW) booster pump will make a reduction of 60% in operating hours, as well as for the electricity consumption.

With using booster pump, there is a pressurized vessel that can be used for non continuous demand as the case of this well pump, which will reduce the running time of pump based on the demand.

The old pump was replaced by new smaller pump because the new pump is more efficient and needs less power to provide the same job. Also, since the factory uses the well pump to supply water to its buildings' tanks, the well pump is needed to run at every need to refill these tanks. After using the new pump with a pressurized vessel, the running hours for the new pump are reduced because the pressurized vessel stores an amount of the supplied water in last run to the next demand. Thus the new booster pump operates about half time of the old pump based on the amount of demand as the on/off operation is reduced almost to the half.

This measure was implemented by the factory staff in parallel with the energy assessment, no measurements were conducted before and after implementing the measure.

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Economic Benefits

Energy saving: $(\text{Old pump power} \times \text{Old pump running hours}) - (\text{New pump power} \times \text{New pump running hours})$

Energy Saving: 31,441 kWh (5.77% of the electrical energy)

Saving= €3,400/year

Environmental Benefits

Energy Saving= 31,411 KWh/yr (5.77% of the electrical energy)

Reduced CO₂ emissions= 17.6 tons/yr

Health and safety impact

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Capital investments & financial indicators	Investment= €400
	Payback period= 0.1 year
Suppliers	---
Other aspects	---
Implementation	Implemented