

RECP Best Practices Catalogue

Installation of a variable speed compressor
Developed within the framework of MED TEST II



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION



The SwitchMed Programme is
funded by the European Union

Best Practice - Installation of a variable speed compressor

SECTOR:	Textile & Readymade Garments
SUBSECTOR:	Weaving of textiles
PRODUCTS	Production of yarn, dyeing and weaving
CATEGORY	Technology upgrade/Eco-innovation
APPLICABILITY	Utilities

COMPANY SIZE	50
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Description of the Problem (Base Scenario):

Compressed air accounts for more than 40% of the electricity bill. The air demand at the production site varies according to the time, the day of the week and even the month. This fluctuation in demand leads to frequent start-up of the compressor inducing a 20% overconsumption of electrical energy

Description of the Solution

We recommend the installation of a variable speed compressor to automatically adapt the motor speed to the air demand. The system pressure is stabilised and energy consumption is minimised. Variable speed has other noted advantages:

- elimination of idling;
- elimination of the transition period between full load and no load operation;
- maintaining the pressure of the network in a differential on the order of 0.10 bar;
- the decrease in total average service pressure;
- reduced risk of leakage, with lower network pressure;
- prevention against the risk of power surges by having smooth starts.
- the ability to select pressures between 3.5 and 14 bar, via an electronic multiplier to reduce electricity consumption.

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Economic Gain	Calculated energy savings is 165,700 KWh/year, or € 13,727/year
Environmental Gain	Electrical energy: 165,700 KWh/year A reduction of CO ₂ emissions corresponds to 121.80 tons/year
Health and Safety Impact	None



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Investment & Financial Indicators	Cost of investment is € 54,545 (Time for Return on Investment: 48 months)
Suppliers	Compressors suppliers and distributors
Other aspects	None
Implementation and new indicator	The company launched the order for the equipment in March 2018, and for installation in Q2/2018.



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