Don't Let It Go To Waste - 35% saving on annual energy costs

Industrial & Commercial

SUCCESS STORY

At A Glance

Application:
Tissue Paper

Output:
Electricity: 1.8 MWe
Steam: 4 t/h High Pressure
Hot Air: 8.9 kg/s at 570°C

Benefits:
30% Saving of Energy Costs
Nearly 90% Overall CHP Efficiency
1.5 M€ Saved Per Year

Installation:
1 X OP16-3B
June 2017

Location:
Fivizzano, Italy

Customer:
Cartiera San Lorenzo, Tissue Mill

The Challenge

The pulp, paper and tissue paper industry is very energy intensive. High temperature heat is needed for steam generation and drying. In this project the tissue paper factory presented OPRA with the challenge of saving energy and reducing production costs. The aim was to produce electricity and recovering heat from the OP16 Gas Turbine which could then be used to produce saturated steam along with hot air for the tissue paper production process.

The Results

Today, the OP16 Gas Turbine is providing heat and power to the tissue mill. The introduction of the gas turbine into the production process, also allowed to optimize the operation of the Yankee Hood drier, increasing the daily production of the mill. The paper mill owner is currently able to earn back the investment rapidly and obtain huge benefits after the first year.

The Solution

EIL has integrated the OP16 Gas Turbine in an ingenious heat recovery system for the tissue paper industry which allows to achieve energy savings up to 30%. The project is named RENERGY+ and it consists of a turn-key solution featuring total engineering, supply of all the equipment needed. The OP16 Package is part of this sophisticated system, providing power and heat to the paper mill. The exhaust gas coming from the OP16-3B is delivered at 570 °C, which is a good fit for the drying processes in the paper mill. The hood has special burners which can provide post firing of a fraction of the exhaust coming from the OP16, in case higher temperature is needed. Due to an oxygen level of 15% in the exhaust, post firing can easily be implemented. The exhaust coming from the turbine and from the hood is also diverted to a Waste Heat Recovery Boiler (WHRB) to produce around 4 t/h of high pressure steam for the Yankee.

10%
Increase of Paper Production

40%
Reduction of Emissions

35%
Saving of Energy Costs

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