Case study factsheet
Ringkøbing, DENMARK

Co-funded by the Intelligent Energy Europe Programme of the European Union

Ringkøbing District heating

Lean-burn gas engine

Main CHP project indicators

Heat capacity (total)	kW_{th}	9,680
Electrical capacity (total)	kW_{el}	7,861
Technology	Motor engine	
No. of units	1	
Manufacturer	Wärtsilä	
Type of Fuel	lean-burn gas	
Heat: yearly generation	MWh	
Electricity: yearly generation	MWh	
Year of construction	2002	
Total investment costs	EUR	4.2 M €
Financing	no specification	
State support	no specification	
Return of investment (payback period)	Years	no specification
Location	Ringkøbing, Denmark	
Information	bent.iversen@wartsila.com	

General description of the case

The Wärtsilä 20V-34SG generating set is situated in the Rindum plant, a substation in Ringkøbing Fjern-varmeværk's district heating network. The spark-ignited engine uses lean gas and delivers heat to the town's 3,500 consumers and electricity to the local utility company RAH.

Success factors

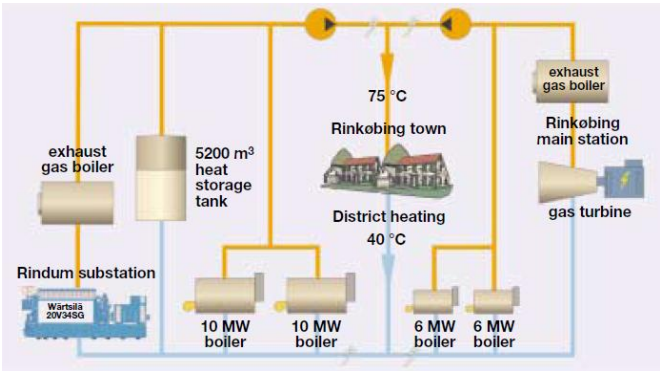
The engine produces significantly more electrical power compared to the gas turbine it replaced. The electrical efficiency of the gas turbine was 27 % while the efficiency of this 20-cylinder gas engine is almost 44%. The operator: was faced with tough environmental demands from the authorities to reduce the NOX emissions from the gas turbine, in addition to which a major overhaul was scheduled for the gas turbine. The high total efficiency of the plant gives the owner maximum security in an open market where fuel and power prices are volatile.

Main barriers

No specific barriers has been identified.

Comparison: before and after

The cost of heat production from the Rindum plant has been reduced by 20 % compared with continuing operation of the gas turbine.



Conclusions

Replacement of an old plant with a new modern plant with the same heat production can increase the power yield considerably.