



Corporate laundry heat recovery system

Case from Corporate Hospital laundry of Nykoebing Falster



Standard product / conventional tender

- Standard ventilation without heat recovering
- .
- .

GPP (PRIMES) tender

- Heat recovery from dry tumblers and washing machines
- .
- .

Results

- 185 t CO2 savings/year
- Energy savings: 465 MWh/year
- Financial savings: 80.000 €/year

Introduction to case

1.1 PITCH-TALK – SUMMARY

The hospital laundry located, at Hospital of Nykoebing Falster, has implemented a heat recover system in the production. The heat recover utilize hot water, hot air and reduce energy consumption from the productions washing machines and dry tumblers. The CO₂ emission is reduced with 185 tonnes per year and savings from energy consumption is approx. 80.000 €/year.

1.2 CASE CONTENT AND ISSUE

The corporate laundry of Nykoebing use large amounts of energy for production purposes. Washers and dryers, as well as roller and steamer, runs every day in the hospital laundry department and large quantities of sewage water is led from the washing machines, to the sewage at a temperature of 45-60 ° C. At the same time the process emit a large amount of warm exhaust air from the equipment to the atmosphere at a temperature of about 90 C.

With the correct solution a major part of the excess heat generated can be recovered. A feasibility study was therefore conducted and a system for the heat recovery appeared to be an obvious action for improvement.

The tender documents contained a proposal for the technical solution, but bidders were urged to choose a system solution they considered most advantageous according to the selection criteria.

1.3 SOLUTIONS APPLIED

The applied solution is a energy recover system utilizing the heat from warm air exhaust and hot water as energy to preheating water for washing and warm air for drying.

Tender features

Region Zealand's procurement division in corporation with laundry management conducted the tender, named "Establishing heat recovery at the laundry of Hospital Nykoebing Falster".

Preparations for the tender consisted of a detailed feasibility analysis of the laundry's energy consumption with proposals for relevant energy actions.

The contract comprises the full enterprise of the recovery system.

The amount of the contract was fixed to 465.000 €.

Bidders were invited to inspect the laundry site. The tender contained appendixes with detailed information on the baseline energy consumption and a feasibility study.

Procurement objectives



The objective of the procurement was to improve the energy consumption of the laundry process by introducing a heat recovery system.

An innovative element of the procurement is that the solution is not specified in advance in the tender. That makes it possible for suppliers to be innovative and use own expertise to propose a technical design.

Procurement approach

The nature of the procurement is specific for the particular laundry service.

Based on a feasibility study of energy saving potentials, laundry management decided to execute a tender for establishing a heat recovery system. An energy consultant assisted with determining the terms and budget for the tender.

To assure the best possible basis for designing a system solution for heat recovery, the suppliers were invited to inspect the site and provided with detailed technical data of energy consumption and process data.

Functional specification has been used in the tender to achieve the best possible solution for the amount settled in the tender.

The criteria were:

- Achieve most possible heat recover
- May not reduce the laundry's production capacity and production time
- Provide minimal requirements for space in the laundry room
- Provide minimal maintenance and resulting costs
- Adequate to changes in equipment/production
- Provide full documentation of realized energy savings and operating / maintenance costs.

The selection criteria assured competition between bidders on energy saving in a total cost perspective and assured at the same time, that the solution did not affect the production capacity and other related functions.

Heat recovery systems are individual technologies whereas no references to standards were made.

The incoming proposals were evaluated according to the criteria and the proposal with the best total cost business case in relation to energy saving and maintenance cost. The contract was signed with the best performing proposal.

The payment structure of the contract was divided into a first and second payment. The first payment was to be paid after approval of the implemented recovery system and the second payment after monitoring of first year operation period from commissioning. If the predicted performance and savings are not accomplished, a negotiation with contractor to cover related and reasonable loss below estimated budgets. The objective of this settlement model was to ensure the contractor's commitment to truly achieve the calculated projected energy savings and maintenance costs.



Criteria development

The criteria were developed by Laundry Management, in corporation with the energy consultant, who conducted the energy feasibility study for the laundry.

It was not found relevant to make references to technical standards.

Results

	CO ₂ emissions	Energy	Financial
Savings with heat recovery system per year compared to baseline	185 tonnes/year	40 toe/year	80,000 €/year

Calculations of the results are based on data for energy consumption before heat recover were implemented and the actual situation after heat recover are implemented.

Lessons learned

Regulation for public procurement is in some cases a barrier for fast improvement of technologies in production process. The business case for implementing a heat recover system provided a very attractive business case with a low pay-back time. Hence, the region's procedures for public procurement affect a longer timespan from management decision to actual execution of the tender while external procurement officers have to get the tender scheduled. It means that realization of potential savings are prolonged.

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About PRIMES

Across six countries in Europe; Denmark, Sweden, Latvia, Croatia, France and Italy, PRIMES project seeks to help municipalities overcome barriers in GPP processes, many of which lack capacity and knowledge.

PRIMES aims to develop basic skills and provide hands-on support for public purchasing organisations in order to overcome barriers and implement Green Public Purchasing. This will consequently result in energy savings and CO₂ reductions.– www.primes-eu.net

About GPP 2020



GPP 2020 aims to mainstream low-carbon procurement across Europe in support of the EU's goals to achieve a 20% reduction in greenhouse gas emissions, a 20% increase in the share of renewable energy and a 20% increase in energy efficiency by 2020.

To this end, GPP 2020 will implement more than 100 low-carbon tenders, which will directly result in substantial CO₂ savings. Moreover, GPP 2020 is running a capacity building programme that includes trainings and exchange. – www.gpp2020.eu



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