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Steen Rysgaard, owner of the hotel



  
**HOTEL**



## Tambohus Inn hotel lowers energy consumption with gas absorption technology

Fired by LPG and renewable energy

Limfjord, Jutland - Denmark

Owner of Tambohus Inn, Steen Rysgaard will reduce his heating bill during the coming years by 40%. This will be accomplished by replacing his old heating oil fired boiler with two Robur gas absorption heat pumps and a condensing boiler. The new system is fired by LPG, and altogether it reduces running costs and it's more environmental friendly. Tambohus Inn has existed as a Royal licensed inn since 1842 and is known for its beautiful

location close to the islands 'Jegindø' in the Limfjord. Over the last 160 years Tambohus inn has been continuously expanded and renovated. Today, the inn offers 29 rooms and a high quality restaurant with a large kitchen; the hotel is open 50 weeks per year. Before the upgrade, the hotel had a yearly consumption of 26.000 liters of heating oil (of which 20% for hot water production) using an oil boiler with only 75% efficiency and,

despite large investments in double glazed windows and thorough insulation, it became more and more costly to heat the inn's newer and older buildings. New technology in combination with LPG fuel makes it possible to reduce energy consumption by over 40%; therefore, also energy bill and CO<sub>2</sub> emissions are reduced by over 50%.

### The requirements

When Primagaz contacted Steen Rysgaard, he did not hesitate: "I was convinced that it was a good overall solution for the environment and the inn's economy" he says. One of the key points was payback, since investment would be recovered after only four years.

**Absorption heat pumps can also be fired by LPG where natural gas is not available**

"Today we have a future-proof heating solution based on a combination of gas and renewable energy" he adds. Gas Absorption Heat Pumps combine the benefits of a condensing gas boiler with those of a heat pump, using renewable energy from the air. High efficiency is guaranteed even when it's very cold outside. Gas heat pumps can integrate condensing boilers in every building. The system supplies central heating with water flow temperatures of 65° C, therefore it can supply hot water for new and old radiator types and for any hot water tank".

#### The technology

The oil boiler has been replaced by two Robur GAHP-A absorption heat pumps fuelled

by LPG. DDC controller can adjust flow temperature in the central heating system following a weather curve depending on outdoor conditions to obtain high efficiency. A 800 l buffer tank divides the primary and the secondary circuits. The secondary circuit provides hot water for two heating circuits with radiators and control valves. A condensing boiler is dedicated for production of domestic hot water.

#### An excellent choice

Several advantages of gas absorption heat pumps can be found in this application. First of all, by using air as renewable energy, environmental impact is significantly lower. Furthermore, the customer obtains remarkable savings because of

the low operating costs of the GAHP-A. Electricity consumption and LPG operating costs are lower. This solution is able to replace or integrate existing heating installation without any changes. Moreover, there is no need for additional investment for the electrical supply. No technical room is required, since units are designed for outdoor installation.

Finally, Tambohus Inn represents the perfect combination of technologically advanced products, attention to running costs and care for the environment.



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<b>Units installed</b>	Nr. 2 GAHP-A Air source Gas Absorption Heat Pumps
<b>Nominal heating capacity</b>	76 kW
<b>Energy source</b>	LPG + air as renewable energy
<b>Type of building</b>	Hotel
<b>Distribution terminals</b>	Radiators

#### Advantages for the Hotels

- high efficiency (low energy bill)
- integrated production of DHW
- low electricity consumption