

# HYSTORSYS

## Hystorsys Metal Hydride Compressor being delivered to the HyNor Lillestrøm refuelling station in May 2013

Hystorsys was founded in 2005 after years of R&D work at Institute for Energy Technology (IFE), Norway, on metal hydrides. Now, a new type of compressor based on metal hydrides (MH) has been developed and the first compressors have been built and delivered.

The compressors are named HYMEHC-x (x denoting  $\text{Nm}^3/\text{h}$ , i.e., flow rate). The first compressor delivered, a HYMEHC-10 ( $10 \text{ Nm}^3/\text{h}$ ) hydrogen compressor, is now in operation at the HyNor Lillestrøm hydrogen refuelling station.



At the HyNor Lillestrøm station:

HYMEHC-10 receives:  
 $10 \text{ Nm}^3/\text{h}$  at 10 bar



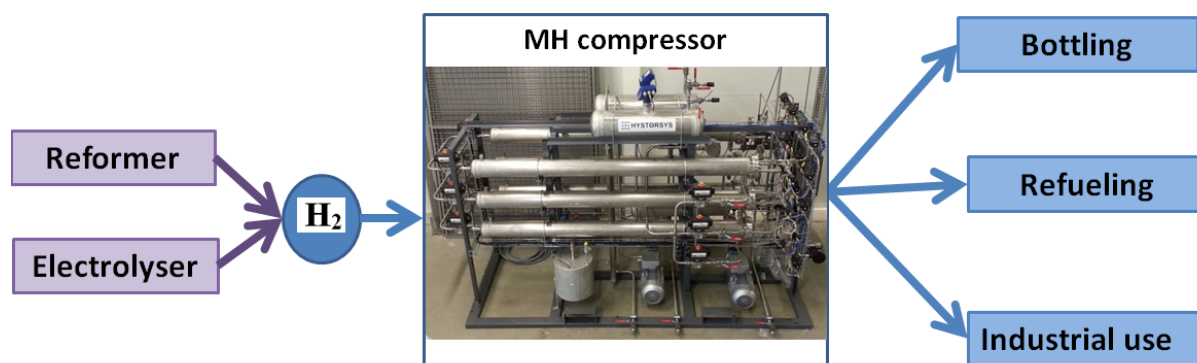
HYMEHC-10 delivers:  
 $10 \text{ Nm}^3/\text{h}$  at 200 bar

In two stages to buffertank

*On the picture, Jon Eriksen CEO of Hystorsys (left) and Christopher Kloed Chair man of the Hystorsys Board (right) in front of the new metal hydride compressor now in operation.*

This new innovative thermal compressor concept has several favourable features compared to other compressors:

- Hardly any moving parts
- Low maintenance cost
- Flexible installation/design – even wall-installation possible
- Silent/vibration less operation
- Can deliver hydrogen from 30-200 bar pressure (customer needs & input pressure)





This new type of metal hydride hydrogen compressor could fit many different applications such as:

- A variety of small scale industrial applications where backup hydrogen storage is required to supplement the on-site hydrogen generation
- Bottling of hydrogen for ordinary H<sub>2</sub> bottle supply to small scale hydrogen users
- First stage compressing at hydrogen refuelling stations

The metal hydride compressor takes thermal energy as input for the compression work. Thus, the compressor specifically fits well where industrial heat (e.g., +120 °C steam) is available – requiring an extremely low electrical energy usage during compressor operation.

Hystorsys would like to team up with other industrial partners which foresee a benefit by combining their technology with an innovative compressor such as:

- Electrolyser companies
- Reformer companies
- H<sub>2</sub> gas distributors
- Other interested partners

Already, Hystorsys has set up key partnerships with a handful of partners – such as:



***For further information:***

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