

## **COSMHYC INTERVIEW**

**Mikael Sloth, Vice President Business Development at NEL Hydrogen, talks about the global roll-out of hydrogen fuelling stations and the novel hydrogen compressor developed by NEL within COSMHYC.**

### **NEL Hydrogen**

NEL is the world's largest manufacturer of hydrogen production and fuelling equipment with 200 employees in Europe and the US. NEL operates the world's largest factory for H2Station® hydrogen fuelling equipment in Denmark.



**Mikael Sloth** is Vice President Business Development in NEL. He is co-founder and served as Business Development Manager in H2 Logic since 2003 which became part of NEL in 2015. Mikael holds positions of trusts in various European hydrogen forums.

He served as board member of the €2.5 billion European Joint Technology Initiative for Hydrogen and Fuel Cells during 2008-2015.

**NEL opened the first publically available hydrogen refuelling station in Europe in 2006. Since then NEL has provided hydrogen fuelling equipment for more than 30 fuelling stations across Europe and is now also entering the US and Asian markets.**

**Which technological developments have been paramount for the global roll-out of hydrogen fuelling stations?**

Firstly, international car manufacturers have advanced greatly on fuel cell electric vehicles and have commenced manufacturing and sales of these in selected markets. This is creating a growing market for hydrogen fuelling stations and has provided the basis for investments in R&D and cost reductions of these. Here one of the main progresses has been the standardization of hydrogen fuelling at 70MPa to ensure fast fuelling of vehicles with long driving range.

**A lot of people still feel insecure about hydrogen with regard to its high explosiveness. How safe is hydrogen fuelling and vehicles today?**

Hydrogen fuelling is just as safe, if not safer than gasoline. Hydrogen is a very light gas, so in the event of leakage it dissipates to the surroundings much faster than gasoline. Also the hydrogen tanks are made of carbon fibre and can withstand crash and fires.

**In COSMHYC NEL is responsible for the design and construction of a novel hydrogen compressor. Can you tell us more about the innovative features you are going to implement and how they will improve the efficiency of the compressor?**

Hydrogen compression is widely used for industrial purposes today, however typically at lower pressures than required for hydrogen fuelling and in contexts where higher cost levels are accepted. With regards to fuelling, this means that lots of R&D efforts are required for optimizing the compressor design to cope with higher pressure whilst ensuring low costs. In COSMHYC the focus is on improving lifetime and efficiency in particular, as these parameters also contribute to cost reduction.

**What has been most exciting in your work on COSMHYC so far?**

The joint efforts on two compression technologies, mechanical compression and an innovative compressing technology without moving parts, within the same project have proved very interesting, so far, and very instructive. There are great synergies between the two technologies and they supplement each other at various compression levels.

