

Scandinavian HVAC

The HVAC Associations in Scandinavia have an umbrella organization called SCANVAC, which stands for Scandinavian Federation of Heating, Ventilation and Sanitary Engineering Associations in Denmark, Finland, Iceland, Norway and Sweden. Total number of members in these associations is about 20 000, which is in the relation to population (about 27 million) highest in Europe.

There are good explanations for the high interest in HVAC -technology in Scandinavia. Good heating has always been a necessity due to cold climate. Most of the energy is imported in Denmark, Finland and Sweden. As the primary energy use of buildings is about 40% of energy demand, the good energy efficiency has been on agenda for decades. The harsh climate has also made people to demand a good and comfortable indoor environment, which again has boosted the R&D work of industry. Active role of Scandinavian industry can be seen also in REHVA. The first REHVA industrial supporters were from Scandinavian countries, and still 40% of REHVA supporting members are from Scandinavia.

Currently the focus of R&D work in Scandinavia is on energy efficiency, renewable energy sources and indoor environment. But after the Paris climate agreement in 2016 more and more focus has been on the measures to reduce the greenhouse gas emissions. The future buildings must be real zero energy buildings over their lifetime. When moving more and more towards the use of renewable energy sources, the demand side management becomes vitally important. The use of the energy should match with the production. ICT applications with reliable building simulation and control systems become more and more important. This again turns focus to the acceptable control of the indoor environment in respect to the variations in temperature swings. In long run the EU, with Scandinavian countries in first row, will stop combustion as a source of heating energy, first coal and later the other fuels. The Finnish government has already decided to place a ban on the

burning of coal for energy production by 2029. This will lead to innovative new use of integrated energy systems, not only on building level but also on the community level. In Scandinavian countries this development will be the fast, as there are no extensive natural gas networks to supply cleaner fuel for heating. One of the big problems is how to convert district heating systems to supply heat for the cities without coal fired plants. The challenge is huge but offers also opportunities for industry to develop innovative solutions for the changing market. To boost this development, City of Helsinki is preparing the international one million-euro Helsinki Energy Challenge, a competition to find a solution for replacing coal in the most sustainable way possible. This is a challenge in a city where currently about 90% of buildings are heated mainly with coal fired power plants.

This issue of the REHVA Journal presents Scandinavian HVAC technology and its recent trends. The articles are submitted by the personal members of the Scanvac Member Associations. Hopefully the Scandinavian technology is also useful in other parts of Europe. ■



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