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while engineers and
project managers work
at our company.

The balance between the
two is important.”

Frank Egas
CEO Royal Dahlman

It helps to have ECN behind us

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“We are a SME company specialised in filtration technology for liquids and gas. With more than 100 employees, we design, manufacture and supply custom products for the petrochemical and processing industries. Dahlman was founded in 1886 and was awarded the honorary title ‘Royal’ in 2011.”

The problem

“Around 12 years ago, we were approached by ECN to work together on developing a technology for the removal of tar from gas produced as a result of biomass gasification. ECN wanted to develop this new, sustainable technology from the laboratory scale to the commercial scale. In this project, ECN conducted experimental research and performed measurements in the laboratory; we had the engineering capabilities to work with ECN to scale up the technology from the experimental phase to the pilot phase.”

The solution

“Together we developed the OLGA gas cleaning technology. The energy efficiency yielded during gasification using this technology is unique. In contrast to the traditional method of biomass gasification, the gas produced during the gasification of biomass or waste can directly be used as fuel for a motor or turbine. The heat does not need to be converted into steam first. This extra step, which results in a loss in efficiency, can now be completely bypassed. OLGA cleans the gas efficiently – the waste stream is small and the energy consumption is relatively minor. There is no comparable system in the world. A number of years after developing OLGA, we worked with ECN on an innovative gasifier called the MILENA. Dahlman has been the licence holder of the OLGA technology since 2006 and of the MILENA since 2013.”

The impact

“The development of these new technologies makes the power generated from biomass much more efficient and can contribute to solving the waste problem in the world. We can gasify waste and directly use it to generate electricity. In this way, we can counteract pollution and negative health effects. We are seeing a great deal of interest in this technology worldwide. Commercial projects for industrial plants are in the pipeline, but at the moment we are still in the ‘valley of death’. We are looking for companies that are not afraid to invest in the new gasification technology and that is difficult. Moreover, the industrial upscaling took longer than we expected. Technology ready for the lab is not necessarily ready for the market. However, the collaboration with ECN has enabled us to expand our portfolio with two promising technologies. Moreover, the name of ECN is internationally recognised.

It helps to have an organisation like that as a partner.”

The collaboration

“For a company such as Dahlman, developing new technology on a laboratory scale is not easy. We really need an organisation like ECN to conduct experimental research and perform measurements. Our collaboration is intensive, especially in the phase of scaling up. This is a process of trial and error. If we run into a problem, it needs to go back to the lab. This collaboration has gone well for 12 years. Scientists work at ECN, while engineers and project managers work at our company. The balance between the two is important. At ECN, technology would probably remain in the laboratory phase for too long, while we have the drive to bring it to the market quickly. In our projects, due attention is paid to each party’s role.”

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