



CONTENTS PARALLEL SESSIONS

The parallel sessions in the afternoon will start with a short introduction regarding the state of the art in the respective business segments. Following the introduction a discussion will be held with the audience.

You can choose between the following sessions:

1. The Rotterdam hydrogen network
2. Sustainable hydrogen production
3. Fuel cell applications
4. Waterpower
5. Transportation, logistics and maritime applications

After the first round you can switch to another session.

Session 1) The Rotterdam hydrogen network

Rotterdam harbor since long operates a significant hydrogen pipeline network. Connecting hydrogen producers with their clients, this network presently supplies a hydrogen quality suitable for hydrogenation and desulphurization purposes. However, expanding on the possibilities of this unique system, as clean energy carrier, will give vast new possibilities for the area.

Obviously fuel cells will be the ultimate solution to produce high efficient zero-emission electricity for all mobile and stationary applications where diesel generators are used today.

Modern, dedicated membranes may offer the purification step required for this type of application. All kinds of new end users, both mobile and stationary, will find their way to Rotterdam due the immense existing hydrogen infrastructure.

The complete chain from producer to future end user will be subject for this session. Various companies will present and discuss the possibilities and further steps towards successful implementation.

Session 2) Sustainable hydrogen production

Today most hydrogen is being produced through the process of large-scale steam methane reforming. The supply of fossil fuels is not secured in the long term due to developments regarding price and environmental issues. Over the last decennia new technologies have been developed to produce hydrogen using sustainable sources. The current challenge is to plan centralized and decentralized hydrogen production in such way that an optimum is created respecting sustainability and the environment, as well as security of supply.

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Session 3) Fuel cell applications

In the last 20 years many fuel cell applications have been developed. These applications cover a wide range of industrial and consumer applications in a size range of a few Watts up to hundreds of kilo Watts.

Some examples are battery replacement (forklift trucks and other material handling equipment), back up power supply, city busses and city distribution trucks, cogeneration systems (WKK) and large-scale waste hydrogen applications. Some of these may use hydrogen as a source, some of them may have (on-board) reforming and use an existing (bio)fuel as a source.

Session 4) Waterpower

It is preferred that ships do not use their Diesel generators to generate electricity when they are docked in the harbor to avoid local emissions.

The waterpower consortium did a study to produce the electricity with hydrogen and fuel cells on site of the ship. The hydrogen storage and the MW FC power plant are located on a barge along the ship. In this way the logistics are not disturbed and is the electricity local emission free produced. The Waterpower solution will have a big impact on the air quality in the Rotterdam area.

Session 5) Transportation, logistics and maritime applications

In an industrial area like the Rotterdam area, logistics is an important area of business. Besides of trucks, cars, buses and ships, which are participating in public traffic, there are especially in the harbor area movements of forklifts, cranes, special purpose vehicles etc, that have a big impact on the air quality as well and are seen as a black hole at the moment by the authorities.

Several developments have taken place in this area, leading to first trucks on hydrogen, forklifts with fuel cells, fairies and ships with fuel cell propulsion etc. Due to the large-scale production of hydrogen combined with the hydrogen pipelines in the Rotterdam area, Rotterdam is the best spot you can think of to demonstrate and field test such applications of hydrogen and fuel cells.

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