eurowindenergy.com

We rethink how energy is produced, stored and used

Eurowind Energy™

Technology Integration

We combine our technologies to create a greener future.

Eurowind Energy is a leading developer of wind, solar, PtX and Biogas. We develop, construct and operate solar, batteries, electrolysers and other Power-to-X technologies. To be part of a green future and benefit from new green technologies, we need to rethink how we utilise renewable energy most efficiently. Our answer is to combine different technologies, as this gives us the possibility of harnessing energy from different renewable energy sources. We work with the green transition by considering the energy system in a circular way by rethinking how energy is produced, stored and used across the silos.

We aim to store excess energy from one type of energy in another sector before it is used in a third, entailing energy is never wasted. For example, we can utilise CO2 from existing biogas and CHP plants in Power-to-X production. The excess heat from hydrogen production made with electrolysis can go into district heating systems. We strive to secure a solid energy production of renewable energy sources as this will give us a huge advantage when moving towards a greener future.

Power-to-X is an enabler of the future

We believe that in the future we will see a significant role for Power-to-X (PtX) technology. The “X” in PtX is an umbrella term that describes any type of source of electricity (power) such as Power-to-heat, Power-to-hydrogen or Power-to-methanol. Essentially, PtX turns electricity into something else. We cover more of the value chain when combining our knowledge within this area and at the same time add the possibility to transform green energy into hydrogen.

The challenges of renewable energy and Power-to-X

One of the issues when working with renewable energy is storing surplus power that is being produced and consumed simultaneously. When it is very windy, we need to shut down wind turbines as they produce more power than we can consume. We cannot save the surplus energy and the grid cannot handle the excess power that is produced, which is one of the reasons why PtX is essential to make storage of renewable energy sources possible.

Power-to-X is a strong force in the energy system

Renewable energy sources such as wind and solar power generate electricity intermittently. This is where Power-to-X (PtX) technology comes in, allowing excess energy to be stored and creating other PtX fuels for renewable energy that offer greater flexibility. By separating electricity consumption from production, PtX technology plays a key role in decarbonising various sectors on a global scale and replacing fossil fuels.

Key benefits of Power-to-X

- PtX technologies provide storage possibilities, as well as utilising renewable energy within industries that can't be electrified e.g. shipping trade, air traffic and within the chemical industry.
- PtX can also be an enabler for wind and solar. This means that we can harness the produced energy to a maximum.
- Some PtX processes generate a large amount of waste heat, which can be applied in the district heating sector. The technology can therefore contribute to CO2 reduction when replacing the use of fossil fuels providing new renewable business and export opportunities.
- PtX allows for balancing our energy sector and being an enabler for the build-out of more renewable power production.

“Power-to-X is a strong force in the energy systems”

Energy centres create a circular system

Eurowind Energy has for the past couple of years worked on the concept of Energy Centres, which are mostly large-scale hybrid or wind-only parks. In the future, we also plan to include biogas and PtX. The combined technologies accomplish a range of synergies.

The challenges of renewable energy

Renewable energy is a key solution to the climate crisis, however, there are various challenges within the renewable energy industry and when working with energy centres.

- Transforming energy from power to renewable fuels.
- Technical know-how to make sure the many plants can function as one unit.

Energy centres allow savings on infrastructure

The war in Ukraine has economically disrupted the energy infrastructure worldwide, and this calls for an accelerated energy transition. Seen from a future perspective it is therefore of utmost importance that we produce as much power locally. Creating large energy centres will allow for substantial savings in infrastructure, as part of the energy is consumed on-site and large expensive connections to the public infrastructure.

Key benefits of Energy Centres

- The ability to produce energy in a variety of weather scenarios will allow the energy centres to provide more full-load hours, which again makes them very competitive in terms of harnessing power from different renewable energy sources.
- Creating large energy centres will allow for substantial savings on infrastructure.
- The ability to transform energy from PtX, will also create the opportunity to store green power, something that has been seen as crucial for the success of the green transition.
- Possibilities for the supply of heat for district heating and others.

“Ability to produce energy in a variety of weather scenarios”

Biogas, a renewable energy source for the future fuel supply

Biogas has an important role to play in the future energy supply to provide both methane and other green biomass-based products. It is based on circular and local production and is a natural part of our vision to produce various kinds of energy for different needs and utilise this synergy.

The challenges of biogas

There are different concerns when it comes to the production of biogas.

- It can be a challenge to get access to biomass.
- The placement of a biogas plant can be an issue, as they require space and can only be placed in rural areas.
- Heavy transportation is needed to and from the plant.

The crucial role of technology in the green transition

At Eurowind Energy, our vision is to create synergy between the different technologies by creating energy centres using biogas alongside the production of wind, solar PV and PtX to secure the future need for fuel and power.

Key benefits of biogas

- The process of producing biogas is a circular process, where we can use resources repeatedly instead of destroying and burning them.
- Biogas creates the foundation to produce methane and CO2, which we can deliver to our gas grid and/or upgrade to other green biomass-based products.
- Green biomass-based products benefit the heavy and transport industry.

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