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PtX is key for the green transition

Abstract
How can green electricity, water and air contribute significantly to the green transition? How does a large-scale PtX plant fit in to our grid system? And what are the possibilities to create local sector connections to water and heat supplies respectively? Esbjerg has the possibility and potential of creating a new growth adventure based on the green transition phase.

HØST PtX Esbjerg is a leading, Danish Power-to-X (PtX) project, deploying large-scale industrial use of electrolysis-technology on GW-level to produce ammonia. The ammonia plant will be powered by green electricity from renewables, harvesting the kinetic energy from wind and solar. Based on this CO2-free production process, HØST PtX Esbjerg will be able to offer green ammonia to the market for use in fertilizers and in fuels. Thereby, HØST PtX Esbjerg is opening the door to decarbonization of hard-to-abate sectors such as shipping, agriculture and industrial applications. Further, excess heat from the plant will be used for district heating of app. 15,000 households, reducing the carbon footprint of the local utility company, DIN Forsyning. Moreover, the 1GW plant is the ideal, green offtake companion to the continued build-out of low-cost, renewable electricity generation capacity in the North Sea.

HØST PtX Esbjerg will be among the first gigawatt-scale PtX facilities in Europe, contributing to the much-needed acceleration of the decarbonization journey towards carbon neutrality in 2050. Moreover, it will be a key driver for the establishment of a new industry within next-generation renewables in Esbjerg and in Denmark.