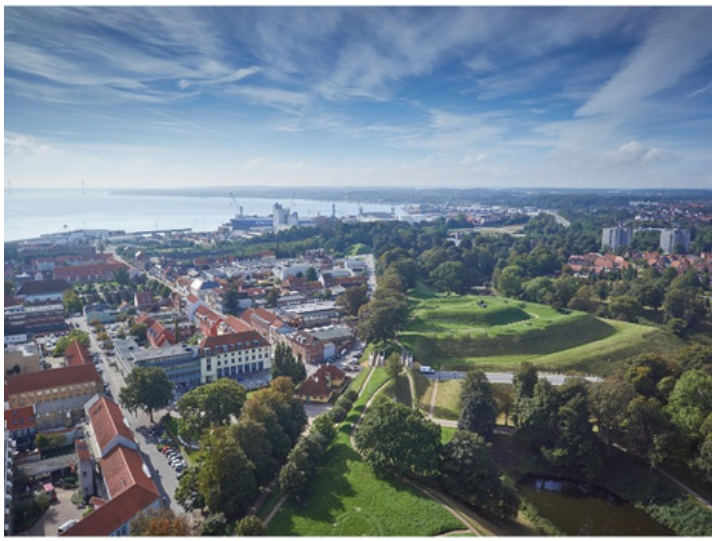
Interreg North Sea | Co-funded by the European Union | Fredericia Kommune | Aalborg University | centerdenmark

COPPER

Case Study

How the **Municipality of Fredericia** is piloting a virtual energy community to electrify its industry

With funding from the European Union through the COPPER initiative, the Municipality of Fredericia will pilot a virtual energy community capable of turning its local industry renewable with a 15-fold increase in green hydrogen production.

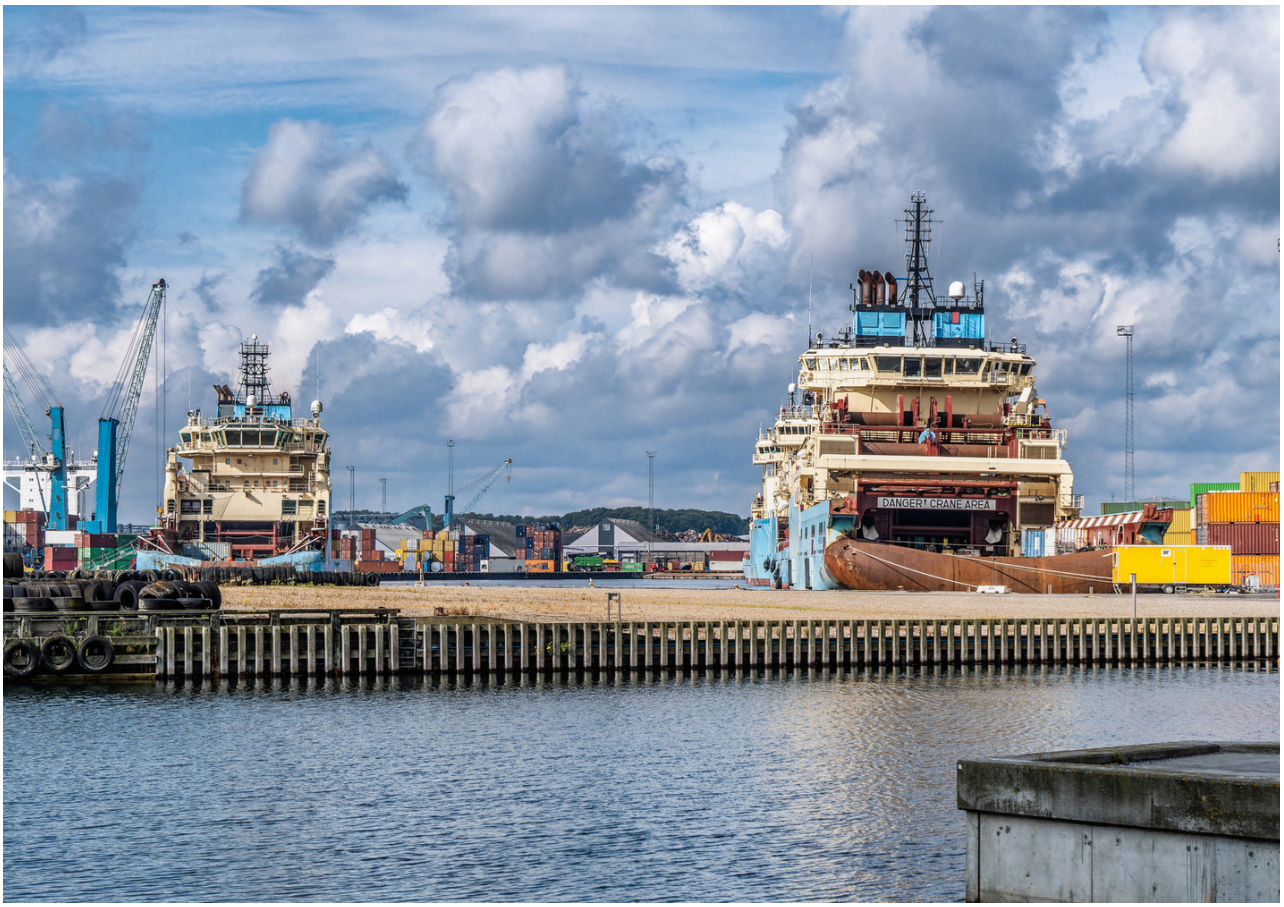


CHALLENGE

As it aims for climate neutrality by 2050, Fredericia has ambitious plans to renewably power its large-scale industry.

This presents a number of challenges. Space is limited within the city, so solar and wind energy must be provided from neighbouring areas.

To power large-scale industry on-demand, much of this will need to be converted into green hydrogen, requiring a 15-fold increase in H2 production from 20MW today to 300MW in 2030. This transition will have a significant impact on the day-to-day health of Fredericia's grids.



APPROACH

Working with Aalborg University, Fredericia will pilot a virtual energy community, modelling how to move and manage sufficient renewable power to electrify large scale industry through the local grid.

With support from Center Denmark, this modelling and data will be fed into a visualisation tool for power flows around Fredericia, to help the municipality understand their local energy system and develop more accurate local energy action planning.

20MW

Current green hydrogen production in Fredericia

300MW

Planned green hydrogen production in Fredericia by 2027

1GW

Targeted green hydrogen production by 2030

OBJECTIVES

Prepare a virtual energy community for large scale industry

Fredericia will prepare one of Europe's first virtual energy communities purpose-built to support heavy industry through green hydrogen

Improve capacity for local energy action planning

Using the visualisation tool built by Center Denmark, Fredericia will have a powerful virtual tool to enhance their future local energy action planning, central to the Municipality's industrial climate strategy

Establish new energy system partnerships

The pilot will enable Fredericia to assemble relevant local energy system actors and determine the best organisational models for industrial, municipal, and DSO stakeholders

> *In Fredericia Municipality, our ambition is to be "Green in World Class". This requires innovative companies in addition development of our energy infrastructure. In Fredericia we will in the future consume a significant amount of electricity for our PtX companies and energy industries.*

Tommy Rachlitz Nielsen

Chairman for Climate, Energy and Environment, Municipality of Fredericia

Learn more by contacting contact@coppercities.eu