## BREMEN.











## BREMERHAVEN. TEST REGION AND COMPETENCE



SHIP REFUELLING

> Bunkering of ships with hydrogen-based fuels has potentia for the port locatio Bremerhaven.

HEATING

**Climate-neutral heating** in buildings Hydrogen-powered units for building technology are a viable alternative offering up to 100% self-sufficienc in electricity and heat

Vehicle fleets road, water, rai nust be converted to re able energies in the future lydrogen or synthetic fuel derived from it will play a major

FLEETS

Bremerhaver 8° Ost

Fuel for stoves

and as basic material

A hydrogen-powered

oven for bakeries is current

being developed. Hydrogen

needed as a basic material in

margarine production.

STREET

SWEEPER REFUSE

COLLECTION

VEHICLE

food processing, e

## Energy turnaround we explained in the Klimahau Bremerhaven

electricity from the wind and s s the basis of climate-neutral e ergy consumption. If it cannot b used directly, it must be stored hydrogen and is available for

Self-sufficient energy supply Investigation of the entire process chain: Generation of as hydrogen and conversion back into electricity using a fuel cell.

be developed

**ENERGY-INTENSIVE** 

INDUSTRY

CO2-neutral fuel for the thermal (production processes of drying, firing) – development of approaches for gradual conversion from gas to hydrogen operation.

SHUNTER RAILCAR HYDROGEN TRAIN

> Railway traffic Deployment of 14 ALSTOM Coradia iLint trains from 2022 between Cuxhaven, Bremerhaven and Buxtehude. Port railway has potential for transitioning to hydrogen-based propulsion; shunters and locomotives are not yet available.

Public transport Hydrogen buses are used for a climate-neutral local transportation in Bremerhaven.

SUPPLY Fuel and heat supplier Hydrogen is suitable as a substitute fuel or for providing process

Municipal transport Hydrogen-based propulsion for refuse collection vehicles and sweepers. Already today, climate-neutral drives are being tested in the City.



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