



Gasmarknadsrådet

08.12.2021

Public

St1 solving global energy challenges

St1 Vision is to be the leading producer and seller of CO₂-aware energy

In the spirit of our vision, we research, develop, produce and invest to be able to provide our customers with CO₂-aware energy while creating positive societal impact

Our operations are strengthened by strategic long-term partnerships in various areas

A composite image representing energy and sustainability. It features a green hill with several white wind turbines. In the background, a city skyline with various skyscrapers is visible. A large, semi-transparent globe of the Earth is positioned on the right side of the hill. The foreground shows dark, rippling water. The sky is a deep teal color with white clouds and a faint rainbow. A white commercial airplane is flying in the upper left corner. The title 'The Energy Context' is written in large, white, sans-serif font across the center of the image.

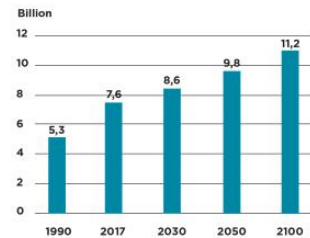
The Energy Context

The Global Energy Challenge



The global population is growing...

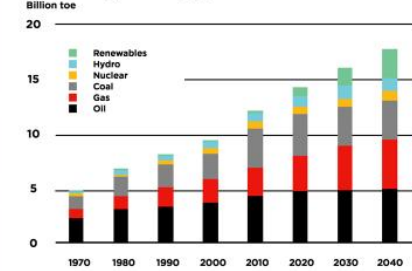
World population



Source: United Nations, World Population Prospects 2019 (Medium variant)

The higher the standard of living, the higher the energy consumption

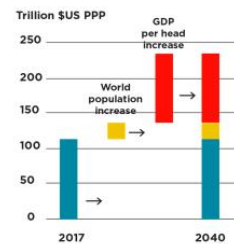
Primary energy demand - fuel



Source: BP Energy Outlook, 2019 Edition

And so are standard of living

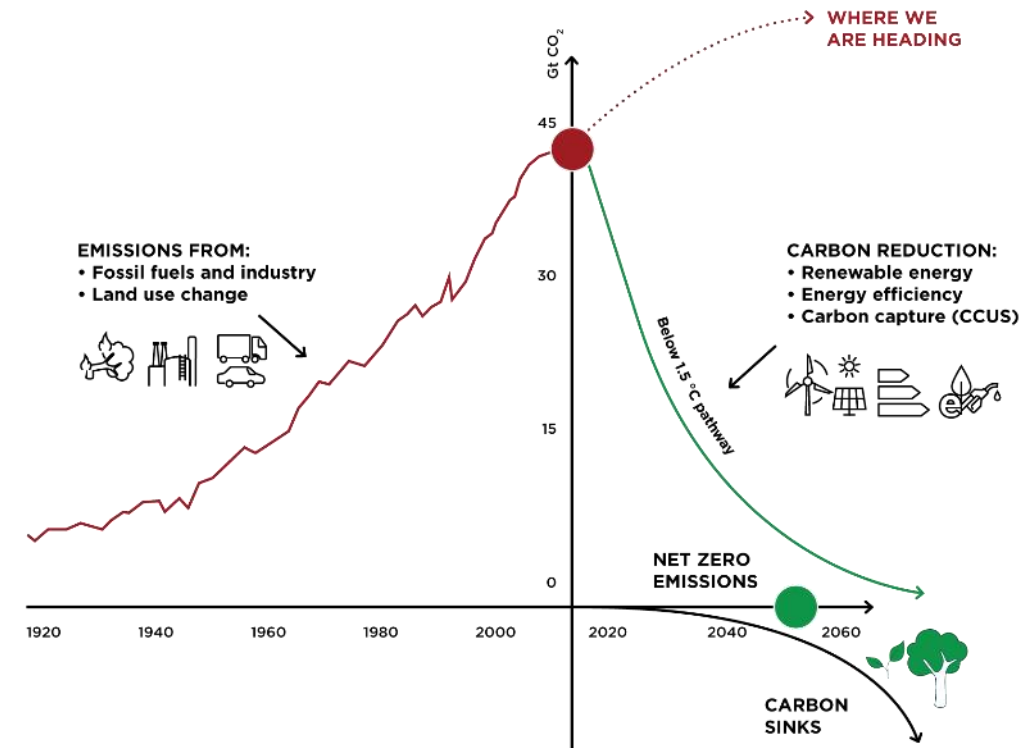
Increase in global GDP



Source: BP Energy Outlook, 2019 Edition

Where we are going vs. where we should go

ILLUSTRATIVE PATHWAY OF GLOBAL NET CO₂ EMISSIONS LIMITING GLOBAL WARMING TO 1.5 °C

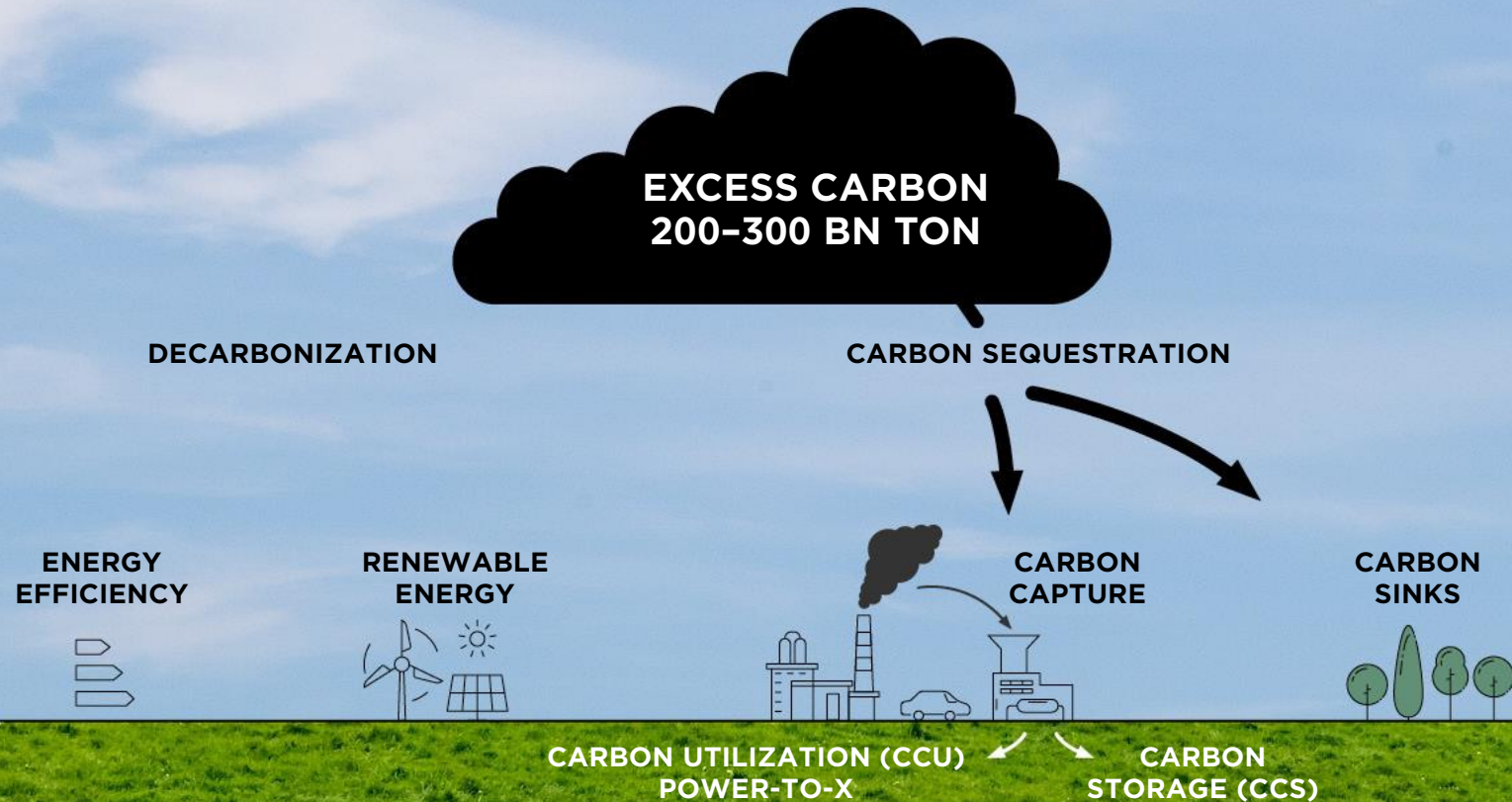


Source: Global Carbon budget 2019, IATA SSP Database, SSP2-19 and SSP2-baseline scenarios

Compromise?



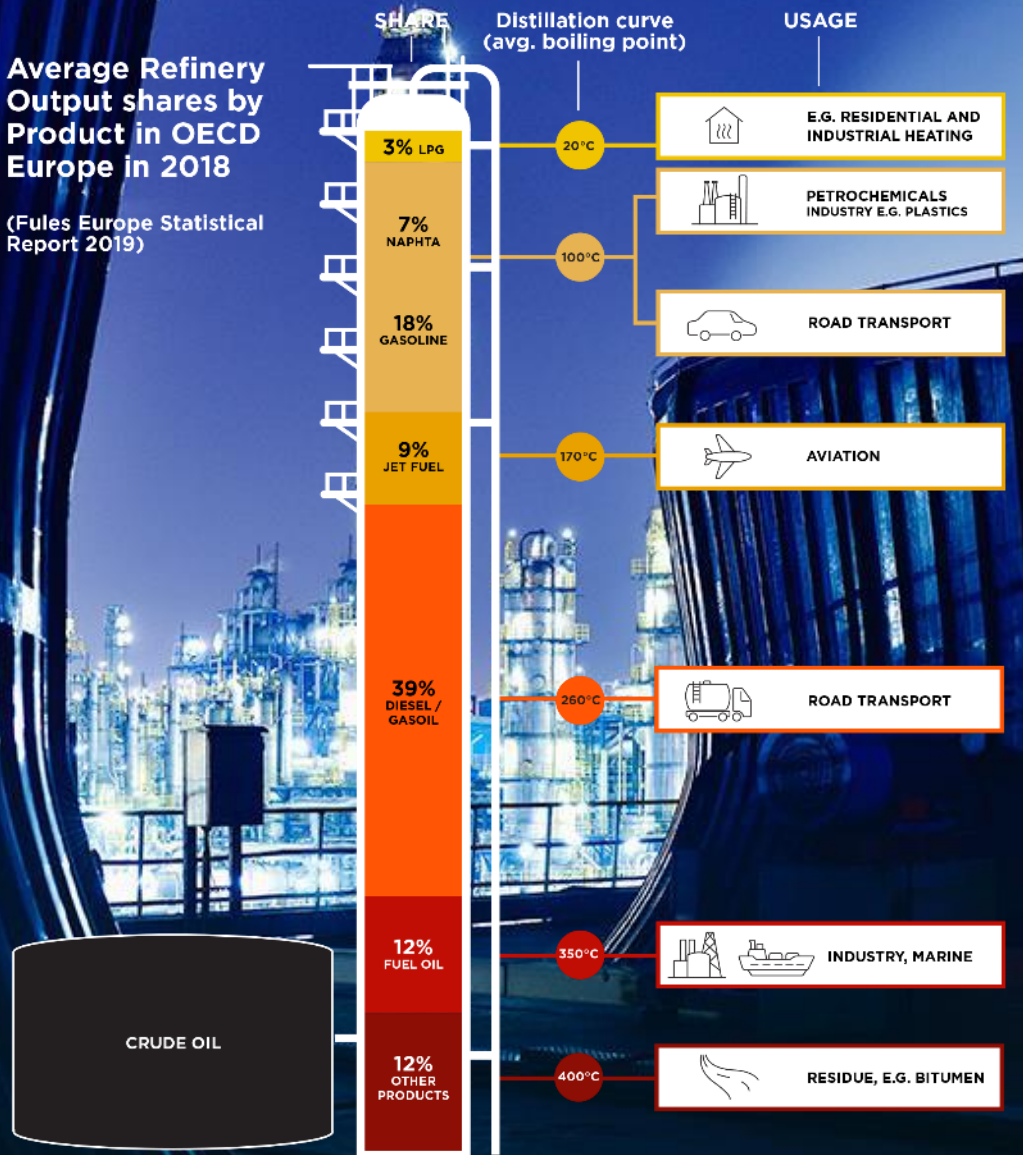
Sustainable carbon cycle requires massive investments in



Keeping fossil reserves under ground

Average Refinery Output shares by Product in OECD Europe in 2018

(Fules Europe Statistical Report 2019)

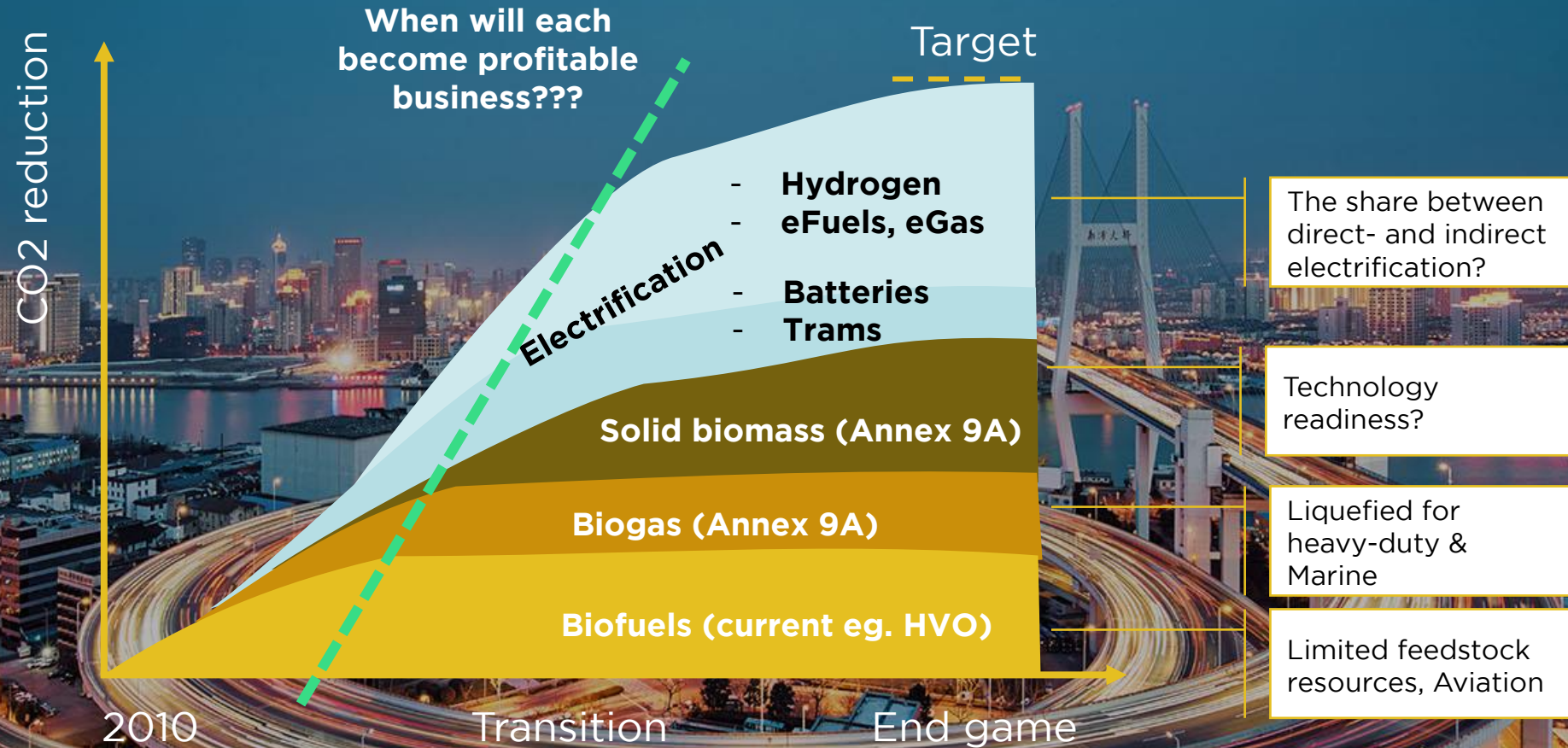


Need for fossil phase out!

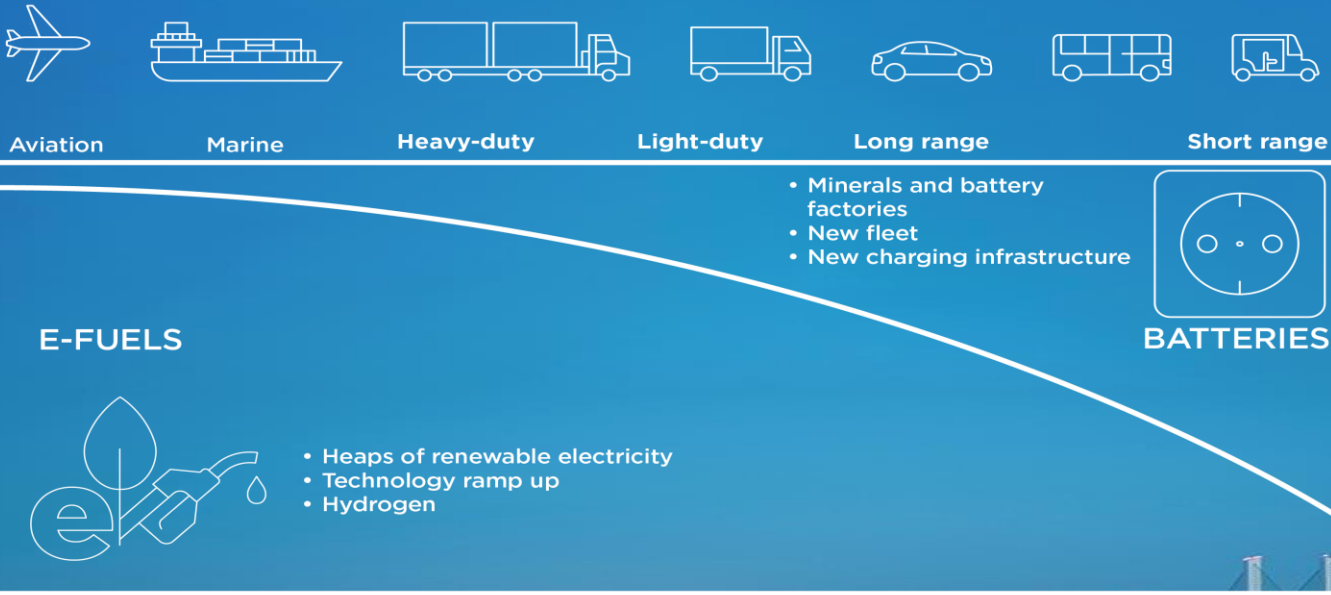
Example Aviation: The Distillation Curve Challenge

The demand on one oil product cannot be met without producing the others

Transport Energy Mix Transition



The balance between direct- and indirect transport electrification



The background is a composite image. It features a green hill with several white wind turbines. In the background, a city skyline with various skyscrapers is visible. A large, transparent globe showing the Earth's continents is positioned on the right side of the hill. The foreground shows dark, rippling water. The sky is a deep blue with white clouds and a faint rainbow. A white airplane is flying in the upper left corner. The text 'St1 as a Company' is overlaid in the center in a large, white, sans-serif font.

St1 as a Company

St1 in figures



6,588

Net Sales, MEUR

1,000

Renewable net sales, MEUR

119

Profit, MEUR

Market shares

	Gasoline	Diesel
	23%	19%
	20%	15%
	18%	18%



Ca. 1 300
St1 and Shell-stations



Gothenburg refinery

23.9 Throughput million barrels

90.2%
76.1%*

Utilization rate

(* incl. maintenance shutdown)



767

Personnel

1979

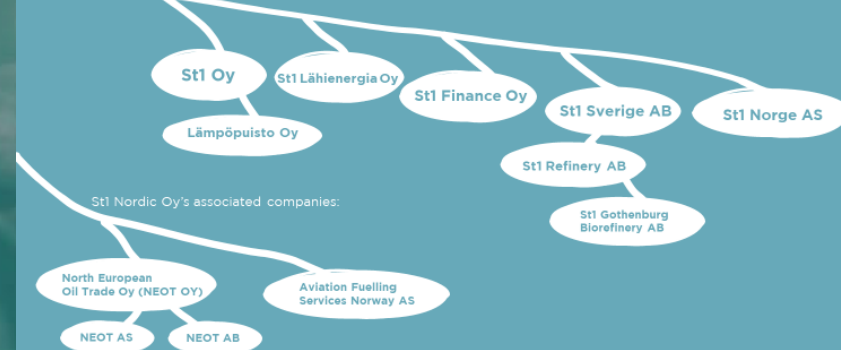
Excise & property taxes, MEUR

31.4

Income taxes, MEUR

2019 figures

St1 Nordic Group Structure

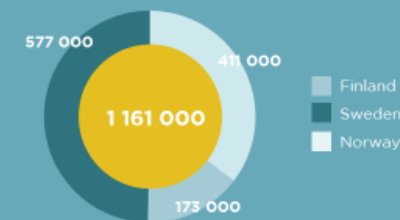


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Creating positive impact

- 800 MW Wind power project under way in Norway
- Piloting synthetic fuels production with power-to-X technologies
- Carbon Farming pilot in Morocco
- Biorefining advanced ethanol from waste
- Construction of biorefinery to produce renewable diesel and kerosene at our Gothenburg refinery
- Geothermal deep heat plant pilot

CO₂ -reduction from use of biofuels, tons



136

Investment, MEUR



42

Renewable energy investments, MEUR



15.4

R&D expenditure, MEUR



Biorefineries
100%

Of the feedstock of our advanced ethanol production is waste-based.



CO₂-reduction equalled more than

557 228

passenger cars^(*)
^(*) a car with an annual mileage of 13 794 km and emissions of 151 g CO₂/km

2019 figures

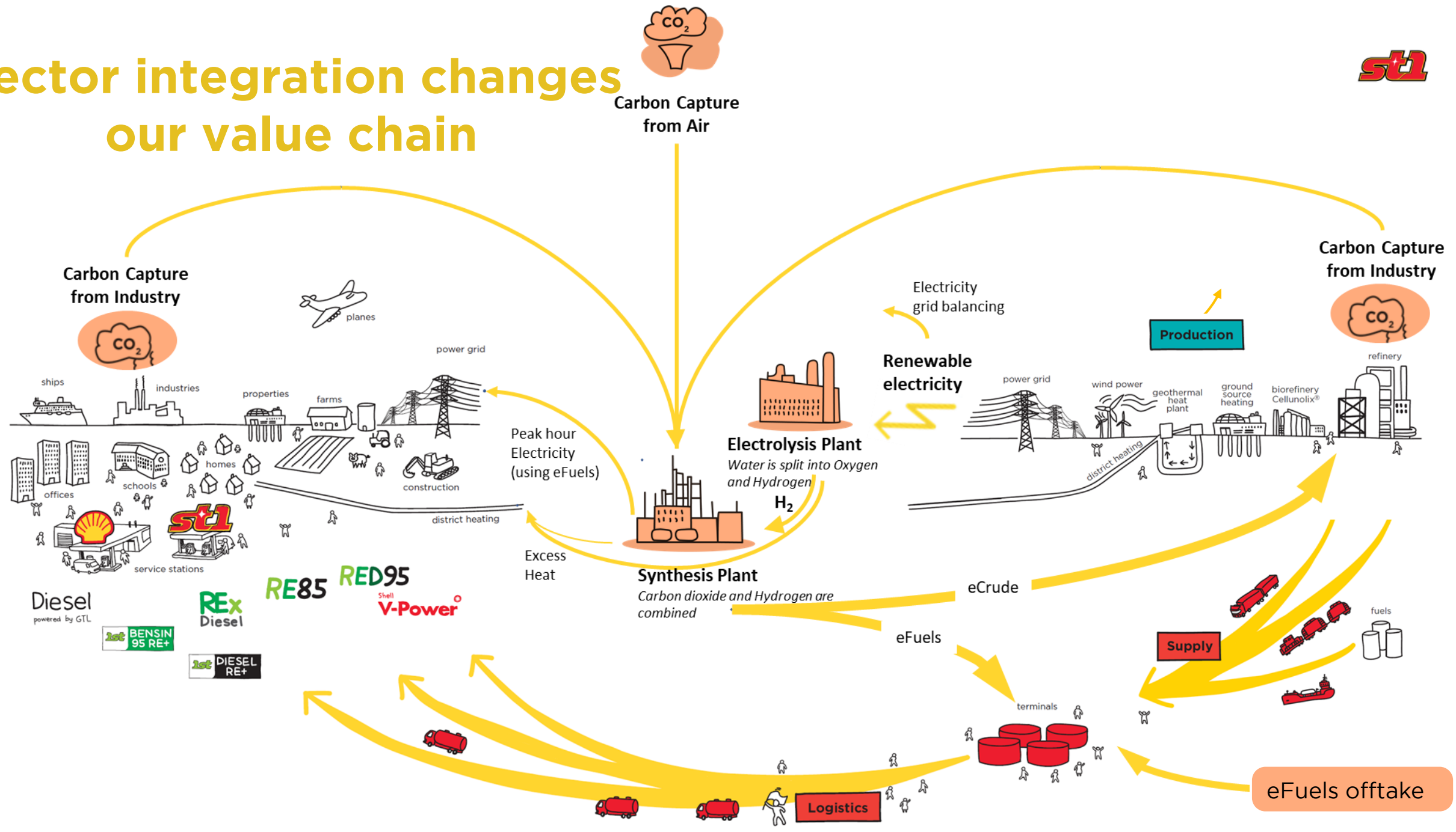
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Solving Global Energy Challenges



Read more
www.st1.com/outlook

Sector integration changes our value chain



St1 Energy Production Supply and Logistics

St1 Wind Power

St1 Gothenburg Refinery



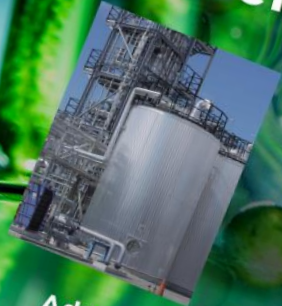
Capacity is 30 million barrels of annually

Energy efficiency with high heat recovery - district heating to 70 000 households

Most energy needs from own gas production

Refinery 2030 Transformation

St1 Biorefining

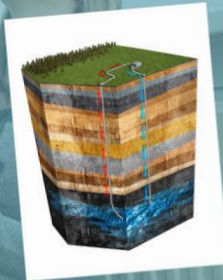


Advanced Ethanol



Renewable Diesel

St1 Heat from the Ground



Supply and logistics

- St1 associated company NEOT acquires fuels from the global trading markets
- St1 Gothenburg refinery is most important source of supply
- St1 and NEOT comprehensive logistics chain and terminals in our operating countries

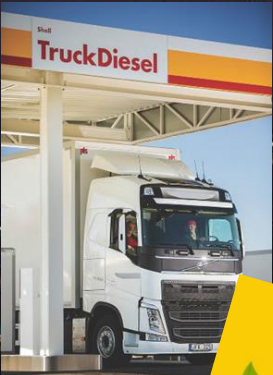


A composite background image featuring a green hill with several wind turbines, a city skyline in the distance, a large globe on the right, and a body of water with ripples at the bottom. A white commercial airplane is flying in the sky above the city. The text 'St1 Retail and Commercial Sales' is overlaid in the center in a large, white, sans-serif font.

St1 Retail and Commercial Sales



Serving daily more than 600 000 customers



St1 Future Business



Power-to-X process

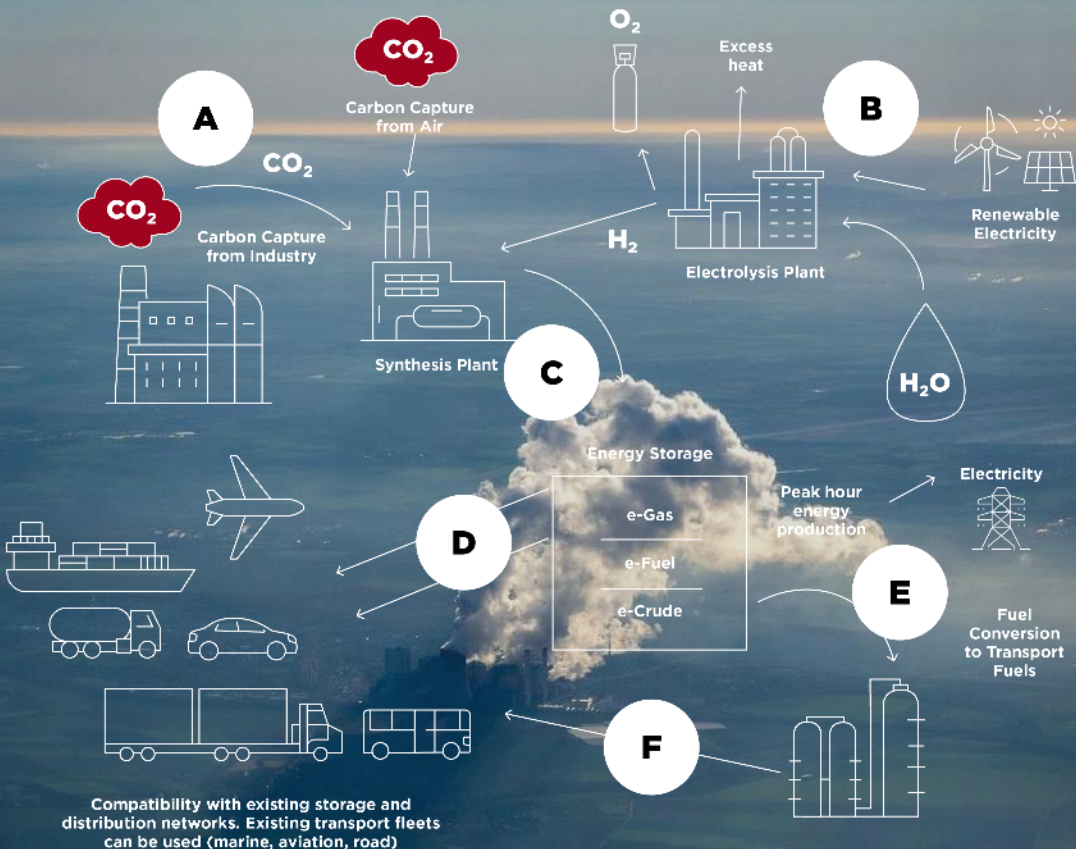


Power-to-X challenges the energy and heavy industry sector to rethink business models

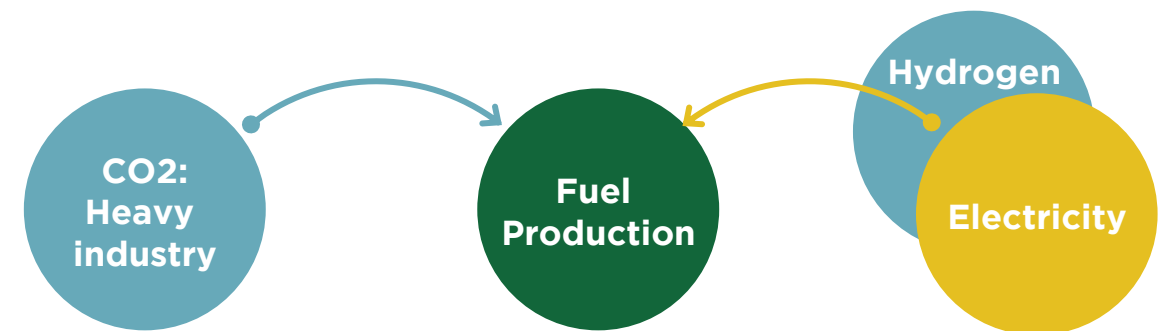
We have active cooperation and projects in synthetic fuel area to move towards first production.

Fundamentals:

- Transferring electricity in time & place
- Requires a lot of additional renewable electricity
- Enables capturing CO₂ and upcycling back into use as energy



- A** Carbon dioxide is captured from air or industrial sites by using carbon capture technologies
- B** Water is split into oxygen and hydrogen by using low-cost renewable electricity. Excess heat can be utilized in district heating networks.
- C** Carbon dioxide and hydrogen are combined into hydrocarbon products
- D** Synthetic hydrocarbon products are stored, thus providing converted solution for electricity storing. Fuels can be used for transportation
- E** e-Crude can replace fossil crude oil in refineries
- F** Refined fuel products for transportation



St1 Nature Based Solutions



- St1 Morocco pilot - research in dry areas
- LIFE CarbonFarmingScheme
- NEGEM – negative emissions

We are actively developing our own carbon capture programs

.....newest family member

St1 Biogas

The What and Why

We need a suite of energy solutions – no silver bullit

A most sustainable and circular solution

Fits well in the St1 portfolio and across production and sales segments

A significant player supporting Nordic portfolio

The Opportunities

LBG – Heavy Duty and Maritime

Industrial Applications

Regional buses and municipality services

Bridging solution light vehicles

The Dark Clouds – Technology Neutrality

Zero tail pipe emissions as opposed to LCA

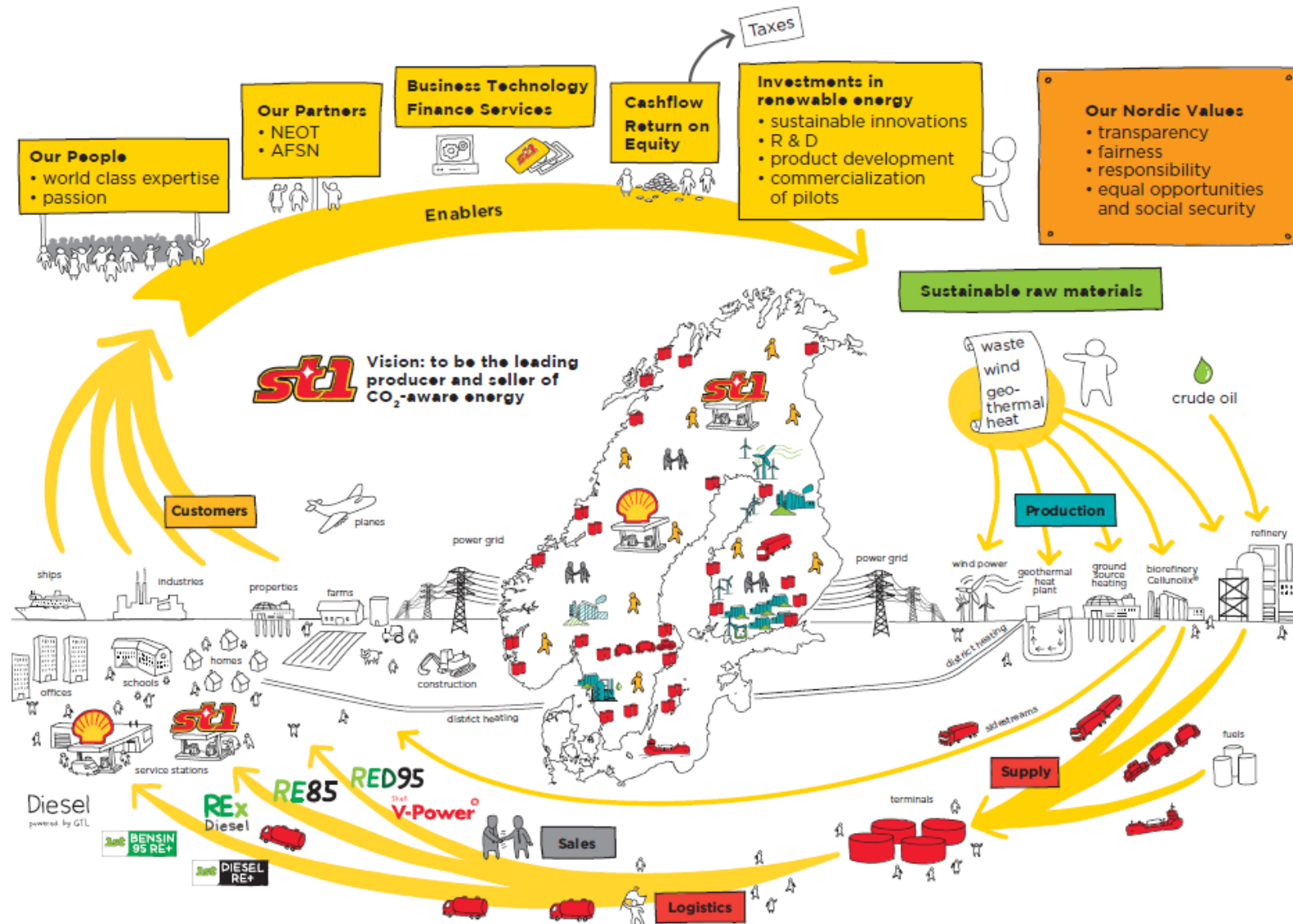
**Green / sustainable Hydrogen only by
electrolysis**

... and EU further restrictions on state aid



Thank You!

GROUP STRATEGY: **ST1** VALUE CHAIN



[Watch the video](#)