

ENERGY TRANSITION – TRENDS AND BEST PRACTICE FROM THE NETHERLANDS

NAVIGANT CONSULTING

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- 2 Steps and strategies of the Dutch Government
- 3 Practical example

TRANSITION TO A LOW CARBON ECONOMY IN THE NETHERLANDS

GOAL AND TRAJECTORY

GOAL:

The Netherlands wants to reduce its greenhouse gas emissions with 49% (compared to 1990) in 2030

Context Climate Agreement

The target is split over 5 segments:

1. Electricity sector
2. Industry
3. Build environment
4. Mobility
5. Agricultural sector

In 2018 a Climate Agreement has been signed between government, industry and non-governmental organisations.

The industry in transition

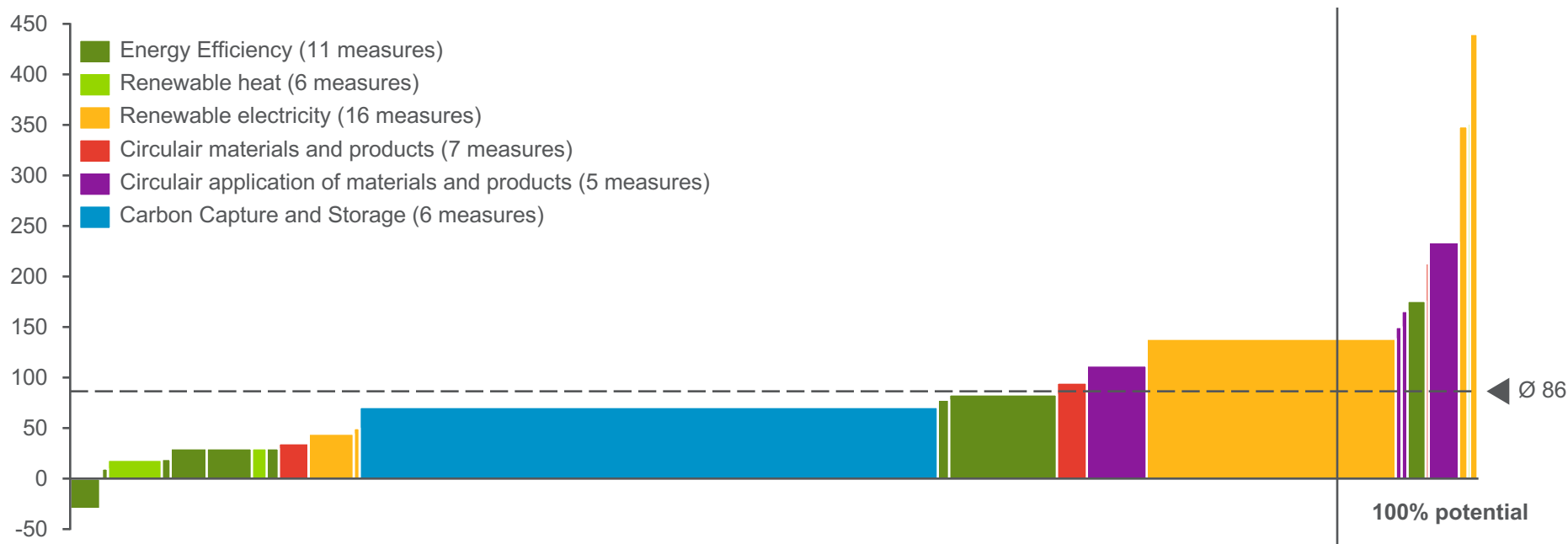
- Over the past 25 years the industry already reduced its emissions with ~ 35%
- For 2030 a reduction of emissions is required of ~ 59% (compared to 1990)
- The Dutch industry sees sufficient potential projects to meet the reduction target, and is prepared to make large-scale investments
- In the Climate Agreement it is estimated that the required additional investments in industry are in the range of € 10 – 15 billion till 2030, including infrastructure*
- The next slides show how it is envisaged to meet the target for the industry

* To be confirmed

THE TOTAL POTENTIAL FOR REDUCTION IN INDUSTRY EXCEEDS THE TARGET

- For estimating the required investment 'cheapest' measures are used to reach the target.
- This only looks at measures reducing GHG emissions in the industry. The use of waste heat from industry in the built environment is not accounted for and has a substantial potential.
- Investments in electricity infrastructure are not included in the costs.

€/ton CO₂eq



- Abatement costs are including OPEX and annualized CAPEX.
- Assumption: no cap on Carbon Capture and Storage.

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STEPS AND STRATEGY OF THE DUTCH GOVERNMENT

KEY POINTS FOR INDUSTRY SECTOR PLATFORM

Strategy: Transition to a circular industry that continues to compete internationally and whose greenhouse gas emissions are almost zero. Electrification, efficiency of processes and heat consumption and circular use of feedstocks are the major themes. Carbon Capture and Storage is required as a temporary solution to achieve the targets for 2030.

MAJOR THEMES

- **PROCESS EFFICIENCY AND HEAT CONSUMPTION:** focus on heat cascading, heat pumps, steam recompression, replacement of high temperatures with energy-efficient methods and utilisation of waste streams such as steam;
- **ELECTRIFICATION:** focus on high-temperature electric boilers and furnaces, electrochemical processes and drive systems;
- **FEEDSTOCK PROCESSING:** focus on hydrogen as a feedstock; changing and recycling of feedstock: CCU, biomass, mechanical and/or chemical recycling, waste2chemicals.

APPROACH: THREE PILLARS

- **INNOVATION:** joint investments in innovation, pilots and demonstrations, and upscaling within a long-term programmatic approach with clean technology and cost reductions;
- **TENDERING MECHANISM:** specification of a targeted tendering mechanism with which the most cost-efficient investments are achieved through competition;
- **INTERNATIONAL ENGAGEMENT:** active focus on agreements with other countries, allowing the level playing field to change in a favourable manner.



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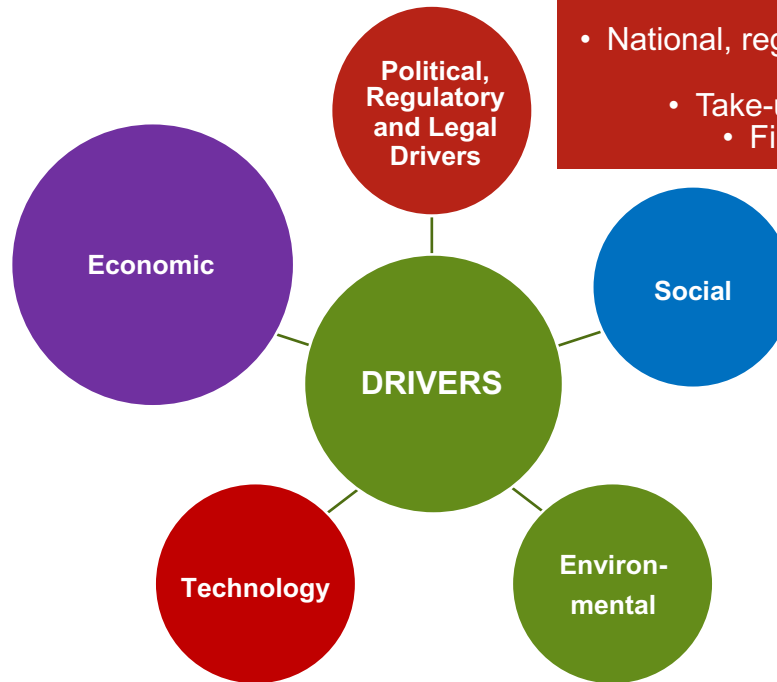
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PRACTICAL EXAMPLE

FIVE KEY DRIVERS ARE PUSHING EMISSION REDUCTIONS IN INDUSTRY

- General economic conditions - focus on short vs long term investment
- Oil and hydrocarbon pricing
- Government and industry drive to economise/modernise
- Cost of capital for low carbon investment
- Investor risk related to energy transitions
- Development of novel funding approaches (e.g.; crowd funding)

- Rate of development of low carbon technology
- Infrastructure changes
 - Energy cloud
 - Energy management
- Corporate diversification into energy-related platforms



- International climate policy, e.g. the Paris Agreement
- Prevalence of insular/protectionist policy vs open cooperation (e.g.; energy grids, collaboration on tech etc)
- National, regional, and local agreements climate and energy targets
 - Take-up of carbon pricing/cap-and-trade
 - Financial reporting requirements

- Changing demographics
- Increased desire for decentralised control (power and others)
- Growing preference for green energy
- Increasing awareness of impacts of climate and environmental degradation
 - Customer preference for sustainably produced products
 - Increased decentralization of power
 - Employer selection

- Observable impacts of climate change
- Increasing concerns over local air quality, notably cities
- Physical climate risks, specifically the value to the future of society

PRACTICAL EXAMPLE

AMGEN BRED A – PHARMACEUTICAL COMPANY

ENGAGING WITH EMPLOYEES TO EMBED SUSTAINABILITY IN THE COMPANY

The Challenge

Amgen Breda (ABR) was looking to expand and align their efforts on sustainability, even beyond their corporate targets, into an overhauling strategy.

Approach

1. We have set up an employee survey, stakeholder interviews and management workshop resulting in a widely supported sustainability vision and focus areas.
2. Next, focus teams, initiatives with targets per focus area and a governance structure were set-up to anchor the strategy. We designed and facilitated the process for the teams to developing the strategy and initiatives themselves
3. We supported to kick-start a renewable electricity initiative incl. solar panel business case and successfully securing subsidy
4. We developed a supply chain carbon footprint for Amgen and Amgen Europe including all distribution lines

Results

The result was a clear overview of the designed Green Vision, working streams (pillars) and Green Initiatives. The teams developed a clear action plan for the implementation of the strategy incl. prioritized GHG abatement measures. Less tangible is the commitment and company wide support gained during the engagement process. Also, a supply chain initiative, monitoring protocol and tool has been delivered



We are responsible for a **sustainable tomorrow**

people

One stream focused on the **social aspects** of sustainability to contribute to **employees health & happiness** at ABR and a **responsible culture** internally and externally

environment

One stream focused on the reduction of the **environmental footprint** of ABR's building and operations by increasing **resource efficiency** and improved utilization of **renewable sources**

value chain

One stream focused on **sustainability oriented collaboration** with value chain partners for **pro-active integration** and improved **resource efficiency** in the value chain

CONTACT DETAILS

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