

# GRIT

**Project Meeting**

**October 2nd, Hafen Hamburg Marketing**

**Interreg  
North Sea**



Co-funded by  
the European Union



**Interreg  
North Sea**



Co-funded by  
the European Union

GRIT



Provincie  
Antwerpen



provincie  
groningen



Hamburg

**Skills gap  
analyse**



Provincie  
Antwerpen



provincie  
groningen



Port of Hamburg  
MARKETING

**Youth  
engagement**



**ENERGIE  
HUB 050**



**VET  
Module**



**vitant**  
PROVINCIAAL CENTRUM VOOR  
VOLWASSENENONDERWIJS

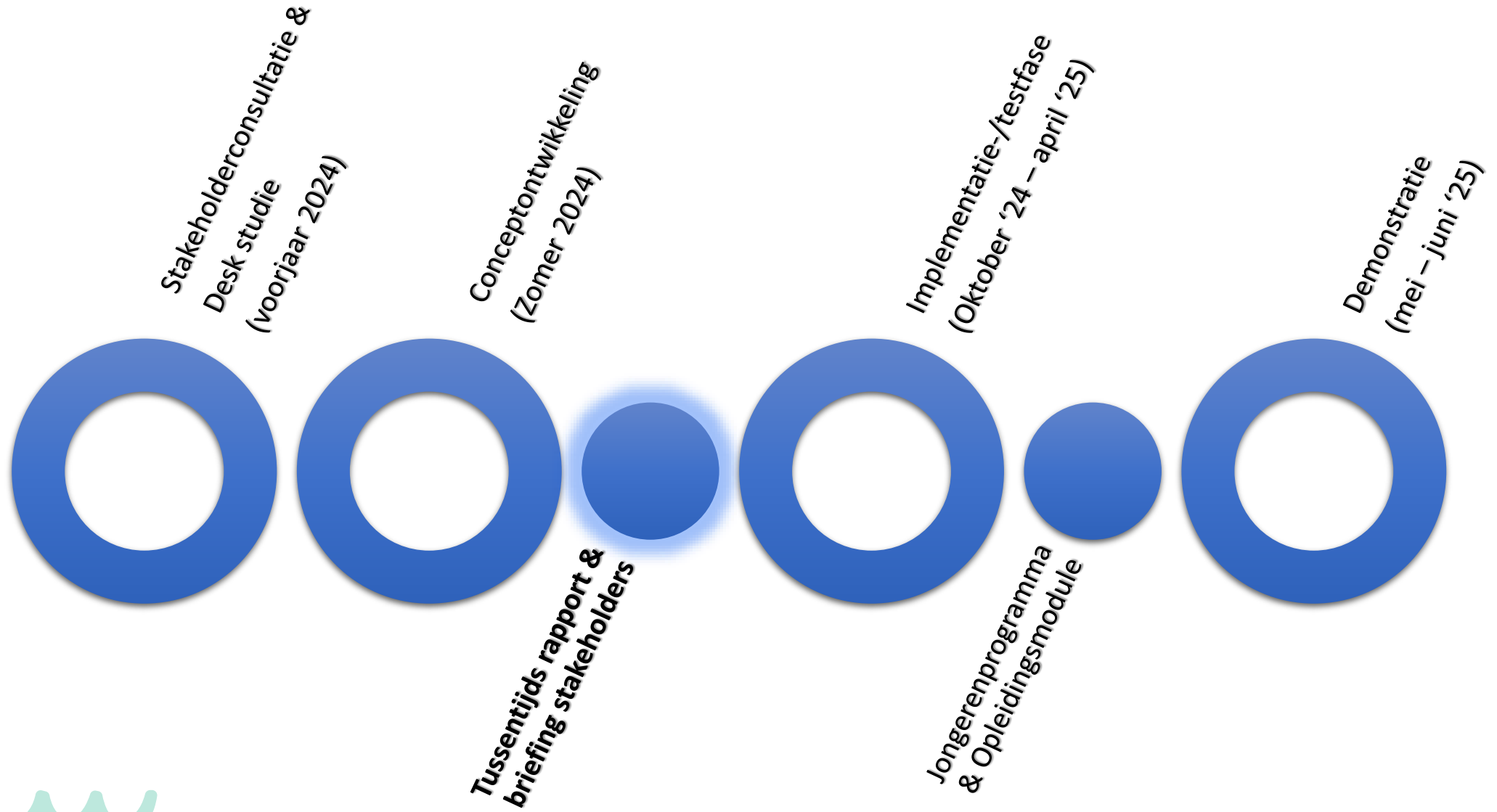


**Alfa-college**



GRIT – Skills for a Green Industrial Transition is an Interreg North Sea project co-funded by the European Union.

# Tijdslijn & outputs



# **Desk study & stakeholder consultation**

**Province of Antwerp**

# Desk study & stakeholder consultation

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# GRIT Desk study – sources (B, NL, D, EU)



**AGORIA**



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# GRIT Stakeholder consultation port area Antwerp

## Production, storage & distribution



## End users

### Energy-intensive Industry



### Maritime & logistics



## Innovation & education



# Trends & developments – policy background

## Climate Transition → **European Green Deal:**

1. Net emissions reduced to zero by 2050.
  2. Growth without depleting resources.
  3. No individual or region left behind.
- REPowerEU accelerated energy transition
  - E.g. Flemish Energy and Climate Plan: 28,512 GWh of renewable energy.

To ensure that the green transition remains **economically prosperous and socially just** → invest in human capital (skills), especially through vocational education and training.





# Trends & developments

## Energy-intensive industry

- European Green Deal (EGD) aims at industrial transition, i.e. **decarbonization of industry**.
- EGD and energy crisis in Dutch-Flemish summit '23: Sustainability of energy-intensive industry while **maintaining competitiveness**
- Heavily influenced by the EU Emissions Trading System (ETS) with strict CO<sub>2</sub> reduction targets for sectors such as the **chemical and steel industries**.

→ **Electrification** is main driver of transition.

→ **Innovative energy technology** related to energy efficiency, green hydrogen, alternative fuels, and carbon capture is essential.



Figure 1-1 Key facts about the Dutch chemical industry

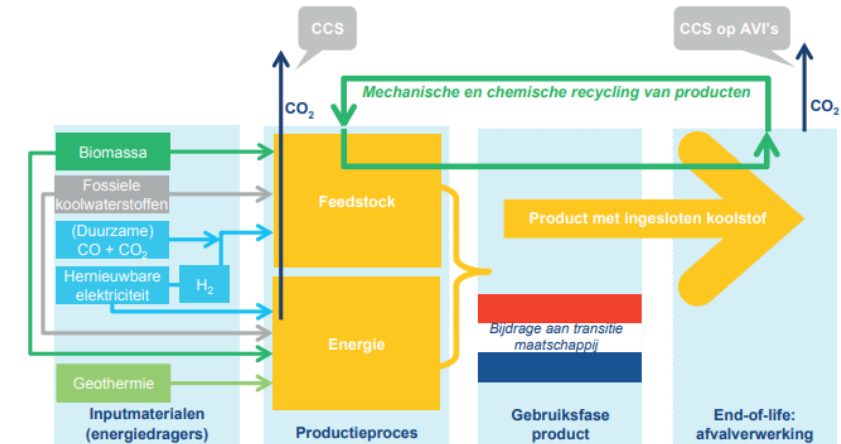


Figure 1 De chemische industrie heeft veel verschillende opties om de emissies van broeikasgassen te verminderen.

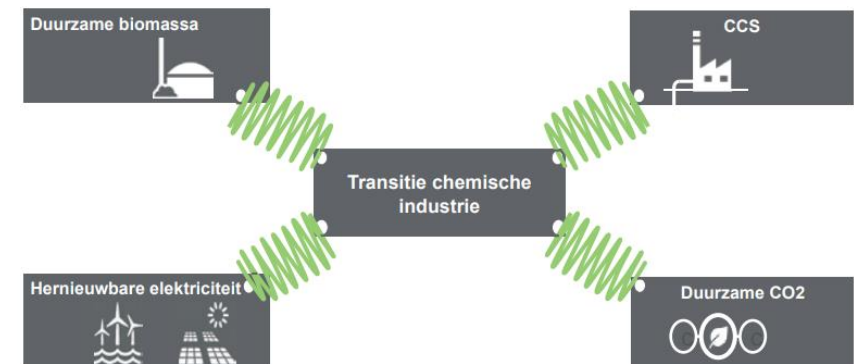


Figure 2 De transitie van de chemische industrie vraagt een zorgvuldig evenwicht in het gebruik van de verschillende mogelijkheden voor emissiereductie.

# Trends & developments (Non-)energy-intensive industry

- Crucial for the green industrial transition is the greening of **heat demand**.
- Energy emissions from heat demand in non-energy-intensive industries in Flanders are highest for the food, fine chemicals, and pharmaceutical industries.
- **Industrial heat pumps** and combined heat and power systems using **residual heat** from processes have the potential to sustainably meet a significant portion of the heat demand.
- In some regions, there are opportunities for **geothermal energy** and **district heating networks**.

technopolis  
group 

April 2022

**Economische  
potentieelstudie  
vergroening van  
de warmtevraag  
van de niet-ETS  
industrie in  
Vlaanderen**

Eindrapportage – April 2022



# Trends & developments

## Energy-intensive industry

- For heat demand in energy-intensive industries, there is interest in **green hydrogen** (~alternative molecules).
    - In the chemical industry, H<sub>2</sub> is used as feedstock.
  - This is reflected in EU, Belgian, Dutch, and German policy ambitions and investments in distribution (~**H<sub>2</sub> backbone**).
  - However, there is insufficient green energy for production. As a result, blue and pink hydrogen are being produced, with **imports** from countries with abundant sun and wind.
- **Seaports** play a crucial role in this process.(!)
- There are also **maritime & logistics applications** in shipping, heavy-duty equipment, and trucking, particularly for dual/multi-fuel engines and fuel cells.

Port of Antwerp-Bruges as lever for a global hydrogen supply chain



# Impact Labour Market

- Belgium, the Netherlands, and Germany are making significant investments in renewable energy, including offshore wind and the hydrogen value chain.
- Policy choices will influence which jobs disappear, transform, or emerge.
- For net job growth, important to invest in:
  - ➔ Strengthening **interest in STEM** (to address quantitative shortages).
  - ➔ **Up-to-date education and training** (to address qualitative shortages).



## Green Skills Roadmap Flanders

Final Report on Green Skills  
Need in Flanders  
(Deliverable 2)

REFORM/SC2021/111

Trinomics 

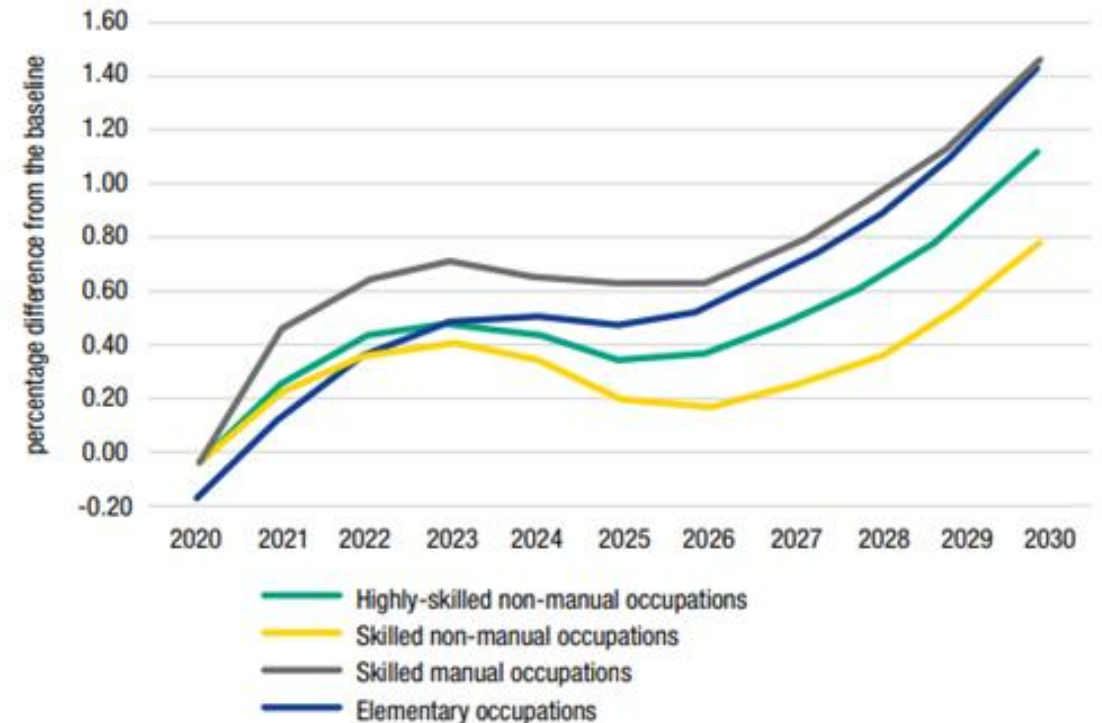


This project is carried out with funding by the European Union via the Structural Reform Support Programme and in cooperation with the Directorate General for Structural Reform Support of the European Commission

# Impact labour market

- EGD has significant effects on the economy and employment.
  - The **employment gains** from EGD, extend across all categories of skill types and levels.
  - Although highly educated individuals are essential for innovation capacity, employment **growth among medium-skilled workers** (manual occupations) is faster due to EGD.
- ➔ EGD moderates job polarisation.

Figure 5. Forecast employment impact of the EGD (% difference between EGD skills forecast scenario and baseline) by skills level, EU-27

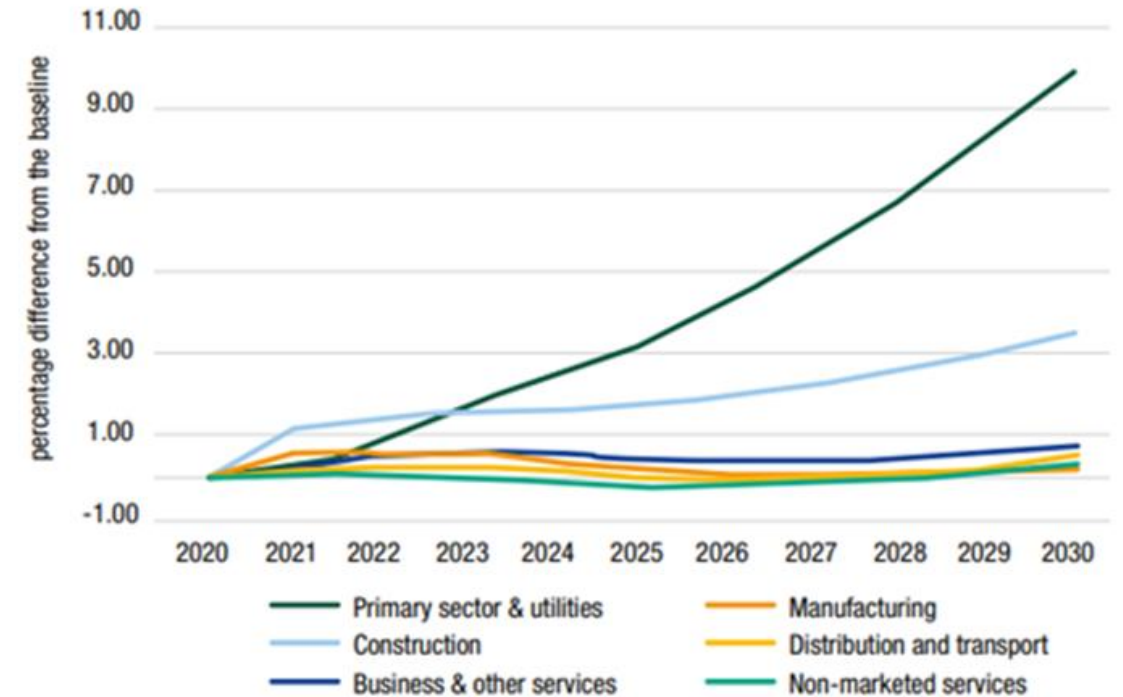


Source: Cedefop skills forecast, 2020 baseline and EGD scenario estimates.

# Impact labour market

- At the EU level, by 2030, no broad sector is expected to experience negative effects on employment.
- Employment in the primary sector (including **utilities**) shows the most notable increase. In addition to recycling, this is mainly attributed to the **electrification**.
- By 2030, employment is expected to increase nearly four times more than in the baseline scenario (i.e. without EGD).

Figure 2. Forecast employment impact of the EGD (% difference between EGD skills forecast scenario and baseline) by broad sector, EU-27

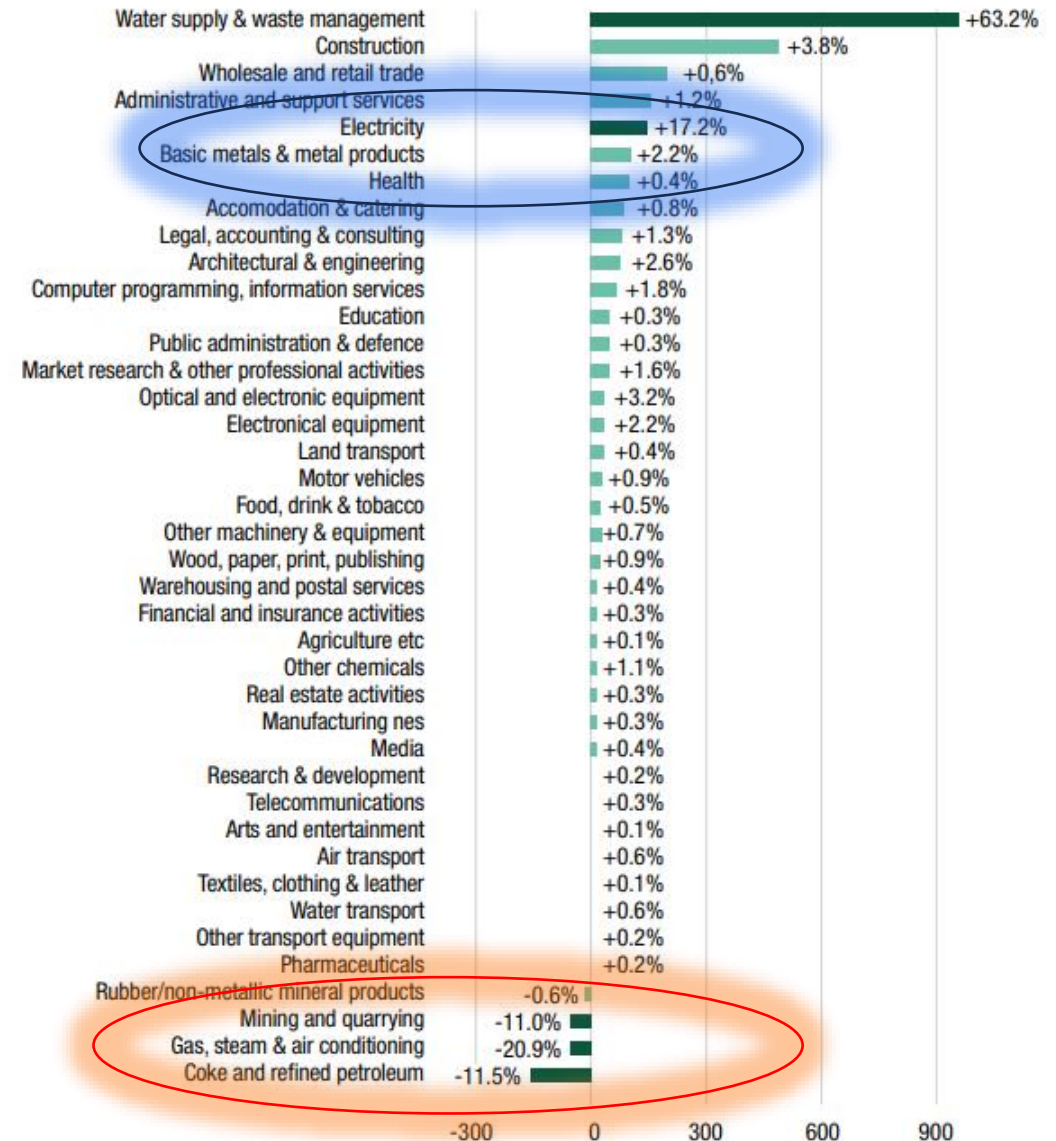


Source: Cedefop skills forecast, 2020 baseline and EGD scenario estimates.

# Impact labour market

- **Winners and losers** due to the creation of new jobs, transformation of existing jobs, and phasing out of outdated jobs.
- The **sectors most negatively affected** by EGD are mining and extraction, coke and refined petroleum, gas, steam, and AC.
- However, **in general, the expected expansion and high replacement needs** exacerbate already existing labour shortages.

Figure 3. **Forecast employment impact of the EGD (difference between EGD skills forecast scenario and baseline in 000s and %) by detailed sector, EU-27**



NB: The percentages indicate the difference in forecast employment growth or decline (in %) between EGD and baseline scenario. Dark shaded bars indicate substantial differences (+/- 10% or more).

Source: Cedefop skills forecast, 2020 baseline and EGD scenario estimates.

# Impact labour market

Green industrial transition leads to more limited employment growth than, for example, the construction or energy sectors, but significant shifts through **intra-sectoral job-to-job mobility**.

→ **Upskilling and/or reskilling of the workforce.**  
Important trends for this include:

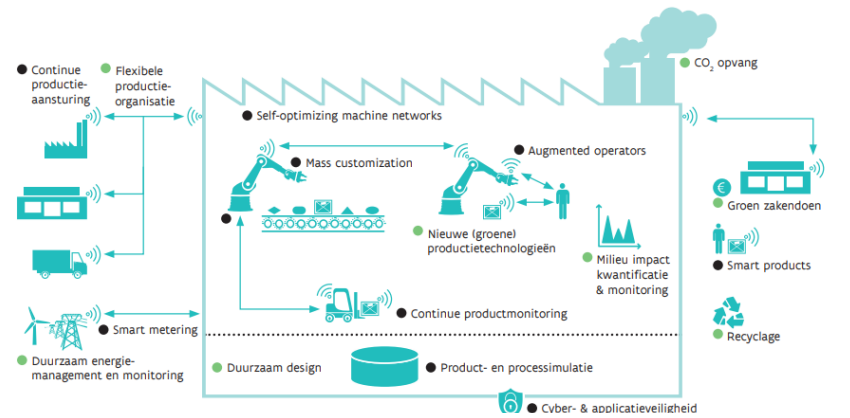
- The convergence of green and digital transitions.
- Sustainable energy management & monitoring.
- Green production methods & carbon capture

The strongest impact for **technicians/ operators**:

- Application of efficient production methods
- Use of digital tools

# Skills roadmap voor de Vlaamse klimaattransitie

Focus op de energie-intensieve sectoren [2020-2035]



## B. Nood aan upskilling in groene en digitale thema's en soft skills doorheen de organisatie

	Operatoren	Technici	Administratief personeel	Productie-medewerkers	Managers	Wetenschappers en ingenieurs	Bestuurders mobiele installaties	Electriciens en elektronici	Verkopers	Milieü, arbeid en veiligheidsinspecteurs
<b>GROEN</b>										
Duurzaam design										
(Hernieuwbare) energie										
Efficiënte & circulaire productie										
Groen zakendoen										
<b>DIGITAAL</b>										
Opzetten van digitaal										
Gebruiken van digitaal										
Innoveren met digitaal										
<b>SOFT SKILLS</b>										
Zelf-management										
Planning & organisatie										
Communicatie & samenwerking										
<b>Aantal werkenden</b> [Vlaanderen; geselecteerde sectoren; 2035]	16,134	15,008	10,190	7,514	6,059	5,623	2,157	1,651	837	768



# Impact labour market - H2

- For the development, production, and maintenance of hydrogen (H<sub>2</sub>) products and processes, a crucial role is played by medium- and highly-skilled technicians.
- EQF level 3-4 job profiles electromechanics, technicians, chemical process operators, welders, and pipefitters.
- Specific competency needs:
  - Technical core competencies (present) in electro- and chemical process technicians.
  - More on electrochemistry & high voltage.
  - Job-specific technical content:
    - Electrolysis, fuel cells, dual/multi-fuel engines.
    - Adapted insulation, coating, and welding.
    - Safety awareness and procedures.

**NWP** Nationaal  
Waterstof  
Programma



**Routekaart  
Waterstof**

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vermogen.nl**



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