



Decarbonisation strategies and policies in the Netherlands

Climate Friendly Materials (CFM) Platform

A climate-neutral industry: state of policy debate in European Member States



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Content

- Dutch climate policy
- Decarbonisation strategies and policies for the industry transition
- Reflection on EU policies and the European Green Deal
- Reflection on Renewable carbon



National law: The Climate-act

- 2019: The Dutch Parliament and the Dutch Senate adopt the proposal for a Climate-act
- The Climate-act captures two main-targets:
 - 49% CO₂-reduction by 2030 (tentative target)
 - 95% CO₂-reduction by 2050 (definitive target)
- Broad political support





Over 100 stakeholders are reducing the CO₂ emissions of the Netherlands by 49% compared to 1990 levels through the

Climate Agreement

Klimaat-beraad

Civil society
Companies
Authorities

Reduction target is **48,7 Mt CO₂**

Electricity **20,2 Mt CO₂ reduction**

Companies Authorities Civil society

Mobility **7,3 Mt CO₂ reduction**

Companies Authorities Civil society

Industry **14,3 Mt CO₂ reduction**

Companies Authorities Civil society

Agriculture & Land use **3,5 Mt CO₂ reduction**

Companies Authorities Civil society

Society

Society is participating. Over 200 companies and organisations are joining the discussion, at the negotiating table or otherwise. People can participate at meetings throughout the country, or submit their ideas online.

Built environment **3,4 Mt CO₂ reduction**

Companies Authorities Civil society



Dutch government agreement:
October '17

Phase 1: First proposal February '18 – September '18

Phase 2: Draft agreement September '18 – March '19

Phase 3: Final agreement March '19 – June '19



Industry
14.3 Mt



Mission

59% CO₂ reduction by 2030 while safeguarding competitiveness and preventing leakage effects with the use of a proper mix of instruments.



Greenhouse gas emissions in Dutch industry sector



GHG-emissions industry sector (as defined in Dutch climate policy)

12 companies emit 32,6 Mton in 2017:

57% of the industrial GHG-emissions

(2017 data in Mton. This excludes joint ventures with the E-sector)

Air Liquide	0,7	2%
Air Products	0,9	3%
BP	2,1	6%
Dow Benelux	2,6	8%
Exxon Mobil	2,6	8%
Nouryon	0,4	1%
OCI	1,8	6%
SABIC	2,6	8%
Shell	6,5	20%
Tata Steel	7,0	21%
Yara	3,8	12%
Zeeland Refinery	1,6	5%

Highly concentrated in regional clusters Strong interdependency within the clusters

North Netherlands | emission 2,5 Mton

Largest emitters: BioMCN, ESD-SIC.

North-west (IJmuiden-Amsterdam) | emission: 8,0 Mton

Largest emitter: Tata Steel.

Rotterdam-Moerdijk | emission: 16,5 Mton

Largest emitters: Shell, BP, Exxon Mobil, Air Liquide, Air Products.

Zeeland-West-Brabant | emission: 9,1 Mton

Largest emitters: Yara, Dow Benelux, Zeeland Refinery.

Chemelot (Sittard-Geleen) | emission: 6,0 Mton

Largest emitters: SABIC, OCI.

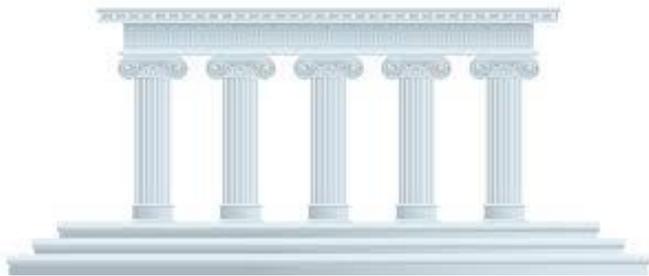
(data 2017)





Dutch industry policy

- **Balanced mix of push and pull measures**
- European policies (ETS)
- Subsidies to accelerate innovation, pilots and demo's to drive down costs
- CO₂ levy – not a tax
- Regional and industrial cluster approach



“By starting now, we give ourselves the time to develop and scale up new technologies (solutions of the future). Make the transition an economic opportunity.”



Technologies needed to reach our goals

Inventory of technological options

Technology	Estimated reduction in 2030 (Mton)
Process efficiency, energy saving	6
Electrification and green hydrogen	4
Recycling, CCU and biobased	1
N ₂ O	1
CCS	7
F Gases	1
Total -including current policies	20



Innovation, pilots and demonstration

- Mission oriented innovation
- Public private partnership in triple helix
- Over € 100 mln annual public funding
- International cooperation (EU, IEA, bilateral contacts)
- Balance between innovation for 2030 (focus on demonstration) and 2050

Innovation themes

Circular economy (CCU, recycling, re-use, biobased)

Electrification (P2H, electric boilers, electric furnaces, heat pumps)

Green hydrogen

CCS/CCU

Process efficiency and non-carbon heating (separation techniques, membranes, bioheat)

System integration and new economic models



Achieving competitive and sustainable European industries

Together with industries, civil society stakeholders, member states and the EU

- Creation of green markets
- Circular economy
- Access to EU funding for R&D, demonstration and first of kind industrial production facilities
- Strengthening EU-ETS
 - on prices and inclusion of all relevant CO₂ reduction measures
- Cross-border infrastructure for hydrogen and CO₂
- EU and national legislation that supports the use of new carbon neutral technologies.





Renewable Carbon

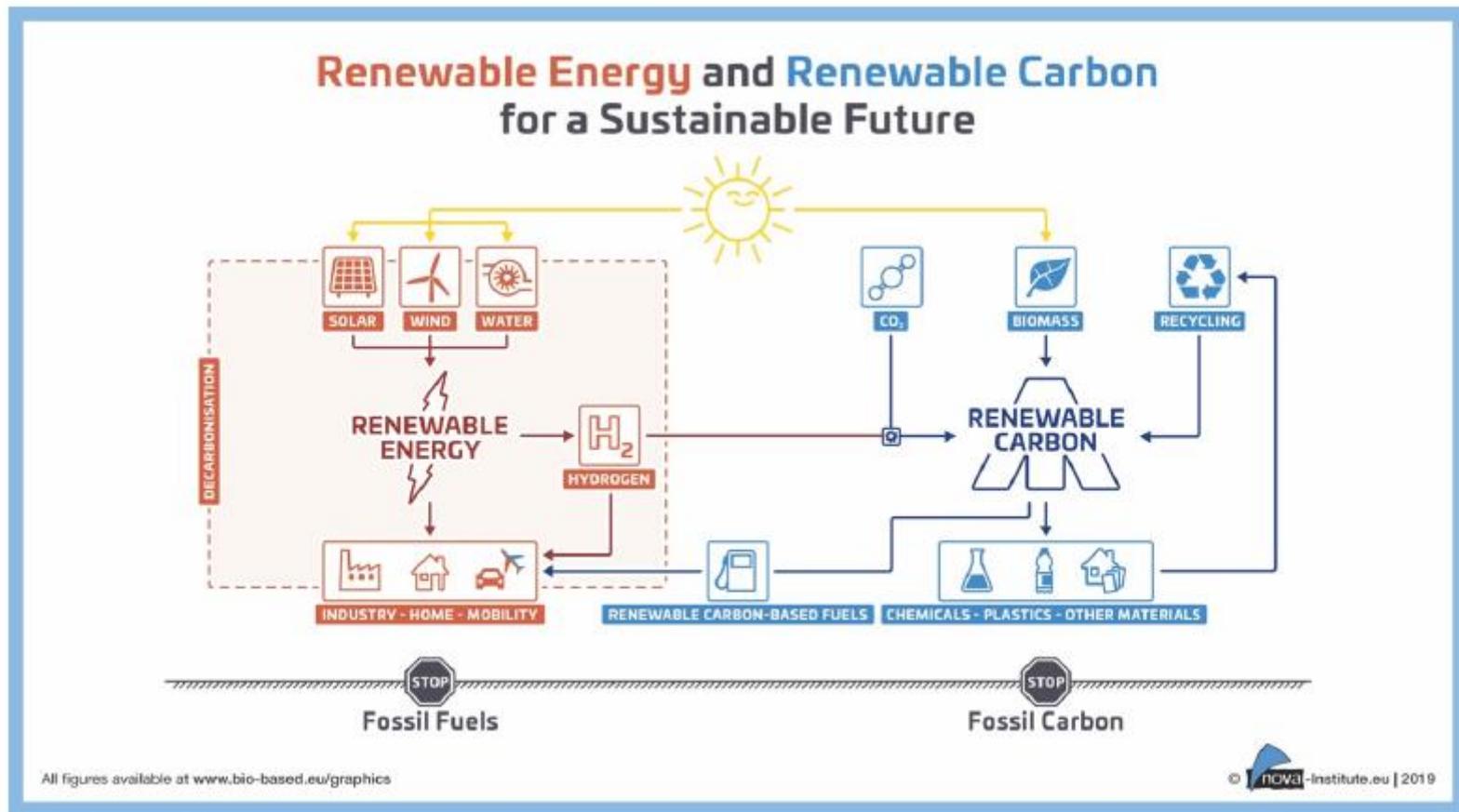


Figure 2: Renewable Energy and Renewable Carbon

Nova Institut (2020), *nova-paper #12 on bio-based economy 2020-03*.

Conclusion and next steps



Ministry of Economic Affairs and Climate Policy

Our lessons learnt:

- › Climate neutrality is technically feasible
- › Innovation of (new) value chains is crucial
- › Industry is part of the solution
- › EU and member states have an important role in accelerating and facilitating the transition
- › Climate neutrality brings economic opportunities

Next steps:

- › A great green restart instead of a reset
- › Concrete cooperation between EU, MS, industries and civil society stakeholders to achieve a competitive and sustainable industry that turns the transition towards a climate neutral en circular economy into a economic opportunity!





**Thank you for
your attention.**

Questions?







Additional slides



Explaining the Dutch carbon levy (not a tax)

Principles

- Dutch carbon levy in addition to ETS:
Purpose is to accelerate the transition and guarantee national CO₂ reduction, not tax collection
- Not all emission levied - only the emissions needed to reach our goal based on ETS benchmarks
- Levy base will increase over time – linked to *expected industrial marginal abatement cost (MAC) curve*: the level will be such that it incentivizes industry to take all measures required for the emission reduction goal
- Possibility to exchange non-levied emissions
- Target group are ETS-companies and installations for waste incineration
- All money will flow back into industry transition



Explaining the Dutch carbon levy

Target group

- > Industrial ETS;
- > Waste incineration plants;
- > Substantial nitrous oxide (N₂O) emissions

Further elements

- > Non-levied base will be transferable between parties (but not over time) – this increases efficiency;
- > Collected revenues will be used for additional funding of industrial carbon reduction;
- > The Netherlands Emission Authority (NEa), the competent authority for executing the EU ETS, will be in charge of carrying out the nation carbon levy.

Expected effect on competitiveness?

- > Risk of leakage is limited, according to assessment of PBL, by carrying out a macro analysis;
- > PwC, by carrying out a bottom-up company analysis (taking into consideration the largest 12 emitters), assessed that introducing a levy would always increase the risk of leakage.
- > However, by taking mitigating measures the risks can be decreased:
 - Providing the sector with incentives to cover the costs of unprofitable investments;
 - Subsidies used for the expected yearly net costs of investments in carbon decreasing technologies.



Rotterdam CCUS Project Porthos





CC(U)S as stepping stone for CCU

- Avoid lock-in and crowding-out
- Boundary conditions to CCS:
 - Sieve: assessment on available alternatives
 - Ceiling: Max 7.2 Mton CCS for subsidies
 - Timecap: After 2035 no new SDE+ (subsidy) for CCS
- CCS solely off shore
- The government develops principles for market regulation of CCS
- Government, EBN and TNO assess the suitability of empty gasfields in the North sea (NL).
- Strict security regulations and prevention of leakage
- NL advocates for modification of EU regulation to enable cross border transport of CO₂ by ship or enable storage/reuse of CO₂ (CCU)