

The Net Zero Industry Act

Dr. Zoe Kapetaki, December 11th, 2023

TNO innovation for life

TNO is an applied research institute that connects people and knowledge to create innovations that boost companies' competitiveness and sustainably increase well-being across society.



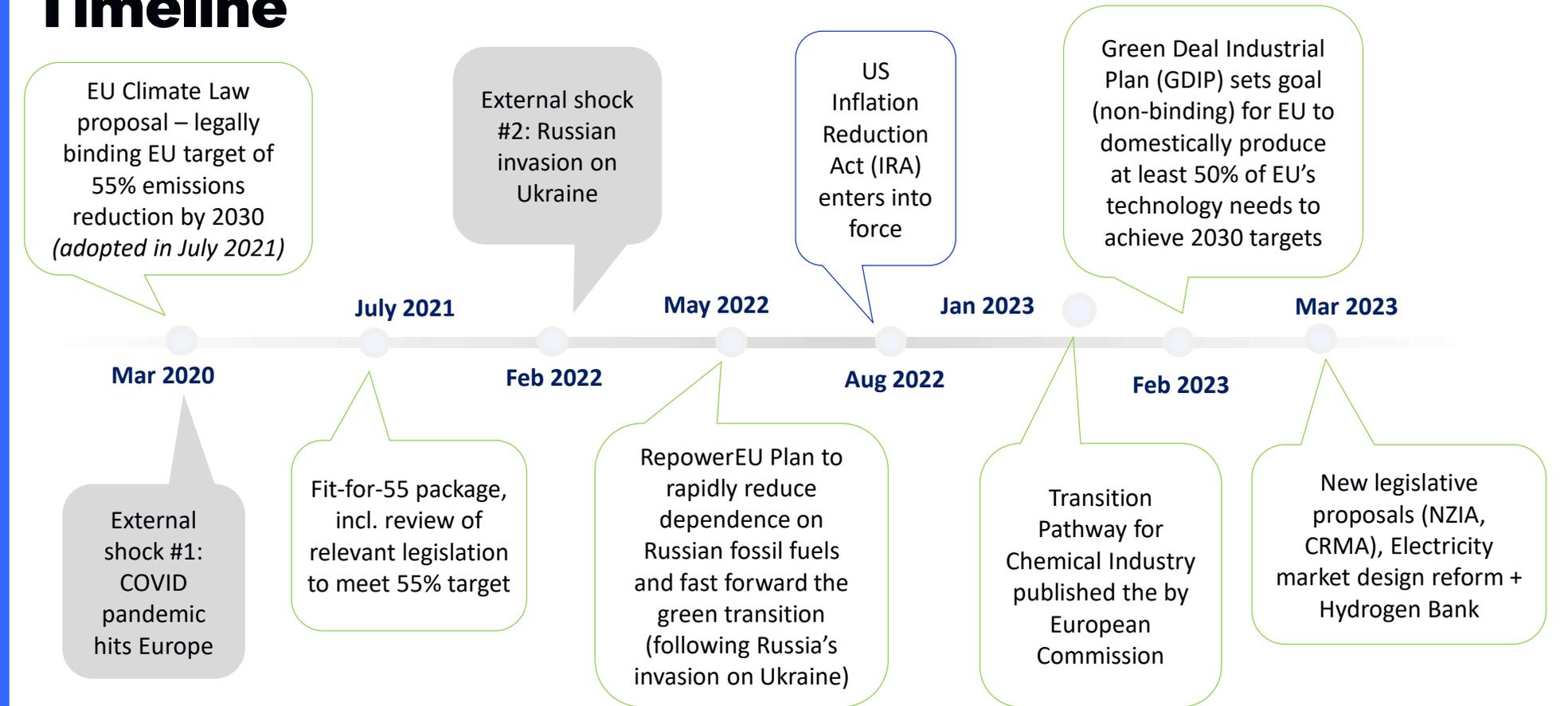
Our focus area's



Selection of relevant Joint Innovation Centres



Timeline



Net Zero Industry Act (NZIA) proposal

What

The proposal sets a benchmark for the manufacturing capacity of strategic net-zero technologies to meet at least 40% of the EU's annual deployment needs by 2030.

Why

- increase the competitiveness and resilience of the EU's net-zero technology industrial base
- to reduce the risk of replacing our reliance on Russian fossil fuels with other strategic dependencies

Strategic net-zero technologies



Solar photovoltaic
and solar thermal



Electrolysers
and fuel cells



Onshore wind and
offshore renewables



Sustainable
biogas/
biomethane



Batteries
and storage



Carbon capture
and storage



Heat pumps and
geothermal energy



Grid technologies

Source: European Commission, March 2023.

Net-Zero strategic projects

These projects may be granted priority status so they can benefit from shorter timelines. They are selected based on the three following criteria:

- 1) technology readiness level
- 2) contribution to decarbonisation and competitiveness
- 3) resilience of the energy system

Net Zero Industry Act proposal

- Net-Zero Strategic Projects
- CO₂ injection capacity target
- Facilitating access to markets
- Enhancing skills
- Cutting red tape and accelerated permitting
- Attracting investment (Net-Zero Europe Platform and European Hydrogen Bank)
- Innovation

(some) NZIA perceptions

Carbon Capture and Utilisation (CCU) should be recognised as a strategic net zero technology in the EU Net Zero Industry Act

The co-signatories of this letter call on Members of the EU Parliament and EU Member States to take position to include CCU technologies as part – along with CCS – of the list of *strategic net-zero technologies* in the Net Zero Industry Act (NZIA).

CCU technologies will enable the supply of renewable fuels and other alternative sources of energy, as well as commercial products such as plastics, concrete, and reactants for chemical synthesis.

CCU is of strategic importance to reach net zero objectives, and should be recognised as such also in the NZIA, considering that its relevance has been acknowledged by recent legislations and by EU funding mechanisms – in the EU Innovation Fund's third call for large-scale projects from July 2023, out of 41 projects selected, at least 10 projects were about CCU. These technologies represent an array of solutions critical for the achievement of the EU climate and energy ambitions, and will support both the realisation of EU hydrogen goals and a crucial element of the CO₂ value chain, as well as creating products that will displace fossil resources.

Allowing CCU projects to benefit from the priority status of a strategic net zero technology will help:

- Unleashing their potential for emission reductions and carbon circularity while maintaining and enhancing the skilled technical workforce in Europe.
- Ensuring the necessary predictability that these technologies need to be deployed by sending a clear signal and help provide investment certainty.

- **Aligning the Net Zero Industry Act with the technological priorities in the recent Fit for 55 legislations**

Setting the scene: net zero technologies VS strategic net-zero technologies

The proposal for a Net Zero Industry Act (NZIA) distinguishes between "strategic net-zero technologies" and "net-zero technologies". Technologies in the last category are also underpinned by a 40% EU annual manufacturing capacity target.

To proceed with this selection, the European Commission should consider the following indicators:

- Technology Readiness Level (TRL) i.e., the level at which the technology should be above level 6.
- Contribution towards the GHG emissions reduction targets.
- Contribution towards the overall resilience of the industrial sector.

Valuing the merit of the three indicators, the co-signatories consider that the proposal for the NZIA complies with the above requirements.

CCU: a manufacturing technology

According to the NZIA Staff Working Document (SWD) on "Strategic net zero technologies as it cannot be considered as a strategic net zero technology".

"Similar important identified gaps as for the case of CCS does not exist for CCU technologies".

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Ursula von der Leyen
President of the European Commission

Frans Timmermans
Executive Vice-President of the European Commission

Thierry Breton
Commissioner

Christian Ehler
Member, Rapporteur for the Net Zero Industry Act

at the Permanent Representations of Member States to the Commission

Brussels, 6 July 2023

Stable and pragmatic Net Zero Industry Act Article 18 – solutions to make CCS work

We welcome the European Commission's proposal for a Net Zero Industry Act regulation. It is a landmark political recognition of the contribution of carbon capture and storage (CCS) technologies to the Europe Union's climate neutrality target. All reliable modelling scenarios, including those from the Intergovernmental Panel on Climate Change and the International Energy Agency, consider the deployment of CCS critical to reaching climate neutrality by 2050¹. Europe will not reach climate neutrality by 2050 without CCS.

The proposed Net Zero Industry Act requires oil and gas companies holding licenses for the prospecting, exploration, or production of hydrocarbons in the European Union to contribute to the annual injection capacity of at least 50 million tonnes of CO₂ by 2030 under Article 18. The signatories to this letter recognise and support the crucial role of this Article for oil and

¹ Climate Change 2022: Impacts, Adaptation and Vulnerability, Intergovernmental Panel on Climate Change, 2022.
² Carbon capture, utilisation and storage, International Energy Agency, 2022.

Zero Emission Platform
Avenue des Arts 44, 1050 Brussels, Belgium
zereplatform.eu

CCS in the NZIA

EU-level

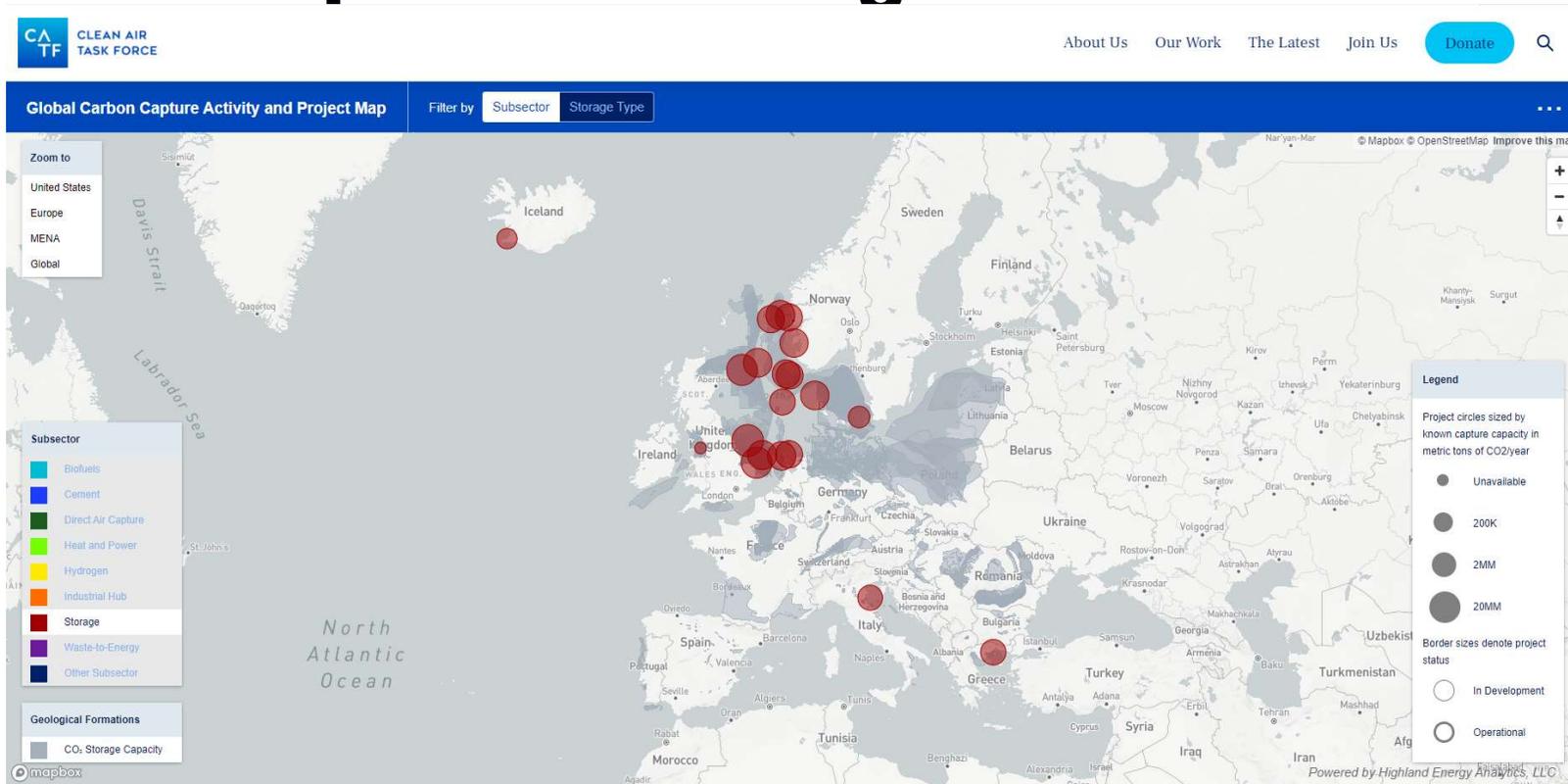
- A target for an annual injection capacity of at least 50 million tonnes of CO₂ by 2030, not combined with enhanced hydrocarbon recovery.

Member States

- Make publicly available data on areas where CO₂ storage sites can be permitted on their territory,
- Oblige entities authorised for the prospection, exploration and production of hydrocarbons to publish all geological data relating to decommissioned production sites.
- Authorised oil and gas producers would be subject to an individual contribution to the EU-wide target for available CO₂ injection capacity.

Source: European Parliament Think Tank

CCS developments - storage



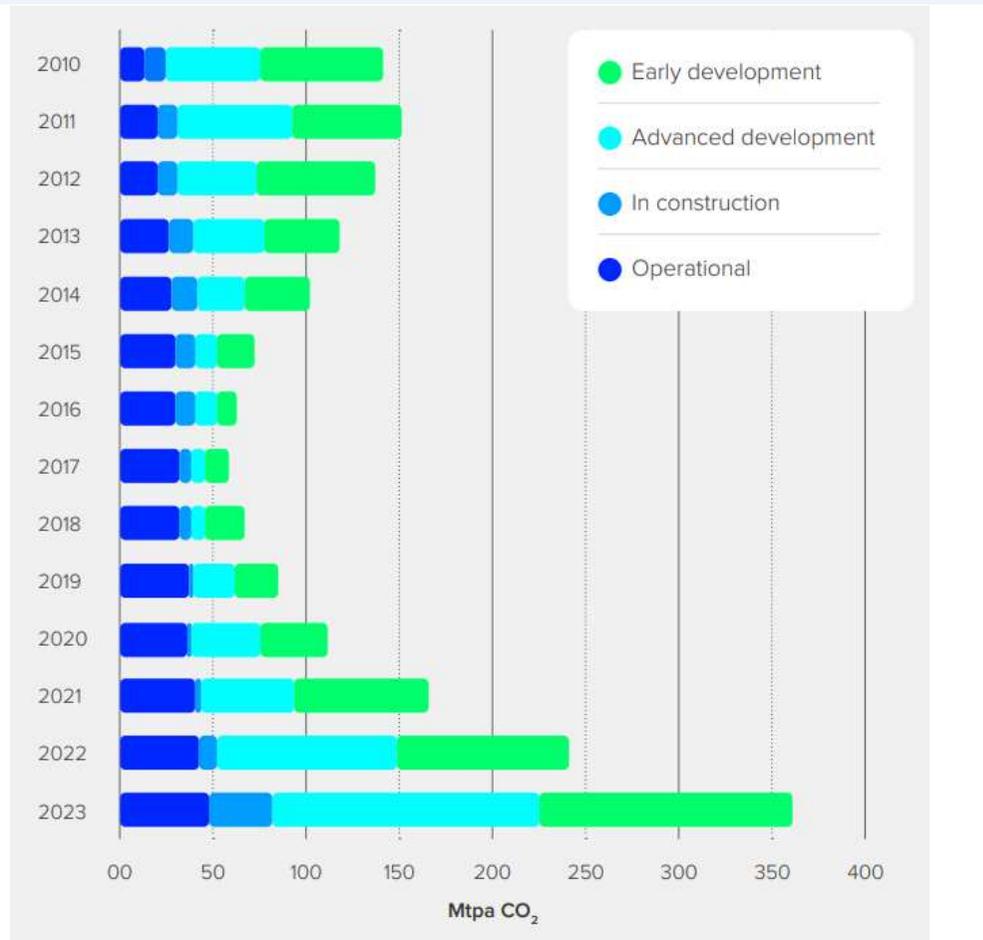
Source: Clean Air Task Force

Project developments

- 194 facilities in 2022
- 392 facilities in 2023

In Europe:

- 3 operational (NO and IS),
- 6 in construction (NO, NL and IS)



Source: Global Status of CCS, 2023.

Need for storage

Project	Project location	Start date	CO ₂ storage capacity (Mtpa)
K6 Program	France	01/01/2028	0.80
ANRAV-CCUS	Bulgaria	01/04/2028	0.78
KUJAWY GO4ECOPLANET	Poland	30/04/2027	1.02
CaICC	France	31/12/2027	0.58
Kairos@C	Belgium	01/08/2025	1.40
SHARC	Finland	31/05/2025	0.40
Total Innovation Fund			~5 Mtpa
Porthos	Netherlands	2026	2.50
Aramis	Netherlands	2028	5.00

Source: Own analysis from public information - DRAFT

Progress and next steps

- The Commission presented the proposal on 14 March 2023 in the Council
- The proposal is examined in the Working Party on Competitiveness and Growth
- The proposal was discussed by ministers during the Competitiveness Council of 22-23 May
- In the Parliament, it is referred to the Committee on Industry, Research and Energy (ITRE)
- Other Committees involved :
 - Environment, Public Health and Food Safety (ENVI)
 - Employment and Social Affairs (EMPL)
 - Economic and Monetary Affairs (ECON)
 - Internal Market and Consumer Protection (IMCO)
 - Regional Development (REGI)
- A total of 1553 amendments were tabled in ITRE on the proposal.
- ITRE voted on 25 October 2023
- File went to plenary in November 2023
- Council adopted the proposal on the 7th of December 2023

TNO Energy & Materials Transition

Join us in our
journey towards net
zero and circular!

IRA vs NZIA

	NZIA	IRA
Timeline	2023-2030	10 years
Size (investment needed)	92 billion euros (Wood-Mackenzie)	USD 360 billion
Instruments	Grants/Subsidies	Tax credit
Technologies		Solar, wind, municipal solid waste, geothermal, tidal, energy storage, fuel cells, biomass, landfill gas, hydroelectric, marine and hydrokinetic

China has outspent the world when it comes to supporting its industry. In 2019, its industrial policy expenditure of 1.73% of GDP was 2.5 times the next largest country, South Korea, over 3 times that of France, and over 4 times both Germany and the US.