



North Rhine-Westphalia's Industry Transition Platform Strategy

Government: North Rhine-Westphalia

Country: Germany

Region: Europe

Population: 17.9 million

Sector(s): Industry

Total GDP: 697.125 million EUR (2020)

Date of publication: October 2021

Total GHG emissions: 227 million tonnes CO₂e



Summary

- **Main rationale and objective of the strategy:** In future scenarios and as emissions from energy generation decrease, industrial emissions will make up a large part of the greenhouse gases emitted worldwide. To tackle this, during the Industry Transition Platform project, political actors from highly industrialised regions in Europe and North America worked together to develop strategies to drastically reduce emissions from industry in their respective regions.
- **Main stakeholders involved in North Rhine-Westphalia's strategy:**
 - **Government:** Other governmental departments, the Federal government, the European Union (EU) and regional governments from in and outside of the EU.
 - **Industry:** The primary industry, small and mid-sized enterprises and business associations.
 - **Civil society:** Non-governmental organisations, the media, research groups and trade unions.
- **Timeline of the project:** The Industry Transition Platform, a joint project of the Under2 Coalition and the state government of North Rhine-Westphalia, funded by Stiftung Mercator, ran from April 2019 to July 2021. North Rhine-Westphalia, Lombardy, Québec, California, Hauts-de-France, Scotland, Zuid-Holland, Minnesota, Wales and Emilia-Romagna participated in the project.

North Rhine-Westphalia context

North Rhine-Westphalia (NRW) is one of the most industrialised regions in Germany. With many industrial companies located near and around the Rhine River, NRW has experienced economic growth as an energy-intensive industrial base for the steel and metals, chemicals, cement, glass, paper, building materials, machinery and automobile sectors.

The region's industrial sector provides jobs to nearly one-fifth of the workforce and contributes a GDP of €139.425 million. Since industrial activity (excluding the energy sector) emits 51.2 million tonnes of CO₂e annually (2019), accounting for nearly 23% of NRW's economy-wide emissions, the sector holds significant responsibility to deliver climate protection.

To work towards a carbon-neutral industry, the NRW government launched the IN4climate.NRW initiative in September 2018. IN4climate.NRW is a public-private-partnership platform for collaboration between North Rhine-Westphalia's industry, researchers and government to develop innovative strategies to reduce emissions from industry.

What is the Industry Transition Platform?

The Industry Transition Platform (ITP) was a joint project between Climate Group and North Rhine-Westphalia that worked with eleven state and regional governments from highly industrialised regions to develop strategies to cut industry emissions while supporting growth, job creation and prosperity.

Through the ITP, a community of subnational governments from Europe and North America was built to collectively address key challenges to low carbon industry transition. Industry representatives, system change experts and researchers provided participants with tailored technical support which enabled governments to develop impactful and innovative industry emission reduction strategies.

The participating governments formed two innovation teams to address specific low-carbon challenges. As the lead government, NRW was a member of both **Innovation Teams**:

- The **Sustainable Hydrogen Team** focused on policies and opportunities to support production, transportation and utilisation of sustainable hydrogen in industrial processes.
- The **Fostering Disruptive Innovation Team** looked at innovative technologies, policies and financing mechanisms to enable lowering the emissions of industry.

What are key insights from stakeholder engagement?

“

The Industry Transition Platform provided valuable insight into other industrial region's transition strategies, this is highly relevant for our own transition path.

Michael Walther,
Project management,
IN4climate.NRW

A carbon-neutral future can only be achieved by active and strong collaboration among governments, industry and civil society. Using a 'systems change' approach, the ITP governments focused on engaging with a diverse range of stakeholders that play a key role in enabling a low carbon industry transition.

Key stakeholders for the industry transition of North Rhine-Westphalia:

- **Government:** other governmental departments, the Federal government and the European Union (EU) as well as other regional government both within and outside of the EU.
- **Industry:** the primary industry, mid-sized industries, and small and mid-sized enterprises (SMEs) and business associations
- **Civil society:** non-governmental organisations (NGOs), the media, research groups and trade unions

In IN4climate.NRW, the cooperation with industry is successful because it provides a room for open and honest discourse, industry feels heard and supported by the government and the research project SCI4climate.NRW provides useful input and often quickly responds to arising topics and industry requests.

In the medium-term, a more extensive engagement with mechanical engineering companies/ component manufacturers will be necessary. Connections with existing networks are established and IN4climate.NRW will host a networking conference in late 2021.

IN4climate.NRW leads regular talks with representatives of civil society (Environmental/climate NGOs, trade unions, church etc.) and invites civil society to discuss industry transition. EnergyAgency.NRW and IN4climate.NRW communicate on all channels (from papers and specialist articles to newsletter and social media) and perform press relations.

How is the government taking action?

Working at the subnational level, governments have the power and ability to implement industrial innovation in a way that is easier than for national governments.

Insights from the stakeholder engagements and tailored **research** recommendations helped the North Rhine-Westphalian government explore and develop policy actions:

Policy actions for Sustainable Hydrogen

- North Rhine-Westphalia's **Hydrogen Roadmap** published in November 2020 sets out the requirements to establish a North-West European hydrogen economy – showing that NRW can act as a hydrogen hub to connect points of large-scale hydrogen production and hydrogen demand. The government's most important actions towards a hydrogen economy include:
 - Expanding and intensifying international partnerships
 - Strengthening research and innovation
 - Exploiting the potential in mechanical and plant engineering
 - Accelerating the market uptake
- The European Union announced an **Important Project of Common European Interest (IPCEI) on hydrogen**, which North Rhine-Westphalia was invited to participate. **IPCEI** is bringing together public and private sectors to undertake large-scale projects, and the NRW government will work with industrial companies within the framework of IPCEI to gain investment for hydrogen projects that comprise the entire value chain.
- The government is **supporting industrial pilot projects** through funding schemes to kickstart hydrogen supply chains. Focus was laid on the energy-intensive industry with several pilot projects started in the last few years:
 - Green steel production based on hydrogen
 - Power-to-Liquid process development
 - Fuel switch from natural gas to hydrogen in glass industry
 - Innovative transport options with liquid organic hydrogen carriers (LOHC)

- The NRW government is **working with the German national government and the EU Commission** to influence hydrogen policies outside of the region's jurisdictional power, for example:
 - Developing European standards including certification and guarantees
 - Legislative framework for a national hydrogen pipeline infrastructure
 - Supporting further development and conversion of seasonal natural gas storage into hydrogen storage, including salt caverns
 - The government is supporting a **structured supply chain integration** for hydrogen to help de-risk private investments and drive economies of scale benefits. NRW provides financial support through funding schemes for hydrogen technologies at different levels. Growing public-private partnerships with stakeholders involved in different stages of the supply chain will identify opportunities for collaboration between industrial clusters.

Policy actions for Fostering Disruptive Innovation

- The NRW government is **working with the German national government and the EU Commission**. The government will continue to **support industrial pilot projects** of innovative industrial technologies through interregional cooperation and financing mechanisms such as the Contract for Difference (CfD) mechanism to drive deep decarbonisation efforts. Pilot projects for innovative technologies include:
 - Hydrogen infrastructure and hydrogen fuel switching for sites across various sectors
 - Demonstration projects for the integration of carbon capture utilisation and storage (CCUS) technology
 - Circular Economy innovations for basic materials and industrial waste
 - Large-scale Industry 4.0 innovations such as AI technology across manufacturing sectors
 - **Structural change of the Rhenish lignite mining area** is underway with support from national funding until 2038. IN4climate.NRW will bring together the regional industry along larger value chains on the topics of hydrogen, CO₂-economy and Circular economy to facilitate transition and is targeting industry to move into the Rhenish region which would facilitate funding for setting up pilot projects in the region.
 - The government will continue to **foster public acceptance and knowledge sharing of disruptive technologies**, for example, CCUS to support industry transition.
 - The government has published a **carbon management strategy** mapping Carbon/CO₂-sources (unavoidable CO₂ from industrial processes and post-fossil sources) and sinks (CCUS), identifying infrastructure and political/regulatory needs as well as developing strategies to utilise these carbon/CO₂ sources towards a climate-neutral industry by 2050. Strong focus is laid on using and recycling carbon.
 - The government is working on a synthetic fuel strategy.

What challenges did the government face?

“

ITP gave us a unique chance to build up a close network of hydrogen regions. It was very inspiring to learn about other perspectives and approaches to reach climate neutrality.

Uwe Lewe,
Policy Officer

- **Economic barriers:** almost all Low Carbon Breakthrough Technologies (LCBT) are missing a business case and need financial support (CAPEX and OPEX). Instruments are being discussed but are still some time away from implementation. Reinvestments in old technologies would prevent industry transition in some cases for decades. It is important to signal understanding of these problems for industry, lobby for the necessary instruments on the federal and EU level and start within the scope of state possibilities (feasibility studies, pilot projects).
- Societal perceptions and acceptance of industry transition technologies and infrastructure are crucial for success. We are engaged with civil society stakeholders and the NRW government is funding research. Still, a comprehensive analysis will only be available once the broader technology and infrastructure implementation is underway and (especially local) resistance is always to be expected.

What are key lessons the government learnt?

“

To be a part of ITP was a very valuable experience in terms of both effective project development and very interesting options for climate protection.

Rainer van Loon,
Senior Expert

- A key benefit of ITP (next to knowledge sharing) lies in connecting regional strategies, especially for hydrogen and CCS. A regional strategy has to incorporate neighboring national and international regional strategies. The ITP working environment provided a good starting point and personal relations to further cooperation on specific topics.
- Investing capacities in stakeholder engagement will pay off significantly in the long run as it makes policy actions more sustainable and acceptable. It helps a great deal to increase quality and it makes sure that focus is not lost in (sometimes) long lasting administrative processes.

More information

Contact: Uwe Lewe, Policy Officer, Government of North Rhine-Westphalia uwe.lewe@mwide.nrw.de