



# Just Transition Platform

## Case study:

### IN4Climate.NRW

#### Key information

**Member State:**

Germany

**Region(s):**

North Rhine-Westphalia

**Sectoral focus:**

cross-sectoral, focusing on energy intensive industries

**Duration:**

Since 2019

**Main activities:**

exchange platform between industry, science and government to contribute to research impulses, strategy development, climate-friendly production.



#### Background

##### Description of the regional policy strategies put in place relevant for Just Transition Mechanism

Besides the regional policies, North Rhine-Westphalia is also an eligible region under the Just Transition Fund (JTF). The Rhenish Coalfield and the northern Ruhr area have been identified as an eligible JTF territory, which is why both areas are included in the **North Rhine-Westphalia (NRW) ERDF/JTF Operational Programme 2021-2027**. The Territorial Just Transition Plans for the two areas highlight the transformation needs and impacts. Different measures will be funded in NRW with the JTF: Founders- and technology centres, technology transfer in SMEs, education and trainings centres, and (only in the Rhenish coal field area) innovation processes in SMEs, land renaturation and (only in the northern Ruhr area) land development.<sup>1</sup>

NRW is Germany's most populous state, hosting around 18 million inhabitants. The region, with its prominent manufacturing sector which employs up to 1.2 million workers, is one of the most

important industrial locations in Germany. NRW has backgrounds in different, often carbon intensive, sectors. The main ones in terms of the strongest turnover are, inter alia, **mechanical engineering** (13.7 % share of turnover), **chemicals** (12.8 %), and the **food industry** (11.4 %).<sup>2</sup> Among them, mechanical engineering is the one with the highest employment share.

Given its strong industrial focus, a green and just transition is of utmost importance for the competitiveness of the state. The national and state goals foresee to achieve a **climate neutral economy by 2045**. To accomplish this, the state ministry has issued several overarching strategies aimed at industrial transition. Almost 45 % of greenhouse gas emissions are produced by the energy sector. Therefore, the energy supply needs to be updated to be based on renewable energy. One central strategy is therefore the *Energy Supply Strategy* (issued in 2019) which defines energy policy goals and strategic fields of action. The strategy foresees to ensure a secure energy supply, competitive energy pricing, digitalisation, and a strong

1 [https://www.efre.nrw.de/fileadmin/user\\_upload/sfc2021-PRG-2021DE16FFPR002-1.3.pdf](https://www.efre.nrw.de/fileadmin/user_upload/sfc2021-PRG-2021DE16FFPR002-1.3.pdf)

2 <https://www.wirtschaft.nrw/system/files/media/document/file/nrw-industrie-studie.pdf>

increase of renewable energy capacities.<sup>3</sup> The initiative was enhanced in 2021, when the government issued a supplementary action plan called 'Crisis-proof energy system for North Rhine-Westphalia', which addresses the challenges that emerged due to the energy crisis. Also related to ensure the energy security in a climate-neutral way is the *Energy Research Offensive*, which aims at strengthening NRW's capacities as a leading research location for energy and climate protection.<sup>4</sup> In order to transform the production processes of industry in a climate-neutral way, more sector-specific strategies have been developed. Those include the *Hydrogen Roadmap*,<sup>5</sup> the

*Carbon Management Strategy*<sup>6</sup> and the Synthetic Fuels Action Plan.<sup>7</sup>

With the state company *NRW.Energy4Climate*, the different initiatives concerning climate protection and energy are bundled under the scope of a single organisation.<sup>8</sup> The organisation initiates concrete projects and offer supports with acquiring funding streams and investments. The offers are specifically addressing communes and enterprises. The project presented in this case study, *In4climate.NRW*, is a part of *NRW.Energy4Climate* since the beginning in 2022.

## Description of Policy Approach 'IN4climate.NRW'

### General project details

The platform *IN4climate.NRW* (I4C) was founded in 2019 by the Ministry of Economic Affairs, Innovation, Digitalisation and Energy of NRW. The rationale for implementing I4C was to trigger to achieve greenhouse gas emission-free production and climate-friendly products. The platform is meant to provide a science and dialogue-based place to work on strategies to ensure economic competitiveness while catering to the climate goals.

The Ministry of Economic Affairs, Innovation, Digitalisation and Energy has launched the platform to start the process and engage representatives from science, industry, and politics. By doing so, a socially accepted, economically feasible and ecologically sensible transformation should be ensured. The platform should provide impulses for the industry's transformation process, not only in NRW but also in other states of Germany and internationally by engaging in cooperation projects.

In addition to the main platform, a secondary branch was established that specifically addresses the Rhenish Coalfield area. There, three future labs have been set up and now work on the topics of hydrogen, carbon economy and Storage and circular economy.<sup>9</sup>

### Partners

I4C was initiated by the Ministry for Economic Affairs, Innovation, Digitalisation and Energy of the State of North Rhine-Westphalia and can be traced back to the preceding initiative *KlimaExpo.NRW* that was founded as a reaction to the first NRW Climate Protection Act of 2013. Since 2022, the platform is part of the state company *NRW.Energy4Climate*.

The platform has three main partner groups:

- **Political side:** represented by the Ministry for Economic Affairs, Innovation, Digitalization and Energy;
- **Industry:** Private companies as well as industry associations from energy intensive industries, amounting to around 40 partners momentarily;<sup>10</sup>

- **Science:** represented by the associated competence centre *SCI4Climate.NRW*, consisting of six (now: five) scientific institutes: Wuppertal Institut, Fraunhofer Institute for Environmental, Safety and Energy Technology *UMSICHT*, Germn Economic institute (IW Cologne), *VDEh-Betriebsforschungsinstitut (BFI)*, *VDZ (Verein Deutscher Zementwerke e.V.)*, *RWTH Aachen University* (until end of 2022).

So far, civil society organisations are not represented. This aspect will be further explored below.

### Type of activities

The platform *IN4climate.NRW* is meant to develop strategies and concepts for a climate-neutral industrial sector through collaboration between different stakeholders from science, industry, and politics. Furthermore, key research needs should be identified. The goal of the initiative is to ensure the competitiveness of the regional economy and securing jobs when transforming into a climate-neutral economy. At the moment, the work of I4C is structured in six different working groups:

- Hydrogen
- Industrial process heat
- Carbon economy
- Circular economy
- Policy frameworks
- Acceleration of approval procedures

The work of the platform materialises in different knowledge products and projects. These include papers (discussion/position paper), contribution to roadmaps of the ministry, and projects. Those products stem from the working groups or are based on initiatives from the management team or the ministry.

The platform is assisted by the scientific competence centre *SCI4climate.NRW* (see box for more information).

3 <https://www.wirtschaft.nrw/energieversorgungsstrategie>

4 <https://www.energieforschung.nrw/>

5 [https://www.wirtschaft.nrw/sites/default/files/documents/mwide\\_br\\_wasserstoff-roadmap-nrw\\_eng\\_web.pdf](https://www.wirtschaft.nrw/sites/default/files/documents/mwide_br_wasserstoff-roadmap-nrw_eng_web.pdf)

6 [https://www.wirtschaft.nrw/sites/default/files/documents/mwide\\_br\\_carbon\\_management\\_strategie\\_summary\\_eng\\_bf.pdf](https://www.wirtschaft.nrw/sites/default/files/documents/mwide_br_carbon_management_strategie_summary_eng_bf.pdf)

7 [https://www.wirtschaft.nrw/system/files/media/document/file/mwide\\_br\\_synthetische\\_kraftstoffe\\_summary\\_rz\\_ba.pdf](https://www.wirtschaft.nrw/system/files/media/document/file/mwide_br_synthetische_kraftstoffe_summary_rz_ba.pdf)

8 <https://www.wirtschaft.nrw/NRWEnergy4Climate>

9 see <https://www.energy4climate.nrw/industrie-produktion/in4climatenrw/in4climater>

10 List of all industry partners: <https://www.energy4climate.nrw/industrie-produktion/in4climatenrw/akteure/industriepartner>

## Box 1: SCI4Climate.NRW

The goal of SCI4climate.NRW is to support the I4C platform with **scientific expertise**. The competence centre is an association of six different scientific institutes and works closely with the IN4climate.NRW initiative, e.g. the discussion-/position papers are strongly shaped by SCI4climate.NRW. Both parts of the initiative work in **close collaboration, holding regular exchanges**. The interviews highlighted how, from time to time and when deemed necessary, challenging the position of the industry representatives can be highly beneficial. By doing so, a balance of the views within the initiative is guaranteed.

SCI4climate.NRW is structured along four key research topics:

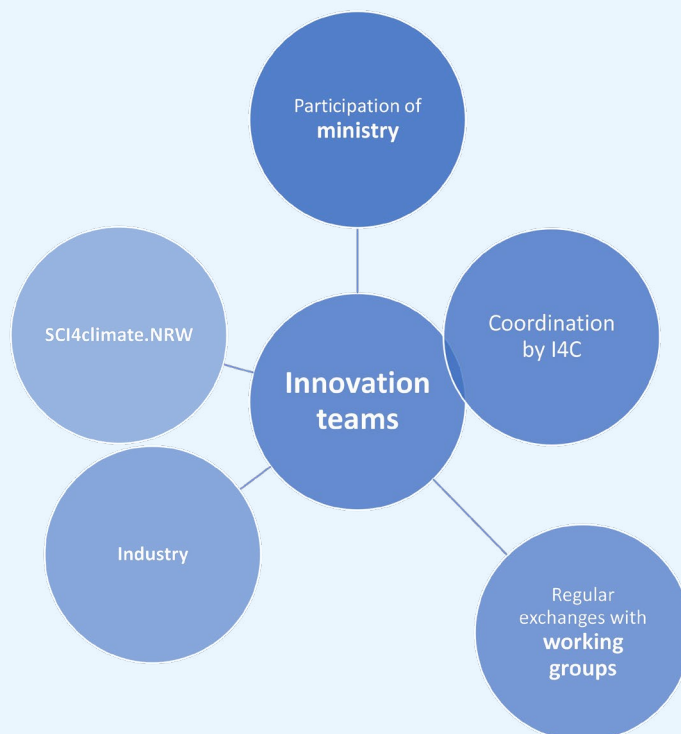
- Technologies and infrastructures
- Products and value chains
- Scenarios and transformation paths
- Framework conditions and business models

The competence centre has already published a broad variety of different papers – ranging from factsheets over policy papers to reports. A large number of the publications can be assigned to scenarios and framework conditions.<sup>11</sup>

The main focus of the working platform lies in the innovation teams, which bring together industry and science. These teams are led and participated in by representatives from the ministry, working collaboratively. The work is coordinated and

organised by I4C. Innovation teams and working groups meet in the meantime and are in lively exchange. The following figure illustrates the work between the different actor groups.

Figure 1: Working structure I4C.



Source: Own illustration, following Strategiemanufaktur (2021)

11 The full list of publications can be accessed here: <https://www.energy4climate.nrw/service/publikationen>

## Goals and Approach

The approach endorsed by IN4climate.NRW to achieve climate neutrality is to provide support to companies in implementing strategies for climate neutrality. The main goal of the initiative is to contribute to the transition while ensuring that workplaces and the economy's competitiveness are preserved. To achieve this, the initiative strives for several goals/tasks:

- Central research needs are identified. Fields of research and innovation for climate-neutral industrial production will be included.
- Ideas for research projects are developed and initiated (sectoral as well as cross-sectoral).
- Scientific and technical strategies are developed to ensure the future viability of the industry of NRW.
- Conduct technology studies and, by doing so, consider the necessary regulatory and political framework conditions.
- Consistent production-specific development steps are identified that contribute to a greenhouse gas neutral industrial production.
- Financing instruments are discussed and developed.
- The economic production of climate-friendly products is facilitated.

So far, the platform has produced several discussions or working papers on how to actively design a carbon-neutral industry. The competence centre SCI4climate.NRW has contributed to a large extent by providing scientific insight and research directly

to I4C working groups, and more generally through numerous reports and peer-reviewed papers. One main achievement is that new strategies of the Ministry for Economic Affairs in NRW (e.g. the hydrogen roadmap of 2020 or the carbon management strategy 2020) were highly influenced by the work of I4C and SCI4climate.NRW and the initiative actively supported the ministry developing them. Furthermore, large industrial projects benefited from working with IN4climate.NRW since this cooperation accelerated the progress of the projects.

## Tools for supporting economic diversification and reskilling/upskilling

The initiative addresses economic diversification on different levels. The exchange in working groups can **support firms to become more innovative** and adjust from **'traditional sectors' to new technologies**. In a similar way, **knowledge exchange and cooperation between firms will be facilitated**. This is probably one of the most important outputs of the initiative. Besides these exchange formats, I4C also supports in finding access to finance and developing possible project ideas. Those activities contribute to **building private and public sector capabilities for innovation**.

Given that I4C represents a tailored approach to the conditions and strengths in NRW, the initiative capitalises to a large extent on **unique regional strengths for innovation**. This is, amongst others, shown by the triple helix approach (taking into account the scientific sector of the region) and the different focus areas.



## Key success factors and lessons learnt

One of the key success factors of IN4climate.NRW is that different players are involved in the initiative (politics, science, industry – **triple helix approach**). Several sectors from industry are involved, and this engenders an integrated approach, allowing for the creation of synergies and cooperation. Moreover, the initiative is focused on the region which creates certain affiliations among the members/partners. There is a low participation barrier for new members – only a strong interest in becoming climate-neutral must be provided, showcasing one's commitment with a concrete vision. Theme-related working groups allow for the treatment of energy-related topics but also of political framework conditions.

SCI4climate.NRW ensures that its work is based on a **broad knowledge base** and that the interests of industry are constantly balanced with a broader and more systemic view of the transition. The research benefits from the exchange with players from industry. Further impulses by the industry contribute to keep the research up to date and addressing concrete needs.

As summarised in the I4C evaluation of 2021, the platform's **working culture is a unique aspect** and one key factor for high-quality results. The work's atmosphere is coined by openness and trust which could emerge thanks to the shared spaces in different groups, the networking of industry, science and administration and the continuous collective work efforts.

One 'lesson learnt', as highlighted in the interviews, is the insight that while industry transformation projects are usually not initiated directly within I4C, it creates facilitating conditions for such projects. The companies develop a concept by their own (after receiving some impulses by I4C) and then I4C supports the realisation.

### Scalability and transferability

The initiative is **scalable only to a smaller extent**. Key for the success of the initiative is that regional players are involved, and a sense of belonging motivates the stakeholders. This is more difficult to achieve at a bigger scale. Moreover, a larger scale might result in a stronger selection of participants and the introduction of hard criteria for selection purposes. The broad focus of the initiative could also limit scalability and result in specific targeting of certain sectors in order to take the project to a higher level. The **geographic proximity is also an important factor** because it allows seamless, in-person exchanges between the involved actors.

There is, however, already a competence centre at national level that pursues similar objectives as I4C. The *Competence Centre on Climate Change Mitigation in Energy-Intensive Industries* supports the transformation process as well while keeping the economic competitiveness of the German industry in mind.<sup>12</sup> Both initiatives work closely together since their inception although the national counterpart has significantly greater financial leverage. In contrast to that, I4C is also **actively engaging at an international level**, most notably in the Industry Transition Platform of the Climate Group.<sup>13</sup>

As recorded in the 2021 I4C evaluation, I4C could position itself as an important, active member and distinguish itself with **high transparency and knowledge-sharing**. It was additionally noted that the Scottish government showed interest in establishing a similar structure with a climate agency – which stresses the success of I4C's triple helix approach and its possible transferability.

Consequently, a certain **degree of transferability** exists. Regions that have a strong regional industry with various sectors and a high density of scientists could profit the most from the approach of I4C. The different sectors should be able to profit from joint efforts (e.g. concerning shared infrastructure) and a **political willingness** to achieve a climate neutral transformation needs to be given (including the willingness to finance and coordinate initiatives). It was noted in the interviews that the more polarised the political landscape, the more difficult it is to launch such initiatives and the more likely it is that no activities beyond discussions will take place. In addition, a **range of different actors** needs to be motivated to join such endeavours, e.g. industry, science, in the best-case scenario, also civil society. In general, the initiative has been attributed model character for regions with a regional structured industry and with a high sense of belonging. The triple helix approach of I4C ensures a holistic support to the industrial transformation which offers a transferable value for other industrial regions in the EU.

### Key challenges

One of the key challenges is the definition of the group of participants. At the moment, the participants come from the energy-intensive raw materials industry. This focus allows a mutual trust between the actors and keeps the participant's group manageable. However, the transition towards a climate-neutral economy is affecting all sectors/branches in the

12 <https://www.klimaschutz-industrie.de/en/>

13 <https://www.theclimategroup.org/industry-transition-platform>

economy. Therefore, the question remains if the initiative should open its membership criteria for more diverse actors from the North Rhine-Westphalian economy or if another forum would be more suitable to open discussions to a broader circle. Another open question concerns the **further integration of civil society** in the process. There are already exchange formats with civil society in NRW concerning climate topics (e.g. KlimaDiskurs.NRW). In the interviews, it was highlighted that while awareness raising of I4C is generally successful within the field of experts, the general public is not satisfactorily addressed yet. If and how civil society will be further involved in the initiative remains to be seen but the benefits of a stronger civil society engagement are clear: public acceptance is a necessity for a just transition. For the collaboration within the initiative this could also mean more diverse perspectives, e.g. when environmental NGOs would be stronger represented. This could also reduce sceptical views on projects that are being pursued.

Given the many different initiatives that are currently ongoing in NRW, it is necessary to pay attention to **avoid overlaps**. Many networks are just emerging from industrial perspective, but it is important not to overwhelm industry partners with too many simultaneous initiatives. For example, there are several clusters located in NRW that could support the diversification of the economy. However, the perception is that they work alongside each other and that more central coordination would be welcomed.<sup>14</sup>

Another challenge that most projects are facing is that they can only be seen as successful when they manage to become structurally effective, meaning that they have a real impact on the ground. Often, the **transfer from theory into practice** is a main obstacle, as noted during the interviews. Therefore, the awareness among the partners is needed that

implementation is crucial although it may take some time. Although the collaboration among the partners is mainly fruitful, it was recorded in the evaluation of the initiative that the main thematic work often concentrates on the science side and industry partners' engagements vary. This could endanger the actual capability of putting theoretical results into practice.

### Strengths and Weaknesses

I4C's main strength lies in building networks with relevant partners concerning selected topics. This can enhance its public perception. The platform can support the development of innovative, climate-friendly technologies by bringing different actors together that did not work together before. Similarly, it is essential to think beyond their own sector. This approach is enshrined in I4C as the cross-sectoral thinking is ensured with bringing together different types of sectoral representatives. The **holistic approach to industrial decarbonisation** is a unique feature of I4C that distinguishes the initiative from other existing projects, as highlighted in an evaluation by the scientific counterpart SCI4Climate.NRW. Additionally, the fact that the initiative is accompanied by the scientific community is a value per se: beyond providing orientation knowledge, it gives the initiative further **credibility**.

The cooperation in the different formats of I4C is not only contributing to share knowledge on ongoing projects in other sectors but also contributes to **share information on new technological and strategic developments** that might have been already explored in other industry segments. Given the strong interlinkages in the economy of NRW this further contributes to the existing cooperation potential.

When engaging with the networking activities of I4C one needs to pay attention to other ongoing initiatives which should be included in order to avoid confusion between the partners.

## Outlook

I4C is a successful player concerning the industrial transition in NRW. There is a largely positive perception towards the initiative among its stakeholders. Some challenges remain that it would be desirable to be address more strongly, first and foremost the civil society engagement which was highlighted during the interviews but also by previous evaluations. Nonetheless, the work done is widely seen as high-quality and especially the work culture and organisation represent a very successful aspect.

With the acceleration of the coal phase-out in NRW to 2030 the regional economy and especially the coal regions in NRW are facing even more pressing transition needs. For the Rhenish Coalfield area, there is, since last year (2022), a dedicated branch of I4C, called IN4climate.RR. This should help to transform the coal region into a pilot region for climate-neutral industry. The work done so far in I4C will serve as an important input.

<sup>14</sup> However, it should be noted that with NRW.innovativ there is now a competence center that attempts to better interlink the innovation ecosystem and its players: <https://nrwinnovativ.de/en/cluster-und-netzwerke/>.

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