Net Zero Industry Impact Innovation Report 2024–2025

The path to a net zero manufacturing industry

Net Zero Industry
impact innovation

Net Zero Industry
impact innovation

Publisher: Net Zero Industry

Title: Net Zero Industry Impact Innovation Report 2024–2025

Author: Net Zero Industry

Published: 2026-03-17

ISBN number: 978-91-89905-41-2

Diary number: 2026-00699

Table of contents

Foreword

Sweden has a long tradition of successful research and innovation collaborations. Over the years, substantial knowledge has been built up, new solutions developed, and strong partnerships established.

At the same time, we are facing broader, more complex challenges than ever before. Climate transition, tougher global competition, and an increasingly uncertain world place new demands on business models, forms of collaboration, technological innovation, skills development, and ways of working. To succeed, we must navigate with a clearer systems perspective, deeper collaboration, and shared long-term objectives.

Net Zero Industry has a clear mission: to ensure a competitive and resilient manufacturing industry with net-zero greenhouse gas emissions by 2040. This is an ambitious goal, but one that is essential for the future of the industry, as well as for Sweden's growth, welfare, and green transition.

This report summarises the programme's first two years. Its success comes from the dedicated engagement of companies, researchers, industry associations, regions, funding bodies, and societal stakeholders across the country.

We are deeply grateful for our established and new partnerships and look forward to continuing our joint efforts to strengthen the competitiveness of the Swedish manufacturing industry and contribute to a more sustainable society.

Sofia Wieselfors

Sofia Wieselfors, Program director

Executive summary

The Swedish manufacturing industry – critical to the country's competitiveness, exports, and welfare – is facing a far-reaching transition. Climate requirements, resource constraints, global value chains, digitalisation, and an increasingly uncertain world demand new approaches to the development of products, processes, and business models. To succeed, individual technological solutions or isolated projects are not sufficient. The transition must take place at a systemic level.

Net Zero Industry is a national initiative within Impact Innovation with a clear mission: to ensure a competitive and resilient manufacturing industry with net-zero greenhouse gas emissions by 2040. The programme brings together industry, academics, research institutes, and public actors to jointly accelerate the transition through collaboration, innovation, and learning.

Since its start, the programme has purposefully mobilised over 600 actors across more than 100 research and innovation projects, with a total project volume exceeding SEK 500 million. The initiatives span entire value chains and integrate technology, business models, skills development, and policy to deliver genuine system change.

During the initial years, the focus has been on mobilisation, knowledge development, and the creation of a mission-oriented approach that enables adaptive management and iterative policy development. Looking ahead, priorities include more targeted interventions, stronger support for small and medium-sized enterprises (SMEs), enhanced skills and competence initiatives, and clearer monitoring of results and impacts.

The objective is to turn net zero into a competitive advantage and position the Swedish manufacturing industry as a global frontrunner in the green transition, with significantly strengthened resilience.

The programme in numbers

102

PROJECTS

SEK 531M

IN FUNDING FOR THE MISSION

617

PROJECT PARTNERS

419

ENTERPRISES

29 INTERNATIONAL PROJECT PARTNERS FROM

13 COUNTRIES

1 Mission

How can the Swedish manufacturing industry remain competitive while achieving climate neutrality in a rapidly changing global context? Net Zero Industry addresses one of the defining challenges of our time: decoupling economic growth from resource use and greenhouse gas emissions. With a clearly articulated mission and a systems-based approach that mobilises and coordinates the entire industrial ecosystem, we create the conditions for a competitive, resilient manufacturing industry that leads the transition to net-zero greenhouse gas emissions by 2040.

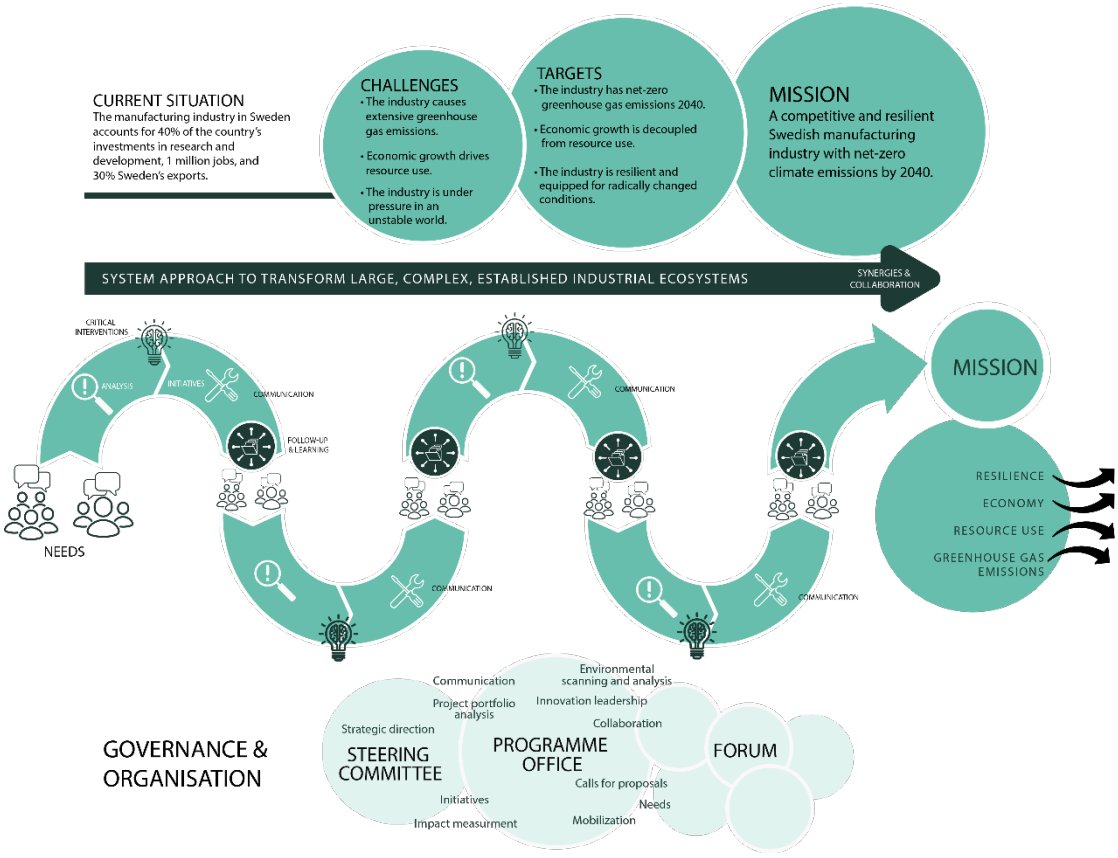
1.1 A competitive and resilient Swedish manufacturing industry with net-zero greenhouse gas emissions by 2040

Our mission is based on a clear societal challenge: production, consumption, and value chains must operate within planetary boundaries. At the same

time, industry must accelerate the transition to strengthen its competitiveness, which is dependent on sustainability and resilience.

1.2 Our theory of change

In 2024, the program's first structured intervention logic was developed in the form of an Impact Plan. The document describes challenges, target scenarios, gaps, and the need for interventions. This work included collaboration and mobilization with actors in the system. In 2025, the requirement for a formal theory of change was clarified, prompting an intensive process to develop a first iteration of the theory of change, as illustrated below.



Theory of change Net Zero Industry

1.2.1 Manufacturing industry adjustment

The manufacturing industry in Sweden, the programme's primary target group, employs more than one million people and accounts for a large share of exports and the country's R&D investments. Manufacturing is a crucial part of Swedish industry, and its continued competitiveness is vital to Sweden's growth and prosperity. A starting point for the programme is that the

Swedish manufacturing industry, through new products, business models, and production processes, serves as a strong enabler and lever for resource efficiency, the circular economy, and resilience.

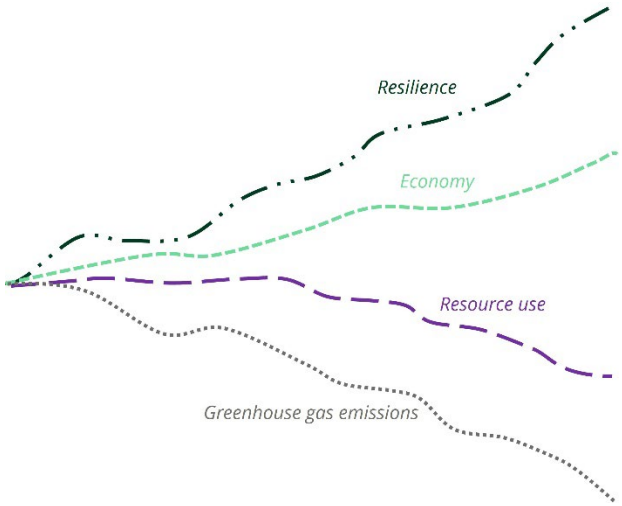
In the programme, the manufacturing industry is defined as companies with discrete manufacturing, where products with a distinct and often traceable identity are produced. The definition also includes product development, related services, product-as-a-service offerings, and manufacturing-related circular activities.

Important collaboration partners to the manufacturing industry include suppliers and customers that play a central role in reducing emissions in the value chains in which the products are embedded, upstream as well as downstream. These organisations do not constitute the core of the system, but within the programme they may apply for projects jointly, and in close collaboration, with companies that fall under the definition of the manufacturing industry.

Manufacturing-related circular activities include remanufacturing, refurbishment, repair, disassembly, and reuse – for the same or a different purpose – when carried out in a manner similar to discrete manufacturing.

1.2.2 Transitioning from challenges to target scenarios

The foundation of our theory of change is based on our mission and create the conditions for transitioning from three challenges to three clear target scenarios, as illustrated below:



The graphic illustrates the programme's vision for the desired evolution of the manufacturing industry up to 2040, decoupling economic growth from resource use and greenhouse gas emissions, while increasing resilience.

Three challenges that describe the current situation

1. **The industry contributes to substantial greenhouse gas emissions.** Foremost in extracting and processing materials, energy consumption when the products are used, and in international value chains.
2. **Economic growth drives resource use.** Today, the industry offers only a small amount of recycled and sustainably manufactured renewable materials and products.
3. **The industry is under pressure in an unstable world.** An uncertain, quickly changing geopolitical landscape is affecting the industry and its value chains.

Three target scenarios that enable our mission

The Swedish manufacturing industry is a global leader with high demand and strong competitiveness and is characterized by:

1. **The industry has net-zero greenhouse gas emissions**. Includes the entire lifecycle, i.e. Scope 1, 2 och 3. Innovative products, business models, and production processes enable a radical reduction in emissions during a product's lifecycle.
2. **Economic growth is decoupled from resource use.** The industry is characterised by a circular economy, with product development and production systems that lead to minimal resource consumption and product longevity. A high amount of recycled and sustainably manufactured renewable material.
3. **A resilient industry that is equipped for radically changing conditions.** The Swedish manufacturing industry is adaptable and prepared for sudden disruptions. It manages changing conditions, regional and global, by adapting swiftly and benefiting from them.

1.2.3 System approach and needs identification

No isolated part of the system or single actor can, on its own, transform large, complex, and established industrial ecosystems. The transition and shift described above require many processes and systems in the manufacturing industry, as well as its upstream and downstream value chains, to be developed in parallel. This entails efforts at system level as well as targeted actions within the different parts of the system.

Based on the theory of change and an increased understanding of an Impact Innovation programme, it has become clear that a more systematic and broader mobilisation effort is required to capture needs, gaps, and desired impacts related to the challenges, target scenarios, and the mission.

In autumn 2025, a decision was made to undertake broader and more systematic work involving forums and councils to strengthen the industrial relevance and the precision of our initiatives. The aim is also to broaden perspectives by including more viewpoints from across the system, enabling a more integrated approach to working with all five system dimensions; from needs to interventions, implementation, and follow-up.

To succeed in the shift towards the mission, a broad systems approach is required. Whereas this has been evident from the outset, insights deepened during 2025. Our challenges were analyzed through five system dimensions in autumn 2025. The programme has faced a certain gap between the level of ambition with mission-driven programs and the support offered by funders and how the systems approach is to be operationally integrated into an industry-driven programme. Therefore, consultants were brought in, who enhanced our understanding of how the five system dimensions—culture/values, business models, infrastructure, technology/products/processes, and laws/policy/regulation—are linked to net-zero greenhouse gas emissions and resource efficiency. It is clear that some system dimensions are more critical than others and that leverage points exist between them. During 2026, the programme will further analyse and communicate these insights, as well as deepening the analysis of resilience in which the system dimensions will also be included.

System analysis has made it increasingly clear that the various discrete challenges within resilience, net zero, and resource efficiency cannot be viewed separately. Several of the leverage points intersect. We see great value in clarifying this so that the system analysis can support us in setting priorities and making strategic choices.

The system maps are used as an analytical tool to understand the structure of the system and identify where targeted efforts will have the greatest impact in relation to the program's mission. The method is also used internationally in mission-oriented innovation policy to guide complex system transitions. Our system maps will continuously evolve and be used in communication and mobilisation with the industrial ecosystem, and in the programme’s portfolio analysis and governance. These maps will also support the development of the programme’s stakeholder maps during 2026.

Our theory of change provides a solid foundation for our work. The focus should be on transitioning towards three target scenarios that the system deems critical to the mission. The hypotheses and leverage points that drive interventions need to be continuously analysed, reassessed, and developed. For this, the various forums and councils will be crucial.

1.2.4 Analysis of challenges

It is crucial for the programme to continuously increase understanding of the challenges facing the manufacturing industry in relation to our mission. The *Manufacturing Outlook* report, launched in early 2026, is an analysis of the facts and data from the current situation related to our challenges and key areas. It reflects the current situation as well as changes over time. The report raises questions such as: Where are the greenhouse gas emissions to be found? Questionnaires will quantify the needs, challenges, and driving forces linked to this and to resilience. Work has begun, and the report is to be released in the first quarter of 2026. The report will be updated regularly, will be used internally for analysis and governance, and will also be communicated externally for mobilisation.

In 2025, the Programme Office engaged expert support on resilience. Proposed delimitations were presented to the steering committee in January 2026. Resilience will be included in the next version of *Manufacturing Outlook.*

1.2.5 Follow-up and learning

In autumn 2025, a traditional portfolio analysis was developed to follow up outcomes of projects, funding, actors, and geographic distribution, among other things. This type of analysis provides a stable foundation for follow-up but is insufficient to drive system change. In parallel, an analytical approach is now being developed to be used for strategic prioritization and guidance of efforts toward the mission's goals. Together, these analyses make it possible to understand both what is happening in the portfolio and how the program can influence the development of the system moving forward. It is important to ensure that the programme’s funds target areas in which they create the greatest impact. Do the projects’ proposed solutions help overcome barriers in the manufacturing industry? Do they have a real effect on greenhouse gas emissions? This work is crucial to steer initiatives precisely and monitor the programme’s results in relation to the mission.

Thus, the program functions act as an instrument for system transformation. A challenge forward is to identify indicators to track in order to see system change.

1.3 Mission-strategic areas: Competence and SMEs

Competence development and the involvement of small and medium-sized enterprises (SMEs) were identified as critical success factors already in the programme application. During 2025, the funders defined mission-strategic areas of intervention, which will be supported through recurring calls for proposals, initiatives, and complementary offerings throughout the programme period.

1.3.1 Competence

A needs assessment conducted in autumn 2024 highlighted the lack of a coordinated national effort for skills development and knowledge sharing within discrete manufacturing. While many initiatives exist, none comprehensively address the mission or the link between climate neutrality, circularity, resilience, and competitiveness. A workshop in 2024 further clarified these needs.

In 2025, Vinnova concluded that launching a competence platform was not feasible. Instead, funders and the programme developed parallel offerings within the mission-strategic approach, including a first call for proposal with two offerings that opened and closed in 2025:

1. Method for evaluating a company's capacity to achieve the Net Zero Industry mission.
2. Educational collaboration and competence development for circularity, climate neutrality and resilience.

Taken together, the approved projects address key components of Net Zero Industry and strengthen the industry's capacity for transition. Work on advancing the next phase within the mission-strategic area of competence development will continue in 2026, labour mobility will be the initial focus. Regarding methodology, the programme will carry out a broader environmental scan and further develop *Manufacturing Outlook*. The programme, in its role as an innovation cluster, aims to assume a stronger coordinating role in developing the methodology. The offering related to educational collaboration will also be further developed to more clearly align with the mission and identified needs.

1.3.2 SMEs

There is a considerable need to strengthen the capacity of SMEs in relation to climate transition and resilience, which is critical for a competitive

manufacturing industry. As with competence development, a need was identified for a more coordinated, long-term platform.

In February 2025, a broad workshop was organised to assess needs and mobilise relevant actors. A needs assessment was submitted to the funders, and in December a forthcoming mission-strategic initiative, “Impact Innovation: Support for Manufacturing SMEs for Net Zero via Intermediaries,” was announced and subsequently implemented in January 2026. The Programme Office and Steering Committee expect this initiative to be expanded and scaled up in several stages.

In parallel, the Programme Office has initiated a development process focused on how SMEs can be mobilised and supported. The Programme Office will assume a stronger role in providing inspiration, building knowledge, and supporting and facilitating critical collaborations. This work will progress further in early 2026.

1.4 The programme in numbers

The portfolio analysis shows that, within a short period of time, the programme has successfully mobilised a large number of actors and initiated more than 100 projects. The rapid start-up phase has been intensive and challenging, while enabling a high pace of learning. As the programme has become established, both its strategic direction and its project portfolio have therefore evolved relatively quickly and become increasingly focused on the core of the mission.

1.4.1 Actors in the Programme Office

The Technology Industries of Sweden (In Swedish, and hereafter: Teknikföretagen) coordinates the programme, with RISE as a partner. The Programme Office is jointly operated and consists of representatives from Teknikföretagen and RISE. Academics also participate to coordinate and channel needs from the academic community. Expert support is enlisted by the Programme Office for specific, clearly defined assignments.

To ensure increased industrial relevance and an integrated systems perspective in stakeholder collaboration, work on challenges, needs, and critical desired impacts has been further developed through dialogue forums, the Net Zero Forum, and an Industrial Strategy Council. These groups constitute an important part of the Programme Office’s work. The Programme Office leads, facilitates and coordinates these dialogues.

1.4.2 The programme's total approved funding and co-funding per year

Below is a brief description of the outcomes during the initial years with a greater focus on traditional portfolio analysis.

The intervention portfolio for achieving system change

From the outset, the programme was directed to commence swiftly with concrete industrial projects to learn about system innovation in practice, based on the daily realities faced by the industry. In parallel, we focused on mobilising a wide range of actors within existing networks to understand where the programme could make the greatest difference and how. The strategy was to act rapidly to make effective use of the allocated budget.

Practical learning about system innovation took place along two parallel tracks. Four strategic areas identified as industrial challenges in the application (referred to as 'Head Start' initiatives) were implemented through calls for proposals within megacasting, large-scale circular manufacturing, electronics, and competence development. In addition, feasibility studies were funded to enable broad learning related to system demonstrators.

Mobilisation was realised through a broad call for proposals entitled *"Increased Resource Efficiency and Resilience, Stage 1"*, which allowed more radical ideas encompassing all five system dimensions to be explored through feasibility studies. In addition, a call for proposals was issued in collaboration with the Impact Innovation programme *Swedish Metals & Minerals*. This call for proposals was limited to regulation and policy instruments, with a focus on sustainable industry. Due to high demand, a large number of projects were funded, involving multiple actors who contributed valuable input to the design of the programme's future strategy.

Overall, 2025 was characterised by intensive work involving broad calls for proposals, established calls for proposals (Stage 2) for the previously funded feasibility studies, and new mission-strategic calls for proposals to disburse the allocated budget within the year. Seven calls for proposals were planned, five of which were implemented, and two postponed. Several of the more strategic projects were given the opportunity to apply to continue to Stage 2, which is considered an important learning outcome for system innovation and system demonstrators.

The design of the mission-strategic calls for proposals entailed significant learning for the programme and the funders. The underlying rationale is to enable scalability while combining open competition with flexibility. Calls for

proposals focusing on competence development and SMEs will recur throughout the programme period, as they are regarded as central enablers for accelerating the transition towards the mission. The Programme Office will ensure coherence and knowledge sharing across projects within these initiatives. During 2026, the Programme Office will further develop its work to coordinate projects within the competence and SME areas and will also define overarching objectives for these initiatives.

From the start, the Programme Office has organised mobilisation meetings to promote knowledge gathering and participated in external conferences and seminars. During 2025, increased emphasis was also placed on organising activities for external knowledge dissemination and learning so as to reach and mobilise a broad range of actors across the industrial ecosystem and industrial value chains.

Some of the activities carried out thus far:

- EU Info Day in collaboration with Swedish Metals & Minerals about current European research funding
- workshop on regulations and policy instruments with our 15 projects from the joint call for proposals related to regulations and policy instruments (in collaboration with Swedish Metals & Minerals)
- developed and launched a concept for digital seminars that inspire, motivate, and mobilise stakeholders, as well as disseminating results
- initiated collaboration with the Produktion2030 programme around the concept of technology workshops
- participated in a range of conferences in Sweden and internationally to communicate about the programme and conduct environmental analysis
- project support, see below Chapter 2.3.4 Implementation of interventions
- co-organised, together with the production clusters, an annual conference called the Swedish Manufacturing Conference (formerly the Cluster Conference) during the first two years
- initiated planning for the Swedish Manufacturing Conference 2026
- initiated planning for participation in SPS2026 (The Swedish Production Symposium)
- initiated strategic discussions with other innovation programmes, for example Advanced Digitalisation, to create synergies between programmes

In 2025, knowledge of mission-driven approaches and system innovation increased, thereby creating improved opportunities to link the manufacturing

industry's challenges in global value chains with the funders' perspectives on how Impact Innovation can deliver change at system level.

In hindsight, it was a sound decision during the first year to focus on close dialogue with the actors involved in the application and on mobilising additional actors through established calls for proposals. This resulted in clearly defined system-oriented projects that began to address several system dimensions as well as the ability to build on a number of key advances from previous research efforts. The projects focusing on regulation and policy instruments generated shared learning with the Swedish Metals & Minerals programme, laying a foundation for future priorities and synergies.

The learning process was initiated immediately during the first year and progressed at pace. A wide range of actors contributed their expertise, networks, experiences, and perspectives on what the manufacturing industry requires to achieve the mission.

Calls for proposals and number of funded projects

Since commencing, the programme has funded 102 projects in an amount of just under SEK 274 M. The projects contribute with co-funding of their own of SEK 257 M, bringing the total project budget that has been activated to approximately SEK 531M. Eleven calls for proposals have been carried out in total. See Table 1.1.

Table 1.1

Call for proposal	Approved funding	Co-funding	No. of projects
Start/Scale: An offering to SMEs (Impact Innovation: joint)	3 592 184	2 442 716	4
Regulations and policy instruments for a sustainable industry	6 878 433	2 172 313	6
Enhanced resource efficiency and resilience, Stage 1	22 597 494	8 790 888	26
System demonstrators, Stage 1	9 941 467	7 105 042	8
Strategic projects: Die casting and circular manufacturing, Stage 1	7 301 277	7 276 264	2
Enhanced resource efficiency and resilience, Stage 2	42 927 084	47 309 012	11
SMART Eureka Call for proposal 2025 – National application	4 652 520	4 652 521	2
System demonstrators, Stage 2	43 737 467	44 441 579	4
Efforts related to competence for Net Zero Industry	22 837 320	13 470 595	6
Die casting of large structural components, Stage 2	15 990 000	16 882 000	1
Impact Innovation: Net Zero Industry 2025	93 269 358	102 482 705	32
Total	**273 724 604**	**257 025 635**	**102**

Total amounts in Table 1.1 and Table 1.4.1 differ somewhat in the data to which the programme has access. However, this does not affect the overall result.

Gender distribution among project managers

43% (N=44) female and 57% (N=58) male.

Thematic project orientation

The most common orientation of the projects in terms of industry is towards manufacturing in a broad sense. The most common individual industries are textiles and fashion, with projects focused primarily on recycling, and electrical and electronic equipment, with projects focused on areas such as sustainable batteries and solar cells. During its start-up phase, the programme applied a somewhat broader definition of the manufacturing industry than has been used since 2025. As a result, certain industries that are no longer included in the programme appear in Table 1.2.1, e.g. the food industry.

Table 1.2.1

Primary sector	No. of projects
Manufacturing, general	32
Textile & fashion	15
Electrical & electronics	15
Plastics & rubber	7
Automotive	7
Metalworking industry	6
Food industry	5
Forestry	4
Construction & property	3
Aviation	3
MedTech & healthcare	3
Defence	1
Packaging	1
Total	**102**

The most proposed solutions concern new production technologies, such as additive manufacturing. The second most common category is chemical engineering solutions, for example chemical recycling technologies, followed by projects to transform or develop new value chains, and projects focusing on policies, standards, or methods.

Table 1.3.1

Type of solution/technology	No. of projects
Production technology	19
Chemical engineering, non-metal	15
Value-chain development	9
Policies, standards, methods	9
Digitalisation	7
Renewable materials	7
Chemical engineering & metallurgy	7
Training and competence development	6
Phase out fossil energy &fuel	6
Needs analysis &mapping	5
Production planning	5
CCU/CCS	4
Biochemistry	3
Total	**102**

1.4.3 Distribution of approved funds and co-funding

Type of actor

In all, 617 project partners are participating in the projects. This is the sum of all project partners across individual projects, regardless of whether a project partner has already appeared in another project. The total number of unique organisations participating in the programme's projects is approximately 427. The figure is approximate as data are collected from multiple sources, which may result in double-counting.

Table 1.4.1 presents an overview of the number of project partners represented by each type of actor, as well as the amount of funding they receive and the level of co-funding they contribute.

Table 1.4.1

Type of organisation	Number	Amount (KSEK)	Co-funding (KSEK)
Enterprises	419	77 415	224 611
Universities & university colleges	73	86 557	5 589
Research institutes	61	103 265	929
Foreign legal person	34	0	11 565
Organisations & foundations	21	6 919	11 465
Regional authorities	8	132	2 452
Municipal authorities	1	0	357
Total sum	**617**	**273 287**	**256 986**

In terms of numbers, enterprises are the most common type of actor, accounting for 68% of the total number of project partners. One explanation for this distribution is that the programme has sought to encourage multiple companies, for example within a value chain, to collaborate and achieve common goals, together with research actors.

Research institutes are the largest recipients of funding, accounting for 37%, followed by universities and university colleges (32%) and enterprises (28%).

Because enterprise are needs owners, whose needs research actors are based on, and because enterprises do not have the same maximum level of support as research actors, it is not unexpected that they receive a smaller share of the funding while contributing 87% of the co-funding.

The biggest funding recipients

The five biggest recipients of funding account for about 54% of the total approved funding.

Table 1.5.1

Organisation	Amount (KSEK)	No. of projects
RISE Research Institutes of Sweden	83 310	17
Chalmers University of Technology	31 271	7
SWERIM AB	13 084	2
Linköping University	12 060	5
Luleå University of Technology	8 274	3

Organisations that contributed the most co-funding

The requested key figures are confidential as long as an organisation has not accepted funding. Therefore, this is information to which the programme does not have access.

1.4.4 Geographical distribution of approved funding and co-funding

In addition to the Swedish participants, 29 international project partners are involved, corresponding to 5% of the total number of project partners. Together, they represent 13 different countries. See Table 1.6.1.

Table 1.6.1

Country	Number
Germany	6
Finland	5
Denmark	4
Norway	3
Switzerland	2
Spain	2
Australia	1
Colombia	1
Czech Republic (Czechia)	1
Great Britain	1
Itay	1
The Netherlands	1
Singapore	1
Total	**29**

1.4.5 The programmes' own key indicators in relation to the mission of each respective programme

The *Manufacturing Outlook* report, to be launched in early 2026, aims to disseminate and anchor a shared understanding of the development and challenges of the manufacturing industry. The underlying need for the report emerged during the broad mobilisation work with external stakeholders ahead of the Impact Plan, where clear objectives, hypotheses, and assumptions were developed.

The report highlighted a clear need for the programme to gain a deeper understanding of challenges that emerged. Hence, it is based on analyses of the current state of the manufacturing industry and its development over time, with a focus on indicators that are central to the programme mission. This includes, for example, economic development, employment levels, and greenhouse gas emissions. A large part of the content is based on statistics generated in collaboration with Statistics Sweden (SCB).

The analytical work began in 2025 and will continue to be developed and integrated into the programme's activities during 2026. By collaborating with SCB, the programme has mapped greenhouse gas emissions from the industry and already identified a number of important strategic directions. For example, the analysis indicates that the vast majority of greenhouse gas emissions originate in the industry's value chains and use phases, i.e., in the stages corresponding to Scope 2 and Scope 3. A natural direction for the programme is therefore to further focus on reducing these emissions rather

than emissions from the manufacturing industry's own operations, i.e., Scope 1.

The more inward-looking project portfolio analysis indicates that many projects focus on measures low down in the circular hierarchy (e.g., material recycling). While several projects are assessed as having significant potential to reduce greenhouse gas emissions for a specific enterprise or process, several also risk having a relatively small impact on greenhouse gas emissions from a system perspective. It is, therefore, important that the Programme Office's new insights and knowledge are communicated to funders and, above all, evaluators, so that project applications are increasingly assessed based on their potential to contribute to the mission as a whole. During 2026, the project portfolio analysis will be expanded to also include, for example, analysis of contributions to the five system dimensions.

Through a mature definition of what is meant by the manufacturing industry and a clearer picture of where the majority of greenhouse gas emissions occur, the programme has significantly increased its capacity to develop targeted and appropriate interventions. This is reflected, for example, in more recently initiated projects that are more closely aligned with the programme's mission than earlier projects.

Key questions that the programme will continue to work on during 2026 include:

- Where do most greenhouse gas emissions from the manufacturing industry arise, and how can the programme enable transition in the industry?
- What is required to decouple resource use from economic growth?
- Which measures to reduce greenhouse gas emissions and increase resource efficiency particularly contribute to a more resilient manufacturing industry?

2 How the programmme operates

After an initial year of extensive and critical learning, the second year of the programme has focused internal development of the mission, clearer core processes, and key capabilities for the Programme Office. A foundation is in place for a broader systems approach and a more systematic mobilisation of the industrial ecosystem, which will be of considerable importance for the continued development of accurate mission-related interventions.

2.1 Beginning

When Impact Innovation was launched, the production clusters and several executives from the Strategic Innovation Programmes (SIPs) felt a need to further develop established models and build on experience from successful innovation efforts. This led Teknikföretagen and RISE to form a working group to prepare an application.

The application process was strongly industry-driven through close collaboration with industry representatives. Participants from academia, SIPs, and production clusters, together with Teknikföretagen and RISE, were also active. A selection of industry, academic, and regional actors signed Letters of Intent (LoIs), and SME perspectives were ensured. Based on industry needs, large companies formulated proposals for 'Head Start' initiatives that could be launched quickly and make a powerful contribution to the mission. However, the funding decision specified that funding applied only to the

Programme Office and not to the proposed interventions. This led to some disappointment during 2024, within the programme and among external stakeholders.

The initial focus was on rapidly initiating activities that enabled powerful progress towards mission goals. Through the approved projects, momentum could be combined with learning. The funders emphasised the importance of using proven call for proposals formats to ensure that allocated funds could be utilised in 2024.

Priority areas during the first year were to:

- establish how to work and collaborate
- mobilise a broad group of actors through open calls for proposals
- lay the foundations for work on regulations and policy instruments
- develop knowledge about system demonstrators through multiple calls for proposals

The needs identified in the application have been integrated in various ways into the calls for proposals in 2024–2025, which have been well received.

2.1.1 Initial identification of actors and mobilisation

Needs analysis and environmental scanning were central tools for actor identification and mobilisation in the Programme Office during the initial year. In close collaboration with actors in the system – such as clusters, innovation programmes, industry, and academics – that had participated in the application process, the programme addressed the following questions:

- What will the industry look like when the mission has succeeded?
- What barriers and opportunities do we see to achieving mission goals? Why are we not where we want to be? What are most important aspects that contributes to mission success?
- How can we begin to take the next step towards mission success? What measurements are needed to confirm that we achieved mission success?

This was crucial for identifying goals, hypotheses, and assumptions for the programme. The work was broad and highlighted a number of different areas, which were summarised in an Impact Plan. This was submitted to the funders in February 2025 and has supported the work involved in the theory of change. Three clear challenges and target scenarios have been clarified within resilience, net zero, and resource efficiency.

Working with *Manufacturing Outlook* has enabled us to link the funded projects to national greenhouse gas emissions from the manufacturing

industry (excluding the use phase). *Manufacturing Outlook* provides a basis for developing our goals, hypotheses, and assumptions in the theory of change concerning greenhouse gas emissions. In the same way, we will develop our work to clarify how resilience facilitates competitiveness and net-zero greenhouse gas emissions.

2.2 Our organisation

2.2.1 Our initial organisation and governance in 2024

The initial organisation in 2024 was based on the application and included a small programme management team and a broader Programme Office totaling about 15 people. A number of experts participated in the work of the Programme Office. The programme director was a consultant engaged by Teknikföretagen, and the deputy programme director came from RISE.

A Steering Committee was appointed with representation from industry, RISE, Teknikföretagen, and academia, as described in the application.

The Programme Forum was a limited group of about 15 representatives from across the system who provided support and knowledge related to environmental analysis, needs, calls for proposals, and interventions.

2.2.2 An evolved organisation in 2025

A programme director was employed by Teknikföretagen. The vice programme director continued to come from RISE, although there was also a change of person in this role in autumn 2025.

The organisation further evolved, resulting in a smaller Programme Office with less focus on experts and a greater focus on analysis, strategy, mobilisation, facilitation, and communication. Some staff changes took place, strengthening certain capabilities. A communications manager was employed by Teknikföretagen at the end of 2025. These changes were implemented to develop our role as an impact programme, where we facilitate, mobilise, and engage the system rather than primarily acting as experts.

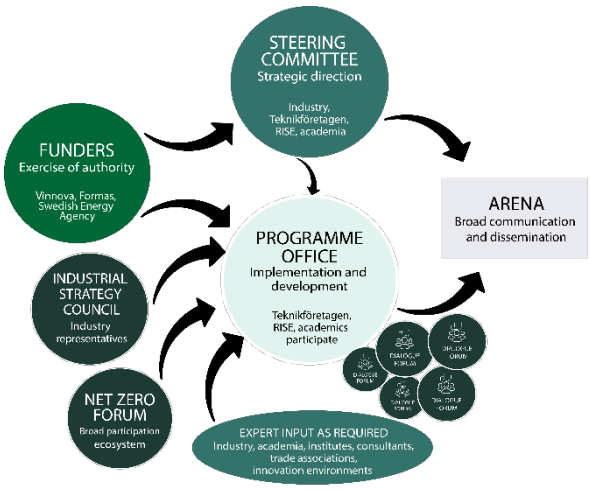


Illustration of the organisation 2025

As of 2025, the organisation consists of the following:

Steering Committee

The Steering Committee consists of one representative from Teknikföretagen, one from RISE, one from academia, and five to eight industry representatives. The position of Chair is held by the CEO of Teknikföretagen.

The Steering Committee's mandate was clarified during 2025, with guidelines from the funders providing direction. It determines the strategic direction, as well as deciding on major changes, the action plan and the needs assessment, which was not previously the case. During 2025, the Steering Committee became increasingly engaged in governance as well as portfolio and programme analysis.

Programme Office

The Programme Office consists of representatives from Teknikföretagen and RISE, with the participation of academics. Its mandate is to drive the programme's work towards mission success. This includes:

- Facilitation, anchoring and mobilisation
- Coordinating the Dialogue Forums, Net Zero Forum and Industrial Strategy Council
- Knowledge dissemination
- Communication
- Portfolio and programme analysis
- Programme governance
- Coordination of the mission strategic areas SME and competence

Expert functions

Expert functions consist of time-limited assignments where the Programme Office brings in expertise as required. For example, this may relate to a targeted area, process support or mobilisation.

Funders

Vinnova is the funder with overall responsibility. The Swedish Energy Agency is responsible for certain initiatives, with Formas supporting the work. The funders support and follow up the programme's work and participate in developing new initiatives. They are responsible for administrative processing from the submission of the action plan to granting projects. They are also responsible for monitoring the approved projects.

Dialogue forums

Dialogue is conducted with existing networks, forums and clusters within the ecosystem to identify critical needs, challenges, gaps and desired results and effects. These dialogue meetings are clearly linked to the objectives, hypotheses and assumptions developed in the Impact Plan and integrated into the theory of change.

We see a strong need for broad dialogue with actors representing all system dimensions. This may involve systematic discussions with different industry groups, networks, clusters and other innovation programmes, but also ad hoc conferences in which we participate and receive input. As an Impact Innovation programme, the need to be flexible and responsive, and to consider the entire ecosystem, is clear. Academics in the Programme Office are responsible for developing a consolidated academic forum to ensure that the programme has a broad, comprehensive understanding of needs and the current situation.

Net Zero Forum

Net Zero Forum is a broader forum with participants from, for example, academics, regions and industry representatives. The focus is on environmental scanning, needs, challenges and desired effects. This group was appointed from the outset but has been strengthened to include the industry, RISE and Teknikföretagen.

Industrial Strategy Council

The Industrial Strategy Council includes industry participation with a focus on environmental scanning, needs, challenges as well as desired effects, results

and direction. It consists of industrial companies, RISE and Teknikföretagen. It is important for the programme to ensure that the Council has the expertise and breadth to meet our challenges.

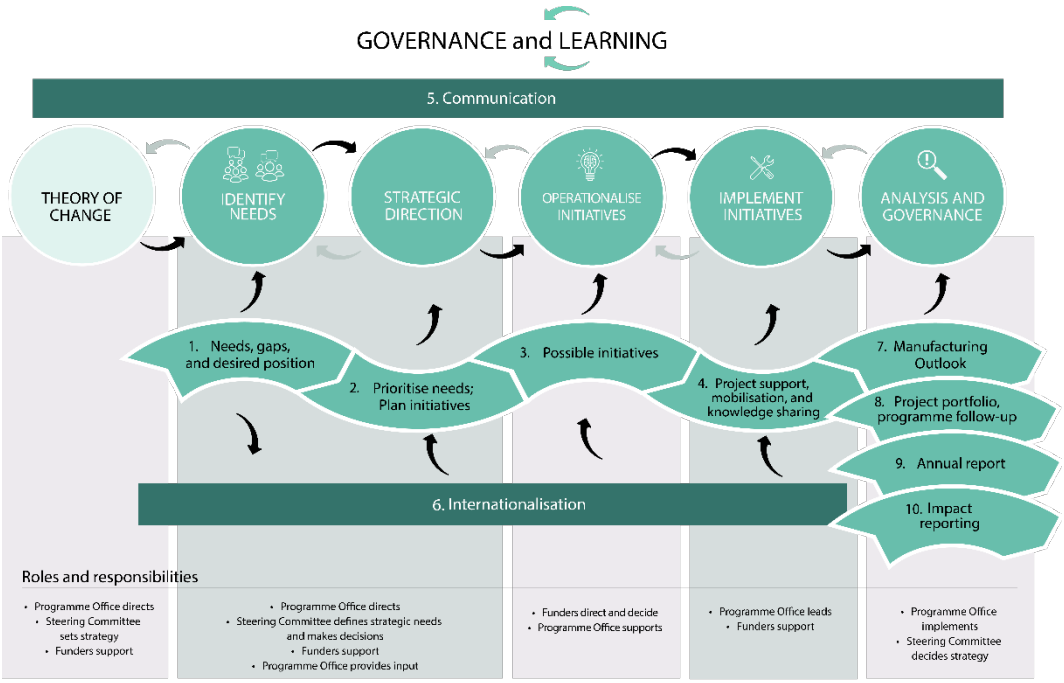
2.2.3 Initial collaboration with the funders

Cooperation with the funders has involved a steep learning curve on both sides. The difficulties that arose and were experienced initially have largely been due to limited knowledge of what needs to be done at system level within the manufacturing industry to achieve mission success, as well as a limited understanding of mission-driven system innovation.

During the programme's second year, 2025, the focus has been on increasing understanding of what it means for a programme to work with system innovation. A learning initiative from the OECD Mission Action Lab has also taken place within Impact Innovation during 2025. The funders have contributed valuable expanded training initiatives and support.

2.3 Our core processes

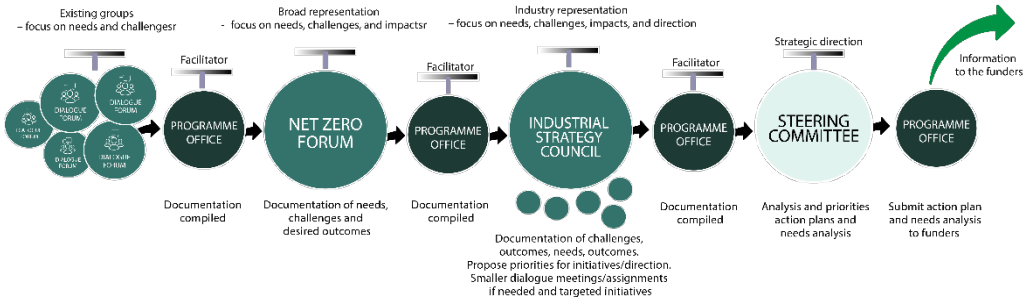
In parallel with the first theory of change, we have developed our mandate, specified the capabilities required to work successfully, and established core processes.



The core process for the Programme Office, see illustration on previous page, was developed in spring 2025 and finalised in autumn 2025. See the description in the following section.

2.3.1 Identify needs

As the programme developed in spring 2025, a need emerged to expand the forums tasked with clarifying needs, challenges and leverage points. Consequently, in autumn 2025, a new structure for this work was decided upon, see illustration below.



The illustration describes how the programme identifies needs, challenges, gaps and desired effects in relation to the mission through the Dialogue Forum, the Net Zero Forum and an Industrial Strategy Council. With the programme's mission in focus, the forums and council contribute to identifying critical needs, challenges, gaps and desired results/effects. Environmental scanning and foresight – predicting what will be important – short-term and long-term is also an important task, as is contributing expertise in areas crucial to the programme.

2.3.2 Strategic direction via the steering committee

Based on *Manufacturing Outlook* as well as programme and portfolio analyses, the Steering Committee holds two annual analysis meetings. Their focus is portfolio analysis of project outcomes and programme analysis, i.e., outcomes and initiatives related to the current situation, and input from forums and councils.

In addition, two annual strategy meetings are held in the Steering Group. They focus on prioritising needs and challenges and defining desired effects. Decisions are made on proposals for the action plan for calls for proposals in the coming year and on the needs assessment. Needs assessment is developed through forums and councils, whereas proposals are facilitated by the Programme Office.

2.3.3 Operationalise initiatives

The funders develop funding instruments after receiving the action plan and needs assessment from the Programme Office. Close dialogue between the Programme Office and the funders ensures innovative, relevant and well-targeted initiatives. The funders are responsible for developing calls for proposals, the application process, and decisions.

Until spring 2025, it was unclear to the Programme Office how needs assessments could be processed, communicated and anchored. Consequently, the work followed the precautionary principle. During 2026, we will establish a more systematic and broader external dialogue to provide input to the needs assessments, and we will increase the transparency of the documentation submitted to the funders.

The funders also have a role in Impact Innovation in developing their own working methods. We began to see some results of this during 2025.

For the Programme Office, it is important to ensure that initiatives and calls for proposals include a clear focus on the mission and the prioritized needs, collaboration and exchange of experience between projects, dissemination of results, and cooperation with the Programme Office.

2.3.4 Implement initiatives

The funders follow up the approved projects in accordance with their decisions. The Programme Office supports the projects in various ways:

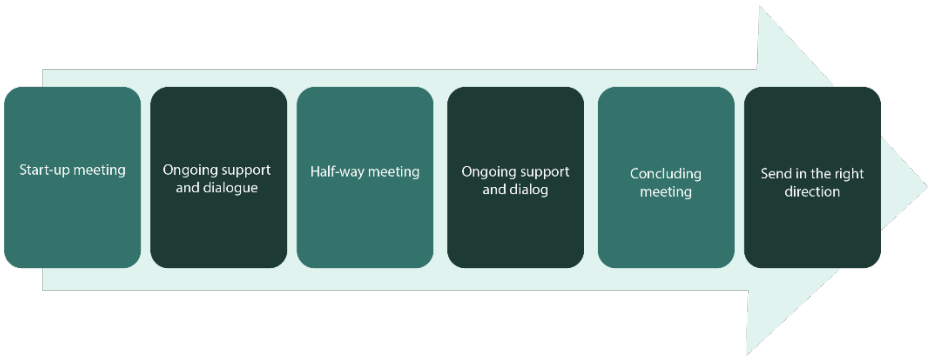
- Collaborating and sharing experiences
- Communicating projects and results
- Inspiration and skills development
- Project visits, general support, and being a sounding board for projects

Support for system innovation and system projects is provided by the Programme Office and the funders. The Programme Office has noted a certain gap here between the funders and the programme. There should be greater focus on projects through collaboration between the Programme Office and the funders rather than parallel processes.

The Programme Office also works with mobilisation and knowledge-enhancing activities such as seminars and workshops, as well as interviews to highlight important issues and themes. The intention is also to conduct roundtable discussions and similar activities to generate insights and develop focus areas. These activities will be further developed and established during 2026.

A process for enhanced project support and system mobilization was developed during 2025 to maximise the impact of the funded projects by enabling them to focus on value creation, maximise project benefits and take the next step in system innovation. The aim is also to offer specific support to SMEs.

In addition to ongoing support, at least three scheduled check-ins take place with the longer projects: at start-up, at the midway point, and on completion. The focus of these is to build relationships, learn, and provide support rather than to report on performance.



Project support process

2.3.5 Analysis and governance

Through the programme's annual *Manufacturing Outlook*, we gain increased knowledge about the status of resilience and where greenhouse gas emissions occur, as well as the main obstacles. In parallel, a traditional portfolio analysis is conducted using statistics on outcomes from approved projects, such as co-funding, target groups, themes, and geography. A more comprehensive programme analysis is also conducted every six months prior to action planning to ensure that all programme initiatives precisely target our challenges. The programme is to accelerate a shift from current states to target states and therefore needs to understand the leverage points that contribute most effectively.

Other follow-up activities take place continuously in accordance with the funders' guidelines and reporting requirements. An annual report is to be released during 2026 for a broader external audience; it will describe the desired transition and providing inspiring examples of results and outcomes.

2.3.6 Communication

Net Zero Industry, like the other Impact Innovation programmes, has a special role in bringing together and directing actors towards common goals

for system transition. By strategically mobilizing these actors, Net Zero Industry functions as a tool to steer the direction of the innovation system towards the mission's objectives.

Communication is a strategic tool for achieving the programme's mission. It should not only inform but also mobilise actors, create a shared understanding of the challenges, and strengthen the industry's ability to act together.

Net Zero Industry should be perceived as a credible and unifying force for industrial system transition. The programme should serve as a platform where companies, academics and societal actors meet to develop solutions that make net zero and competitiveness possible at the same time.

During 2025, the programme therefore developed a brand platform and a communication strategy that clarifies our offering, target groups, and priority messages. An updated visual identity will be launched in 2026 to create a more coherent and distinct presence.

Going forward, the emphasis will be on external communication that highlights results, lessons learned, and tangible effects of the programme. By sharing knowledge, inspiring more actors and spreading good examples, we aim to accelerate the transition of the Swedish manufacturing industry.

2.3.7 Internationalisation

Work on internationalisation has been ongoing from the start, engaging a group of representatives from the ecosystem. However, internationalisation is a natural part of the manufacturing industry, which operates in a global market. Therefore, in 2025, a strategic decision was taken not to develop a separate strategy for internationalisation, but instead to integrate it into the core process, from needs to initiatives and analysis.

Several concrete activities have been carried out, for example EU Info Days in 2025 and 2026. A closer cooperation with the Brussels representation through Teknikföretagen and RISE has been initiated. A decision has been taken to support SMART Eureka during 2024 – 2028. As we have been offered the opportunity to determine requirements, only projects working towards our mission may receive funding. The SMART Eureka Cluster is a well-functioning international funding instrument to support SMEs in advanced manufacturing in working internationally with market-oriented solutions.

The strategy going forward is that internationalisation should enable:

- Increased pace in the transition towards our mission by mapping, learning from, and collaborating with international actors.

- Accelerate and highlight Sweden's green industrial transition in international contexts.
- Development of examples of how we strengthen our international competitiveness through system innovation aligned with our mission.

2.3.8 Gender equality

In several respects, gender equality is crucial for the programme to successfully achieve its mission. For example, the industry's ability to make the transition depends on access to the necessary skills and critical capabilities. During autumn 2025, the Programme Office developed a gender equality plan, with a strong focus on balanced gender representation. The programme has performed well internally in this regard during 2024, 2025 and 2026. It is important to ensure balanced gender representation in external forums and councils during 2026 as well.

Within the framework of the funders' efforts to fund initiatives, there is a clear focus on integrating gender equality. The Programme Office's programme and portfolio analysis has had a clear responsibility for gender equality since 2025. Going forward, a priority is to highlight diversity in projects and representatives, reach different target groups, and spread good examples of gender equality and equity projects through our own channels.

3 Looking to the future

Net Zero Industry addresses change and transition in complex ecosystems within an industry that is absolutely critical to Sweden. It is, therefore, a unique programme. The first year focused on getting the programme up and running; the second year involved a strong internal focus and learning; and now, in the third year, we look forward to taking greater external steps through new collaborations and crucial projects that contribute to bolder progress towards mission success.

3.1 The mission in focus

We take pride in our mission of ensuring a competitive and resilient manufacturing industry with net-zero greenhouse gas emissions by 2040. At the same time, we see a need to further develop our environmental scanning to navigate the mission through a rapidly changing external environment.

In the geopolitically unstable period following the programme launch, focus on green transition has diminished in favour of resilience. Within the programme, however, we feel confident that the mission is the right one, and that effective work to reduce the global climate threat in a decisive manner strengthens competitiveness and resilience.

The need to clearly articulate the mission to the industrial ecosystem is quite apparent. What do net zero and resilience actually mean? We also need to listen to how the industry describes how the work carried out in our funded projects contribute to competitiveness from a broader perspective. Where are the leverage points to accelerate the green transition? We look forward to this crucial task of articulating our narrative, giving it greater external visibility, and highlighting good examples during 2026.

3.2 Highlighting the importance of research and innovation programmes

Long-term collaborations built through research and innovation programmes provide the ecosystem with a broad range of actors who have a shared and mutual understanding of challenges and priorities, enabling faster progress towards a common mission. Joint programmes in which the state contributes by sharing risk facilitate adaptation, reprioritisation, and bold steps as we navigate a rapidly changing world. When these collaborations are designed as strategic public-private partnerships, the ability to coordinate investments, knowledge, and action towards common goals is also strengthened.

Investments in research and innovation are a crucial foundation for strengthening the manufacturing industry's capacity to transition and be competitive.

Net Zero Industry is one of the few innovation programmes in Sweden aimed at industrial transition and competitiveness, and the manufacturing industry is crucial for Swedish growth and welfare. The strong engagement from industry and other ecosystem actors since its inception is essential to mission success and a clear indication of its relevance. This joint commitment illustrates the strength of the model where public and private actors together drive systemic change.

During 2026, we will place significantly greater focus on results and impacts. What change does the programme create? What is our significance for the industry? What constitutes a successful project, and why? What effects do we see from our funded projects?

3.3 Enhanced understanding of our challenges

The programme has initiated a large number of projects and mobilised many actors. The next step is to focus on even more mission-aligned projects, mobilise additional actors, and integrate project results into the system.

By “precision” we mean projects that clearly and precisely address the challenges we see as critical to mission success. A key step for the programme in 2026 is to further develop a continuous process for learning and reflection by linking *Manufacturing Outlook*, portfolio analysis, and new calls for proposals to understand where we can make the greatest difference in relation to our mission. By systematically mapping greenhouse gas emissions and resilience in the manufacturing industry, we should be able to identify critical leverage points and interventions.

In this context, the Net Zero Forum, the Industrial Strategy Council, and the steering committee have important roles in environmental scanning, understanding where we can make the greatest impact, and fostering new thinking. We will also initiate dialogues with Advanced Digitalisation and Swedish Metals & Minerals to create synergies between our programmes.

Communication and anchoring of the challenges will be important areas of work during 2026. Ultimately, this is about funding projects that make a difference, but also about ensuring that other programme activities – such as webinars, communication, mobilization, and newsletters – are directed towards the target groups that are most relevant for us.

3.4 Expanded dialogue and collaboration

An important lesson learned is that, as an Impact Innovation programme, we need to collaborate in new ways and bring together far more components than has traditionally been the case in R&D projects and strategic innovation programmes. The work carried out during 2025 to develop new forums and councils, as well as clear core processes, is crucial to enable more successful work during 2026.

A number of adjacent initiatives and programmes also exist with potential for closer collaboration. Several relevant strategic innovation programmes are approaching their conclusion, and after 12 years of work many important lessons and results should be carefully carried forward into our continued efforts.

With related Impact Innovation programmes, such as Swedish Metals & Minerals, we have already collaborated in various ways, including joint calls for proposals, and we look forward to continued joint initiatives and shared learning.

We also see development potential in collaboration with other research and innovation programmes. For example, we will collaborate with Advanced Digitalisation during 2026 to explore opportunities for a joint initiative in 2027.

3.5 Innovative interventions and the role of the programme

The Impact Innovation programmes are expected, in close collaboration with the funders, to develop precision interventions that ensure maximum impact and meaningful progress towards the mission. During the programme's first two years, a large number of interventions have been launched. However, these have largely been of a more traditional nature, and there is a clear desire, internally within the programme and externally, to develop a more innovative portfolio of interventions.

We look forward to further developing the mission-driven approach to enable a system transition in a context of global competition. This involves identifying call for proposals formats that allow for rapid scaling of effective interventions. It also involves finding ways to address issues at different system levels and with different system dimensions in focus. Another important part of the work is to connect competencies and experiences across different parts of the ecosystem and the country to enable a national perspective on system transition and thereby more effective action.

We hope our upcoming broad calls for proposals will provide long-term predictability for actors in the innovation system. We endeavour to offer a recurring, clear, and broad proposition linked to our mission. This can then be complemented by more targeted calls for proposals to steer applications towards blind spots where competencies need strengthening. We believe and hope that this will create favourable conditions for companies and researchers to form long-term, broad, and bold project consortia that work throughout the duration of the programme to achieve decisive results.

The Programme Office is an innovation cluster. This means that it is an economic entity with 50% public funding and 50% financing from Teknikföretagen and RISE. During 2025, we clarified our innovation role in relation to the programme, for example regarding support to projects and coordination of training. This work will be further developed and scaled up during 2026. New ways of working to support SMEs will also be a key focus in 2026.

3.6 Mission-oriented methodology

Ahead of 2026, we have a solid foundation for working in a mission-oriented manner.

We have initiated work to understand what the different system dimensions mean for our challenges related to resilience, resource efficiency, net zero,

and competitiveness. This work will continue during 2026 and will become more visible in our communication. Development work to analyze the programme's interventions based on these system dimensions will also be initiated.

It is clear that our interventions need to be consistently close to the industry, and that there are high expectations from the industry towards the programme. Research and innovation need to be translated into real-world outcomes, which requires speed and bold action. We believe it is important to move towards the industrialisation of solutions, as well as to generate new knowledge where gaps exist, and to more clearly highlight when regulations and policy instruments become barriers.

Individual interventions are not sufficient for the transition required. We must connect the parts into a larger whole whose complexity increase. Therefore, we need to engage actors more broadly, collaborate more closely, and do so at a faster pace.

3.7 Collaborating with the funders

A gap was experienced between the programme and the support from the funders after the programme received the go-ahead and was launched. During the application phase there was strong support from the funders, which decreased significantly during the first year – a time when support was most needed. At a time when many countries are investing in transformative innovation policy and developing approaches for mission-driven system transitions, the interaction between the program and funders becomes particularly crucial.

At case officer level, the relationship has evolved from a degree of frustration to close, smooth collaboration. We hope that this mutual learning will continue in the coming years.

The funders, with Vinnova in a leading role, developed acceleration and system support for the programmes during 2025. Parts of this have been highly valuable and have contributed to the development of the programme and us as staff. However, we have also experienced that some of the methods and approached to work designed by the funders for Impact Innovation programmes have not been entirely easy to transfer to an industry-driven programme. As a result, we have undertaken our own internal development journey to understand how the systems approach can best be applied in an industry-driven program focused on the challenges of the manufacturing industry. This type of mutual method development is in line with international practice, where both program offices and funders

need to develop their ways of working in line with the complexity of the assignment.

We hope for closer collaboration with the various support functions of the funders within Impact Innovation to increase shared learning during 2026. We believe the focus should increasingly be based on the needs identified by the programmes internally and externally in relation to target groups and mission. Rather than applying common methods that must be adapted to the programme, we look forward to discussing needs and support collaboratively so that both Impact Innovation and the programme can make joint strategic moves.

We also wish to see a similar shift in communication. After two years, we see that the programme needs to further develop its narrative, and that the Impact Innovation umbrella can support us, and vice versa. There is clear development potential in strengthening each other, but this requires more joint discussions about how and why. This is crucial for developing competitive national approaches to mission-driven system transformation.

3.8 Concluding remarks

Overall, the first two years have been challenging but highly instructive. We are truly looking forward to 2026. The Programme Office is characterized by strong engagement and enthusiasm.

We also look forward to developing shared narratives with the entire innovation system around opportunities and obstacles on the journey towards our mission. An important component will be a deeper strategic dialogue with industry on priorities, needs, and desired impacts.

We also hope to collaborate closely with the funders to better understand and further develop the potential of innovation clusters. Ideally, we can learn from other leading countries and be an inspiration for the rest of Europe in mission-oriented work.