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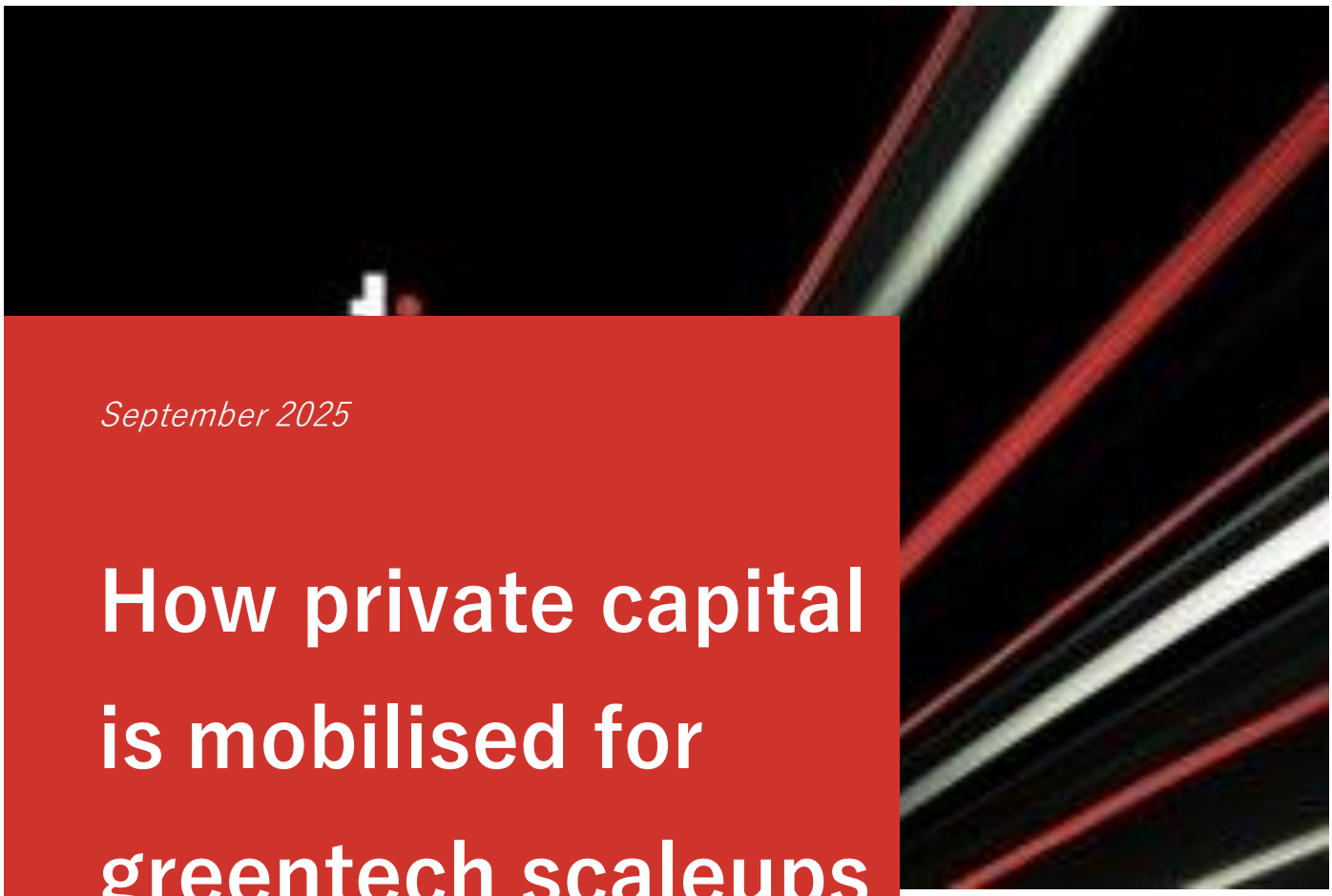

September 2025

How private capital is mobilised for greentech scaleups

Appendix - Country studies from Estonia, Denmark, France, the Netherlands, United Kingdom and Canada

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1.1 Context and ecosystem overview

The Danish financing ecosystem for greentech and high-growth SMEs consists of both public and private stakeholders, including:

- The national promotional bank, the **Export and Investment Fund of Denmark (EIFO)**, which is a government-backed financial institution that provides funding and support to Danish companies looking to expand internationally or invest in high-growth opportunities. Its aim is to foster Danish exports, increase foreign investments, and strengthen the country's global competitiveness. EIFO lies under the **Ministry of Industry, Business & Financial Affairs**.
- The **Danish Innovation Fund** supports the development of innovative projects and technologies by providing funding to businesses, researchers, and public-private partnerships. Its goal is to drive sustainable growth and job creation by fostering groundbreaking research and innovation across various sectors. The Fund lies under the **Ministry of Education and Research**.
- Another public stakeholder involved include the **Ministry of Climate, Energy, and Utilities**, which plays a central role in shaping climate policy, ensuring that green technologies align with Denmark's national climate goals and the European Green Deal. Others involved include the **Danish Energy Agency** which manages Denmark's energy policies, focusing on renewable energy sources, energy efficiency, and the transition to a low-carbon economy, the **Danish Business Authority**, which create the best framework to run responsible business and create development and growth in Denmark.
- Among key private stakeholders are **Danish Industry**, a major umbrella organisation representing Danish companies, including greentech firms. Other key stakeholders include private Investment firms and venture capitalists such as **Nordic Capital** and institutional investors such as **Danica Pension** and **ATP (Danish Labour Market Supplementary Pension Fund)**, which provides capital for green investments, including in renewable energy projects and sustainable infrastructure.

Denmark has several greentech related strategies. Some of these include:

- **The Danish Climate Action Plan**: Focus on, among other things, Power-to-X (PtX), Carbon Capture Utilisation and Storage (CCUS), energy efficiency measures, transition to market driven build out of onshore wind and solar and new funds for onshore wind, biogas and solar energy.[1]

[1] Invest in Denmark (n.d), Danish Climate Action Plan, https://investindk.com/publications/climate-action-plan

- **Green solutions of the future - Strategy for investments in green research, technology, and innovation**: The strategy points out four missions that focus on challenges where the need for new solutions and the potential for meeting the green objectives are the largest in Denmark as well as on a global scale. The missions are to be accomplished by green partnerships in which knowledge institutions, businesses, public authorities, and private players join forces in a strategic research and innovation effort over several years. The goal is to enable greenhouse gas reductions and strengthen the green frontrunner position of Danish industries to the benefit of exports and green jobs in Denmark. The four missions are: 1. Carbon capture and storage or utilisation, 2. Green fuels for transportation and industry (Power-to-X etc.), 3. Climate and environment-friendly agriculture and food production and 4. Recycling and reduction of plastic waste. [2]
- **The Business Development Denmark strategy**, focusing on supporting the improvement of sustainability performance of SMEs such as adapting and becoming more resource-efficient, strengthening the companies' robustness against supply uncertainties and ensuring that SMEs have access to the right skills to handle upcoming ESG requirements and sustainability reporting – either through upskilling or recruitment.[3]

1.1.1 Funding landscape Denmark

A 2022 Nordic Innovation report mapped the 1,000 most **promising Nordic scaleups**, categorising them into Unicorns (valued at €1B+), Future Unicorns (€250M–1B, founded after 1990, non-exited, and funded within five years), and Rising Stars (successful startups in their growth phase). Of these, 184 were Danish: **157 Rising Stars**, **19 Future Unicorns**, and **8 Unicorns**. Together, the top 50 Danish scaleups reached a combined value of €54 billion in 2022. The eight unicorns include Genmab, Ascendis Pharma, Pleo, Bavarian Nordic, Lunar, Trustpilot, Saxo Bank, and Zealand Pharma. Pharmaceuticals dominate, reflecting Denmark's industrial strengths. Among the top 50 scaleups, sectoral distribution includes seven healthcare companies, six in energy, and five in fintech. [4]

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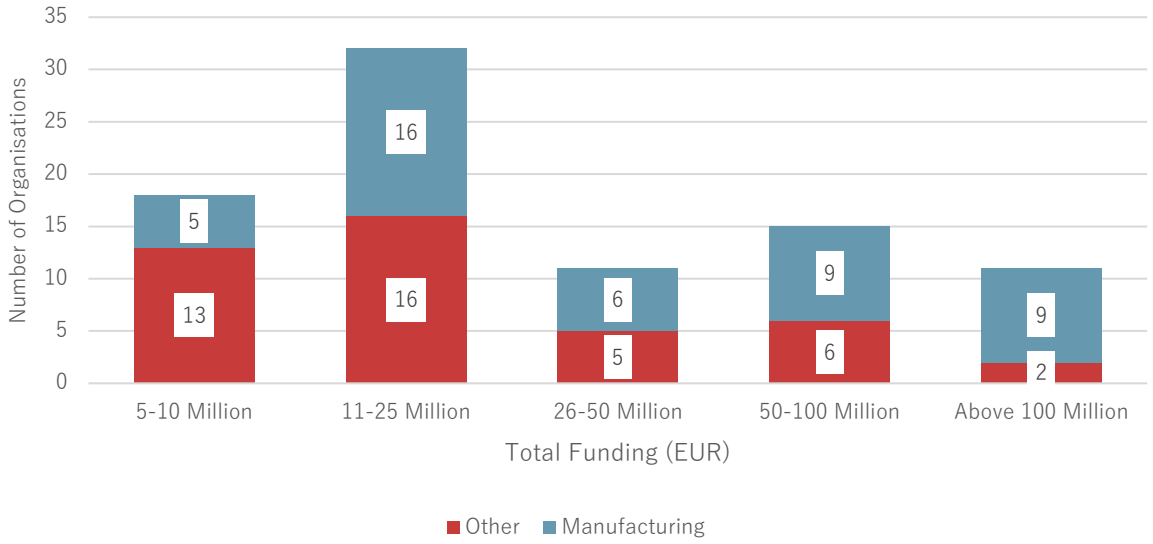
[2] Ministry of Higher Education and Science (2020), Green solutions of the future - Strategy for investments in green research, technology, and innovation, https://ufm.dk/en/publications/2020/green-solutions-of-the-future-strategy-for-investments-in-green-research-technology-and-innovation-1

[3] Ministry of Industry, Business and Financial Affairs (2024), Ny strategi skal styrke væksten i hele landet, https://www.em.dk/aktuelt/nyheder/2024/maj/ny-strategi-skal-styrke-vaeksten-i-hele-landet-

[4] Nordic Innovation (2022), Nordic Scaleup Landscape 2022, https://norden.diva-portal.org/smash/get/diva2:1727742/FULLTEXT01.pdf

The funding landscape for Danish scaleups shows a strong manufacturing presence. Figure 1 illustrates that manufacturing organisations dominate in all funding brackets above €11 million, with the largest group being 32 organisations in the €11–25 million range (half of them manufacturing). At the top end, nine out of 11 organisations raising over €100 million belong to manufacturing, while other sectors dominate only in the €5–10 million bracket ranges.

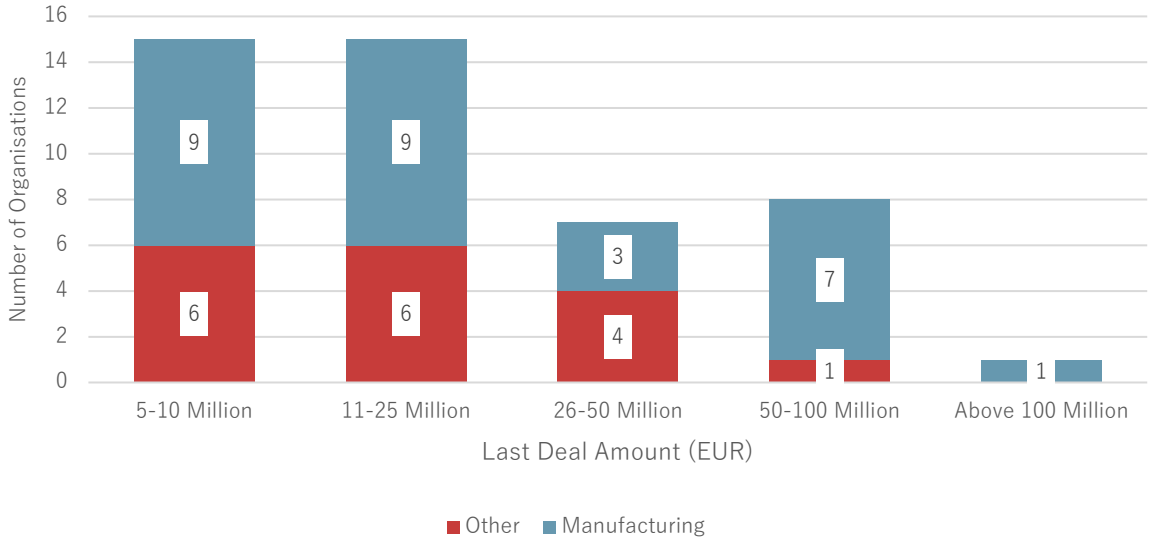
Figure 1 Total funding by organisation: manufacturing vs others



Source: Net Zero Insight database

Figure 2 displays the number of organisations by last deal amount, divided between manufacturing and other sectors. Most deals are concentrated in the lower categories, specifically the €5–10 million and €11–25 million ranges, each comprising 17 organisations. Manufacturing accounts for the majority in both categories, with nine out of 17 organisations. High-value deals are uncommon, with only one deal exceeding €100 million, which is in manufacturing. In the second-highest category, manufacturing companies also represent a notably large proportion, with seven out of eight organisations.

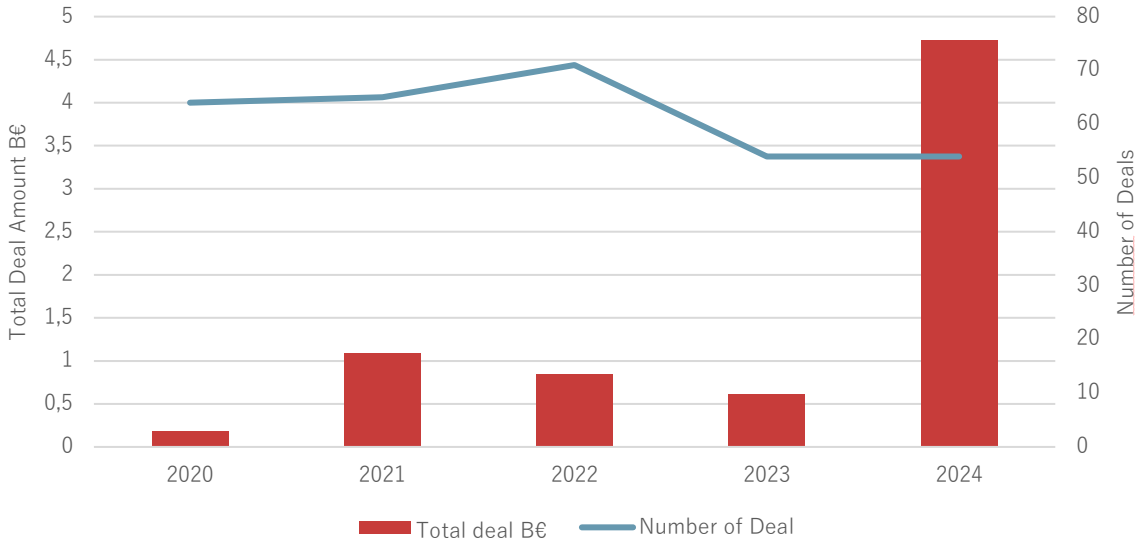
Figure 2 Number of organisations by last deal amount, split between manufacturing and other sectors



Source: Net Zero Insight database

Trends over time are shown in Figure 3. While the number of deals rose from 64 in 2020 to 71 in 2022, it dropped to 54 in 2023. Despite this decline, total deal values peaked in 2024 at about €4.7 billion, the highest recorded. This suggests fewer but larger deals, signalling a shift away from the previously cooling investment climate.

Figure 3 Total deal amount and number of deals by year

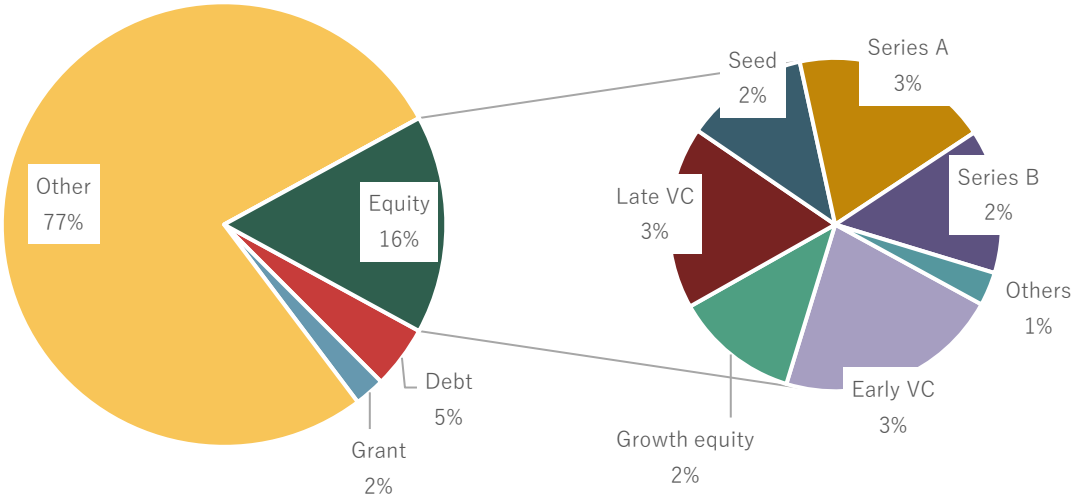


Source: Net Zero Insight database

Funding instruments are diverse, but equity dominates the landscape. Figure 4 shows the distribution of equity funding by total deal amount and deal type. "Other" makes up the largest share

of total funding at 77 percent, followed by equity at 16 percent, debt at five percent and grants at two percent. Within the 16 percent attributed to equity, the categories are relatively evenly distributed, with Series A, Late VC, and Early VC each accounting for the largest individual shares at three percent each.

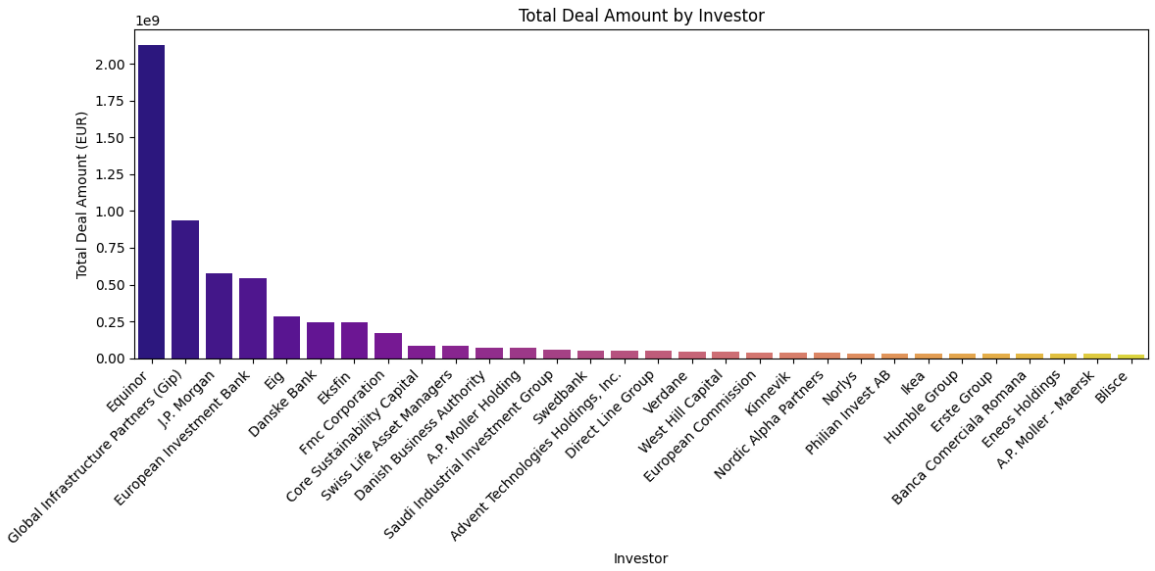
Figure 4 Equity funding: Total deal amount by deal type



Source: Net Zero Insight database

Investor activity is highly concentrated. Figure 5 displays the main investors ranked by total deal amount, with larger bars indicating higher investment volumes. Equinor stands out as the largest investor by a significant margin, followed by global infrastructure partners, J.P. Morgan and the European Investment Bank.

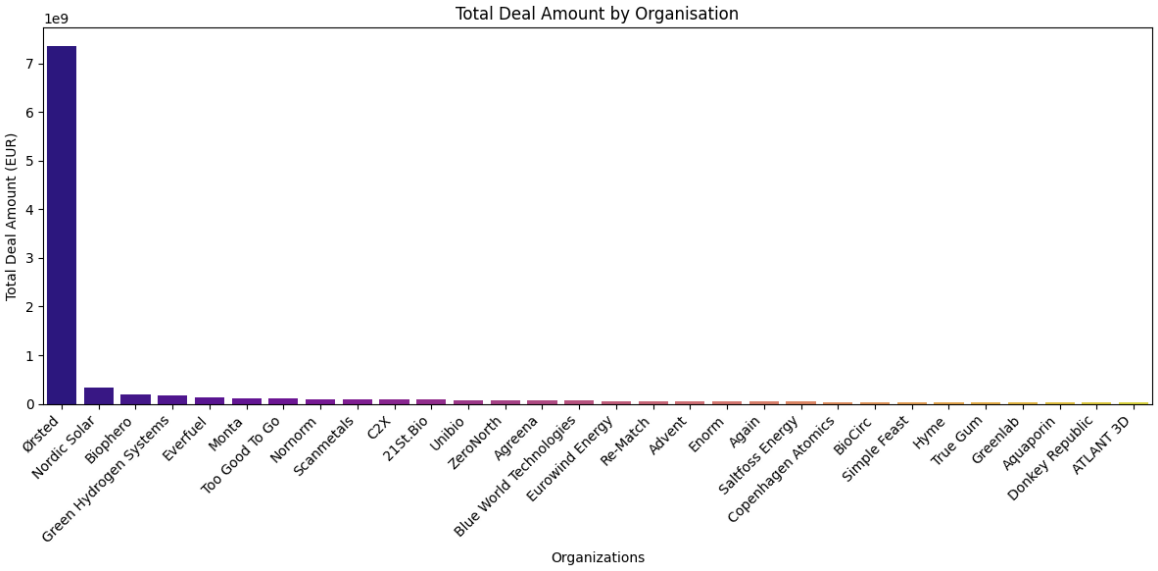
Figure 5 Total deal amount by investor



Source: Net Zero Insight database

Figure 6 presents total deal amounts (in EUR) by organisation, highlighting Ørsted as the dominant player in the funding landscape. Ørsted leads followed by Nordic Solar, Biophero and Green Hydrogen Systems, which each received significantly lower deal amounts. As illustrated in the figure, the significantly higher deal amount secured by Ørsted indicates a highly concentrated distribution of funding among organisations.

Figure 6 Total deal amount by organisation



Source: Net Zero Insight database

1.2 Green financial instruments

1.2.1 Methodology

The analysis was conducted in two phases. First, a desk-based mapping of publicly available sources identified 11 relevant financial instruments. Of these, six were implemented by the state-owned Export and Investment Fund of Denmark (EIFO), with others managed by the Danish Innovation Fund, the Danish Energy Agency, and the Ministry of Environment.

In the second phase, instruments were assessed in greater depth for their scale, relevance, and potential impact. Smaller schemes, such as the Innovation Fund's Innobooster, were excluded. One instrument—the Green Investment Support Scheme—was selected for detailed analysis.

For this instrument, the review drew on multiple sources, including programme documentation, implementation agreements, regulatory texts, and recent media coverage, to ensure accuracy and timeliness. In addition, two expert interviews were conducted: one with a representative from Cleantech Scandinavia, providing insights into broader ecosystem trends and actors, and another with EIFO, focusing specifically on the Green Investment Support Scheme.

1.2.2 Green Investment Support Scheme (Investeringsordningen til Grøn Industriproduktion)

1.2.2.1 Instrument characteristics

The Green Investment Support Scheme provides direct grants to companies for eligible projects in green industrial infrastructure and technologies. Its purpose is to accelerate Denmark's green transition by supporting large-scale manufacturing in priority sectors such as offshore wind and Power-to-X. [5] Grants are awarded on a project basis, covering between 6 and 657 million DKK (≈ €0.8–88 million) per company, but limited to a maximum of 15 percent of total eligible project costs. This ensures that private capital remains the dominant source of financing and positions the scheme as a co-investment mechanism rather than a stand-alone subsidy. [6]

The programme is funded through the national budget and administered by EIFO. It was piloted in 2024 and continues in 2025 with an allocation of 657 million DKK, as outlined in the Finance Act. While originally designed to include subsidised loans and guarantees, these instruments received no applications. Consequently, the scheme now focuses exclusively on grants. Non-financial

[5] EIFO (2025), Investeringsordningen til Grøn Industriproduktion, https://eifo.dk/media/zyve3rlk/r29247_eifo_ansoegningsvejledning_groen-investering_dk_final-2.pdf

[6] Ibid.

support is not provided directly but grant funding can cover consultancy costs related to facility construction.[7] [8]

A key feature of the scheme is its ability to crowd in private investment. Applicants must demonstrate the counterfactual scenario (e.g., relocation outside the EU/EEA or cancellation of investment) to underline the necessity of public support. In 2024, supported projects mobilised over 4.2 billion DKK (≈ €560 million) in total investment, of which 634 million DKK (≈ €85 million) came from the scheme. This highlights its strong leverage effect in mobilising large-scale private and industrial capital. [9]

1.2.2.2 Beneficiaries

Sectoral scope

The scheme has a narrow sectoral focus on industrial scale greentech manufacturing. Eligible areas include wind turbine production and components, Power-to-X technologies such as electrolysers, and the extraction or production of related critical raw materials. Coverage extends to a broad range of components (see Table 1) but is **restricted to the establishment or expansion of production facilities in Denmark**. It does not support renewable energy deployment projects (e.g., wind farms) or service/software activities, reflecting its focus on strengthening domestic industrial capacity and supply chains. [10]

Target companies

The instrument primarily targets scale-ups and established firms undertaking major industrial expansions. While designed to facilitate the growth of innovative scale-ups, larger companies such as Siemens also received support in the first funding round, underscoring its openness to players with significant industrial capacity. The emphasis is on firms beyond the start-up phase that can commit substantial private co-financing and deliver projects at commercial scale. [11]

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[7] EIFO (n.d), Investeringsordningen til Grøn Industriproduktion, https://eifo.dk/loesninger/saerordning-investeringsordningen-til-groen-industriproduktion/

[8] Interview EIFO

[9] Ministry of Industry, Business and Financial Affairs (2024), Udmøntning af grøn investeringsordning, https://www.em.dk/Media/638524065246445931/Faktaark%20-%20Gr%C3%B8n%20investeringsst%C3%B8tteordning.pdf

[10] EIFO (2025), Investeringsordningen til Grøn Industriproduktion, https://eifo.dk/media/zyve3rlk/r29247_eifo_ansoegningsvejledning_groen-investering_dk_final-2.pdf

[11] Interview EIFO

The scheme is therefore aligned with the industrialisation and commercial deployment phases of innovation. It supports projects that move technologies from demonstration into full-scale production, focusing on tangible infrastructure and manufacturing rather than R&D or early-stage pilots. In doing so, it reinforces Denmark's ambition to build resilient green-tech supply chains, scale domestic production, and strengthen energy independence. [12]

More specifically the scheme covers certain components in its target areas, see Table 1:

Table 1 Components covered by the Green Investment Support Scheme

Target area	Components
Electrolysers	Anodes, ATEX Components, Battery, Bipolar Plates, Cathodes, Catalysts, Compressors, Circulation Pumps, Components Related to Balance of Plant, Containers, Converters, Cooling System Deionizers, Diaphragms, Dryers, Electric Switchboards, Electrolytes, Electrolysers, Electronic Control Software, Electronic Control Unit, Fuel Cell Stack and Its Components, Gas Detection System, Gas Diffusion Layers, Gas Dryers, Gas Filter System, Heat Exchangers, High and Low Pressure Gas Cylinders, Hydrogen Cooling, Hydrogen Purification, Manual On/Off Valves, Membrane Electrode Assembly, Membranes, Operating and Emergency Ventilation, Power Electronics, Pressure Regulators, Radiators and Evaporators, Separators, Solenoid Valves, Stainless Steel Connectors and Fittings, Stainless Steel Piping, Tank, Temperature Regulators, Tools and Sensors, Transformers, Water Purification Systems, Wafers.
Wind turbines	Anemometer, Battery, Bat Sensor, Bearings, Blade, Blade Cup, Brake, Busbars, Cables, Circuit Breakers, Control Building, Control Cabinet, Control Elements, Cooling System (Air-, Oil-), Coupling Elements, Crane and Elements, Crane Rails, Current Transformers, Electric Motors (including permanent magnets), Electrical Protection, Electronic Controller, Gearboxes, Generator, Hydraulic System, Lightning Protection Devices, Main Axle, Measuring Equipment, Monopiles (and other foundation structures), Electrical Motors, Nacelles, Oscillation Damper, Reactors, Rotor Blades, Rotor Hubs, Rotor Shafts, Sensors, Steel Structure, Steel-Body, Stretch Stamps, Structural Composite for Wind Turbine Blades, Switch Cabinets, Transformers/Converters, UPS (Uninterruptible Power Supply), Voltage Transformers, Wind Direction Sensor, Wind Turbine Towers, Yaw Mechanism
Critical raw materials	Antimony, Arsenic, Bauxite, Barite, Beryllium, Bismuth, Boron, Cobalt, Coking Coal, Copper, Feldspar, Fluorspar, Gallium, Germanium, Hafnium, Helium, Heavy Rare Earth Elements, Light Rare Earth Elements, Lithium, Magnesium, Manganese, Natural Graphite, Nickel – for batteries, Niobium, Phosphate Rock, Phosphorus, Platinum Group Metals, Scandium, Silicon Metal, Strontium, Tantalum, Titanium Metal, Tungsten, Vanadium, Wafers

Source: Executive Order on Green Investment Scheme (BEK nr 395 af 23/04/2025)

[12] Interview EIFO

Eligibility

To qualify for support, companies must incur costs related to establishing or expanding green-tech production facilities in Denmark, specifically in wind turbine manufacturing (including components) or Power-to-X technologies such as electrolysers. Eligible costs include both tangible assets (land, buildings, equipment, machinery) and intangible assets (patents, licences, know-how, intellectual property), as defined in the EU's Temporary Crisis and Transition Framework. [13]

Applicants must comply with EU state-aid rules, which cap total public support at 15 percent of project costs, as well as EIFO's Environmental, Social, and Governance (ESG) standards. Projects must also demonstrate that they could be eligible for support abroad, ensuring that Denmark does not create an uneven competitive advantage through state aid. [14] [15]

Funding agreements carry strict implementation requirements: projects must begin within 12 months and be completed within four years unless exceptional circumstances apply. Beneficiaries are also subject to ex-post obligations, including regular reporting on capital expenditures, production outputs, job creation, and capacity expansion. EIFO retains audit and compliance rights throughout the project cycle. [16]

Although the scheme now operates primarily through grants, supported companies may also access EIFO loans and guarantees on market terms, provided these remain in line with EU state-aid regulations. [17]

1.2.2.3 Intervention logic

The Green Investment Support Scheme is a targeted instrument designed to scale Denmark's green industrial manufacturing base, with a focus on wind turbines and electrolysers. Its overarching objectives are to accelerate the green transition, strengthen supply-chain resilience, and reduce dependence on non-EU sources for critical technologies, while contributing to EU-wide goals of competitiveness and climate neutrality.

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[13] EIFO (2025), Investeringsordningen til Grøn Industriproduktion, https://eifo.dk/media/zyve3rlk/r29247_eifo_ansoegningsvejledning_groen-investering_dk_final-2.pdf

[14] Danish Chamber of Commerce (2025), Nu åbner den grønne investeringsordning igen: Mulighed for at søge om midler til grøn energiproduktion, https://www.danskerhverv.dk/presse-og-nyheder/nyheder/2025/april/nu-abner-den-gronne-investeringsordning-igen-mulighed-for-at-soge-om-midler-til-gron-energiproduktion/

[15] EIFO (n.d), Investeringsordningen til Grøn Industriproduktion, https://eifo.dk/loesninger/saerordning-investeringsordningen-til-groen-industriproduktion/

[16] Executive Order on Green Investment Scheme (BEK nr 395 af 23/04/2025)

[17] EIFO (2025), Investeringsordningen til Grøn Industriproduktion, https://eifo.dk/media/zyve3rlk/r29247_eifo_ansoegningsvejledning_groen-investering_dk_final-2.pdf

The scheme directly addresses structural barriers in green-tech markets, most notably the high upfront capital costs that deter private investment in large industrial projects. By lowering these entry barriers and de-risking investments through grants, it incentivises companies to establish or expand domestic production facilities.

At a strategic level, the scheme also responds to international competition, particularly from the United States and China, by anchoring manufacturing capacity within the EU. This industrial focus supports the creation of high-quality jobs, development of technological capabilities, and long-term strengthening of Europe's clean-tech value chains.

In essence, the intervention logic rests on using public co-investment as a catalyst for private capital mobilisation, ensuring that Denmark can scale green technologies at a pace and scale aligned with both national ambitions and EU policy frameworks.

Table 2 Intervention Logic: Green Investment Support Scheme (Denmark)

Level	Description
Problem	• High upfront capital costs and global competition (notably from the US and China) constrain Denmark's green industrial manufacturing. • Strong reliance on imports for critical technologies and materials creates supply chain vulnerabilities. • Private investment levels are insufficient to meet the pace and scale of Denmark's green transition targets.
Objectives	• Stimulate large-scale investments in green industrial production (wind turbines and Power-to-X technologies). • Position Denmark as a leading hub for greentech manufacturing. • Use public co-financing to crowd in private capital and reduce dependency on external supply chains. • Generate long-term, high-quality jobs and strengthen domestic industrial capacity. • Contribute to national and EU goals for climate neutrality and energy security.
Inputs	• National funding allocation: 657 million DKK for 2025 (≈ €88 million). • Governance and implementation by EIFO. • EU Temporary Crisis and Transition Framework as enabling legal basis. • Selection and evaluation criteria aligned with Danish industrial policy priorities.
Activities	• Competitive calls for applications administered by EIFO. • Strategic evaluation of projects (e.g., investment scale, domestic footprint, ecosystem contribution). • Disbursement of direct grants for eligible production infrastructure. • Ongoing monitoring, reporting, and auditing of funded projects.

	• Indirect support for consultancy costs linked to production facility construction.
Outputs	• Number of firms/projects supported (approx. 5 in 2025). • Total capital disbursed: ~657 million DKK. • Significant private investment leverage (target multiplier ≥6.6x). • New or expanded infrastructure for wind turbine and Power-to-X component manufacturing.
Outcomes (short to medium-term)	• Expanded green manufacturing capacity in Denmark. • Stronger domestic supply chains and procurement from Danish firms. • Creation of ~800 new jobs (based on 2024 results). • Reduced cost and risk of industrial-scale green investments. • Increased retention of projects in Denmark rather than relocation abroad.
Impacts (long-term)	• A more competitive and resilient greentech manufacturing ecosystem. • Greater energy independence and secure supply chains. • Tangible progress toward net-zero emissions and climate goals. • Boosted R&D and innovation in clean industrial production. • Denmark as a key contributor to the EU Green Deal Industrial Plan.

Source: Technopolis Groups interpretation of the publicly available information collected

Alignment with other policies

The Green Investment Support Scheme is tightly aligned with both EU and national policy priorities. At the European level, it contributes directly to the **EU Commission's Green Deal Industrial Plan**, which aims to strengthen Europe's domestic manufacturing of critical green technologies. Nationally, it **supports the Strategy for Investments in Green Research, Technology, and Innovation** (Green Solutions of the Future), with a particular emphasis on Power-to-X technologies. greentech, including PtX, is also one of the four focus areas in Denmark's national strategy for attracting foreign investment, underscoring the scheme's strong link to industrial and innovation objectives. Together, these alignments ensure that the scheme advances broader goals of climate neutrality, industrial competitiveness, and economic resilience.[18] [19]

[18] Ministry of Industry, Business and Financial Affairs (2024), Udmøntning af grøn investeringsordning, https://www.em.dk/Media/638524065246445931/Faktaark%20-%20Gr%C3%B8n%20investeringsst%C3%B8tteordning.pdf

[19] Invest in Denmark (2024), ET STÆRKERE DANMARK - Strategi for tiltrækning af udenlandske investeringer 2024-2027

1.2.2.4 Governance

The scheme is managed and implemented by Denmark's national promotional bank, EIFO, which oversees applications, grant administration, and compliance monitoring. [20] Funding is allocated through the Danish national budget under the Ministry of Industry, Business and Financial Affairs, ensuring consistency with national priorities and targeting support toward sectors critical to Denmark's green industrial future. [21]

Application and selection process

Applications are assessed on a competitive basis. Once the deadline closes, EIFO evaluates and ranks all projects using a structured scoring system. Key criteria include:

- Domestic footprint: employment and turnover in Denmark.
- Investment scale: size of the total eligible investment.
- Support intensity: lower public co-financing shares are favoured.
- Contribution to Denmark's strengths: projected turnover gains, R&D expenditure in Denmark.
- Ecosystem effects: procurement from Danish suppliers.
- Impact of support: expected revenue growth resulting from the investment.
- Long-term commitment: future operational presence in Denmark.

Each criterion is scored up to 10 points, with funding awarded to the highest-ranking projects. While not formally scored, applicants must also explain the counterfactual—what would happen if the project did not receive support, including whether the investment might be cancelled or relocated abroad. This ensures that funding targets projects with the greatest strategic and economic impact.[22]

1.2.2.5 Enablers/Barriers

The scheme is enabled under the EU's *Temporary Crisis and Transition Framework*, which provides the legal basis for such support. Its continuation beyond 2025 depends on whether the

[20] EIFO (n.d), Investeringsordningen til Grøn Industriproduktion, https://eifo.dk/loesninger/saerordning-investeringsordningen-til-groen-industriproduktion/

[21] Danish Chamber of Commerce (2025), Nu åbner den grønne investeringsordning igen: Mulighed for at søge om midler til grøn energiproduktion, https://www.danskerhverv.dk/presse-og-nyheder/nyheder/2025/april/nu-abner-den-gronne-investeringsordning-igen-mulighed-for-at-soge-om-midler-til-gron-energiproduktion/

[22] EIFO (2025), Ansøgningsskema - Investeringsordningen til Grøn Industriproduktion, https://eifo.dk/media/lpbdkmpx/ansoegningsskema-groen-industriproduktion-01052025.pdf

framework is extended at EU level. Without this legal foundation, Denmark would lose the ability to maintain or expand the scheme.[23]

1.2.2.6 Results and impact

In 2024, five projects received a total of 634 million DKK (≈ €85 million) in grants, leveraging more than four billion DKK (≈ €540 million) in private investment and creating an estimated 800 jobs. For 2025, the scheme has a budget of 657 million DKK (≈ €88 million), expected to mobilise a similar volume of green investment.

Success is measured through metrics such as job creation, industrial capacity expansion, R&D activity in Denmark, revenue growth, and the degree to which companies' source from Danish suppliers. Past performance shows a strong leverage effect, with a private-to-public ratio of ~6.6x.

Examples from 2024 include:

- **Siemens Gamesa** with two projects totalling ~538 million DKK (≈ €72 million), expected to create 500 jobs while strengthening offshore wind technology and local supply chains in Esbjerg and Aalborg.
- **Niebuhr Gears** who received 16.3 million DKK (≈ €2.2 million) to expand wind turbine component production, adding 30–40 jobs and deepening supplier networks.
- **Advanced Surface Plating** who received 35.4 million DKK (≈ €4.7 million) to replace imported nickel foam with domestic production, creating 70–80 jobs and supporting Denmark's hydrogen and PtX industries.
- **Njord Assembly Lines:** who received 44.8 million DKK (≈ €6 million) to expand manufacturing capacity, generating around 175 new jobs.

Together, these projects highlight how the scheme fosters industrial expansion, job creation, and Denmark's leadership in greentech manufacturing, while anchoring production and supply chains within the country.[24]

Table 3 Overview of support from the Green Investment Support Scheme

Outcome indicator	Key output
Number of firms supported	Four (five projects)

[23] EIFO interview

[24] Ministry of Industry, Business and Financial Affairs (2024), Udmøntning af grøn investeringsordning, https://www.em.dk/Media/638524065246445931/Faktaark%20-%20Gr%C3%B8n%20investeringsst%C3%B8tteordning.pdf

Capital invested	Total investments of over 4,200 million DKK (≈ €560 million) in 2024, with 634 million DKK (≈ €85 million) in support from the scheme
Average support per company	126,8 million DKK (≈ €17 million)
Leverage ratio (specify if expected or/and actual)	6,6 (expected)

Source: Ministry of Industry, Business and Financial Affairs, Implementation of green investment scheme, 2024

1.3 Synthesis/summary

✅ **The Green Investment Support Scheme shows policy alignment and strategic positioning.** The Green Investment Support Scheme is tightly embedded in Denmark's broader industrial and climate policy framework as well as the EU's Green Deal Industrial Plan. By targeting wind turbines, Power-to-X technologies, and critical raw materials, the scheme aligns national strengths with European strategic priorities. This ensures coherence across policy levels and positions Denmark as a frontrunner in greentech manufacturing.

✅ **The scheme address market failures through co-investment.** The scheme directly tackles the structural barriers of high capital intensity and strong global competition, particularly from the US and China. With public grants capped at 15% of project costs, it maintains fiscal discipline while leveraging private investment. The 2024 results show a strong multiplier effect (6.6x), confirming the scheme's effectiveness in crowding in large-scale industrial capital.

✅ **The instrument target later-stage green scaleup companies.** The instrument focuses narrowly on later-stage companies capable of commercial-scale expansion. This includes both scale-ups and established industrial players (e.g., Siemens Gamesa), reflecting the aim to accelerate industrialisation rather than support early-stage innovation. Only production facilities in Denmark qualify, anchoring supply chains domestically and strengthening national industrial capacity.

✅ **The scheme shows results and measurable impact**. In its first year, the scheme mobilised over 4.2 billion DKK in total investments, supported five large-scale projects, and created an estimated 800 jobs. Beneficiary companies not only expanded capacity but also deepened domestic supplier networks, boosted R&D, and reinforced Denmark's role in the European clean energy transition. These results suggest the scheme is meeting its objectives of catalysing industrial growth while generating tangible economic and social returns.

✅ **There are still gaps and future needs to tackle.** While the scheme is highly effective at scaling industrial production, the Danish greentech pipeline remains thin compared to stronger unicorn creation in sectors like biotech and fintech. This points to a missing link in earlier innovation phases, R&D, demonstration, and market validation, where more targeted instruments could strengthen the

pipeline of firms able to graduate into industrial-scale support. Moreover, the scheme's future depends on the extension of the EU's Temporary Crisis and Transition Framework beyond 2025, which creates regulatory uncertainty.

✅ **The Danish model offers lessons for other EU member states**. A focused, co-financing-based scheme can effectively unlock private capital while advancing strategic national and EU objectives. By combining fiscal discipline with high leverage, Denmark demonstrates how industrial policy can drive greentech manufacturing at scale. However, long-term success will require ensuring continuity of enabling EU frameworks and building a stronger pipeline of early stage greentech firms.

2 Public support instruments for greentech scaleups in Estonia

2.1 Context and ecosystem overview

Estonia does not currently have a dedicated national policy explicitly labelled as a "greentech policy," nor is there an official definition of "greentech" in its national strategic frameworks. However, the term is generally understood to encompass technologies and solutions that contribute to environmental sustainability and have a tangible physical or policy impact. [25]

2.1.1 Key public stakeholders

Several public institutions play important roles in shaping the greentech landscape in Estonia:

- **Ministry of Climate**: Responsible for national climate policies, the Ministry leads efforts on climate change mitigation, the energy transition, and environmental protection. It oversees strategies to reduce greenhouse gas emissions, promote renewable energy, and ensure compliance with EU and international climate commitments.
- **Ministry of Economic Affairs and Communications**: This ministry drives economic development and innovation, including green technologies. It supports the growth of greentech scale-ups by fostering an enabling ecosystem, facilitating access to funding, and opening pathways to international markets.
- **Estonian Business and Innovation Agency (EIS)**: EIS serves as the primary government agency for business development and innovation. It provides grants, funding opportunities, advisory services, and international networking platforms for companies focused on sustainable technologies.
- **Environmental Investment Centre (KIK)**: KIK allocates funding for environmental and greentech initiatives using national and EU resources. Its support covers areas such as renewable energy, waste management, and energy efficiency projects.

2.1.2 Key private stakeholders

- **Estonian Cleantech Association:** A business network representing over 160 members, this association advocates for the interests of greentech companies and promotes collaboration within the sector.
- **Financial Institutions and Development Banks**: Private financial actors, including development banks and venture capital firms, are critical in scaling greentech businesses. For

[25] Interview – Cleantech Estonia

example, LHV Group, a leading Estonian bank, offers tailored financial products to support green innovation and business expansion.

2.1.3 Strategic policy frameworks

While no specific greentech scale-up policy exists, several national strategies include relevant elements, of which the two most important are:

- **Estonian Research and Development, Innovation and Entrepreneurship Strategy 2021–2035 (TAIE).** This strategy highlights priorities such as promoting energy efficiency and renewable energy. It also emphasizes scaling enterprises through higher value-added production and expanded export capacity, thereby supporting greentech scale-ups indirectly. [26]
- **Estonia 2035**: The long-term vision for national development promotes environmentally sustainable entrepreneurship and climate-neutral energy solutions, including offshore wind and other renewables. It also calls for strengthening the startup ecosystem to facilitate the scaling of innovative enterprises. [27]

2.1.4 Startups, scale-ups, and investment trends

Estonia is a leading innovation hub in Europe. In 2023, it recorded the highest number of funded startups per capita in Europe—over 400 per million inhabitants. The country also leads in unicorns, with approximately 4.5 unicorns per million people (or up to 7.7, according to Invest Estonia[28]), many of which are progressing into scale-ups.

Several Estonian companies were featured in the Leading European Tech Scaleups (LETS) 2024 list, including: Bolt (electric vehicles and scooters), Skeleton Technologies (ultracapacitor-based energy storage), Veriff, Bondora, Tuum, Adcash, Choise.ai, Swappie. [29] Specifically Bolt and Skeleton Technologies are notable for their contributions to green technology.

Private investment in Estonia's greentech sector has surged, growing from €16 million in 2017 to €258 million in 2024. Clean energy tech dominates the ecosystem, comprising 34% of all greentech

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[26] Estonian Research and Development, Innovation and Entrepreneurship Strategy 2021 - 2035, https://www.hm.ee/sites/default/files/documents/2022-10/taie_arengukava_kinnitatud_15.07.2021_211109a_en_final.pdf

[27] Estonia 2035

[28] Invest in Estonia (2023), Estonia is the startup and unicorn haven of Europe, https://investinestonia.com/estonia-is-the-startup-and-unicorn-haven-of-europe/

[29] France Digitale (2024), LETS 2024, mapping 251 leading European technology companies that are achieving global success, https://francedigitale.org/publications/lets-2024

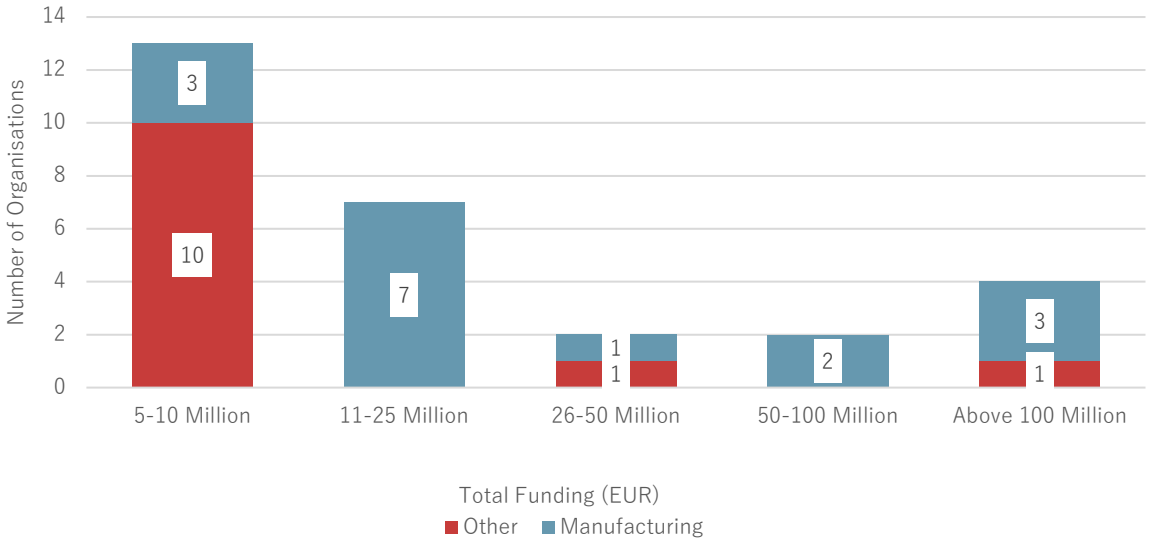
activity and attracting 57% of total greentech investment in 2024. Other prominent sectors include:[30]

- Resources and Environment (21% of the ecosystem),
- Materials and Chemicals (14%).

2.1.5 Greentech funding landscape

Figure 7 shows the number of organisations by total funding range, split between manufacturing and other sectors. Manufacturing dominates all ranges above €11 million, while other sectors lead only in the €5–10 million range—the largest group, with 13 organisations (10 other, 3 manufacturing). The second-largest group is €11–25 million, with 7 organisations, all Manufacturing. Funding above €25 million is rare, with large-scale investments concentrated mainly in manufacturing. Overall, most organisations operate in lower funding ranges, with only a few reaching large-scale investment levels.

Figure 7 Total funding by organisation: manufacturing vs others



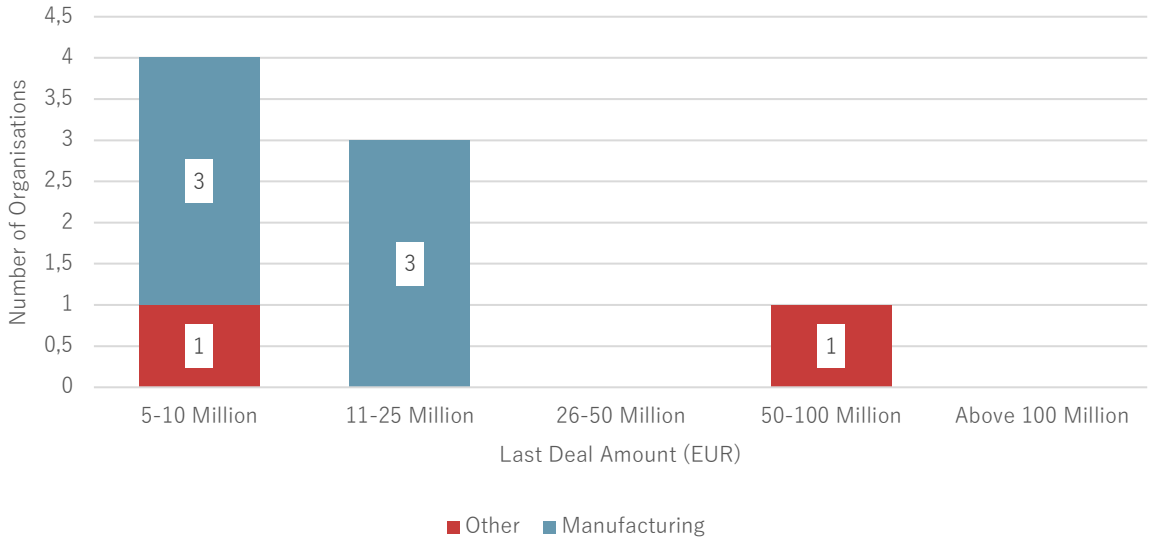
Source: Net Zero Insight database

Figure 8 shows the number of organisations by last deal amount, split between manufacturing and other sectors. Most deals fall in the €5–10 million (4 organisations) and €11–25 million (3 organisations) ranges, with manufacturing dominating both. Higher-value deals are rare—only one

[30] Estonian Cleantech Association (2025), Estonian Cleantech Sector and the Association supporting it.

in the €50–100 million range (other sector) and none above €100 million. No deals were recorded in the €26–50 million range.

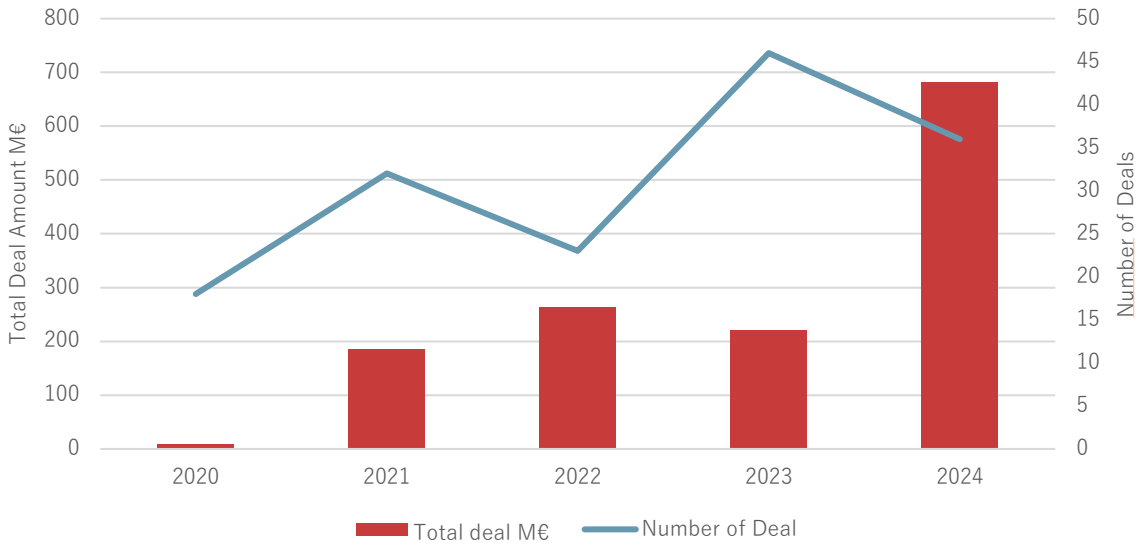
Figure 8 Number of organisations by last deal amount, split between manufacturing and other sectors



Source: Net Zero Insight database

Figure 9 shows total deal amounts (in million euros) and number of deals per year. Deal numbers rose from 2020 to peak in 2023, before dipping slightly in 2024. Total deal values, however, surged in 2024 to their highest level (~€670M), despite fewer deals than in 2023. This suggests 2024 saw fewer but larger deals on average.

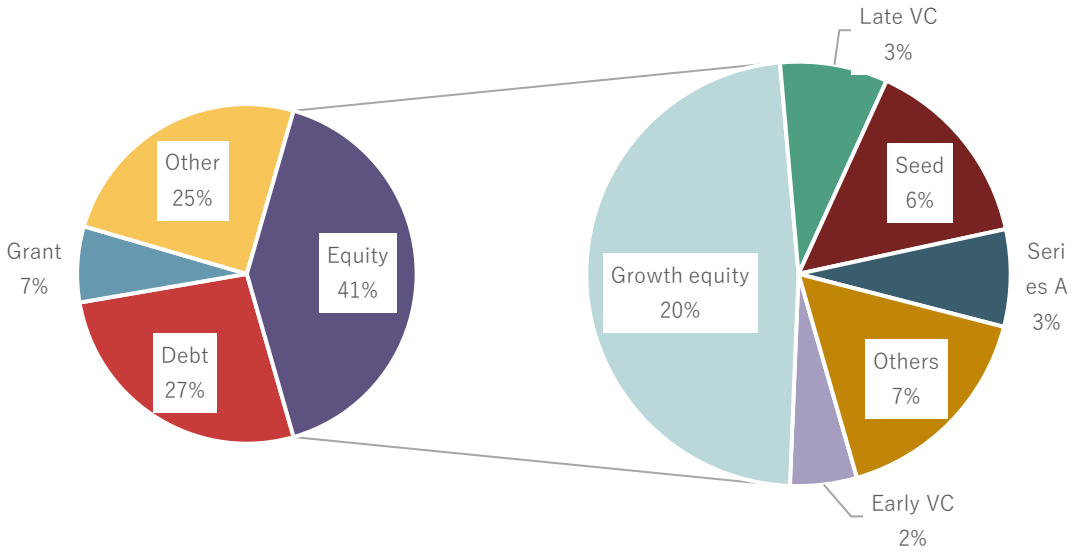
Figure 9 Total deal amount and number of deals by year



Source: Net Zero Insight database

Figure 10 presents the breakdown of equity funding by total deal amount and deal type. By total funding share, Equity accounts for the largest portion (41%), followed by debt (27%), other (25%), and grants (7%). Within Equity's 41 percent share, growth equity is the dominant category (20%), with smaller contributions from other types (7%), seed (6%), late VC (3%), Series A (3%), and early VC (2%). This indicates that Estonia's equity funding is concentrated in growth-stage investments, while early-stage venture capital represents only a minor share.

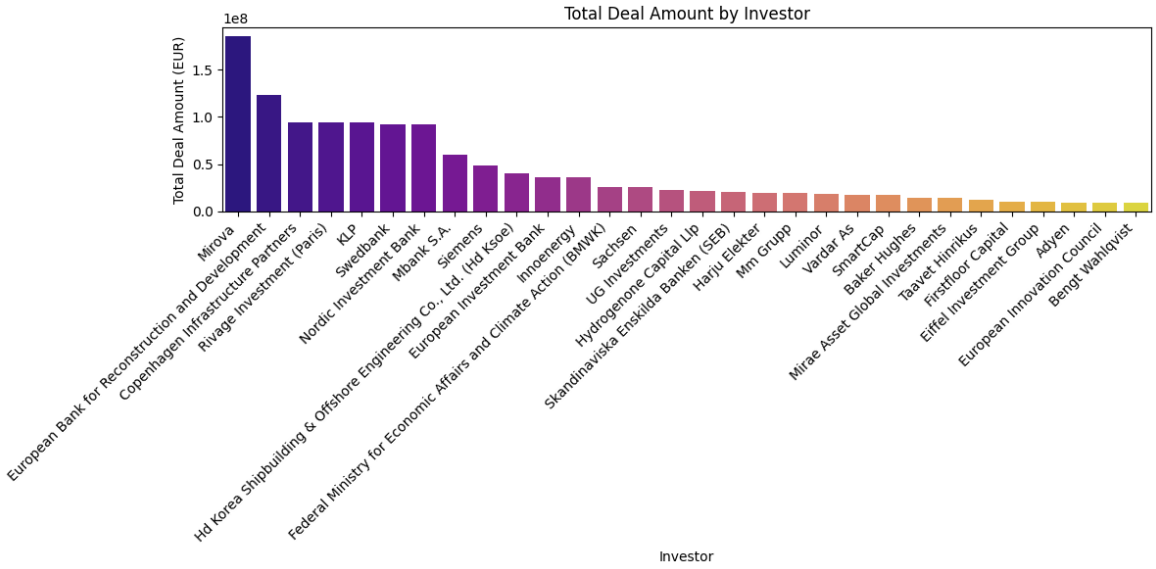
Figure 10 Equity funding: Total deal amount by deal type



Source: Net Zero Insight database

Figure 11 shows the main investors ranked by total deal amount, with larger bars indicating higher investment volumes. The biggest investors are Mirova, the European Bank for Reconstruction and Development, the Nordic Investment Bank, and Copenhagen Infrastructure Partners, followed by others like Rivage Investment (Paris), KLP, and Mbank S.A

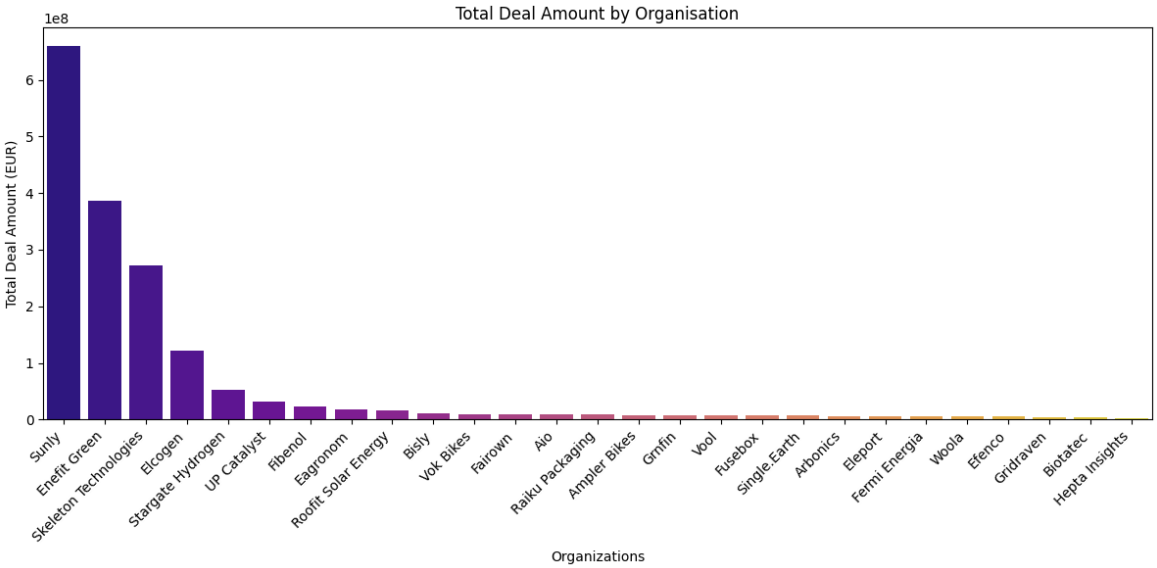
Figure 11 Total deal amount by investor



Source: Net Zero Insight database

Figure 12 shows total deal amounts (EUR) by organisation, where a few companies dominate the funding landscape. Sunly leads with over €630 million, followed by Enfit Green (€380 million) and Skeleton Technologies (€260 million). Other notable recipients include Elcogen, Stargate Hydrogen, and UP Catalyst, though their amounts are much smaller. Most other organisations received significantly lower funding, indicating a highly concentrated distribution of deal amounts.

Figure 12 Total deal amount by organisation



Source: Net Zero Insight database

2.2 Green financial instruments

2.2.1 Methodology

The analysis began with a desk-based mapping of financial instruments, drawing on publicly available sources to identify relevant funding mechanisms. In addition, an interview was conducted with a representative from Cleantech Estonia. The initial review identified approximately 15 instruments, the majority of which are administered by the Estonian Business and Innovation Agency (EIS). Additional managing entities included AS SmartCap and the Environmental Investment Centre (KIK).

In the subsequent phase, a more in-depth evaluation was conducted to assess the characteristics, scale, and strategic relevance of the identified instruments. Smaller-scale initiatives—such as the EIS Development Voucher and the Small and Medium-Sized Enterprise Development Programme—were excluded from further analysis due to their limited scope and impact.

Following this screening, the Large-scale Investment Grant was selected for detailed examination. This assessment was informed by a comprehensive review of programme documentation, regulatory frameworks, and recent media coverage to ensure an accurate and current understanding of the instrument's design, implementation, and relevance.

2.2.2 Estonian Large-scale investment grant

2.2.2.1 Instrument characteristics

The Estonian Large-Scale Investment Grant (Suuremahuliste investeeringute toetus) is a direct grant programme financed through the state budget and administered by the Estonian Business and Innovation Agency (EIS) under the authority of the Minister of Economic Affairs and Communications. Launched in December 2024, the instrument is designed to stimulate high-impact economic development projects within Estonia.

The programme will run from 2025 to 2028, with a total budget allocation of €160 million. Supported projects may have a maximum duration of 48 months, providing a defined window for execution and capital deployment.

In terms of funding parameters, the grant provides up to €20 million per project. To be eligible, projects must meet stringent criteria, including:

- A minimum investment of €100 million in fixed assets.
- The creation of at least 30 new full-time jobs.

These jobs must offer an average gross monthly salary at or above the national average, ensuring a positive impact on local wage levels and employment quality.

A key feature of the instrument is its emphasis on mobilising private capital. With the state contribution limited to approximately 10–15% of total investment costs, the programme ensures that most of the financing comes from private investors. The post-investment payout model further mitigates public risk, as funds are disbursed only after eligible private investments have been made—demonstrating financial commitment and capacity from the applicants.

Strategically, the Large-Scale Investment Grant is intended to enhance Estonia's competitiveness as a destination for foreign direct investment (FDI). It aligns with international best practices and mirrors the incentive structures offered by comparable economies, thereby positioning Estonia as an attractive location for large-scale, innovation-driven investment.

2.2.2.2 Beneficiaries

The Large-Scale Investment Grant is open to all sectors, though it primarily **targets large-scale projects that enhance competitiveness, export capacity, and value added**. While sector-neutral in design, the instrument tends to favour **advanced manufacturing and industrial projects**, such as high-tech wood processing and veneer production, due to their strategic economic impact. [31] [32]

The instrument is not designed for early-stage ventures or start-ups. Instead, it supports **mature companies** undertaking significant scale-up activities. Eligible projects must involve **capital investments of at least €100 million**, with a focus on expanding production, entering new markets, and enhancing international competitiveness.

Supported activities may include:

- Acquisition of tangible assets (including transport, installation, and insurance),
- Construction or reconstruction of facilities,
- Acquisition of intangible assets,
- Leasing of tangible assets (finance lease only; operating lease excluded).

Applicants must be private **legal entities registered in Estonia**, with public ownership not exceeding 49% (including linked and partner enterprises). Projects must create **at least 30 full-time jobs** with wages at or above the sectoral average. Investments can be located anywhere in Estonia. Aid intensity is capped at:

- 15% of eligible costs outside Harju County.

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[31] Estonian Business and Innovation Agency (2018), EAS supports large-scale investments, https://eis.ee/eas-toetab-suuremahulisi-investeeringuid/?utm_source

[32] Estonian Business and Innovation Agency (2025), Large-scale investment grant, https://eis.ee/toetused/suurinvesteeringute-toetus/#boulder-accordion-collapse-5-3

- 10% within Harju County (including Tallinn).

Application Process

Pre-application (ex-ante): Applicants must first undergo a **mandatory consultation** with the Estonian Business and Innovation Agency (EIS), submitting a project plan detailing objectives, timelines, budget, funding sources, and team capacity. Large enterprises may apply when launching new economic activities while others may apply for any initial investment. **A positive preliminary assessment from EIS is required for formal submission**.

Post-implementation (ex-post): Beneficiaries must report progress via the Structural Funds e-grant system, including **interim and final reports**. The final grant payment is conditional on the approval of these reports. EIS may request a **post-implementation impact report** within three years and can involve external experts in the evaluation process. Job creation is a key performance indicator monitored throughout. [33] [34]

2.2.2.3 Intervention logic

The Large-Scale Investment Grant is designed to address Estonia's long-standing challenge of attracting large-scale, high-value-added foreign direct investment (FDI). Historically, the country has lacked a fast, flexible incentive scheme competitive with those of peer nations, limiting its ability to secure major investments in strategic sectors. [3536] This instrument fills that gap by offering targeted public support to crowd in private capital for projects that can transform Estonia's economic landscape. [37]

The grant directly supports the goals of the Estonian Research and Development, Innovation and Entrepreneurship (TAIE) Strategy 2021–2035, including[38]:

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[33] Estonian Chamber of Commerce and Industry (2025), What do you think about the planned support for large-scale investments?, https://www.koda.ee/et/meie-moju/hetkel-kasil/mida-arvad-plaanitavast-suuremahuliste-investeeringute-toetusest?utm_source

[34] Regulation on the Large-scale investment grant (RT I, 07.02.2025, 11), https://www.riigiteataja.ee/akt/107022025011#

[35] Ministry of Economic Affairs and Communications (2025), 2025 activities to support economic competitiveness and industry, https://mkm.ee/majanduskasvuplaan2025?utm_source

[36] Ministry of Economic Affairs and Communications (2025), Estonia opens large-scale investment incentive, https://www.mkm.ee/en/news/estonia-opens-large-scale-investment-incentive?utm_source

[37] Ministry of Economic Affairs and Communications (2025), Estonia opens large-scale investment incentive, https://www.mkm.ee/en/news/estonia-opens-large-scale-investment-incentive?utm_source

[38] Minister of Economic Affairs and Industry (2024), Majandus- ja tööstusministri määruse Suuremahuliste investeeringute toetus" eelnõu seletuskiri, https://www.koda.ee/sites/default/files/content-type/content/2025-01/Suuremahuliste%20investeeringute%20toetus%20SK.pdf

- Increasing export capacity and labour productivity.
- Stimulating economic activity outside of Harju County.
- Growing exports to €43 billion.
- Attracting innovation-driven, sustainable investments.

With a total budget of €160 million (2025–2028), the instrument targets high-impact projects with minimum investments of €100 million, tied to the creation of at least 30 high-wage jobs. The state contribution, capped at 10–15% of total project costs, is disbursed post-investment, reducing fiscal risk while ensuring serious private sector commitment. [39]

By supporting large-scale, capital-intensive projects, especially in advanced manufacturing and green technology, the grant aims to:

- Leverage over €1 billion in private investment.
- Expand Estonia's industrial base.
- Boost exports and productivity.
- Enhance the country's appeal as an FDI destination.

The instrument's mandatory pre-screening process ensures that only well-prepared, economically sound projects move forward. Its structure prioritizes quality over volume, aiming for measurable economic impact, including job creation and increased tax revenues.

The approach aligns with both national and EU-level priorities, resonating with the goals of the European Green Deal Investment Plan by fostering sustainable growth and enabling greater integration into global value chains. [40]

Table 4 Intervention logic - The Estonian Large-Scale Investment Grant

Level	Description
Problem	• Limited capacity to attract large-scale, high-value FDI. • Absence of fast, flexible financial incentives compared to other countries.
Objectives	• Increase export capacity, competitiveness, and value added. • Stimulate €1+ billion in private investment. • Create high-wage jobs.

[39] Invest in Estonia (2025), Estonia opens large-scale investment incentive, https://investinestonia.com/estonia-opens-large-scale-investment-incentive/?utm_source

[40] European Commission press release (2020), Financing the green transition: The European Green Deal Investment Plan and Just Transition Mechanism, https://ec.europa.eu/commission/presscorner/detail/en/ip_20_17

	• Support TAIE 2021–2035 targets.
Inputs	• €160 million in state funding (2025–2028). • Administered by Estonian Business and Innovation Agency (EIS).
Activities	• Project pre-screening and evaluation. • Selection and grant disbursement. • Monitoring and reporting. • Compliance with job creation and investment conditions.
Outputs	• Up to 8 projects supported (2 per year). • Max €20 million per project. • Each project expected to create ~100 jobs (direct + indirect).. • Investments in industrial and green technologies.
Outcomes (Short to Medium-Term)	• High private investment leverage (expected 6.25x). • Increased export readiness and production capacity. • Job creation and fiscal returns. • Strengthened innovation and scale-up ecosystem.
Impacts (Long-Term)	• Sustained GDP and productivity growth, especially outside Harju County • 110% of EU labour productivity average • €43 billion in exports • Greater FDI inflows and integration into global value chains • Alignment with EU green and investment goals

Source: Technopolis Group interpretation of the instrument

2.2.2.4 Governance

The Ministry of Economic Affairs and Communications holds overall governance responsibility for the Large-Scale Investment Grant. It defines the instrument's framework, approves state aid decisions, and ensures strategic alignment with national development priorities. The Ministry also allocates funding from the state budget, acting as the main financing authority for the programme.

Day-to-day administration is managed by the Estonian Business and Innovation Agency (EIS), which operates under the Ministry. EIS is responsible for implementing the programme, including application processing, project evaluation, and fund disbursement.

Applications may be submitted either on a rolling basis or during designated application rounds. Each application undergoes a structured evaluation process conducted by an expert committee using the following weighted criteria[41][42]:

- Impact on programme objectives and results (40%): Includes expected economic benefits, particularly the average gross monthly salary of new jobs.
- Applicant's capacity to deliver (20%): Assesses the organisation's experience, expertise, and operational capacity.
- Overall economic impact (20%): Evaluates the project's contribution to Estonia's economic growth and competitiveness.
- Project readiness (10%): Considers the quality and completeness of the project plan.
- Location outside Harju County (10%): Prioritises regional development by giving additional weight to projects located outside the capital regio.

2.2.2.5 Enablers/Barriers

While the instrument is strategically designed to attract large-scale investment, several barriers may limit its effectiveness:

- **Job creation requirement**: Projects must create at least 30 new jobs with salaries at or above the sectoral average. This may present challenges for highly automated industries, where large capital investments do not always correlate with employment growth. [43]
- **High investment threshold**: The €100 million minimum investment requirement is considered high, particularly under the current economic and geopolitical climate. The Estonian Chamber of Commerce and Industry has proposed lowering the threshold to €30 million to better reflect the national investment context. [44]
- **Sectoral structure**: Estonia's industrial greentech sector is dominated by hardware companies, with relatively limited development in clean energy solutions. In the past, wind energy

[41] Estonian Chamber of Commerce and Industry (2025), What do you think about the planned support for large-scale investments?, https://www.koda.ee/et/meie-moju/hetkel-kasil/mida-arvad-plaanitavast-suuremahuliste-investeeringute-toetusest?utm_source

[42] Estonian Business and Innovation Agency (2025), Large-scale investment grant, https://eis.ee/toetused/suurinvesteeringute-toetus/#boulder-accordion-collapse-5-3

[43] Eesti Rahvusringhääling (ERR) (2025), Chamber lambasts Estonia's €100 million investment support threshold, https://news.err.ee/1609582102/chamber-lambasts-estonia-s-100-million-investment-support-threshold

[44] Eesti Rahvusringhääling (ERR) (2025), Chamber lambasts Estonia's €100 million investment support threshold, https://news.err.ee/1609582102/chamber-lambasts-estonia-s-100-million-investment-support-threshold

development faced significant regulatory and permitting barriers. While progress has been made in resolving these issues, full-scale sector diversification remains a work in progress. [45]

2.2.2.6 Results and impact

As the instrument follows a **post-investment disbursement model**, no payments have been made to date, and no projects have yet been publicly announced as recipients. This makes it too early to assess concrete outcomes. However, projections and prior experience offer a basis for estimating potential impact. [46]

The programme is planned to run from 2025 to 2028, with an expectation of supporting approximately two projects per year. According to the Ministry of Economic Affairs and Communications, the instrument is projected to stimulate at least €1 billion in private investment over its lifetime. Of this, an estimated 40% per project (approximately €40 million) is expected to return to the state in the form of tax revenue.

Each supported project is projected to generate approximately 100 jobs, including.[47]

- 30 direct positions,
- 70 indirect positions,
- Additional temporary employment during the construction phase.

Although no outcomes are yet available for the current programme, a predecessor instrument, targeting smaller-scale investments (around €10 million), provides a useful precedent. For example, the establishment of Estonian Plywood AS's veneer and plywood production facility and The Metsä Group's high-tech plywood factory. Together, these projects were expected to generate over 300 jobs, illustrating the potential economic and employment impact of targeted public support for industrial investment.

Table 5 Overview of the Large-scale investment grant

Outcome indicator	Key output
Number of firms supported	Approximately 2 projects per year; up to 8 projects in total (expected)
Capital invested	At least €1 billion in total private investment (expected)

[45] Interview – Cleantech Estonia

[46] Ministry of Economic Affairs and Communications (2025), 2025 activities to support economic competitiveness and industry, https://mkm.ee/majanduskasvuplaan2025?utm_source

[47] Estonian Business and Innovation Agency (2018), EAS supports large-scale investments, https://eis.ee/eas-toetab-suuremahulisi-investeeringuid/

Average support per company	€20 million per project (expected)
Leverage ratio (specify if expected or/and actual)	6.25:1 (expected) – based on €160 million in public funding leveraging €1 billion in private capital

Source: Ministry of Economic Affairs and Communications - Economic Growth Plan 2025[48]

2.3 Synthesis/summary

✅ **Estonia has a strong innovation base, but no greentech-specific policy**. While Estonia is an EU innovation leader, no national policy is explicitly labelled as "greentech", and the term lacks a formal definition. Existing strategies like TAIE 2021–2035 and Estonia 2035 support relevant objectives (green growth, scale-ups, energy efficiency) but do so indirectly.

✅ **Public institutions play a coordinated but fragmented role.** Key actors include the Ministry of Climate, Ministry of Economic Affairs, EIS, and KIK. The ecosystem is well-networked, but policy coordination could be improved, especially for large-scale greentech investments.

✅ **Estonia punches above its weight in startups and scale-ups.** Estonia has the highest number of funded startups and unicorns per capita in Europe. However, greentech scale-ups still represent a small share of the broader ecosystem, with clean energy dominating recent growth.

✅ **The large-scale investment grant fills a long-standing policy gap.** Estonia previously lacked a competitive investment incentive scheme to attract large-scale, high-value FDI. The new large-scale investment grant, launched in 2024 and running until 2028, directly addresses this gap by:

- Supporting projects with €100M+ investment
- Offering up to €20M per project (capped at 10–15% public contribution)
- Using a post-investment model to reduce fiscal risk

✅ **Strong Leverage but limited accessibility.** The grant is expected to leverage €1 billion in private investment (6.25x leverage). However, the entry barrier (€100M investment minimum and 30-job requirement) is high and may exclude smaller but strategic projects. Calls from the business community to lower the threshold to €30M indicate demand for a more inclusive version of the scheme.

✅ **Early to assess results – but precedents are promising**. No projects funded yet due to the post-investment model, but past smaller-scale initiatives suggest strong job creation and fiscal return potential. The programme is expected to support up to 8 projects, each creating ~100 jobs.

[48] Ministry of Economic Affairs and Communications, Economic Growth Plan 2025, https://mkm.ee/majanduskasvuplaan2025?utm_source#1-toetame-suuremahu

✅ **Alignment with national and EU objectives.** The instrument supports structural goals like regional development, labour productivity, and export growth and is well-aligned with Estonia's TAIE 2021–2035 strategy and the EU Green Deal Investment Plan.

✅ **Key challenges to keep in mind** are the limited sector diversification in greentech (clean energy dominates, other segments lag), regulatory bottlenecks (e.g., wind energy) which could impede private sector responsiveness and the risk of underutilization if eligibility criteria are not adjusted based on uptake.

3 Public support instruments for greentech scaleups in Canada

3.1 Context and ecosystem overview

Canada has a dynamic and rapidly expanding clean technology (greentech) sector that plays a central role in addressing global environmental challenges. Over the past decade, the industry has demonstrated strong economic performance, with real GDP rising by 21 percent and employment increasing by 16 percent. Greentech has also become a driver of Canada's trade performance, with exports growing by 90 percent between 2012 and 2021, primarily to the United States and Europe.

Government support has been critical in fostering this growth. Flagship initiatives such as the **Clean Growth Hub**[49] and the **Strategic Innovation Fund's Net Zero Accelerator**[50] provide financing, advisory services, and coordination across departments to accelerate innovation and commercialisation. Canada also plays an active role in international partnerships, including cross-border initiatives with the United States through the **Canadian Technology Accelerator for Climatetech**[51].

Key focus areas of Canadian greentech include:

- **Energy storage**: Companies such as Hydrostor and Moment Energy are advancing innovative storage technologies, including compressed air solutions and second-life applications for electric vehicle batteries.
- **Water technologies**: Canadian firms are leaders in developing water treatment, quality improvement, and sustainable resource management solutions.
- **Renewable energy**: Canada continues to expand solar, wind, and geothermal capacity, with greentech firms driving deployment and efficiency gains.
- **Sustainable resource management**: Innovations are supporting more resource-efficient and environmentally responsible practices across industries such as mining and agriculture.

Canadian companies are also increasingly recognised on the global stage. Notable examples include Carbon Upcycling, Cyclic Materials, Eavor, and Ionomr Innovations, all featured on the Global Cleantech 100 list for their breakthrough contributions. A more detailed breakdown of the sector and its taxonomy is available through Canada's Clean Technology Data Strategy[52].

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[49] https://ised-isde.canada.ca/site/clean-growth-hub/en

[50] https://ised-isde.canada.ca/site/strategic-innovation-fund/en/net-zero-accelerator-initiative

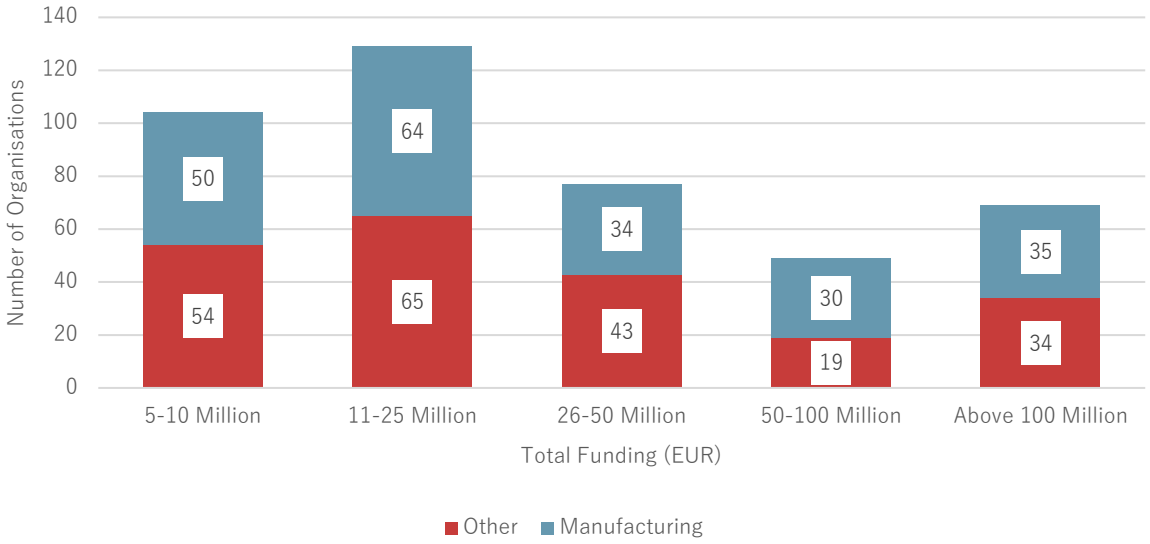
[51] https://ctaconnects.com/climatetech/

[52] https://ised-isde.canada.ca/site/clean-growth-hub/en/clean-technology-data-strategy

3.1.1 Greentech funding landscape

Figure 13 shows the distribution of organisations by total funding range, split between manufacturing and other sectors. Manufacturing dominates the upper funding brackets (€50–100 million and above €100 million), while non-manufacturing sectors make up the majority in the lower ranges. This indicates that while manufacturing companies are fewer in number, they can secure significantly larger financing rounds compared to their peers in other sectors.

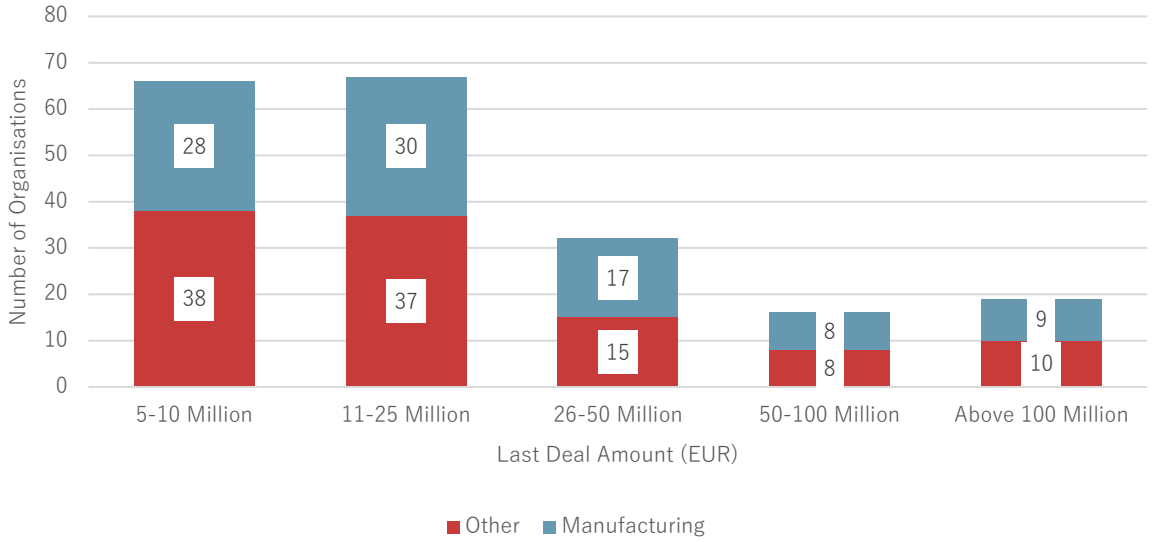
Figure 13 Total funding by organisation: manufacturing vs others



Source: Net Zero Insight database

Figure 14 presents the number of organisations by their most recent deal size. Most deals fall in the €5–10 million and €11–25 million brackets, with 133 organisations combined. Only 58 of these are in manufacturing, showing that non-manufacturing sectors dominate at this level. However, the balance shifts as deal sizes increase and manufacturing organisations make up the majority in the €26–50 million and €50–100 million brackets and represent nearly half of the organisations with deals above €100 million. This suggests that while manufacturing companies may participate less frequently in smaller deals, they attract a disproportionately large share of higher-value funding.

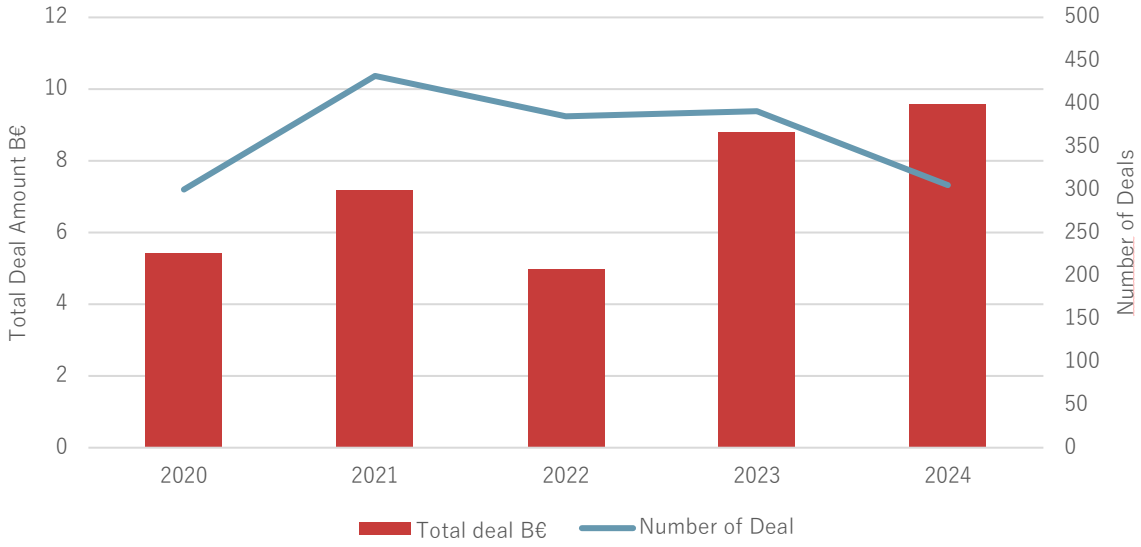
Figure 14 Number of organisations by last deal amount, split between manufacturing and other sectors



Source: Net Zero Insight database

Figure 15 presents total deal amounts (in billion euros) alongside the number of deals per year. The number of deals rose from 300 in 2020 to 432 in 2021, before declining to 305 in 2024. However, except for a dip in 2022, the total value of deals increased each year, from €5.4 billion in 2020 to €9.6 billion in 2024. This growth occurred despite the number of deals in 2024 being like that of 2020, suggesting a rise in the average deal size. This reflects a shift toward fewer but larger deals, suggesting increasing maturity and investor confidence in scaling greentech ventures.

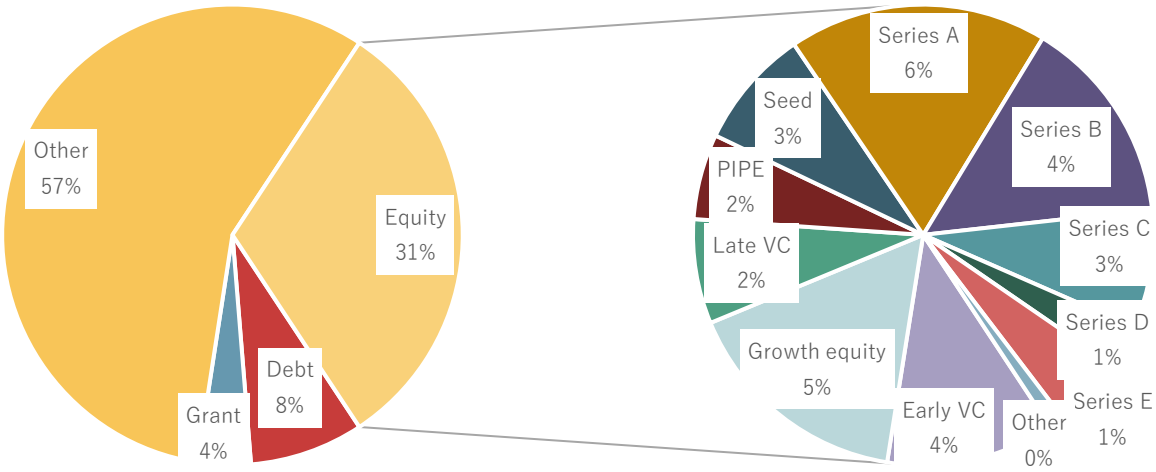
Figure 15 Total deal amount and number of deals by year



Source: Net Zero Insight database

Figure 16 displays the distribution of equity funding by deal type. "Other" accounts for the largest share (57%), followed by equity (31 %), debt (8 %), and grants (4%). Within equity funding, no single stage dominates. Series A represents six percent of the total, followed by growth equity (5%) and both Series B and early venture capital (4% each). This diversity indicates an active equity market across stages, though reliance on “other” financing forms suggests structural differences compared to more equity-driven ecosystems.

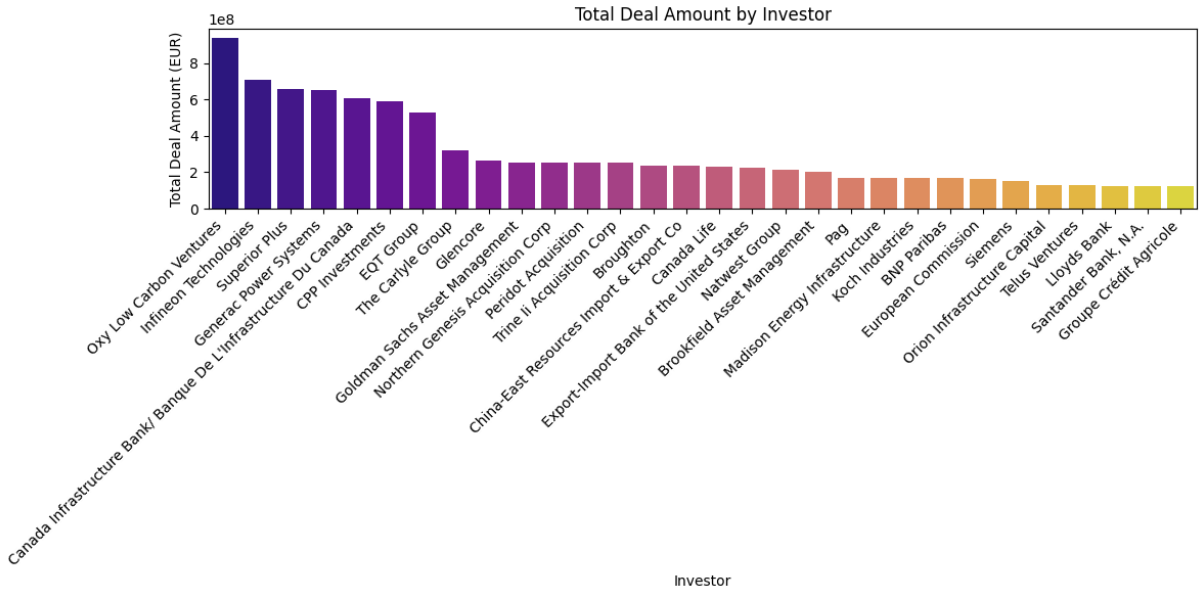
Figure 16 Equity funding: Total deal amount by deal type



Source: Net Zero Insight database

Figure 17 displays the main investors ranked by total deal amount, with larger bars representing higher investment volumes. As shown in the figure, Oxy Low Carbon Ventures (OLCV) holds the largest deal amount, exceeding €800 million. OLCV focuses on the development and deployment of low-carbon technologies and business solutions. Other notable investors by deal size include Infineon Technologies, Superior Plus and Generac Power Systems, showing a mix of global corporates and strategic industrial players alongside financial investors.

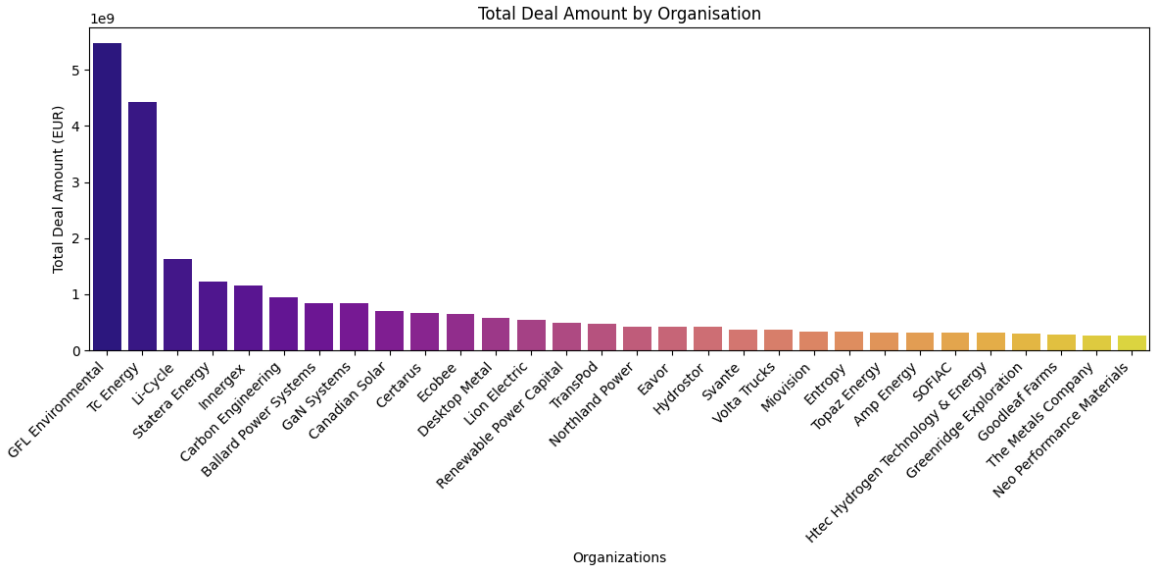
Figure 17 Total deal amount by investor



Source: Net Zero Insight database

Figure 18 shows total deal amounts (in EUR) by organisation, revealing a highly concentrated funding landscape. Two organisations, GFL Environmental (over €5 billion) and TC Energy (over €4 billion) stand out by representing significantly higher deal amounts than the rest. While several other firms also attract significant funding, the dominance of a small number of large incumbents underscores a concentration of capital flows within Canada's greentech and energy transition landscape.

Figure 18 Total deal amount by organisation



Source: Net Zero Insight database

In sum, the Canadian greentech funding landscape is characterised by strong growth, increasing deal sizes, and high concentration among a few large players. While the number of deals has fluctuated, peaking in 2021 before declining again in 2024, total investment volumes have nearly doubled since 2020, reflecting a shift toward fewer but larger transactions. Manufacturing companies, though fewer in number, dominate the higher funding brackets (€50 million and above), underscoring their central role in scaling capital-intensive technologies such as energy and industrial greentech.

Investor activity is led by strategic industrial and corporate players, with Oxy Low Carbon Ventures, Infineon, and TC Energy among the largest investors and recipients of funding. This highlights the importance of corporate-led financing in Canada's greentech ecosystem. At the same time, the funding landscape remains highly concentrated, with a handful of large incumbents such as GFL Environmental and TC Energy capturing a disproportionate share of capital. This suggests that while Canada is effective at mobilising large-scale investments, ensuring sufficient support for smaller scaleups and early-stage innovators remains an important challenge for sustaining long-term ecosystem growth.

3.2 Green financial instruments

3.2.1 Methodology

The analysis began with a desk-based mapping of financial instruments, using publicly available sources to identify relevant funding mechanisms. This initial review identified approximately ten instruments, administered by a broad range of entities, including Agriculture and Agri-Food Canada (AAFC), the Canada Development Investment Corporation (CDEV), and Innovation, Science and Economic Development Canada (ISED).

In the next phase, a more detailed evaluation was undertaken to examine the characteristics, scale, and strategic relevance of each instrument. Smaller-scale initiatives such as the Innovative Solutions Canada programme were excluded from further analysis due to their limited scope and impact. To supplement the research, an interview was also conducted with a representative from Canada's Clean Growth Fund.

Following this screening process, the Canada Growth Fund and the Strategic Innovation Fund were selected for in-depth analysis. This assessment drew on a thorough review of programme documentation and regulatory frameworks to ensure a current and accurate understanding of each instrument's design, implementation, and strategic significance.

3.2.2 Strategic Innovation Fund (SIF)

3.2.2.1 Instrument characteristics

The Strategic Innovation Fund (SIF) is a **federal grant and contributions program** launched in 2017 to support projects with strong potential to deliver innovation, economic, and public benefits. It is **administered by Innovation, Science and Economic Development Canada (ISED)** and offers both direct-to-business and network-based support.

SIF provides **flexible funding**, primarily through repayable contributions, though partially or fully non-repayable support can be considered for projects with exceptional benefits for Canadians. Repayable contributions may be: [53]

- **Unconditional** through fixed repayment schedules, limited to the original amount received.
- **Conditional** with repayments depend on specific conditions and may exceed the original contribution.
- **Blended** by combining elements of both unconditional and conditional structures.

The program funds projects across all sectors of the economy and is open to both for-profit and not-for-profit organisations. Eligible projects must have a minimum cost of CAD 20 million, with contributions starting at CAD 10 million[54] and capped at CAD 500 million. Between 2017 and 2023, SIF administered CAD 18.5 billion, supporting a wide range of strategic initiatives (see Table 6). [55] [56]

SIF operates through two overarching categories[57] [58]:

- **Business Innovation and Growth projects** led by individual firms, covering R&D and commercialisation, firm expansion and growth, and investment attraction/reinvestment. These span the full Technology Readiness Level (TRL) scale, from early-stage research to market-ready deployment.
- **Collaborations and Networks projects** led by firms or NGOs to strengthen innovation networks and ecosystems.

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[53] https://ised-isde.canada.ca/site/strategic-innovation-fund/en/project-requirements/funding-amounts

[54] The $ throughout the text is Canadian dollars

[55] https://ised-isde.canada.ca/site/strategic-innovation-fund/en/impact-report#s1

[56] $18.5 billion figure refers to cumulative SIF allocations since its establishment in 2017, including large federal initiatives

[57] https://ised-isde.canada.ca/site/strategic-innovation-fund/en/project-requirements/funding-amounts

[58] https://ised-isde.canada.ca/site/strategic-innovation-fund/en/project-requirements/businness-innovation-and-growth

The program's objectives reflect its role in attracting large-scale investment and crowding in private capital: [59]

- Stimulating private R&D, technology transfer, and commercialisation.
- Accelerating the growth and expansion of innovative Canadian firms.
- Attracting and retaining strategic industrial investments.
- Building collaborative innovation ecosystems across priority sectors.

Table 6 Overview of initiatives funded through SIF

Initiatives funded through SIF	Overview of support through SIF
Clean technology development and application	$500 million
Critical minerals	$1.5 billion
Net Zero Accelerator	$8 billion
New core SIF funding, including targets for biomanufacturing and life sciences and aerospace	$2.2 billion
IP-rich firms	$250 million
Medical countermeasures / COVID-19 response	$1.24 billion
Clean Resource Innovation Network	$100 million
SIF top-up, including focus on Alberta, food processing and forestry	$800 million
Steel and aluminium	$250 million
Low Earth orbit satellites	$100 million
Strategic Innovation Fund initial launch	$1.26 billion

Source: Strategic Innovation Fund: Impact report

3.2.2.2 Beneficiaries

The 2023 federal budget identified **clean technologies, critical minerals, and industrial transformation as key priorities for SIF**, while the program remains open to high-potential projects across other strategic sectors such as aerospace, biomanufacturing, semiconductors, and agri-food.

[59] https://ised-isde.canada.ca/site/strategic-innovation-fund/en/about-program/objectives-background

Notable initiatives within SIF include[60]:

- **Net Zero Accelerator** (CAD 8 billion) is aiming to decarbonise major emitters, advancing clean industrial processes, and developing battery and hydrogen ecosystems to position Canada for net-zero leadership.
- **Critical Minerals** (CAD 1.5 billion) by aiming to scale Canada's capacity for responsible production, processing, recycling, and manufacturing of critical minerals, strengthening domestic supply chains, and supporting global partners.
- **Biomanufacturing and Life Sciences** (CAD 2.2 billion) aiming to build domestic resilience and pandemic preparedness while expanding Canada's life sciences sector.
- **Other initiatives**, including aerospace, steel and aluminium, COVID-19 countermeasures, and IP-rich firms.

Within the Business Innovation and Growth stream, a strong emphasis is placed on scaleups. Firm expansion and growth projects, for example, fund industrial-scale improvements such as expanding manufacturing capacity or enhancing production efficiency.[61]

Eligibility

To qualify, projects must exceed CAD 20 million in total costs and align with SIF's investment priorities. Eligible costs include direct labour, materials, equipment, overhead (within program limits), and subcontracting. For Collaborations and Networks projects, additional costs such as network operations and events are also covered. [62] [63]

Applicants must demonstrate "benefits for Canada" across three dimensions[64]:

- **Economic**: job creation, high-paying positions, and revenue growth.

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[60] https://ised-isde.canada.ca/site/strategic-innovation-fund/en/investments/current-investment-priorities

[61] https://ised-isde.canada.ca/site/strategic-innovation-fund/en/project-requirements/businness-innovation-and-growth

[62] **Ineligible costs** include advertising except reasonable advertising of an industrial or institutional character placed in trade, technical or professional journals for the dissemination of information for the industry or institution, allowance for interest on invested capital, bonds, debentures, bank or other loans together with, related bond discounts and finance charges, amortisation of unrealised appreciation of assets, compensation for officers and employees that is unreasonable, depreciation of assets, donations, dues and other memberships other than regular trade and professional associations, entertainment expenses, fines and, penalties, losses on investments, bad debts and expenses for collection charges, losses on other projects or contracts, premiums for life insurance on the lives of officers and/or directors, product development or improvement expenses not associated with the project, provisions for contingencies, selling and marketing expenses associated with the products or services or both being developed as a part of this project, taxes

[63] https://ised-isde.canada.ca/site/strategic-innovation-fund/en/project-requirements/project-costs

[64] https://ised-isde.canada.ca/site/strategic-innovation-fund/en/project-requirements/benefits-for-canada

- **Public:** a positive impact on health, society, security, environment, and Indigenous communities.
- **Innovation**: spillovers, IP creation, and productivity gains.

Moreover, to be eligible several other aspects must be complied with. Two of these are "Benefits for Canada" and current investments priorities. By Benefits for Canada, SIF refers to three kinds of benefits, economic, public and innovation benefits. When assessing the eligibility of a projects and to what degree it benefits Canada SIF assess the following for each type of benefit:

- **Economic benefits**: number of jobs and number of high-paying jobs the project will create as well as project-related revenue growth.
- **Public Benefits**: health, society, security, environment, investment in local communities and project-related impact on Indigenous communities.
- **Innovation Benefits**: potential spillover benefits, creation of intellectual property and impact on productivity of the new technology

The current investment priorities on the other hand are those mentioned earlier that were announced in the budget for 2023: clean technologies, critical minerals and industrial transformation projects.[65]

Application process

The **application process** for the Strategic Innovation Fund is **competitive and based on rigorous due diligence**. Applicants must first determine whether their project aligns with one of SIF's investment priorities (clean technologies, critical minerals, or industrial transformation) and demonstrate clear benefits for Canada in terms of jobs, innovation, and public value.

Once submitted, **applications are reviewed by technical and financial experts**, who assess the project's feasibility, alignment with national priorities, potential greenhouse gas impacts (if relevant), and the applicant's managerial and workforce capacity. Equity, diversity, and inclusion practices are also considered.

Projects that pass this stage undergo a **detailed risk–benefit analysis** of their **costs, financing, and expected impacts**. Based on these findings, recommendations are made to the Minister of Innovation, Science and Economic Development Canada, who has final approval authority.

Successful applicants are then required to enter into a formal contribution agreement with the government. Throughout the project lifecycle, beneficiaries must provide regular progress updates, financial statements, and reports on benefits delivered. These include information on job creation,

[65] https://ised-isde.canada.ca/site/strategic-innovation-fund/en/investments/current-investment-priorities

investment attraction, and other commitments agreed to in the funding contract. For repayable contributions, recipients must also provide repayment forecasts and royalty statements.

This structured process ensures that only projects with strong potential to advance Canada's economic, innovation, and sustainability goals receive support, while maintaining accountability and transparency in the use of public funds.

3.2.2.3 Intervention logic

The Strategic Innovation Fund (SIF) was created to **address Canada's long-standing innovation and productivity gap compared to other advanced economies**. Canadian firms have historically underinvested in research and development, lagged in scaling innovative technologies, and faced barriers in moving discoveries from laboratories to commercial markets. This innovation deficit has limited Canada's industrial competitiveness, productivity growth, and ability to secure a leading position in emerging global sectors. [66]

The rationale behind the SIF is to bridge this "commercialisation gap" by de-risking large-scale investments in innovation. By providing a mix of repayable and, in exceptional cases, non-repayable contributions, the program lowers financial barriers that prevent firms from pursuing transformative projects. This approach aims to crowd in private capital, encourage firms to scale domestically rather than abroad, and anchor high-value intellectual property in Canada. In doing so, the SIF also tackles structural challenges such as low private-sector R&D intensity, underdeveloped supply chains in strategic sectors, and vulnerability to external shocks (e.g., global competition, supply chain disruptions, climate transition pressures).

The intervention logic rests on four key pillars:

- **De-risking transformative investments** by lowering upfront capital requirements for projects with high innovation potential, enabling firms to pursue activities that would otherwise be too risky or costly.
- **Scaling domestic industrial capacity** by supporting firms in moving from demonstration to full-scale commercialisation, ensuring that Canada builds and retains production capabilities in mission-critical sectors like clean tech, critical minerals, biomanufacturing, and aerospace.
- **Attracting and anchoring investment** by positioning Canada as a competitive destination for global capital and innovation through strategic support, thereby preventing the relocation of projects abroad.

[66] https://ised-isde.canada.ca/site/strategic-innovation-fund/sites/default/files/documents/impact-report.pdf

- **Generating broad-based public value** by ensuring that funded projects deliver measurable benefits for Canadians, such as high-quality job creation, regional economic development, environmental sustainability, and long-term resilience.

Through this logic, the SIF functions not only as a funding tool but as a strategic lever for industrial transformation. It is designed to align firm-level incentives with national priorities such as the Net-Zero Strategy, the Critical Minerals Strategy, and long-term industrial resilience. By **combining repayable contributions, strict eligibility requirements, and clear benefit criteria**, the instrument ensures both **fiscal responsibility and maximum impact for public investment**, see Table 7. [67]

Table 7 Intervention logic - The Strategic Innovation Fund

Level	Description
Problem	• Canadian companies invest less in R&D and innovation compared to peers in the G7 and OECD. • Low private sector productivity and limited scale-up support in strategic sectors. • Commercialisation gap between research and market-ready solutions. • Insufficient capacity in emerging and mission-critical sectors (e.g., clean tech, critical minerals, biomanufacturing). • Climate and supply chain vulnerabilities requiring economic transformation.
Objectives	• Enhance Canada's innovation capacity, productivity, and industrial resilience: – Attract and retain large-scale strategic investments – Accelerate R&D, commercialisation, and scaling of innovations – Promote collaborative innovation ecosystems – Support national priorities (e.g., net-zero, critical minerals) • Provide flexible repayable and non-repayable contributions to high-potential projects
Input	• Federal funding through **ISED**, including: – $8B Net Zero Accelerator – Targeted calls for proposals under critical minerals and biomanufacturing strategies – Up to $500M per project
Activities	• Conduct open and priority-driven calls for proposals • Perform due diligence on project risks, benefits, and alignment with national priorities • Co-develop agreements with recipients • Monitor project delivery, repayments (if applicable), and outcomes

[67] https://ised-isde.canada.ca/site/strategic-innovation-fund/en/project-requirements/funding-amounts

Output	• 108+ direct-to-business deals • 10 collaboration agreements • $8.2B in SIF contributions committed • Over 900 ultimate project recipients • Leverage ratio: $1 SIF → $9 private investment • Key sectors: aerospace, clean tech, biomanufacturing, agri-food, critical minerals
Outcomes ***(Short- & Medium-Term)***	• **Innovation**: $1.2B in R&D investment in 2021 (5% of Canada's total); IP creation and scaling in Canada • **Economic**: 113,000+ full-time jobs created/maintained; expanded manufacturing and commercialisation • **Public Value**: Clean energy deployment; healthcare system resilience; greater regional equity • **Catalytic Effects**: Increased private capital investment; stronger trust in Canada's innovation system
Impacts ***(Long-Term)***	• Economic resilience via a more diversified and modernised industrial base • Environmental sustainability through fossil fuel phase-out (esp. via Net Zero Accelerator) • Regional economic development • Global competitiveness through Canadian leadership in strategic global markets (e.g., batteries, hydrogen, semiconductors)

Source: Technopolis Groups interpretation of the publicly available information collected

3.2.2.4 Governance

SIF is funded and administered by Innovation, Science and Economic Development Canada (ISED), with recommendations made to the Minister following expert review and due diligence. **Governance involves multiple layers, drawing on expertise from up to 20 federal departments and agencies**, with coordination across provincial governments for co-funding opportunities.

SIF also **operates alongside the Canada Growth Fund (CGF)**. While the CGF is focused exclusively on green investments and decarbonisation, SIF has a broader mandate spanning multiple sectors. Projects in clean technology may qualify for both, with SIF emphasising R&D and innovation while CGF provides financial backing for large-scale deployment.

The SIF is **funded by the government** through ISED, which is also the implementation entity. In terms of governance structure the SIF makes recommendations to the Minister for approval. Moreover, governance for the SIF program involves several layers, from subject-matter experts to ministers. It also **brings together up to 20 federal departments and agencies** so that decisions are informed by all sources of federal expertise and are consistent with government-wide policies.

Information may also be shared with provincial governments to support project due diligence and explore co-funding opportunities.

3.2.2.5 Enablers/Barriers

The Strategic Innovation Fund benefits from a flexible design that can support projects across sectors and technology readiness levels. Its mix of repayable and non-repayable contributions makes it attractive to a wide range of firms, while requirements on intellectual property ensure that innovations funded remain anchored in Canada. Strong alignment with national priorities such as net-zero, critical minerals, and biomanufacturing further enhances its strategic relevance.

However, barriers remain. Canada's fragmented regulatory landscape, particularly in energy and infrastructure, complicates the scaling of supported technologies across provinces. The relatively small domestic market also limits growth potential, making access to global markets essential. In addition, strong international competition for capital and talent risks diverting Canadian innovations abroad, while high demand for SIF funding means that many promising projects cannot be supported.

3.2.2.6 Results and impact

Since its launch in 2017, the Strategic Innovation Fund has become one of Canada's most important tools for advancing large-scale innovation and industrial transformation. To date, it has supported more than 140 projects across sectors such as clean technology, aerospace, biomanufacturing, and critical minerals, representing over CAD 10 billion in federal funding and leveraging more than CAD 82 billion in total project investments. This translates into a leverage ratio of nearly 7:1, meaning every dollar of SIF support has mobilised close to seven dollars of private and partner investment.

The program has played a significant role in job creation and retention, securing commitments for over 113,000 full-time-equivalent positions nationwide. It has also contributed directly to Canada's research and development base: in 2021 alone, SIF-backed projects accounted for CAD 1.2 billion in R&D spending, roughly 5 percent of the national total. These impacts extend across the country, with projects located in every province and targeting both established industries and emerging sectors.

Beyond its economic footprint, SIF has supported national priorities in times of crisis and transition. During the COVID-19 pandemic, it was repurposed to strengthen domestic biomanufacturing and supply chain resilience. More recently, through the CAD 8 billion Net Zero Accelerator stream, it has funded major decarbonisation projects, including emissions reductions in heavy industry and investments in Canada's growing battery ecosystem. Flagship projects, such as Rio Tinto's expansion of critical minerals production in Quebec, illustrate how SIF support strengthens supply chains, advances clean technologies, and generates high-quality jobs.

Overall, early evidence shows that SIF is both catalysing large-scale private investment and advancing Canada's long-term competitiveness in key global markets.

Key metrics include[68]:

- 143 projects funded (direct-to-business and network agreements)
- CAD 10.4B in SIF funding supporting CAD 82.5B in total project costs
- Leverage ratio: ~6.9 private/partner dollars for every SIF dollar
- 113,000+ full-time-equivalent jobs created or maintained
- R&D investment: CAD 1.2B in 2021 (≈5% of Canada's national total)

Based on their website, the following figures which was latest updated on the 19th of February 2025 can be found.

Table 8 Strategic Innovation Fund - Overview

Outcome indicator	Key output
Number of firms supported	143 (nr of projects funded)
Capital invested	$10.4B in total SIF funding, $82.5B in total project costs
Average support per company	$72,7 million
Leverage ratio (specify if expected or/and actual)	($82.5B - $10.4B)/$10.4B = 6,9

Source: ISED - Investments: Strategic Innovation Fund[69]

3.2.3 Canada Growth Fund

3.2.3.1 Instrument characteristics

The Canada Growth Fund (CGF) was announced in the Government of Canada's 2022 Budget by the Department of Finance. It is a $15 billion arm's-length investment fund designed to attract private capital, supporting the competitiveness and efficiency of Canada's economy. Its mandate is to develop a portfolio of investments that catalyse significant private sector participation in Canadian businesses and projects, fostering economic growth while advancing emissions reduction goals. [70]

CGFs strategic objectives are to:

[68] https://ised-isde.canada.ca/site/strategic-innovation-fund/sites/default/files/documents/impact-report.pdf

[69] https://ised-isde.canada.ca/site/strategic-innovation-fund/en/investments

[70] The $ throughout the text is Canadian dollars

- Reduce emissions and meet Canada's climate targets.
- Accelerate deployment of key technologies, including low-carbon hydrogen and carbon capture, utilization, and storage (CCUS).
- Scale up companies that create jobs, improve productivity, promote clean growth across sectors, and retain intellectual property in Canada.
- Leverage natural resources and strengthen critical supply chains for long-term economic and environmental sustainability.

The CGF **does not provide grants or subsidies** and invests only where there is a reasonable expectation of return. Its four main investment instruments are[71]:

- Concessional equity or debt is offered at below-market rates or with higher exposure to loss to address financing gaps (e.g., first-loss equity, subordinated debt, or low-interest loans).
- **Contracts for difference (CfD) and price assurance** can mitigate demand or policy risk to improve project economics:
  - Two-way contracts: Payments adjust depending on whether market prices are above or below the strike price
  - One-way contracts: CGF covers downside risk if prices fall below the strike price and may participate in project upside via revenue-sharing warrants.
- **Anchor equity** provides capital in projects in which high risk limits private sector participation.
- Offtake contracts secure demand and improve project economics.

CGF investments typically range from CAD $50 million to $1.2 billion.

3.2.3.2 Beneficiaries

According to the Corporate Plan Summary 2025–2029, CGF focuses its investing activities on three areas. The first is **projects**, which deploy technologies that have been proven in pilot stages but have not yet achieved widespread adoption, aiming to reduce emissions across Canada. CGF supports these projects by taking minority or controlling positions using a combination of debt, equity, hybrid instruments, and contracts. Projects span multiple sectors, including CCS, electrification, greening electricity, hydrogen, and biofuels. [72]

The second focus area is **clean technology companies**, particularly small and medium-sized enterprises (SMEs) scaling less mature but proven technologies in the demonstration or

[71] https://www.budget.canada.ca/fes-eea/2022/doc/gf-fc-en.pdf

[72] https://d2apye5bf031b.cloudfront.net/documents/CGF-2025-2029-Corporate-Plan-Summary-FINAL-EN.pdf

commercialization stage. These technologies have the potential to significantly reduce greenhouse gas emissions. Unlike project-based investments, this category supports companies directly through growth equity positions or commitments to third-party fund managers whose strategies align with CGF objectives.

The third area is **low-carbon supply chains**, which includes SMEs and projects operating within climate-tech value chains or low-carbon natural resource development. CGF invests in critical minerals by partnering with operators and general partners and makes direct investments in key infrastructure, such as offshore wind, battery manufacturing, and hydrogen production.

A central mandate of the CGF is to scale companies that can create jobs, drive productivity, and promote clean growth across Canada's industrial base. [73]

Eligibility and Application Process

Eligible businesses must contribute to reducing emissions with less mature technologies, including CCS, hydrogen, and biofuels. They may also focus on **scaling technology companies in demonstration or commercialization stages** or operate in low-carbon or climate-tech supply chains. Applicants are required to demonstrate a contribution to the development of Canadian workers, maintain a Canadian presence, retain intellectual property, and generate knowledge that yields long-term economic benefits.

When assessing applications, CGF considers additionality, financial soundness, and alignment with international sustainability standards. Additionality ensures that the investment attracts private sector funding that would not otherwise be available, while financial soundness evaluates the preservation of capital and risk management. Sustainability alignment confirms adherence to recognized ESG measurement and disclosure standards.

After investment, CGF actively monitors project performance, drawing on the diligence of its private sector partners. Monitoring covers **operational oversight** to ensure effective project execution, **financial oversight** for responsible risk management, and **strategic oversight** to maintain long-term commitment, mitigate risks, and support corporate growth in Canada. Performance metrics for scale-up technologies and companies include permanent jobs created or supported, technologies or patents developed or maintained, and annual export revenue from major projects. [74]

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[73] https://d2apye5bf031b.cloudfront.net/documents/CGF-Fund-Presentation-Short-Updated-June-2025.pdf

[74] https://d2apye5bf031b.cloudfront.net/documents/CGF-Fund-Presentation-Short-Updated-June-2025.pdf

3.2.3.3 Intervention logic

The Canada Growth Fund (CGF) was created to address a critical gap in the Canadian investment ecosystem. There is strong awareness of commercial opportunities in low-carbon and clean technology, but **private investors often face high financial, policy, and demand risks that constrain investment in first-of-a-kind (FOAK) or scaleup projects**. The rationale behind the instrument is to de-risk these investments, mobilize private capital, and accelerate the deployment of decarbonization technologies that would otherwise struggle to secure funding. By providing targeted financing tools, including concessional equity, debt, contracts for difference, anchor equity, and offtake agreements, the CGF enables projects and companies to grow at scale while generating economic and environmental benefits.

Canada's economic prosperity has historically relied on natural resources and emissions-intensive industries. **Achieving climate targets and ensuring long-term economic resilience requires a significant transformation of the industrial base**. The CGF supports this transformation by enabling the deployment of low-carbon technologies, strengthening domestic infrastructure and capabilities, and positioning Canada as a global leader in a low-carbon economy. [75]

The CGF's activities are also aligned with other national initiatives, such as the **Canadian Clean Growth Program**, which provides funding for clean technology R&D and demonstration projects in energy, mining, and forestry. By complementing such programs, CGF helps bridge the gap between innovation demonstration and commercial implementation, see Table 9. [76]

Table 9 Intervention logic - The Canada Growth Fund

Level	Description
Problem/Need	• Canada requires a significant transformation of its industrial base to meet climate targets and ensure long-term economic prosperity. • Private investment in clean and emerging technologies is hindered by financial, demand, and policy risks. • Despite awareness of commercial opportunities, investors are constrained by uncertainty, lack of price guarantees, and limited access to capital for high-risk or first-of-a-kind projects.
Objectives	• Reduce greenhouse gas emissions and achieve Canada's climate goals. • Accelerate deployment of key decarbonisation technologies (e.g., hydrogen, CCS).

[75] https://www.budget.canada.ca/fes-eea/2022/doc/gf-fc-en.pdf

[76] https://natural-resources.canada.ca/funding-partnerships/clean-growth-programs

	• Scale up clean technology companies that create employment, productivity and innovation. • Strengthen critical supply chains and resource sectors for long-term sustainability. • Mobilise private capital by de-risking climate-related investments.
Inputs	• CAD 15 billion fund capitalised by the Government of Canada. • Managed by Canada Growth Fund Investment Management (CGFIM. • Investment instruments include concessional equity/debt, contracts for difference, anchor equity, and offtake agreements.
Activities	• Select and approve investments based on strategic alignment, additionality, and financial soundness. • Provide concessional capital or price certainty to projects and firms through blended finance tools. • Focus investments across three areas: decarbonisation projects, clean tech companies, and low-carbon supply chains. • Monitor projects post-investment to ensure operational, financial, and strategic performance.
Outputs	• Nine investments made (seven in 2024). • $2.1 billion committed (as of 2024). • 1,100 jobs at CGF portfolio companies. • 315 patents held by portfolio companies. • Example investments include: Eavor Technologies (CAD 90M), Entropy Inc (up to CAD 1.2B), and Nouveau Monde Graphite Inc (CAD 35.6M).
Outcomes (Short to Medium-Term)	• Up to 15.9 $MtCO_2e$ emissions avoided globally, including 4.1 $MtCO_2e$ in Canada (2024–2030). • 261 direct full-time jobs created; 85 patents filed. • Up to CAD 892M in new private capital leveraged. • Private investment leverage ratio of 0.84:1. • Commercialisation of breakthrough decarbonisation technologies and strengthened investor confidence.
Impacts (Long-Term)	• Industrial transformation toward a low-carbon economy. • Long-term decarbonisation of high-emission sectors. • Strengthened economic resilience through climate-aligned growth and job creation. • Development of globally competitive Canadian clean tech firms. • Improved Canadian ownership and retention of IP and value in strategic sectors.

Source: Technopolis Groups interpretation of the publicly available information collected

3.2.3.4 Governance

The Canada Growth Fund (CGF) is a **subsidiary of the Canada Development Investment Corporation (CDEV)**. In March 2024, CGF entered into an Investment Management Agreement (IMA) under which PSP Investments' wholly owned subsidiary, **Canada Growth Fund Investment Management (CGFIM)**, was appointed as the **independent investment manager**. CGFIM has full authority over all investment management activities and is supported by a dedicated team from PSP Investments.

To oversee investment decisions, CGFIM has established an **Impact, Risk, and Investment Committee (IRIC)**. The committee is responsible for reviewing and approving all investments, ensuring they align with the fund's mandate. Every investment requires IRIC's formal approval. [77]

In its selection process, **CGF applies investment criteria such as mandate alignment, additionality, and financial soundness**. As noted earlier in Section 1.2.4 on governance, CGF also interacts to some degree with the Strategic Innovation Fund (SIF). Both instruments support innovation, but with distinct focuses. CGF concentrates on green technologies and decarbonisation, whereas SIF covers a wider range of sectors, including clean tech. Although the two operate separately, there can be overlap in project eligibility. In such cases, companies may apply to CGF for financial support and to SIF for R&D or innovation funding.

3.2.3.5 Enablers/Barriers

Several factors may either enable or constrain the effectiveness of the CGF. One important enabling condition is Canada's carbon pricing regime, which establishes consistent carbon prices across provinces. This system provides a clear policy signal to large industrial emitters and creates incentives for low-carbon investment. The harmonised approach also makes it easier for CGF to operate across provincial boundaries. [78]

At the same time, there are structural barriers. More than half of Canada's intellectual property (IP) is foreign owned, which limits the country's ability to retain and benefit from homegrown innovation. While financial investment is essential for R&D and scaling technologies, it is insufficient if not paired with strong domestic IP ownership and commercialization capacity. Without these, Canada risks losing long-term value from CGF-supported innovation.[79]

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[77] https://d2apye5bf031b.cloudfront.net/documents/CGF-Fund-Presentation-Short-Updated-June-2025.pdf

[78] https://mcmillanvantage.com/2023/05/04/when-you-need-to-know-about-the-canada-growth-fund-and-clean-tech-tax-credits/?utm_source

[79] https://www.ipcollective.ca/blog/article_tag/ip-ownership/

3.2.3.6 Results and impact

In its 2024 Annual Report[80], the CGF highlighted a series of outcomes measured against the three pillars of its impact framework.

Under the 1) decarbonisation pillar, CGF portfolio companies are expected to avoid up to 15.9 million tonnes of CO_2e worldwide between 2024 and 2030, including 4.1 million tonnes in Canada. For the 2) clean growth pillar, CGF investments have already generated 261 new Canadian jobs (FTE) and supported the development of 85 new patents. On 3) additionality, the fund has unlocked up to $892 million in new private capital aligned with its mandate since inception. This translates to a ratio of up to 0.84:1 in private investment leveraged per dollar of CGF capital committed (excluding derivatives).

The annual report also documented broader achievements since inception (with 2025 not included). **By the end of 2024**, CGF had made **nine investments**, including seven within that year. Portfolio companies collectively **employed 1,100 people** in Canada and held **315 patents**. The fund had **committed a total of $2.1 billion**. However, for two of the nine investee companies, no information was provided on the size of the investment, meaning the reported $2.1 billion relates to seven companies.

The report further highlighted examples of investments across each of CGF's three categories:

- **Clean technology:** Eavor Technologies Inc. received a $90 million investment to scale its closed-loop geothermal energy system, which provides clean, reliable baseload heat and power with minimal land and water use. The investment is expected to support 80 permanent jobs in Alberta while strengthening energy security and reducing emissions.
- **Project investment:** Entropy Inc. secured up to $1.2 billion in support, including a $200 million investment and fixed-price credit offtake agreements (CCOs) covering up to one million tonnes of CO_2 per year. The Calgary-based company develops advanced carbon capture and sequestration (CCS) projects with the potential to significantly reduce emissions both domestically and globally.
- **Low-carbon supply chain:** Nouveau Monde Graphite Inc. received $35.6 million to develop the largest fully integrated natural graphite production facility in North America. The investment strengthens critical supply chains for battery production and supports the creation of new manufacturing jobs in Canada.

[80] https://d2apye5bf031b.cloudfront.net/documents/cgf-2024-annual-report.pdf

Table 10 Canada Growth Fund – Leverage

Outcome indicator	Key output
Number of firms supported	Seven in 2024, nine in total (2025 not included)
Capital invested	Since its inception (2025 not included), CGF has committed $2.1 billion over nine investments and deployed $247.1 million. Although, the actual size of the investments is only listed for seven of the nine, meaning the $2.1 billion represent seven investments.
Average support per company	$300 million (committed, since inception)
Leverage ratio (specify if expected or/and actual)	0.84:1 (Ratio of private investment (equity and debt) catalysed due to CGF investments, per dollar of CGF capital committed (less derivatives) since Fund inception)

Source: CGF 2024 Annual Report[81]

3.3 Synthesis/summary

✅ **Canada effectively leverages public funds for innovation.** The Strategic Innovation Fund (SIF) and the Canada Growth Fund (CGF) have demonstrated strong crowding-in effects, with SIF alone mobilising nearly CAD 9 of private investment for every CAD 1 of public funding. Together, they address the country's long-standing underinvestment in R&D and scale-up financing.

✅ **SIF and CGF play complementary roles.** The SIF provides broad support for R&D, firm expansion, and commercialisation across multiple sectors, while the CGF focuses specifically on de-risking large-scale clean technology projects and strengthening low-carbon supply chains. This balance helps Canada both develop innovations and accelerate their deployment.

✅ **The instruments deliver tangible outcomes.** Collectively, they have supported more than 100 firms, expanded Canada's manufacturing and innovation base, positioned Canadian companies as leaders in emerging areas such as energy storage, geothermal, carbon capture, and battery production, and SIF along has created or maintained more than 113,000 jobs.

✅ **Challenges remain in regulatory and IP frameworks.** Scaling innovations nationally is hindered by fragmented provincial regulations, particularly in the energy sector. Additionally, the high share of foreign ownership of Canadian intellectual property limits long-term economic benefits from homegrown greentech breakthroughs.

✅ **Strategic importance for Canada's future.** Beyond emissions reductions, SIF and CGF are central to building Canada's global competitiveness, strengthening supply chain resilience, and

[81] https://d2apye5bf031b.cloudfront.net/documents/cgf-2024-annual-report.pdf

diversifying the industrial base. They are critical pillars in achieving Canada's net-zero targets while securing long-term economic growth.

4 Public support instruments for greentech scaleups in France

4.1 Context and ecosystem overview

The French greentech ecosystem brings together a mix of public institutions, private actors, and policy frameworks that collectively drive the country's ecological and industrial transition.

Public stakeholders include:

- **Bpifrance** is France's public investment bank, whose overall mission is to support business growth, innovation, and competitiveness across the French economy. It plays a pivotal role in the greentech space by providing equity, debt, and advisory support to innovative companies at all stages of development. Notably, Bpifrance manages several instruments that directly target greentech scale-ups. [82]
- **ADEME** (Agence de la Transition Écologique) is a public agency under the joint authority of the Ministry for the Ecological Transition and the Ministry for Higher Education and Research. It supports the implementation of public policies in the fields of the environment, energy, and sustainable development. [83]
- **Secrétariat Général pour l'Investissement** (SGPI) is an interministerial body reporting to the Prime Minister. It is responsible for coordinating and monitoring government investment programmes, including the France 2030 plan, ensuring strategic alignment and performance. [84]
- **Agence Nationale de la Recherche** (ANR) is the French national research funding agency. It funds scientific research in all disciplines and contributes to the development of research policies at the national and European levels. [85]

Private stakeholders include:

- **Cleantech for France** is a coalition of greentech startups and investors advocating for policies that support the scaling of clean technologies.
- **French cleantech** is an advisory firm for fundraising and mergers and acquisitions, specialised in the climatech and energy sectors. It has a platform connecting over 400 French greentech companies with investors and industrial partners to accelerate sustainable innovation.[86]

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[82] https://www.bpifrance.fr/nous-decouvrir

[83] https://www.ademe.fr/lagence/

[84] https://www.info.gouv.fr/organisation/secretariat-general-pour-l-investissement-sgpi

[85] https://anr.fr/fr/lanr/nous-connaitre/organisation-et-gouvernance/

[86] https://www.frenchcleantech.com/home.html

- **Venture capital firms**: Firms like Aster, Elaia Partners, and Partech Ventures actively invest in greentech startups, providing capital and strategic support.

France has established several major strategies and programmes to strengthen its greentech base:

Energy and climate strategy (SFEC) is the overarching framework guiding decarbonisation, integrating the National Low-Carbon Strategy (SNBC), Multiannual Energy Programme (PPE), and Ecological Planning. It targets climate neutrality by 2050. [87]

France 2030 is a €54 billion investment plan launched in 2021 to drive industrial transformation and ecological transition, prioritising areas such as green hydrogen, low-carbon industry, sustainable mobility, nuclear, circular economy, and decarbonised agriculture. [88]

France relance (Recovery Plan) was introduced in 2020, allocating €30 billion to green recovery measures, supporting building renovation, clean mobility, industrial decarbonisation, and greentech innovation. [89]

The green industry act (Loi Industrie Verte) was adopted in 2023, it accelerates industrial decarbonisation and competitiveness through measures to speed up permitting, rehabilitate brownfield sites, and simplify procedures for strategic projects. It also promotes the creation of new green industries (e.g. batteries, hydrogen, carbon capture) and supports the decarbonisation of existing ones. [90]

National hydrogen strategy (*Stratégie nationale hydrogène* – SNH II) was updated in 2025. With €4 billion in public investment and further support under France 2030, it positions France as a leader in decarbonised hydrogen by promoting industrial deployment and securing key technologies. [91]

Table 11 The green industry act

The Green Industry Act
Signed in October 2023, the Green Industry Act aims to reindustrialise France while reducing its environmental footprint. It seeks to cut greenhouse gas emissions by 41 million tonnes CO_2 equivalent by 2030 (around 1% of the national total). The law accelerates industrial permitting, promotes the reuse of brownfield sites, and simplifies procedures for major national projects. Its dual focus is:

[87] https://www.ecologie.gouv.fr/sites/default/files/documents/23242_Strategie-energie-climat.pdf

[88] https://www.economie.gouv.fr/france-2030

[89] https://www.info.gouv.fr/grand-dossier/france-relance

[90] https://www.entreprises.gouv.fr/priorites-et-actions/transition-ecologique/decarboner-lindustrie#:~:text=n°%208-,La%20loi%20«%20Industrie%20verte%20»%20%3A%20un%20catalyseur%20de%20la%20transition,écologique%20de%20son%20tissu%20industriel

[91] https://www.economie.gouv.fr/files/2025-04/strategie_nationale_hydrogene_decarbone_2025.pdf

- Creating green industries (batteries, hydrogen, carbon capture, renewables).
- Decarbonising existing industries through investment and innovation support.

It also introduces financial incentives linked to savings, life insurance, and taxation, including the C3IV scheme.

4.1.1 Greentech funding landscape

The French greentech market is increasingly dynamic and mature. National champions and ambitious scale-ups are emerging, supported by both equity and debt financing. In 2024, several companies raised major late-stage rounds, such as Electra (€304m, EV charging), Elyse Energy (€117m, hydrogen mobility), and Newcleo (€86m + €49m, advanced nuclear). [92] [93]

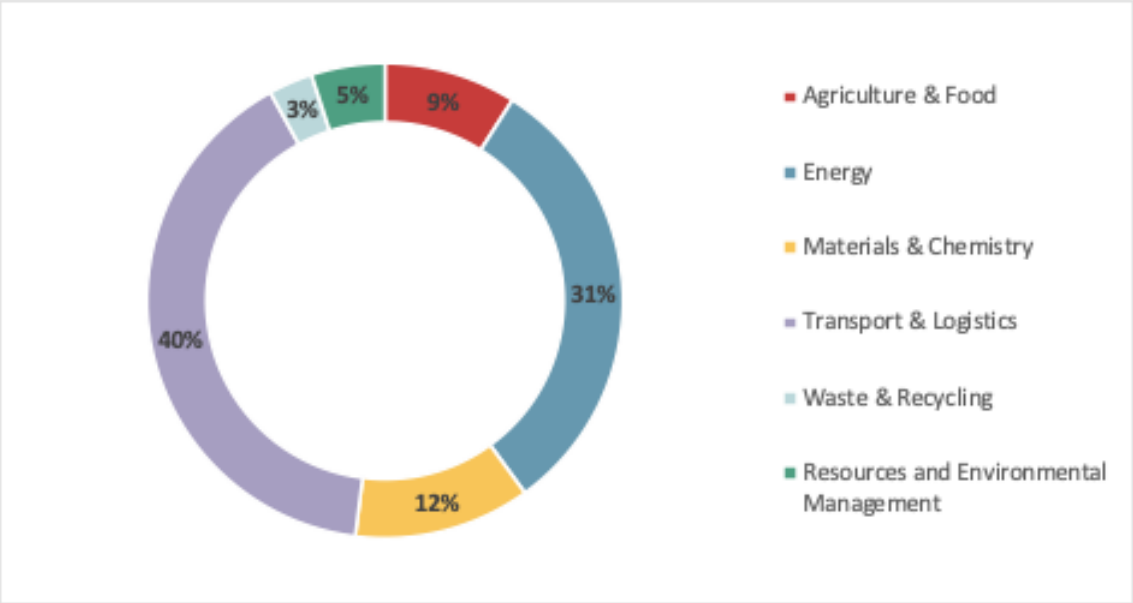
Large-scale financing is positioning France within global value chains: Verkor (€1.3bn) and Automotive cells company (€4.3bn) secured significant debt funding for battery production. The ecosystem is shifting from early-stage to large-scale operations. While early-stage activity has remained steady, a sharp rise in debt financing in 2024 signals a more mature investment landscape.

Figure 19 presents the sectoral distribution of greentech investment in 2024. Funding is concentrated in a few key areas, notably low-carbon mobility, energy transition technologies, and the circular economy. This concentration highlights France's growing specialisation and the alignment of private investment with national decarbonisation priorities.

[92] https://cdn.prod.website-files.com/62c1fe8049a83b12fefd1878/67bd82378ec93ea617af2428_FRANCE_Briefing%20Annuel%202024_250225.pdf

[93] Ibid.

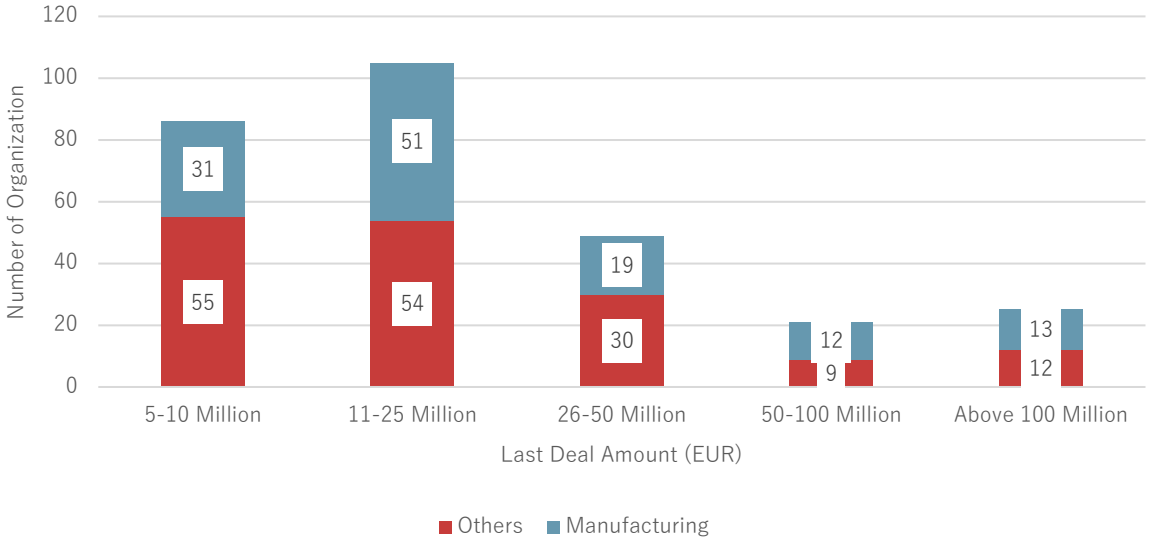
Figure 19: Greentech investment in 2024 by sector



Source: Cleantech for France, Briefing Annuel 2024

Figure 20 shows total funding by organisation, split between manufacturing and other sectors. Most organisations fall within the lower funding brackets (€5–10 million, €11–25 million, and €26–50 million), where non-manufacturing firms dominate. By contrast, manufacturing accounts for most organisations in the higher brackets (€50–100 million and over €100 million). Nevertheless, in absolute numbers, manufacturing organisations remain more numerous in the lower brackets due to the overall funding distribution.

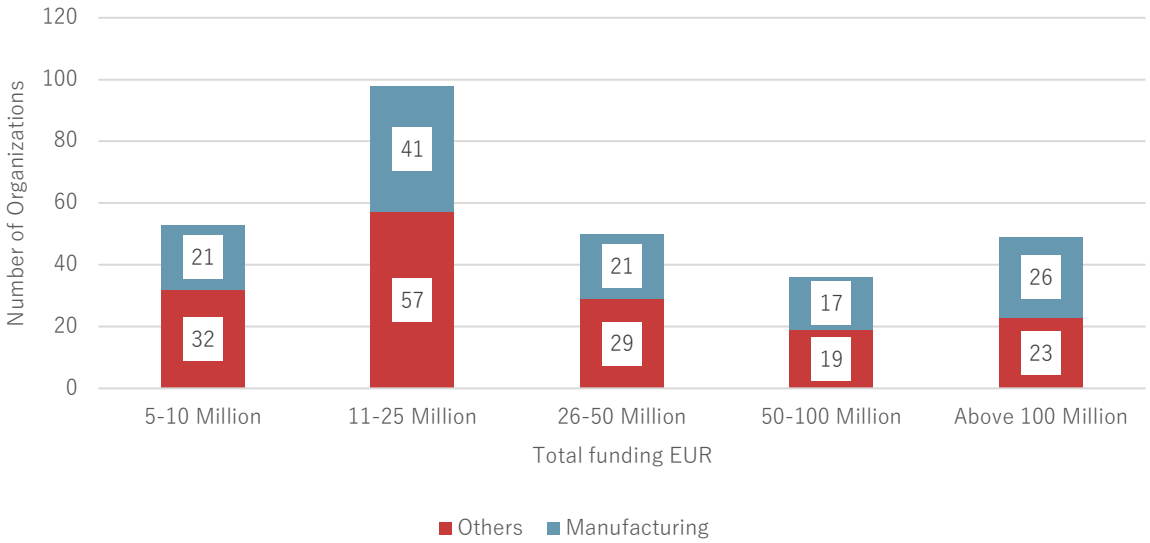
Figure 20 Total funding by organisation: manufacturing vs others



Source: Net Zero Insight database

Figure 21 shows the number of organisations by their most recent deal amount, distinguishing between manufacturing and other sectors. The distribution is relatively balanced across the five brackets, with the €11–25 million range standing out as the largest. Manufacturing organisations represent a minority in all brackets except the highest (above €100 million), where they account for more than half of organisations (26 out of 49).

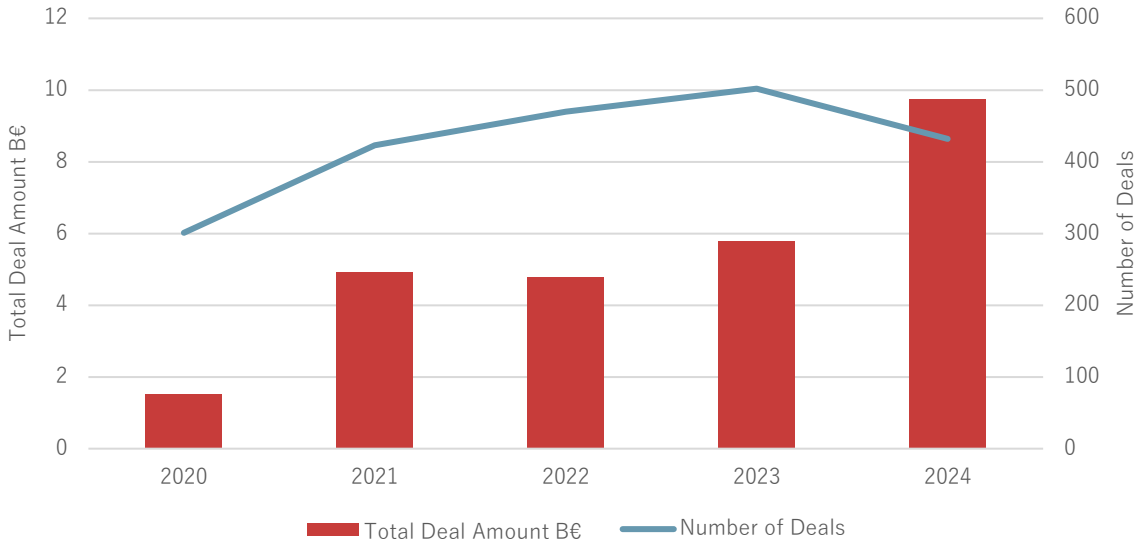
Figure 21 Number of organisations by last deal amount, split between manufacturing and other sectors



Source: Net Zero Insight database

Figure 22 presents annual trends in total deal amounts and the number of deals. Deal activity grew from 301 in 2020 to a peak of 502 in 2023, before easing to 432 in 2024. Except for a dip in 2022, the total value of deals rose each year, from €1.5 billion in 2020 to €9.8 billion in 2024. While the number of deals increased by about 44 percent over the period, total value expanded by more than 550 percent, reflecting larger average deal sizes and a higher concentration of capital per transaction.

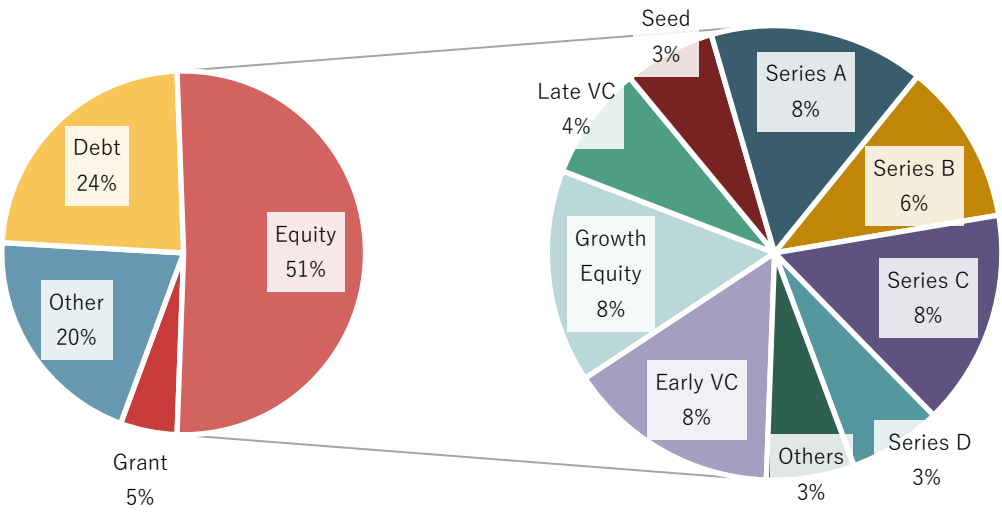
Figure 22 Total deal amount and number of deals by year



Source: Net Zero Insight database

Figure 23 illustrates the distribution of funding by deal type. Equity accounts for the majority share at 51 percent, followed by debt (24%), other instruments (20%), and grants (5%). Within equity, four categories – Growth Equity, Series A, Series C, and Early VC – each represent the largest individual shares, at around 8 percent of total funding.

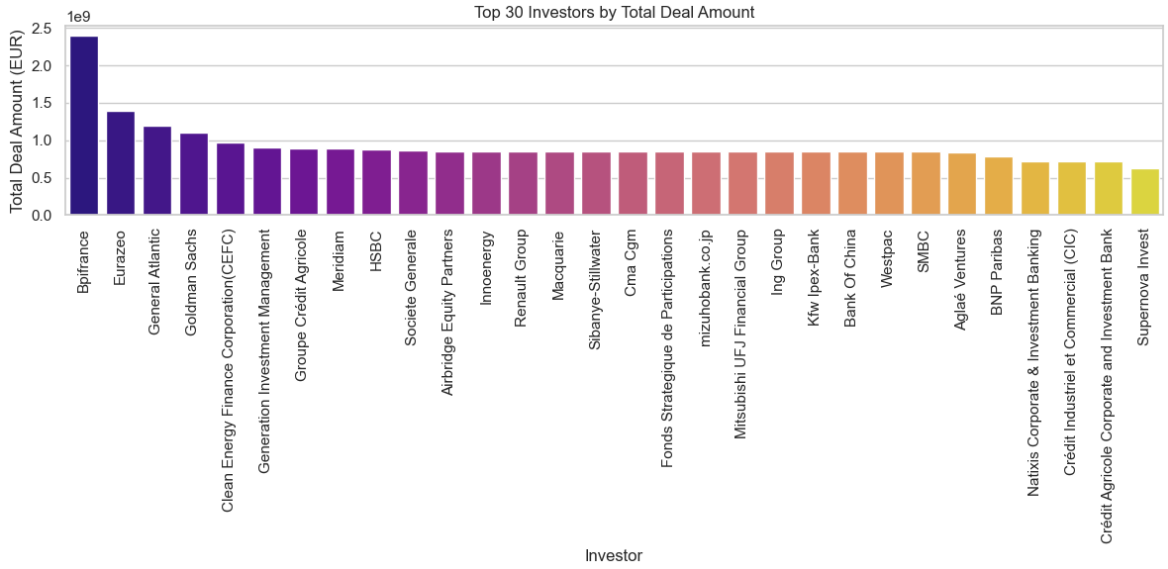
Figure 23 Equity funding: Total deal amount by deal type



Source: Net Zero Insight database

Figure 24 ranks investors by total deal amounts, with larger bars indicating higher investment volumes. Bpifrance clearly dominates, with nearly €2.5 billion invested, well ahead of the next tier. Among the other top 30 investors, most are clustered just below €1 billion. Only Eurazeo, General Atlantic, and Goldman Sachs exceed the €1 billion threshold besides Bpifrance.

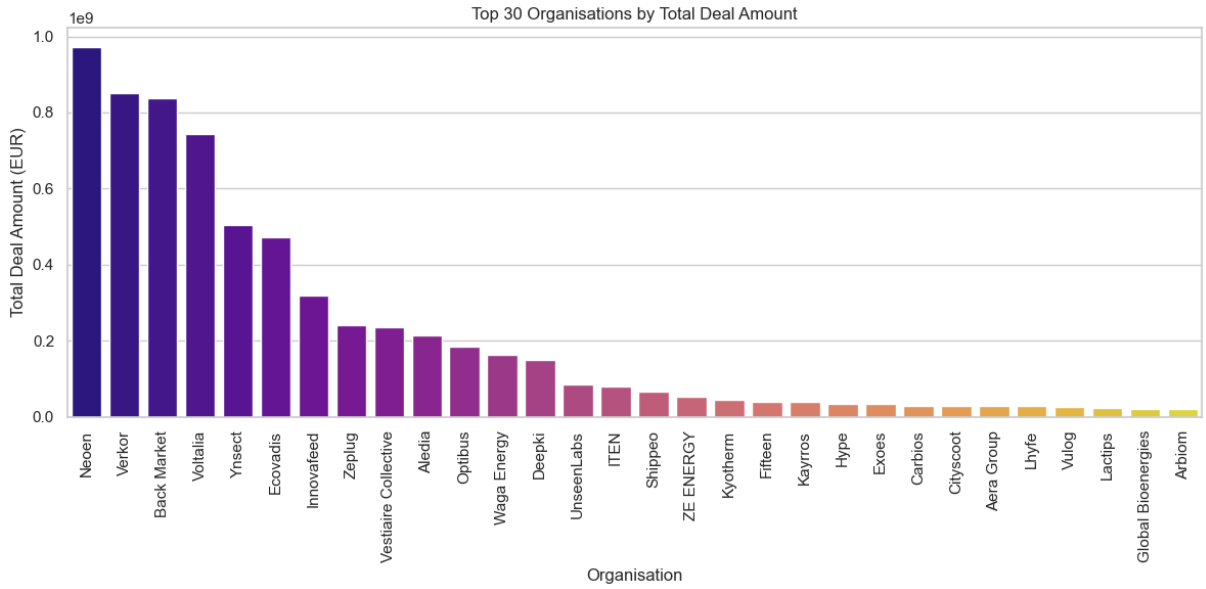
Figure 24 Total deal amount by investor



Source: Net Zero Insight database

Figure 25 presents total deal amounts (in EUR) by organisation. As shown, no organisation has a total deal amount exceeding one billion euros. However, three organisations, Neoen Verkor, and Back Market, each have deal amounts above €800 million.

Figure 25 Total deal amount by organisation



Source: Net Zero Insight database

4.2 Green financial instruments

4.2.1 Methodology

The analysis began with an initial mapping of financial instruments based on a desk review of publicly available sources. This first phase identified around 20 instruments, some of which operated at the European level with France included in their scope. These EU-level instruments were excluded to maintain a focus on instruments implemented specifically at the national level.

In a second phase, more in-depth research was conducted on the remaining instruments to examine their characteristics and assess their relevance. Instruments offered by private sector financiers were excluded, as the study focuses exclusively on public instruments or those backed by public funding.

For each instrument retained in the final selection, a variety of sources were consulted, including official programme documents, implementation agreements, institutional reports, and recent news coverage to ensure up-to-date insights.

4.2.2 Fonds Ecotechnologies 2[94]

4.2.2.1 Instrument characteristics

The Fonds Ecotechnologies 2 is a closed-end investment fund dedicated to accelerating the growth of French greentech enterprises through equity and quasi-equity financing. It is implemented under the "Accelerating Growth" (*Accélération de la croissance*) action of the fourth Future Investment Programme (PIA 4) and managed by Bpifrance Investissement, approved by the French Financial Markets Authority (AMF). The fund is capitalised by EPIC Bpifrance, acting on behalf of the State. [95]

It builds on the first Fonds Ecotechnologies, launched in 2012 under the original PIA, which deployed €225 million in growth-stage investments across renewable energy, green chemistry, smart grids, mobility, and circular economy sectors. That initial fund typically invested €4 million per company and combined long-term financing with portfolio support, including board participation.

The second fund, created in December 2021, is structured as a Professional Private Equity Fund (FPCI) with an initial 12-year duration (renewable up to 16 years). It has a target capital of €300 million, fully contributed by the French State, and invests €1.5–30 million per company. Investments are made under market conditions and systematically seek pari passu co-investment from private actors. Public participation must remain below 50 percent in each round, ensuring that public funding acts as a catalyst for private capital mobilisation.

Key features are:

- Closed-end fund with 12-year lifespan (+2x2 years extensions possible)
- Equity exclusively from the French State (€300m)
- Investments: €1.5–30m per company in equity/quasi-equity
- Managed by Bpifrance Investissement with strategic oversight by an Advisory Committee

4.2.2.2 Beneficiaries

The fund targets French SMEs active in greentech sectors contributing to the ecological and energy transition, particularly:

- Low-carbon hydrogen and applications

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[94] Convention du 10 décembre 2021 entre l'État, l'EPIC Bpifrance et Bpifrance Investissement relative au programme d'investissements d'avenir – Fonds Ecotechnologies 2, Journal officiel de la République française, 12 décembre 2021. Available at: https://www.legifrance.gouv.fr/jorf/id/JORFTEXT000044471260

[95] https://www.maddyness.com/2020/09/21/qflf-ecotechnologie-bpifrance/

- Material recycling and reintegration
- Industrial decarbonisation (incl. CCUS)
- Industrial biotechnology and bio-based products
- Sustainable food and agriculture systems
- Innovative buildings
- Sustainable mobility and logistics
- Energy systems and batteries

Its core focus is **venture and growth capital operations**, supporting firms moving **from technology development to commercial scale** (demonstration and deployment). Early-stage (seed/Series A) and later-stage (Series C+) rounds are not excluded but remain exceptional, as they are usually covered by other Bpifrance vehicles (e.g. Large Venture, FIEE). Eligibility criteria:

- Established in France
- Turnover < €50m
- Not majority-owned by firms with > €200m turnover
- Not publicly listed at first investment
- Not in financial distress or insolvency
- Financing tied to a clearly defined, profitable project
- No special-purpose vehicles (SPVs) for joint projects
- Minority public participation alongside private co-investors

4.2.2.3 Intervention logic

PIA 4 seeks to accelerate France's ecological and digital transitions, strengthen industrial competitiveness and sovereignty, and ensure long-term support for innovation ecosystems. Within this, the Fonds Ecotechnologies 2 plays a targeted role: filling the financing gap for growth-stage greentech SMEs that face long development cycles, uncertain returns, and high technological risks — factors that often deter private investors.

The rationale of the fund is to:

- De-risk private investment by sharing risk under market conditions.
- Mobilise additional capital through systematic co-investment.
- Accelerate the scale-up of French greentech SMEs.
- Support strategic sectors contributing to ecological transition and industrial sovereignty.

The fund's intervention logic, see Table 12, is straightforward: by combining public equity with private capital and strategic oversight, it helps SMEs reach commercial scale, thereby generating jobs, improving environmental performance, and strengthening national resilience. In this way, the fund acts as both an economic and environmental catalyst, aligned with France's long-term transformation objectives.

Table 12 Intervention logic - Fonds Ecotechnologies 2

Level	Description
Problem/Need	• Limited availability of private capital for French SMEs during the capital-intensive stages of commercial development and scale-up, particularly in greentech sectors. • Long development timelines • Uncertain returns • High technological risks
Objectives	• Facilitate the emergence and scaling of French industrial players capable of delivering sustainable, high-impact solutions • Support the ecological and energy transition • Reinforce national industrial capacity • Mobilise additional private investment alongside public funds
Inputs	• €300 million initial capital exclusively from the French State • Management by Bpifrance Investissement • Governance through an Advisory Committee • Equity and quasi-equity funding under market conditions • Operational support and strategic oversight from Bpifrance
Activities	• Identify and assess eligible companies through a rolling call for expressions of interest • Conduct due diligence • Invest in selected SMEs alongside private co-investors • Provide active portfolio support, including board participation and strategic guidance • Monitor and report on results and impacts annually
Outputs	• Equity or quasi-equity investments ranging from €1.5 million to €30 million per company • Financing distributed across greentech sectors such as low-carbon hydrogen, recycling, industrial decarbonisation, sustainable mobility and energy systems • Minority public shareholding in investment rounds • Mobilised private co-investment
Outcomes (Short to Medium-Term)	• Increased growth and scaling of supported SMEs • Strengthened capacity for commercial deployment of greentech solutions

	• Enhanced competitiveness and resilience of French industrial players • Greater mobilisation of private capital in ecological and energy transition sectors
Impacts (Long-Term)	• Structural transformation towards a low-carbon, sustainable economy • Improved environmental performance and reduced carbon footprint • Creation of high-quality jobs • Strengthened national industrial sovereignty in strategic greentech sectors

Source: Technopolis Groups interpretation of the publicly available information collected

4.2.2.4 Governance

The governance of the fund reflects a shared structure between the State and Bpifrance, combining strategic oversight with delegated implementation. The fund is part of PIA 4 and financed by the French State under the programme Financing strategic investments (Financement des investissements stratégiques). The financial resources are channelled through **EPIC Bpifrance**, which acts as the fund's operator and subscribes to its capital on behalf of the State.

Fund management is delegated to Bpifrance Investissement, a subsidiary of Bpifrance and a licensed asset management company accredited by the AMF. It is responsible for launching and managing the rolling call for expressions of interest, conducting due diligence, preparing legal documentation, executing investments, and providing strategic and financial monitoring throughout the investment lifecycle.

An Advisory Committee ensures alignment with national priorities. It includes representatives from the Ministry for the Economy and Finance, the Ministry for Ecological Transition, and the General Secretariat for Investment (SGPI), which also chairs the committee. The Committee is consulted on all investment decisions and validates key elements such as the fund's investment rules and monitoring indicators. While its opinions are non-binding, it plays a central role in preventing conflicts of interest and guiding strategic coherence.

Fonds Ecotechnologies 2 is part of a broader equity instrument ecosystem under the PIA. It operates alongside Bpifrance-managed vehicles such as France Investissement Énergie Environnement (FIEE), which supports SMEs and mid-caps in renewable energy, energy efficiency, and the circular economy with tickets from €0.5 million to €7 million, and Large Venture, which targets late-stage technology firms (typically Series C and beyond) with investments above €10 million. In addition, the Industrial Projects Company Fund (SPI) finances the industrialisation of innovative technologies across sectors. Positioned at the intersection of innovation and deployment, Fonds Ecotechnologies 2 focuses on ventures ready for scale-up, ensuring complementarity rather than duplication and maximising the catalytic effect of public equity.

4.2.2.5 Results and impact

The fund is subject to annual monitoring and reporting to the SGPI and Advisory Committee, covering distribution of financing by type of beneficiary, share of financing allocated to "green" and "digital" investments, breakdown of financing by sector/thematic area and financial leverage effect of public funding While consolidated results are not yet available, early investments include:[96]

- Micropep Technologies (2024) w €27m Series B for agri-biotech crop protection, co-led by Fonds Ecotechnologies 2.
- PILI (2023): €14.5m Series A to industrialise bio-based dyes and pigments.

4.2.3 Sociétés de Projets Industriels 2 (SPI 2) Fund[97]

4.2.3.1 Instrument characteristics

The Société de Projets Industriels 2 (SPI 2), launched in 2022, is a closed-end investment fund providing **equity and quasi-equity financing** to support industrialisation projects in France. Structured as an *Fonds Professionnel de Capital Investissement* (FPCI), it is managed by **Bpifrance Investissement** and implemented under **PIA 4**, similar in design to the Fonds Ecotechnologies 2 (see section 2.2.1).

SPI 2 succeeds the first SPI fund, launched in 2015 under PIA 2, which had a total envelope of €800 million to support the industrialisation of innovative technologies. Of this amount, €700 million came from the French State via EPIC Bpifrance, and €100 million was invested by the European Investment Bank (EIB) through the SPI EIB vehicle)[98] [99]. SPI 1 demonstrated the feasibility of equity-based industrial support, applying rigorous ESG and sectoral due diligence. No public information indicates EIB participation in SPI 2. [100]

SPI 2's **investment period** is five years, renewable twice for one year each, and the fund is designed for a total lifespan of 14 years, with renewal possible under specific conditions. The fund's **target capital envelope** is €1,015 million, with individual investment tickets ranging from €5 million to

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[96] https://www.maddyness.com/entreprise/pili/

[97] Convention du 30 décembre 2022 entre l'État, l'EPIC Bpifrance et Bpifrance Investissement relative au programme d'investissements d'avenir – Société de projets industriels 2 (SPI 2), Journal officiel de la République française, 31 décembre 2022. Available at: https://www.legifrance.gouv.fr/eli/convention/2022/3/31/PRMI2206329X/jo/texte

[98] https://www.eib.org/fr/press/all/2016-232-plan-dinvestissement-pour-leurope-le-groupe-bei-et-bpifrance-signent-deux-accords-pour-soutenir-lindustrie-durable-et-les-pme-innovantes

[99] https://www.eib.org/en/projects/pipelines/all/20150435

[100] https://www.eib.org/attachments/registers/66099397.pdf

€150 million. SPI 2 systematically seeks co-investment with private actors under pari passu conditions and maintains **minority public shareholdings** to attract private capital while achieving national industrial objectives.

4.2.3.2 Beneficiaries

SPI 2 is open to companies of all sizes, from start-ups to large industrial groups, provided they are engaged in the industrial scaling of innovative technologies. Eligibility is not determined by firm size but by project characteristics. **Projects must align with France 2030 and PIA 4 priorities** (notably the ecological and energy transition), **be structurally transformative** (e.g. creation of new production sites or significant scale-up), and exclude low-tech or mere capacity expansion.

Eligible firms must be established in France, present risk-adjusted returns, and preferably be unlisted at first investment. They must propose a clearly defined and profitable project within a realistic timeframe, provide a credible exit or liquidity path for the fund, and not be in financial distress.

All projects **must demonstrate a positive contribution to sustainable development and ecological transition**, supported by an objective environmental assessment, in line with EU taxonomy. Investments are made on market terms, with beneficiaries subject to continuous strategic, financial, and governance oversight.

4.2.3.3 Intervention logic

SPI 2 was conceived as a response to a persistent structural weakness in the French innovation and industrial landscape: the difficulty of moving from technological demonstration to large-scale industrial deployment. While France has a strong research base and an increasing number of innovative start-ups, many projects fail to cross the “industrialisation valley of death” due to a lack of suitable financing instruments. Private investors are often reluctant to commit to late-stage industrial projects because of their high capital intensity, long maturation periods, and technological or regulatory risks. Traditional bank financing is ill-suited to these projects, as they rarely offer the predictable cash flows or collateral that lenders require.

The rationale for SPI 2 is therefore to provide a dedicated equity and quasi-equity instrument that de-risks these large-scale projects while crowding in private capital. By deliberately adopting a minority stake and investing on pari passu terms, SPI 2 ensures that projects remain market-driven and attractive to private co-investors, while the State’s participation signals strategic importance and provides confidence to private actors. This design also mitigates the perception of excessive public intervention while ensuring alignment with national priorities.

The instrument builds on lessons from SPI 1, which demonstrated that such an approach can both catalyse private co-investment and generate significant industrial and employment impacts. SPI 2

scales up this model under France 2030, with a broader sectoral scope and an increased financial envelope, reflecting the ambition to anchor production of key technologies in France, strengthen industrial sovereignty, and accelerate the ecological and digital transitions.

Table 13 Intervention logic - SPI2

Level	Description
Problem	• Persistent gap in late-stage equity and quasi-equity financing for industrialisation projects in France, particularly for scaling and localising innovative technologies • Private investors are often reluctant due to high capital requirements, long payback periods, and technological or market risks.
Objectives	• Reinforce France's industrial base by supporting the scaling of innovative technologies • Contribute to the ecological and energy transition • Strengthen long-term industrial competitiveness and economic sovereignty • Crowd-in private capital through co-investment
Inputs	• €1.015 billion target capital from the French State under France 2030 and PIA 4 budget lines • Fund management by Bpifrance Investissement • Governance via an Advisory Committee with representatives from SGPI, the Directorate General for Enterprises, the Treasury, and the General Commission for Sustainable Development • Equity and quasi-equity investments under market conditions • Minority public shareholding
Activities	• Identify and evaluate eligible industrialisation projects via a rolling application process • Conduct due diligence, risk and return assessments and environmental/sustainability analysis • Negotiate investment terms and co-investment arrangements • Provide strategic, financial, and governance oversight throughout the investment lifecycle • Represent the fund in investee company governance bodies
Outputs	• Equity or quasi-equity investments between €5 million and €150 million per project • Creation or expansion of industrial facilities in France • Financing distributed across strategic sectors such as green chemistry, energy, electronics, biotechnology, space, and advanced materials • Minority public participation with private co-investment
Outcomes (Short to Medium-Term)	• Increased industrial capacity for innovative and sustainable technologies • Enhanced competitiveness of French industrial actors • Creation and maintenance of direct jobs • Mobilisation of private capital in high-impact industrialisation projects

	• Regional economic development
Impacts (Long-Term)	• Structural transformation of the French industrial landscape towards sustainable and high-value sectors • Reduced environmental footprint and contribution to climate goals • Strengthened national sovereignty in strategic industries • Significant long-term job creation including direct, indirect and induced employment effects

Source: Technopolis Groups interpretation of the publicly available information collected

4.2.3.4 Governance

SPI 2 reflects a partnership between the French State and Bpifrance. It is financed under France 2030 via two envelopes:

- Financing Strategic Investments" (Financement des investissements stratégiques).
- Speeding Up Modernisation of Businesses" (Accélération de la modernisation des entreprises).

Bpifrance Investissement manages the fund, sourcing projects, evaluating opportunities, negotiating terms, and monitoring implementation. EPIC Bpifrance subscribes on behalf of the State. Oversight is provided by an Advisory Committee comprising SGPI, Directorate General for Enterprises, Treasury, and General Commission for Sustainable Development. The SGPI chairs the committee, which provides guidance, particularly for conflict-of-interest cases or exceptions to investment policy.

SPI 2 complements other France 2030 and PIA 4 equity instruments (e.g., Ecotechnologies 2, Large Venture, PSIM, FIEE, Definnov), targeting industrial scaling at different stages compared to SME-focused or early-stage funds.

4.2.3.5 Results and impact

Companies benefiting from SPI 2 undergo **annual monitoring**. Fund managers report to SGPI and the Advisory Committee, tracking indicators including:

- Distribution of financing by type of beneficiary
- Share of financing allocated to green investments
- Sectoral/thematic allocation of financing
- Financial leverage of public funds
- Jobs created or maintained (direct employment)

Since its launch, the SPI fund - comprising both SPI 1 and SPI 2 - has made approximately **30 investments**, including 16 directly related to energy and environmental technologies (TEE), and has completed **five exits**, with investment sizes typically ranging from **€10 million to €140 million per**

project. Over its six-year investment period, SPI 1 supported **17 industrial projects**, resulting in the creation of **17 new production facilities** across 10 regions and generating **3,200 direct jobs**, with total employment impact (including indirect and induced jobs) estimated at around 17,000. While detailed data on SPI 2 remains limited, the remaining 13 investments are thus attributed to this fund. Notably, **75 percent of SPI 1's investments contributed to the ecological and energy transition**, targeting sectors such as: [101]

- Green chemistry (PILI, Afyren)
- Energy (Entech, InovaYa)
- Electronics (Exagan, Aledia)
- Biotechnology (AlgoSource, BioMéthodes)
- Space & new materials (Comat, Mecano ID)

Equity stakes ranged from 15–46 percent, and SPI 1 successfully diversified its co-investment profile across startups, SMEs, mid-caps, large corporations, cooperatives, and international partners.

A success story for SPI 2 is Eyco, a French startup producing ultra-thin, flexible "smart circuits" for microelectronics, closed a **€16 million Series A round** in May 2024, led by SPI 2 with participation from Région Sud Investissement, Caap Création, and private investors. [102]

4.2.4 Crédit d'impôt au titre des investissements dans l'industrie verte (C3IV)

4.2.4.1 Instrument characteristics

The tax credit for investment in green industry (C3IV) was introduced in 2023 as part of the French Green Industry Act. Its objective is to support companies in financing key industrial projects for the energy transition and to help France establish itself as a leader in green industry in Europe. The initiative is scheduled to run for two years.

C3IV targets four strategic sectors of the energy transition:

- **Batteries**: Manufacturing of battery cells and essential components primarily used as direct inputs in battery production.
- **Wind Power**: Production of onshore and offshore wind turbines and their essential components, such as masts, blades, nacelles, and foundations.

[101] https://www.maddyness.com/base-fonds-investissements/societes-de-projets-industriels-spi/?utm_source

[102] https://www.maddyness.com/entreprise/eyco/

- **Solar Panels**: Manufacturing of photovoltaic or hybrid cells, and essential components for solar panels, including the extraction, production, and processing of silicon.
- **Heat Pumps**: Manufacturing (including assembly) of heat pumps and essential components, such as compressors, electronic and control systems, heat exchangers, and hydraulics.

The tax credit applies across the entire production chain in these sectors, supporting both tangible and intangible investments. Tangible investments include buildings, installations, equipment, machinery, and land necessary for operations. Intangible investments cover patents, licenses, know-how, and other intellectual property rights.

C3IV is a tax advantage, not direct financing. Companies must request approval before incurring any expenditure. The credit reduces corporate income tax (IS) or income tax for sole proprietorships and partnerships not subject to IS. Companies finance their projects using their own funds, bank loans, private investors, or investment funds, with the tax credit enhancing project attractiveness by increasing net profitability.

The tax credit rate varies depending on company size and location:

Table 14 Differences depending on company size and location

Company size	General	ZAFR	Outermost region
Other business	20%	25%	40%
Medium sized business	30%	35%	50%
Small business	40%	45%	60%
Maximum amount per company	150 million EUR	200 million EUR	350 million EUR

Source: https://www.economie.gouv.fr/entreprises/trouver-des-aides-et-des-financements/les-aides-et-financements-pour-developper-son-4

The maximum eligible amount per company ranges from €150 million (general) to €350 million (outermost regions).[103] [104]

For example: A medium-sized company investing €10 million in a heat pump plant in a ZAFR zone qualifies for a 35% tax credit, amounting to €3.5 million. If it owes €2 million in corporate tax, it will

[103] Regional aid areas (AFR) are areas of the European Union considered to be in difficulty. Regional aid zoning is approved by the European Commission and set by decree. It defines the areas in which the State and local authorities can grant aid to businesses to encourage investment and sustainable job creation.

[104] https://www.economie.gouv.fr/entreprises/credit-impot-investissements-industrie-verte-C3IV

pay no tax and receive €1.5 million as a refund. If the company has no tax liability, it will receive the full €3.5 million as a refund.

Eligible expenditures include:

- Acquisition of tangible assets (buildings, installations, machinery, land) from third parties not linked to the company.
- Acquisition of intangible assets (patents, licenses, know-how) that can be amortized and are entered on the company's balance sheet.
- Authorisations for temporary occupation of public domain (AOT).

Costs are considered net of taxes, with public assistance deducted. Expenditures must occur after the approval application, and AOT-related expenditures are considered until the minimum operating period (five years, or three years for SMEs).

4.2.4.2 Beneficiaries

Although a tax credit, C3IV functions similarly to a reimbursement when the tax reduction exceeds a company's tax liability.

Eligibility criteria include:

- Companies must not be in financial difficulty or subject to insolvency proceedings.
- Subject to corporate tax (IS).
- Must have a clear industrialization plan.
- Must not have transferred similar activities from another EU/EEA country to France in the previous two years.
- Must comply with environmental legislation and maintain the operation of investments for at least five years (three years for SMEs).
- Must be up to date with tax and social security obligations.

Applications must be submitted to ADEME between 12 October 2023 and 31 December 2025 for expenditures from 1 January 2024. ADEME reviews the economic feasibility and compliance with environmental regulations.

4.2.4.3 Intervention logic

France has faced decades of deindustrialisation, losing around two million industrial jobs since 1980. Manufacturing's share of GDP has fallen below 9%, far below the European average of 14 percent and Germany's 19 percent. This decline has resulted in widened trade deficits, reduced

competitiveness, and increasing dependence on imports in strategic sectors such as energy, electronics, and high-tech materials. [105]

The consequences are especially acute in historically industrial regions, including Nord-Pas-de-Calais, Lorraine, and parts of Auvergne-Rhône-Alpes, where factory closures have left behind industrial wastelands, rising unemployment, and weakened local economies. Simultaneously, a significant portion of the French manufacturing sector remains a major source of greenhouse gas emissions, highlighting the need to reconcile industrial competitiveness with decarbonisation.

At the European level, fragmented industrial policies across Member States hinder the emergence of European champions capable of competing with global leaders in the U.S. and China. In this context, France seeks to reverse deindustrialisation trends by fostering a reindustrialisation strategy anchored in green technologies.

The C3IV tax credit is designed to address multiple, interconnected challenges:

- **Industrial Decline and Competitiveness:** By incentivising domestic production of batteries, wind turbines, solar panels, and heat pumps, the instrument encourages the creation and expansion of industrial capacity in strategic sectors, thereby strengthening France's industrial base and reducing reliance on imports.
- **Energy Transition and Decarbonisation:** C3IV supports the production of technologies critical to the ecological transition, aligning with national and European climate targets, including the Paris Agreement, the French Energy and Climate Act, the National Low-Carbon Strategy (SNBC), and the EU 'Fit for 55' package. By relocating low-carbon production to France, it contributes to both national and global emission reductions.
- **Economic and Social Revitalisation:** The instrument targets industrial investment in regions affected by economic decline, supporting job creation and stimulating local economies. It helps to bridge the social and territorial divides exacerbated by industrial closures and population exodus from these areas.
- **Private Investment Leverage:** By reducing the net cost of investment through tax credits, C3IV attracts private investors and financial institutions, leveraging public incentives to mobilise significant private capital for green industrial projects.
- **Strategic Sovereignty:** Strengthening domestic production in key green sectors enhances France's resilience and strategic autonomy in energy, technology, and critical materials.

[105] https://www.revueconflits.com/reindustrialisation-un-imperatif-strategique-pour-la-france-et-leurope/

In short, the intervention logic of C3IV combines industrial policy, environmental objectives, and economic development goals. It aims to create a virtuous cycle: attracting investments, expanding green industrial capacity, generating employment, and contributing to France's position as a European and global leader in sustainable industrial production

Table 15 Intervention logic - C3IV

Level	Description
Problem	• Decades of deindustrialisation, loss of ~2 million industrial jobs since 1980; manufacturing's GDP share <9%. • Widened trade deficits, reduced competitiveness, dependency on imports of strategic technologies. • Industrial decline concentrated in historically industrial regions, causing social and economic challenges. • Manufacturing remains a major emitter of GHGs, requiring alignment of competitiveness and decarbonisation goals. • Global competition and energy price pressures threaten industrial viability.
Objectives	• Stimulate domestic production of key green technologies (batteries, wind power, solar panels, heat pumps). • Accelerate the ecological transition. • Strengthen green economic sovereignty. • Attract new industrial capacity to France. • Create jobs and revitalise regions. • Reduce national and global carbon emissions via low-carbon production relocation.
Inputs	• Tax credit scheme under the 2023 French Green Industry Act. • Administered by Ministry of the Economy, DG Trésor, DGFiP, and ADEME. • €23 billion expected investment leveraged. • Varying tax credit rates (20–60%) depending on company size and location. • Technical and environmental project assessment by ADEME. • Corporate tax reductions or direct refunds to eligible companies
Activities	• Receive and assess company applications for approval • Verify compliance with eligibility and environmental criteria • Calculate and grant tax credits based on eligible investment expenditure • Conduct ex-post tax audits • Coordinate with ADEME for technical validation • Promote uptake among companies investing in eligible sectors • Ensure continued operation of supported investments for minimum required periods

Outputs	• Approved industrial investment projects in batteries, wind, solar and heat pumps • €1.8 billion in investment from 20 projects as of March 2024 • Financial support reducing net investment costs • Enhanced attractiveness of green industrial projects to private investors • Tangible and intangible assets deployed in production chains for the four targeted sectors
Outcomes (Short to Medium-Term)	• Increased domestic manufacturing capacity in key energy transition technologies • Improved competitiveness of French industry • Greater investment in low-carbon production facilities • Attraction of private capital • Job creation in green manufacturing sectors • Reduced dependence on imports for strategic technologies
Impacts (Long-Term)	• Contribution to decarbonised reindustrialisation of France • Estimated 40,000 direct jobs created by 2030 • Reduction of 35 million tonnes of CO_2 emissions; enhanced industrial sovereignty and resilience • France positioned as a European leader in green industry • Long-term economic revitalisation of industrial regions

Source: Technopolis Groups interpretation of the publicly available information collected

4.2.4.4 Governance

The program is managed by the Ministry of the Economy and DG Trésor. DGFiP examines applications and checks compliance, while ADEME issues technical opinions to confirm environmental and technical eligibility.

Companies must provide detailed information on production activities, turnover, costs, and public aid received. Approval applications are due by 31 December 2025.[106]

4.2.4.5 Results and impact

C3IV is expected to generate €23 billion in investment, create 40,000 direct jobs by 2030, and reduce CO_2 emissions by 35 million tonnes. As of March 2024, 20 project developers applied for the tax credit, representing €1.8 billion in investment:

106 https://www.impots.gouv.fr/sites/default/files/media/1_metier/2_professionnel/EV/2_gestion/220_rembousement/industrie_verte_c3iv/demande_agrement_c3iv.pdf

- Batteries: 8 projects
- Wind Power: 5 projects
- Heat Pumps: 6 projects
- Photovoltaic Panels: 1 project

Success Stories include Vendée-based Atlantic, Europe's second-largest heat pump manufacturer, who invested €140 million to relocate production to France, partly thanks to this tax credit.[107] [108]

Table 16 C3IV - Overview

Outcome indicator	Key output
Number of firms supported	On March 2024, 20 project developers applied for the tax credit. No information is available for 2025.
Capital invested	Of these applications, eight were for batteries, five for wind power, six for heat pumps and one for photovoltaic panels, representing a total investment of €1.8 billion
Average support per company	N/A
Leverage ratio (specify if expected or/and actual)	N/A

Source: https://abgi-france.com/expertises/innovation/credits-impot/c3iv/?utm

4.2.5 Initiative Tibi

4.2.5.1 Instrument characteristics

The Tibi initiative, launched in 2019, mobilises institutional savings to finance French technology companies, particularly at the growth and industrialisation stages. Instead of providing direct public funding, the State acts as a facilitator by awarding the "Tibi label" to investment funds that meet strict criteria (experienced teams, ESG standards, track record, and at least 70% investment in French tech) [109].

Institutional investors – mainly banks, insurers, pension funds, and mutuals – make formal pledges to invest in these labelled funds. This creates a signalling effect, channels private capital into strategic sectors, and reduces reliance on foreign investors for disruptive technologies. [110]

[107] https://www.economie.gouv.fr/actualites/credit-impot-investissements-industrie-verte-C3IV

[108] https://www.lesechos.fr/pme-regions/pays-de-la-loire/le-vendeen-atlantic-investit-140-millions-pour-relocaliser-ses-pompes-a-chaleur-en-france-2135216

[109] https://www.experts-du-patrimoine.fr/lexique-patrimonial/tibi/

[110] https://www.economie.gouv.fr/initiative-tibi-plan-financement-entreprises-technologiques

The funds invest across three streams:

- **Unlisted equity**: venture, growth, and late-stage financing of start-ups and scale-ups
- **Listed equity**: encouraging IPOs and listings in France to strengthen domestic capital markets
- **Direct co-investments**: in high-risk industrial and technological projects, often alongside France 2030 and major corporates

This approach supports the emergence of large-scale French funds able to compete globally, while reinforcing the financing of deeptech, ecological transition, and industrial sovereignty.

4.2.5.2 Beneficiaries

Beneficiaries are **fund management companies**, primarily based in France, with proven expertise in technology investing and responsible (ESG) practices. They must specialise in financing companies with a strong scientific or technological component (digital, life sciences, deeptech, energy transition, biodiversity, etc.), from early-stage start-ups to mature scale-ups)[111]

4.2.5.3 Intervention logic

The rationale of the Tibi initiative lies in addressing a persistent financing gap for innovative and high-risk technology companies in France and Europe. While Europe has abundant savings, institutional investors (such as insurers and pension funds) traditionally prioritise safe, liquid assets like bonds and real estate. This risk aversion has resulted in structural underinvestment in venture capital and growth equity, especially in capital-intensive or disruptive technologies such as deeptech, semiconductors, and green technologies.

Compared to the United States and China, Europe has fewer large-scale funds, limited specialist investment teams, and a weak late-stage financing ecosystem. This makes it harder for European start-ups to scale, often forcing them to seek foreign capital or relocate abroad. The consequence is a loss of technological sovereignty and increased dependence on foreign investors for strategic sectors. [112]

The 2019 Tibi report identified that French tech companies, particularly at the industrial and commercial acceleration stage, faced a severe financing bottleneck. Despite having strong scientific talent and innovative companies, France lacked domestic funds of sufficient size to provide the late-stage capital required to scale globally competitive firms. This limited both the growth of French start-ups and the development of a mature venture ecosystem.

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[111] https://www.franceinvest.eu/wp-content/uploads/2023/04/France-Invest-Initiative-Tibi-Phase-2.pdf

[112] https://www.revueconflits.com/reindustrialisation-un-imperatif-strategique-pour-la-france-et-leurope/

The Tibi initiative responds to this by mobilising institutional savings through a labelling and coordination mechanism, rather than direct state funding. The government, via the French Treasury, awards the Tibi label to funds meeting demanding criteria, including a strong track record, experienced teams, ESG standards, and a minimum allocation to French technology firms. The label serves as a signal of quality and credibility, encouraging institutional investors to commit capital.

In practice, this mechanism:

- De-risks participation for institutional investors by ensuring only credible, professional funds are labelled.
- Crowds in private capital, leveraging institutional pledges to attract additional investors.
- Strengthens the domestic ecosystem by creating larger, more professional investment funds capable of supporting companies at all stages — early, late, listed, or industrial.
- Reduces reliance on foreign capital, thereby reinforcing France's technological sovereignty in strategic sectors.

Ultimately, the intervention logic is that public coordination, without direct financial input, can unlock billions in private investment. By pooling institutional commitments and professionalising fund structures, Tibi creates the conditions for France to build a competitive, large-scale technology investment ecosystem. This not only supports start-up growth and IPOs but also contributes to national priorities: ecological transition, digital transformation, and industrial renewal.

Table 17 Intervention logic - Tibi initiative

Level	Description
Problem	• Persistent underinvestment in innovative and high-risk technology companies in Europe, due to limited institutional investor participation, small fund sizes, and lack of specialised tech investment teams. • Europe lags the US and China in financing strategic technologies, with lower R&D spending, fragmented governance, and rising competitive pressure in areas such as energy transition, semiconductors, and green technologies. • In France, the financing gap is most acute at the industrial and commercial scale-up stage, when companies need significant capital to accelerate growth.
Objectives	• Mobilise institutional savings to finance French technology companies across all stages, from start-up to growth. • Create large-scale investment funds capable of competing internationally. • Finance disruptive innovations. • Strengthen France's technological sovereignty. • Support ecological, digital and industrial transitions. • Expand and professionalise the domestic tech investment ecosystem.

Inputs	• No direct public funding: the State acts as organiser and facilitator via the Tibi label. • Governance led by DG Trésor with support from Bpifrance. • Formal pledges from institutional investors (banks, insurers, pension funds, mutuals, corporates, family offices) to allocate defined portfolio shares to Tibi-labelled funds. • Strict label criteria: experienced management teams, strong ESG reporting, and at least 70% allocation to French technology companies.
Activities	• Award Tibi labels to qualifying funds • Coordinate investor commitments and facilitate co-investment opportunities • Manage and monitor labelled funds' compliance with criteria • Organise thematic working groups • Attract new partner investors • Promote investment in unlisted (venture and growth equity), listed technology equities and direct co-investment in high-risk industrial projects • Support early-stage, late-stage, and disruptive innovation financing
Outputs	• 92 labelled funds approved by end-2023, managing €22bn. • Partner investor base expanded from 21 in 2019 to 35 in 2024. • €6.4bn invested in Phase 1, mobilising nearly €30bn in total. • €7bn pledged for Phase 2. • Emergence of new large-scale funds, including several first-time funds. • Diversification into deeptech, healthcare, energy, and ecological transition. • Hundreds of new hires in approved fund
Outcomes (Short to Medium-Term)	• Increased financing for French technology companies at all growth stages • Stronger domestic tech investment ecosystem with greater density, diversity, and depth • More large-scale funds competing internationally • Enhanced capital availability for deeptech, energy transition and other strategic sectors • Increased IPO activity and attraction of listings in France • Reduction of reliance on foreign capital for strategic technologies
Impacts (Long-Term)	• Strengthened French and European technological sovereignty • Sustained growth of globally competitive technology companies • Leadership in deeptech and strategic sectors • Acceleration of ecological, digital, and industrial transitions • Revitalisation of industrial capacity • Enhanced economic resilience and job creation in high-value sectors

Source: Technopolis Groups interpretation of the publicly available information collected

4.2.5.4 Governance

The initiative is coordinated by the **French Treasury (DG Trésor)** with support from **Bpifrance**. A technical committee reviews fund applications, ensures compliance with label criteria, facilitates co-investment opportunities, and organises thematic working groups to strengthen the ecosystem.

4.2.5.5 Results and impact

Strong results from phase 1

The results of Phase 1 of the Tibi initiative are highly positive and demonstrate its catalytic role for the French tech ecosystem. [113] Between 2020 and 2022, institutional partners exceeded their initial €6 billion pledge, with €6.4 billion ultimately invested in approved funds. [114] Thanks to the leverage effect of co-investments and complementary capital, nearly €30 billion was mobilised, of which two-thirds went to late-stage private equity funds and one-third to listed equity funds. This scale of mobilisation helped position France as the leading EU ecosystem for technology financing: in 2023, French technology firms raised €8.3 billion, compared with €6.6 billion in Germany. [115]

Since launch, 92 venture capital and growth funds have been awarded the Tibi label, representing €22 billion in assets under management and aiming to reach €35–40 billion. Their available "dry powder" is estimated at €13 billion. These funds reflect both the diversity and professionalisation of the ecosystem:

- 53 late-stage funds (15 first-time), 37 early-stage (7 first-time) and 2 secondary funds.
- Sectoral breadth: 43 generalist, 34 deeptech (incl. 16 health), 13 ecological/energy transition (incl. 3 impact), and 2 secondaries.
- One quarter are first-time funds, signalling strong entrepreneurial dynamism in investment management.

The growth of funds has been accompanied by 348 new hires (including 174 senior staff), a 40% increase in headcount across the unlisted investment segment. This indicates not only capital expansion but also human capacity-building in investment expertise.

The initiative has clearly **directed capital toward strategic sectors**:

- Deeptech accounts for 27% of investments by approved funds, including medtech/biotech, energy (5%), cybersecurity (4%), mobility (2%) and AI (1%).
- Software and platforms together represent 45% of investments.

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[113] https://www.tresor.economie.gouv.fr/Articles/2024/05/06/initiative-tibi-phase-2-et-perspectives

[114] https://www.tresor.economie.gouv.fr/Articles/2024/05/06/initiative-tibi-phase-2-et-perspectives

[115] https://www.tresor.economie.gouv.fr/Articles/2024/05/06/initiative-tibi-phase-2-et-perspectives

- Healthcare accounts for 20% and ecological/energy transition more than 10%.

This rebalancing shows that Tibi has begun to shift the investment mix towards sectors aligned with France's priorities: technological sovereignty, green and digital transitions.

Phase 2: Building on success

Launched in June 2023, Phase 2 aims to mobilise €7 billion of fresh institutional funding. This new phase broadens the scope by adding an early-stage component to sustain the pipeline of technology start-ups and increasing the focus on disruptive innovation in both start-ups and established firms. It also seeks to reinforce underfinanced areas such as deeptech, ecological and industrial transitions, and to deepen the role of the stock market as a financing channel.

Phase 2 is also widening the investor base: the number of partner investors has grown from 21 at launch in 2019, to 30 by mid-2023, and 35 by May 2024 — now including large corporates and family offices in addition to traditional institutional investors.

Taken together, the results show that the Tibi initiative has delivered:

- A structural increase in the supply of growth capital for French tech firms.
- The emergence of a more dense, diverse, and professional investment ecosystem.
- Greater attractiveness of France as a listing destination, with IPO activity starting to increase.
- A shift in capital allocation towards deeptech, healthcare, and ecological transition sectors, directly supporting national strategic priorities.

Long-term impacts are expected to include strengthened technological sovereignty, sustained growth of globally competitive firms, leadership in deeptech and green technologies, revitalised industrial capacity, and significant job creation in high-value sectors.

Success stories such as CAPZA Growth Tech and Move Capital illustrate how Tibi-labelled funds are not only mobilising large ticket sizes (€300m+) but also deploying hands-on strategies to help French and European technology firms become global leaders in their niches. [116] [117]

Table 18 Tibi initiative - Overview

Outcome indicator	Key output
Number of firms supported	320 specialist investors recruited in France in the 67 funds approved by the initiative

[116] https://capza.co/fr/news/capza-growth-tech-labellise-par-la-commission-tibi/

[117] https://www.keplercheuvreux.com/fr/articles/communiques-de-presse/le-fonds-move-capital-i-a-ete-selectionne-par-le-comite-tibi

Capital invested	6 billion in funds raised by partner investors over the period 2020-2022
Average support per company	NA
Leverage ratio (specify if expected or/and actual)	NA

Source: https://www.economie.gouv.fr/initiative-tibi-plan-financement-entreprises-technologiques

4.2.6 ADEME Investissement

4.2.6.1 Instrument characteristics

ADEME Investissement is a 100 percent state-owned facility with €400 million in equity capital, created by decree in December 2018 under the PIA (now part of France 2030). Chaired by ADEME, it co-invests with private actors in innovative infrastructure projects for the ecological transition, sharing technological risks and accelerating the deployment of new solutions.

Its role is complementary to ADEME's technical expertise and to Bpifrance's broader financing scope, focusing specifically on high-risk, capital-intensive projects at the demonstration or early industrial deployment stage[118]. Rather than competing with private investors, ADEME Investissement acts as a catalytic investor, de-risking early projects so that private capital can later scale them[119].

Financing scope:

- Equity/quasi-equity for innovative infrastructure (project financing)
- Equity in developers of innovative solutions (corporate venture)
- Investment in specialized funds (fund of funds)

Ticket size: €2–40 million.[120]

4.2.6.2 Beneficiaries

Eligible projects must contribute to the ecological and energy transition, including:[121][122]

- Energy: renewable production, storage, hydrogen, energy efficiency, smart grids
- Mobility: electromobility, hydrogen/gas mobility, logistics, maritime, rail, road

[118] https://www.legifrance.gouv.fr/jorf/id/JORFTEXT000037600154

[119] Refer to note 44

[120] Nos missions - ADEME Investissement

[121] https://www.ademe-investissement.fr/nos-modalites-dintervention/#nos-conditions-dintervention

[122] https://fr.linkedin.com/company/ademe-investissement

- Circular economy & renewable gas: waste recovery, methanisation, pyrogasification, power-to-gas
- Climate & biodiversity: CO_2 capture, green chemistry, eco-efficiency, agroecology, biodiversity protection

Beneficiaries range from start-ups to scale-ups and mature SMEs. Selection is based on environmental impact, industrial benefits for France (jobs, supply chains), innovative infrastructure or models, and viable, replicable business cases.

4.2.6.3 Intervention logic

The rationale behind ADEME Investissement is to close a structural financing gap for high-risk, capital-intensive ecological transition projects, particularly at the demonstration and early industrial deployment stages. These projects often struggle to secure private financing because of their technological novelty, long payback periods, and high market risk.

To address this, ADEME Investissement provides equity financing (€2–40m per project), backed by €400 million in state-owned capital, and leverages ADEME's technical expertise. By co-investing alongside private actors, the fund absorbs part of the early-stage risk, enabling innovative infrastructure projects – such as renewable energy, sustainable mobility, circular economy, and biodiversity protection – to reach their first commercial deployment.

The instrument's core logic is to act as a catalyst: once a project demonstrates technical and commercial viability, private investors can step in at scale. In doing so, ADEME Investissement accelerates the market adoption of ecological transition technologies, strengthens French industrial capabilities, and supports job creation. Ultimately, the long-term goal is to contribute to a structural transformation toward a low-carbon, sustainable economy and at the same time attract more private capital.

Table 19 Intervention logic - ADEME Investissement

Level	Description
Problem	• Structural financing gap for high-risk, capital-intensive projects in the ecological transition at demonstration or early industrial deployment stages. • Private investors are reluctant due to the novelty of technologies, long payback periods and elevated technological and market risks.
Objectives	• Accelerate the deployment of innovative ecological transition technologies by financing first commercial units. • De-risk early-stage infrastructure projects to enable private capital to invest once technologies mature.

	• Generate environmental and industrial benefits for France, including job creation and support for domestic technology providers.
Inputs	• €400 million state-owned equity capital. • Governance by a Supervisory Board including representatives from the General Secretariat for Investment, the Ministry of the Economy, and the Ministry for Ecological Transition. • Strong technical partnership with ADEME's expert teams. • Investment windows of €2–40 million per project. • Equity, quasi-equity and fund-of-funds approaches.
Activities	• Identify and assess eligible innovative infrastructure projects; conduct due diligence including environmental studies and risk analysis. • Structure financing arrangements alongside private co-investors. • Participate in governance of funded projects. • Monitor project performance and impacts.
Outputs	• Equity or quasi-equity investments in projects within sectors such as renewable energy, sustainable mobility, circular economy, greenhouse gas mitigation and biodiversity protection. • Creation of innovative infrastructure or assets. • Co-investment with private actors. • Demonstration of commercially viable ecological transition solutions.
Outcomes (Short to Medium-Term)	• Deployment of first commercial units in innovative infrastructure. • Reduced investment risk for private sector participation. • Accelerated market adoption of sustainable technologies. • Creation of jobs. • Strengthened industrial capabilities in ecological transition sectors.
Impacts (Long-Term)	• Structural transformation towards a low-carbon and sustainable economy. • Sustained private sector investment in ecological infrastructure. • Widespread adoption of innovative technologies. • Reduced greenhouse gas emissions and enhanced biodiversity protection. • Strengthened national industrial base and competitiveness.

Source: Technopolis Groups interpretation of the publicly available information collected

4.2.6.4 Governance

Investment decisions follow a structured process with regular committees (go/no-go, due diligence, financial approval). ADEME Investissement benefits from ADEME's technical expertise.

Its Supervisory Board includes representatives of the General Secretariat for Investment, the Ministry of the Economy, and the Ministry for Ecological Transition.

Applicants must provide environmental studies, a 10-year business plan, legal and financial arrangements, and risk analyses. The decision process usually takes 3–6 months. There is no permanent call; projects are assessed ad hoc. [123]

4.2.6.5 Results and impact

No consolidated results are yet available, but early investments include:

- **ENOGIA Asset Industry**: Joint venture with Enogia (55% Enogia, 45% ADEME Investissement) to finance €15m in waste heat recovery (Organic Rankine Cycle) equipment, enabling 70–80 projects over 5 years. [124]
- **TLS Geothermics**: €13.3m fundraising (July 2022, with Noria) to accelerate exploration of deep geothermal deposits for energy, cooling, and lithium recovery.[125]

4.3 Synthesis/summary

The mapping of public instruments for greentech scale-ups in France highlights an ecosystem that is both increasingly structured and strategically oriented. It reflects not only the priority accorded to ecological transition but also the ambition to reindustrialise the French economy around green technologies. Several key conclusions emerge:

✅ **A multi-tiered and coordinated support architecture.** France has put in place a dense and well-structured suite of instruments that collectively span the financing continuum for greentech scale-ups. Anchored in national frameworks such as France 2030, the Green Industry Law, and the Energy and Climate Strategy, these instruments provide diverse forms of support, from equity and quasi-equity to tax incentives. Importantly, they are designed to interact, creating a layered system that aligns investment with national industrial and ecological priorities.

✅ **Targeted responses to persistent market gaps.** The design of the instruments demonstrates a clear understanding of market failures, particularly the scarcity of growth-stage financing and the difficulty of attracting private capital to capital-intensive or high-risk industrial projects. Vehicles such as Fonds Ecotechnologies 2 and SPI 2 explicitly seek to bridge these gaps by de-risking investments through pari passu co-financing. In this way, they act as catalysts, enabling private capital to flow into areas critical for the ecological transition.

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[123] https://www.ademe.fr/wp-content/uploads/2024/12/2025-regles-generales-attribution-aides-ademe.pdf

[124] https://www.ademe-investissement.fr/nos-transactions/economie-circulaire/projet-transport/

[125] https://www.ademe-investissement.fr/en/our-transactions/energy/tls-geothermics/

✅**Robust institutional coordination.** Governance is a distinctive strength of the French model. Bpifrance acts as the operational backbone, managing funds and ensuring professional investment practices, while strategic oversight is exercised through interministerial committees and the General Secretariat for Investment (SGPI). The use of Advisory Committees ensures decisions remain aligned with ecological transition objectives and broader industrial policy, thereby embedding accountability and coherence into the system.

✅**Strong mobilisation of capital.** The mapping confirms that public intervention has succeeded in mobilising substantial private resources. By leveraging public funds, France has been able to attract private investors into areas with high decarbonisation potential, thereby multiplying the overall scale of capital available for greentech scale-ups.

✅**Signs of maturity and catalytic impact.** Recent fundraising activity underscores the growing maturity of the ecosystem. Increasingly, scale-ups can access larger rounds, with capital being channelled into later-stage projects. Strategic sectors such as energy storage, hydrogen, industrial decarbonisation, and green mobility are emerging as investment hotspots, strengthening France's position within global greentech value chains.

✅**Remaining challenges and future needs.** Despite these achievements, the mapping also highlights persistent challenges. Permitting and administrative bottlenecks continue to slow down industrial deployment. The technological risks inherent in scaling up innovative solutions create uncertainty for both investors and entrepreneurs. Territorial equity also remains an issue, as greentech investment is unevenly distributed across regions. Finally, some newer instruments, such as the C3IV, are still at an early stage of implementation and lack evaluation, though initial signals of uptake are encouraging.

✅**France's public support ecosystem for greentech scale-ups is becoming both comprehensive and catalytic**. It demonstrates a clear logic of intervention, an advanced model of institutional coordination, and tangible early signs of impact on the maturity of the ecosystem. At the same time, ongoing challenges remind us that achieving France's climate and industrial goals will require sustained effort to consolidate this progress, address bottlenecks, and maintain the delicate balance between industrial competitiveness and ecological ambition.

5 Public support instruments for greentech scaleups in the Netherlands

5.1 Context and ecosystem overview

Public support for greentech scale-ups in the Netherlands is shaped by a diverse ecosystem of actors. The **Ministry of Climate and Green Growth** sets strategic priorities and allocates resources, while the **Netherlands Enterprise Agency (RVO)** translates these into targeted instruments such as grants, subsidies, and regulatory support. **Invest-NL** (the Dutch promotional investment agency) and **regional development agencies** (ROMs) provide catalytic capital, often bridging early-stage gaps that private investors are reluctant to fill.

Private players such as venture capital firms, corporate investors, and banks are increasingly active, but risk appetite in greentech remains constrained by long payback periods and policy uncertainty. Platforms such as **Techleap.nl** and **industry associations** like **FME** foster dialogue between innovators, financiers, and policymakers, helping to close knowledge and coordination gaps. The effectiveness of this support depends on alignment across actors: co-investment structures, mission-driven programmes, and shared infrastructure illustrate a growing shift toward collaboration rather than fragmentation. A key example is the **Top Consortium for Knowledge and Innovation (TKI)** for energy and industry, which links companies and research institutes to accelerate clean energy innovation. [126]

The Ministry of Economic Affairs defines scaleups as former startups, innovative, technology-driven firms with strong growth ambitions, that have matured beyond the early stage. Operationally, they are firms with at least ten employees before a period of rapid revenue growth (73 percent over three years). While the exact definition continues to be debated, this highlights the critical transition point where Dutch companies face persistent financing and regulatory hurdles. [127]

The Dutch greentech market is active across several high-potential sectors, including **sustainable food systems, clean mobility, renewable energy** (solar and wind), **circular economy** solutions, and **water treatment technologies**. Notable scale-up champions include: [128]

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[126] For more information, please see: https://topsectorenergie.nl/en/

[127] CBS, RVO & BAT-lab (2024). Starten om niet te stoppen met groeien. Source: https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://www.cbs.nl/-/media/_pdf/2024/28/batlab-2024--starten-om-niet-te-stoppen-met-groeien.pdf&ved=2ahUKEwjWo4idydeOAxX28LsIHR_1CKIQFnoECAkQAQ&usg=AOvVaw28zdDzc-A44SZkOokP4nlj

[128] MT Sprout (2024). Source: https://mtsprout.nl/groei/investeringen-april-2024

- **Avantium** – developer of plant-based plastics from sugars; secured a €90 million loan from Invest-NL and four Dutch banks in 2023.
- **Lightyear** – innovator in solar-integrated mobility; following bankruptcy and relaunch, its technology is now applied in EV integration; raised €81 million led by Invest-NL.
- **Mosa Meat** – pioneer in cultured meat; raised ~€135 million, with regulatory approval for sales currently limited to Singapore.

5.1.1 Strategic policy framework

Scaleup-support is embedded within broader national innovation and industrial policy frameworks. The **Mission-Driven Top Consortia** and **Innovation Policy**, launched in 2019, **set 25 missions under four societal themes**, including Energy Transition & Sustainability. These build on existing top sectors, leveraging networks and instruments to stimulate innovation and growth.

In 2024, the **National Technology Strategy (NTS)** identified nine key technologies critical to competitiveness, security, and societal challenges. These include biomass and waste conversion processes, CO_2 reduction technologies, and biomolecular and cell technologies for sustainable agriculture and food production.

Although there is no single national strategy focused exclusively on scale-ups, parliament has declared the ambition for the Netherlands to become Europe's leading startup and scale-up ecosystem. Initiatives under discussion in 2025, such as payroll tax credits on stock option benefits for startup and scale-up employees, reflect this ambition, though implementation will depend on future political developments.

5.1.2 Greentech funding landscape

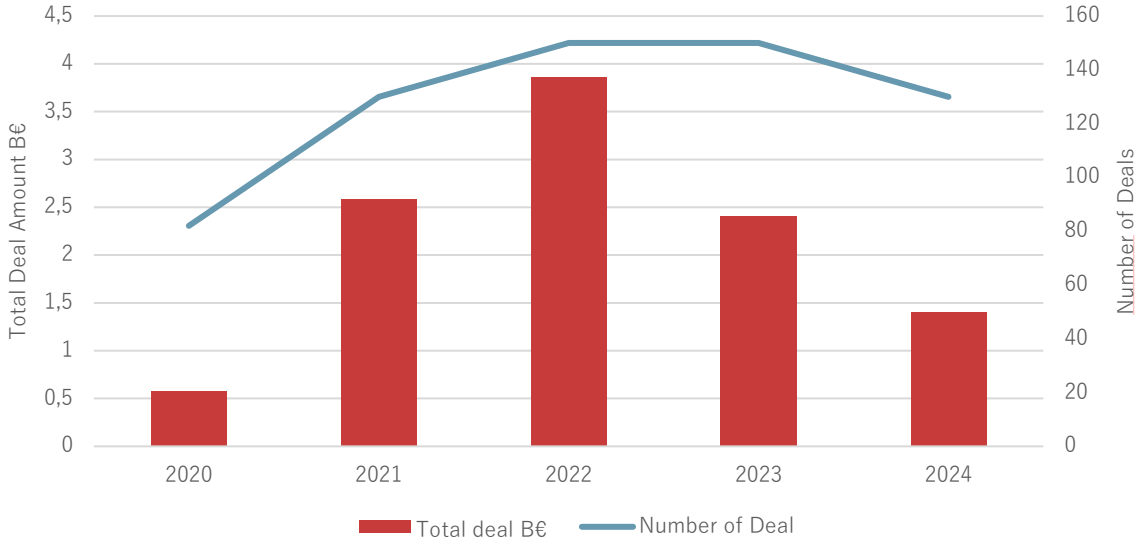
The Netherlands has built a strong tech foundation, supported by a skilled workforce and leading research institutions such as TNO and Wageningen University & Research. Venture capital investment reached 0.12 percent of GDP in 2022, which is above the EU average (0.09%) and comparable to Germany (0.09%), France (0.12%), and the UK (0.14%). Yet despite this, scale-up growth lags European leaders. Later-stage investment rounds above €20 million are relatively rare, and Dutch companies typically take around two years to secure follow-on funding which is twice as long as in the US. Labour and tax regulations further add to the challenges. [129] [130]

[129] Techleap - State of Dutch Tech 2025

[130] Parliamentary paper, 16 september 2024. Source (Dutch): https://open.overheid.nl/documenten/1693e580-83bf-4ad7-a564-a725115c33b5/file

Figure 26 show a rapid increase in both total deal amounts and number of deals between 2020 and 2022. Total deal value peaked in 2022 at nearly €4 billion, while the number of deals reached about 150, remaining stable into 2023 before declining in 2024. This recent downturn suggests a cooling investment climate after a period of strong growth.

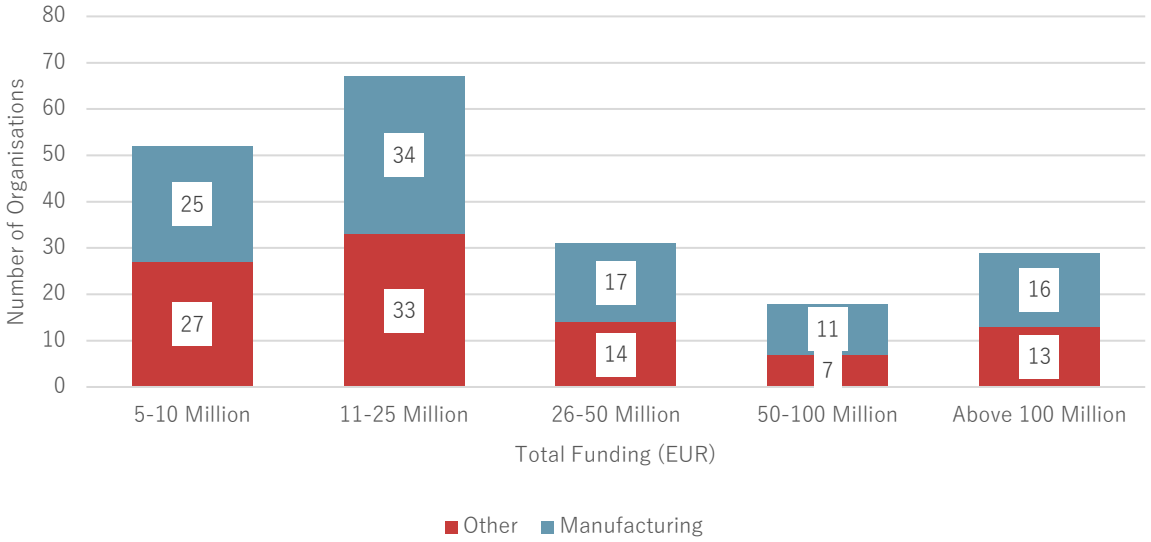
Figure 26 Total deal amount and number of deals by year



Source: Net Zero Insight database

Figure 27, total funding, shows that most organisations have raised less than €25 million overall, with the €11–25 million range leading. Manufacturing dominates higher funding brackets, while other sectors are more prevalent only in the €5–10 million range. Large-scale investments above €50 million remain rare, indicating that later-stage financing gaps persist.

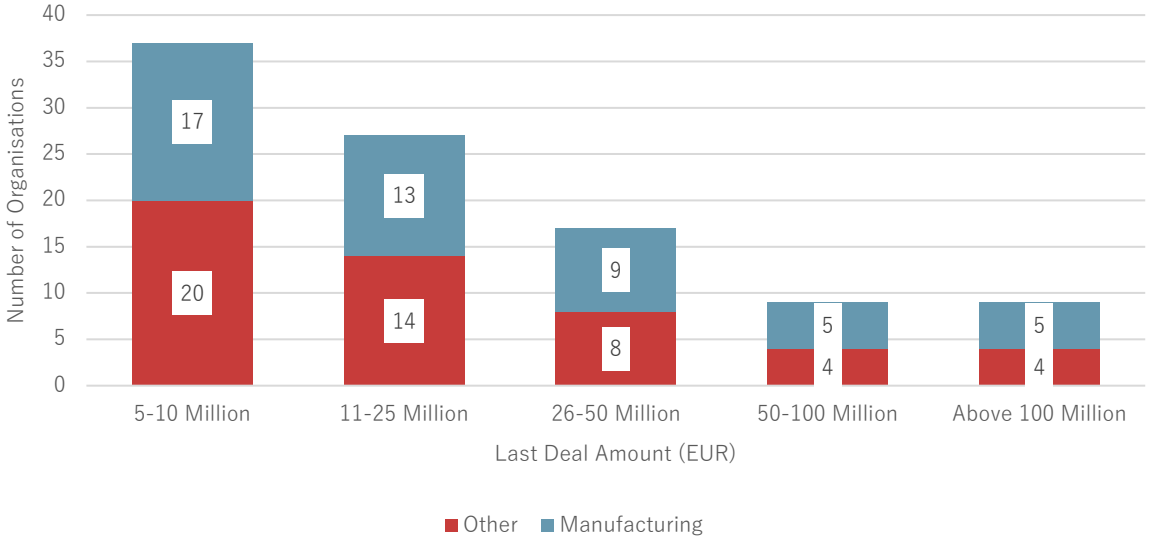
Figure 27 Total funding by organisation: manufacturing vs others



Source: Net Zero Insight database

Figure 28, recent deal sizes, tell a similar story. Most last funding rounds were between €5–10 million, with other sectors slightly outnumbering manufacturing. The €11–25 million range is the second most common and deals above €50 million are infrequent. Even in the highest brackets, manufacturing and other sectors are evenly represented.

Figure 28 Number of organisations by last deal amount, split between manufacturing and other sectors



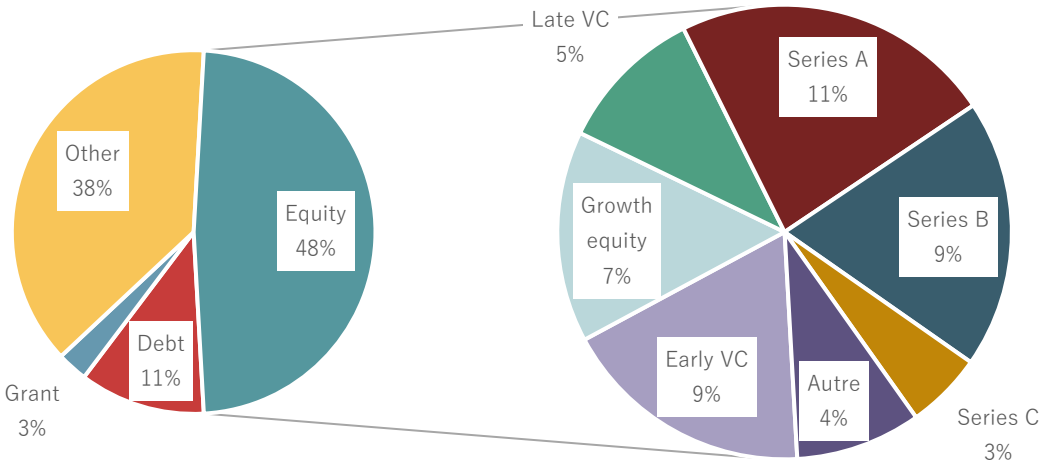
Source: Net Zero Insight database

Together, these patterns suggest that while some organisations have built significant capital bases over time, the flow of large new investments into the Dutch greentech sector is limited. Bridging

these later-stage financing gaps will be essential to accelerate scale-up growth and maintain competitiveness.

Figure 29 shows that equity dominates total funding at 48%, followed by other sources (38%), debt (11%), and grants (3%). Within equity, the largest shares go to Series A (11%), Series B and early VC (9% each), and growth equity (7%). Smaller portions are found in late VC (5%), autre (4%), and Series C (3%). Overall, equity funding spans all stages, with the strongest presence in early and mid-stage investments.

Figure 29 Equity funding: Total deal amount by deal type

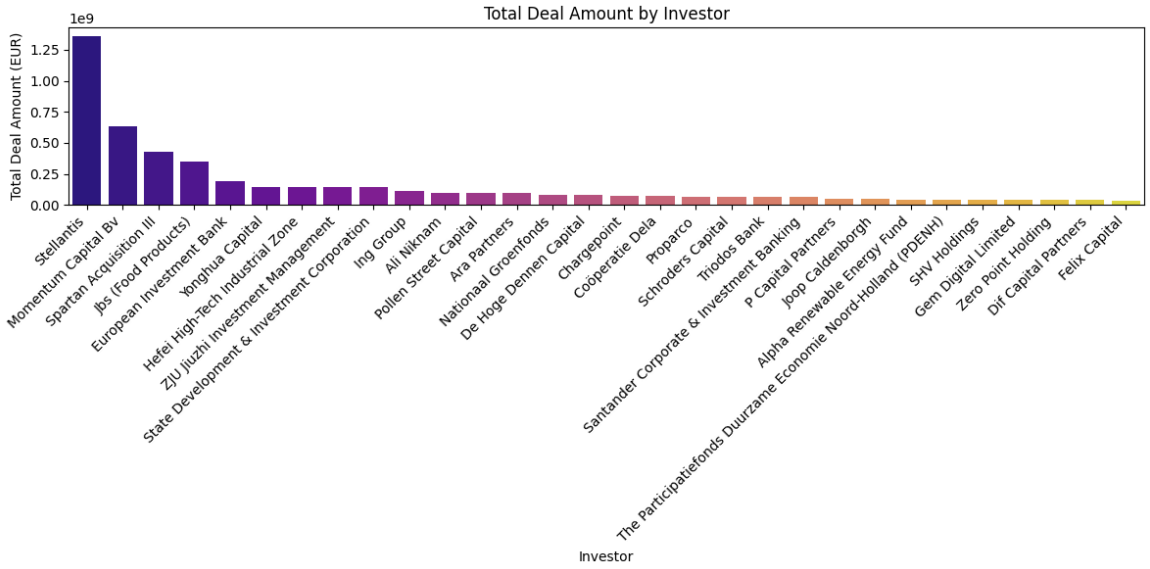


Source: Net Zero Insight database

Figure 30 presents the total deal amounts by investor. Stellantis stands out with investments exceeding €1.3 billion—more than double that of the next largest contributor, Momentum Capital BV. Other major investors include Spartan Acquisition III, JBS (food products), and the European Investment Bank. After the top five, contributions drop steeply, with most remaining investors committing under €100 million each.

Together, the data highlights two key trends: the dominance of equity financing across a range of investment stages, and the outsized influence of a handful of large investors in shaping overall deal volumes.

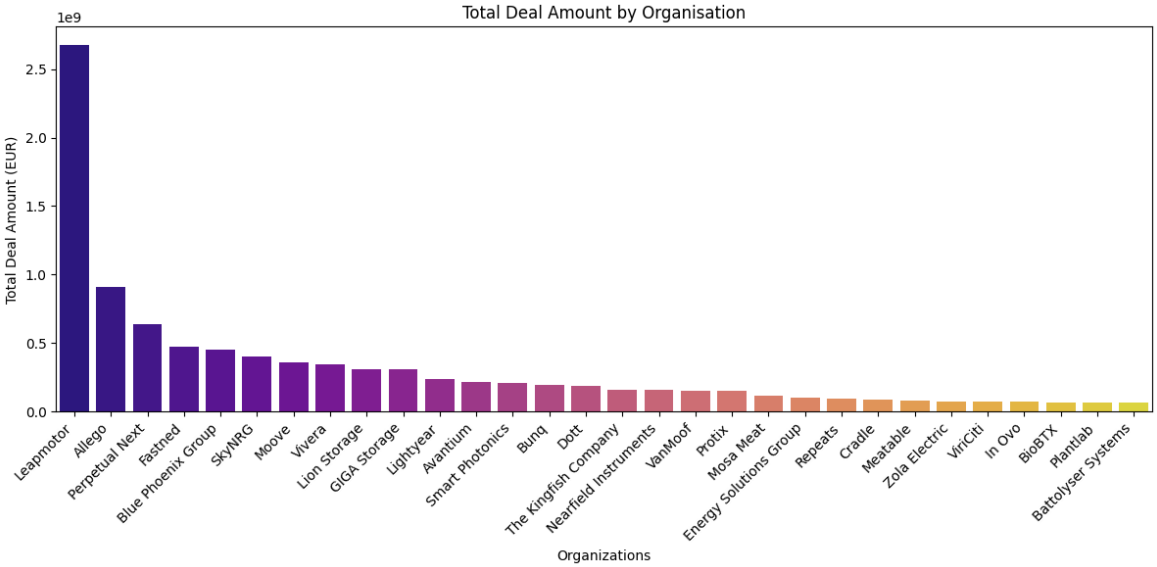
Figure 30 Total deal amount by investor



Source: Net Zero Insight database

Figure 31 shows the total deal amounts (EUR) by organisation, where a handful of companies dominate the funding landscape. *Leapmotor* stands out clearly, with more than €2.6 billion raised, and is far ahead of the rest. It is followed by *Allego* and *Perpetual Next*, both exceeding €800 million and €700 million respectively. Other notable recipients include *Fasned*, *Blue Phoenix Group*, and *Skytngo*, each securing several hundred million euros. Most of the remaining organisations received considerably smaller amounts, highlighting the highly concentrated nature of the funding distribution.

Figure 31 Total deal amount by organisation



Source: Net Zero Insight database

5.2 Green financial instruments

5.2.1 Methodology

The analysis began with a desk-based review of publicly available sources to map existing financial instruments. This initial phase identified seven instruments, most of which were funded by the Ministry of Economic Affairs and implemented by either the Netherlands Enterprise Agency (RVO) or Invest-NL.

In the second phase, in-depth research was conducted to assess the characteristics and relevance of the remaining instruments. Two were selected for detailed examination: the **Investment Grant for Manufacturing Industry Climate Neutral Economy** and **Techleap**.

For these instruments, a wide range of sources was reviewed, including official programme documents, implementation agreements, regulatory texts, and recent news coverage, to ensure the information was both current and comprehensive. As part of the mapping, two interviews were also conducted—one with a representative from Cleantech Benelux and another with a representative from Invest-NL.

5.2.2 Investment Grant for Manufacturing Industry Climate Neutral Economy (IMKE)

5.2.2.1 Instrument characteristics

Investment Grant for Manufacturing Industry Climate Neutral Economy (IMKE) is a direct grant scheme for well-defined projects funded through three proposals under the National Growth Fund (**Nationaal Groeifonds, NGF**). [131] The Growth Fund is a government programme that invests in projects aimed at strengthening the Netherlands' long-term earning capacity, with a particular focus on innovation and sustainability. The scheme is managed by the Ministry of Economic Affairs and Climate Policy and implemented by the Netherlands Enterprise Agency (RVO).

The scheme operates for a single round (2024–2025), with projects required to be completed within five years. The total budget is €148 million, allocated across three priority clean-tech areas: €100 million for electrolysers, €20 million for batteries, and €28 million for solar panels and related components.

A central aim is to stimulate private investment alongside public funding. The grant covers only part of the project costs, requiring companies to provide co-financing. The grant rate ranges from 15-40 percent, depending on company size and location in the Netherlands. This structure is designed to

[131] GreenNL, Material Independence & Circular Batteries and SolarNL

leverage public funds to attract private capital into critical green technologies while ensuring companies share in the financial risk

5.2.2.2 Beneficiaries

The instrument targets companies in the Dutch manufacturing industry engaged in producing high-quality green technologies[132], defined here as greentech. Specifically, it supports production lines for manufacturing essential components for:

- Electrolysers
- Battery production or recycling equipment
- Solar panels

The scheme can fund all strictly necessary investment costs required to set up the production line, covering both tangible (material) and intangible (immaterial) investments:

- Tangible investments include physical assets such as installations, equipment, and machinery, as well as land and buildings if they are essential to the production line.
- Intangible investments include costs such as detailed engineering, functional testing to verify supplier specifications, and commissioning activities before the line becomes operational.

Funding is available across different stages of business growth, including commercialisation and expansion. The scheme is open to companies of all sizes, though small and medium-sized enterprises (SMEs) benefit from more favourable grant rates. SME status is determined according to the European Commission's definition. [133] Projects located in designated 'support areas'[134] and regions prioritised by the Dutch government are also eligible for higher funding rates. Table 20 provides an overview of the applicable grant percentages under these conditions.

Table 20 Percentage of grant depending on area

Company size	Outside of supported area	Inside supported area
Small	35%	40%
Medium	25%	30%

[132] Rijksoverheid (2024). VEKI. Source: https://www.rijksoverheid.nl/actueel/nieuws/2024/07/31/148-miljoen-voor-stimulering-nederlandse-maakindustrie-en-klimaatneutrale-economie#:~:text=%E2%82%AC%20148%20miljoen%20voor%20stimulering%20Nederlandse%20maakindustrie,in%20Nederland%20te%20bevorderen%2C%20introduceert%20het%20kabinet

[133] RVO (n.d.). Source: https://www.rvo.nl/onderwerpen/subsidiespelregels/ez/mkb-verklaring

[134] https://www.rvo.nl/subsidies-financiering/imke

Large	15%	20%

Based on RVO (2025)[135]

To be eligible, companies must be established in the Netherlands and not be classified as a company in difficulty according to EU rules.

Key conditions for the grant include a requirement for private co-financing, since the grant only covers 15 to 40 percent of the total costs. The projects must start within six months of receiving the grant and be completed within five years. Throughout the project, companies must provide progress reports, and after two years, inspections of the project site take place. At the end, a final report, grant settlement, and audit statement are mandatory.

In terms of funding limits:

- The maximum grant per company depends on the technology:
  - Electrolysers: up to €50 million
  - Batteries: up to €20 million
  - Solar panels: between €25 and €28 million
- Grant shares vary from 15% to 40%, depending on company size and location. These regions have been approved by the European Commission for increased state aid.[136]
- Eligible costs include capital expenses for production lines and key components but exclude R&D and pilot projects.
- The total project duration must be under five years.

5.2.2.3 Intervention logic

The IMKE instrument pursues three main goals: accelerating the transition to a climate-neutral economy, strengthening domestic greentech manufacturing, and reducing dependence on fossil fuel imports and non-EU suppliers. It addresses a persistent investment gap in scaling clean technology production lines, which are typically too capital-intensive with long payback periods to attract sufficient private finance.

Unlike many other subsidy schemes, IMKE does not require companies to demonstrate direct CO_2 reduction. This marks a significant departure. Previously, such investments were hard to incentivise

[135] RVO (n.d.). Source: https://www.rvo.nl/onderwerpen/subsidiespelregels/ez/mkb-verklaring

[136] RVO (2022). Steunmaatregel SA.105305 (2022/N) – Nederland Wijziging van de regionalesteunkaart voor Nederland (1 januari 2022 – 31 december 2027) – gebruik van de bevolkingsreserve. Source: https://www.rvo.nl/sites/default/files/2024-06/Steunkaart_NL_2022tm2027.pdf

because the emissions reductions occur downstream, at the customer level (e.g. in the chemical or construction industries), rather than at the point of production. By recognising this indirect effect, IMKE lowers the barriers for companies to qualify and invest in sustainable manufacturing technologies.

Although the programme lacks a formal theory of change, its logic is straightforward, see Table 21. By providing direct financial support for investments in Dutch production lines for electrolysers, innovative solar panels, and batteries, IMKE enables the establishment and expansion of clean technology manufacturing capacity in the Netherlands. This, in turn, is expected to:

- Reduce production costs through economies of scale.
- Stimulate the emergence of Dutch-based greentech suppliers.
- Decrease reliance on non-EU suppliers.
- Strengthen Europe's strategic autonomy in energy and technology.
- The intended impacts are to accelerate the energy transition, enhance the Netherlands' and EU's strategic resilience, and contribute to long-term climate neutrality.

IMKE is closely aligned with the policy objectives of the Ministry of Economic Affairs and Climate Policy, as it is indirectly financed through the National Growth Fund (NGF). The NGF's overarching aim is to strengthen the Netherlands' sustainable earning capacity, which IMKE supports by enabling innovative, capital-intensive manufacturing investments that advance both industrial competitiveness and environmental sustainability.

Table 21 Intervention logic IMKE

Level	Description
Problem	• The manufacturing of clean technologies such as electrolysers, batteries and solar panels requires high capital investment and involves long return on investment periods, which creates an investment gap. • There is a dependency on fossil fuel imports and non-EU suppliers for key clean tech components. • Existing subsidies often require direct CO_2 reduction proof, which is difficult for production-line investments because CO_2 reductions happen downstream at the customer level. • Regulatory hurdles and permitting processes cause delays and increase project risks.
Objectives	• Accelerate the transition to a climate neutral economy in the Netherlands • Strengthen domestic manufacturing capacity for greentech production lines (electrolysers, batteries, solar panels) • Reduce dependency on fossil fuel imports and non-EU suppliers • Attract private co-investment alongside public funding to share financial risk

	• Support sustainable economic growth aligned with the National Growth Fund's aim to increase the Netherlands' long-term earning capacity through innovation and sustainability
Inputs	• Total budget of €148 million from the National Growth Fund (NGF), divided into €100 million for electrolysers, €20 million for batteries and €28 million for solar panels • Funding managed by the Ministry of Economic Affairs and Climate Policy and implemented by the Netherlands Enterprise Agency (RVO) • Private co-financing required from companies, covering 60% to 85% of project costs depending on company size and location • Application system and administrative support by RVO for project assessment, monitoring, and reporting
Activities	• Call for project proposals from Dutch manufacturing companies for investments in greentech production lines • Evaluation and selection of projects on a first-come, first-served basis without competitive ranking • Disbursement of direct grants covering 15-40% of eligible project costs based on company size and location • Monitoring of project progress through regular reports, site inspections after two years and final audits • Coordination with other NGF programmes to align greentech investments with broader sustainability goals
Outputs	• Grants awarded to projects setting up or expanding production lines for electrolysers, battery manufacturing/recycling and solar panel components • Approximately six companies supported so far, with €39 million allocated by mid-2025 • Detailed project plans and financial commitments submitted by applicants • Regular progress reports, inspections, and audits conducted to ensure compliance and proper use of funds
Outcomes (Short to Medium-term)	• Increased industrial capacity for clean technology manufacturing in the Netherlands • Improved financial feasibility of capital-intensive greentech projects through partial public funding • Attraction of private investment to supplement grants, reducing financial risk • Reduction in reliance on non-EU suppliers through development of domestic supply chains • Enhanced ability of companies to scale up greentech production and contribute to sustainable economic growth
Impacts (Long-term)	• Accelerated national energy transition towards climate neutrality • Strengthened strategic autonomy of the Netherlands and EU in clean technology manufacturing • Reduced fossil fuel dependency and carbon emissions through expanded clean tech deployment • Increased sustainable earning capacity of the Dutch economy aligned with NGF goals

	• Establishment of a resilient, innovative greentech industrial base supporting long-term economic and environmental sustainability

Source: Technopolis Groups interpretation of the publicly available information collected

5.2.2.4 Governance

The governance of this instrument involves several key actors. The Ministry of Climate and Green Growth initiated the grant, reflecting its strategic focus on sustainable development and the energy transition. Funding originates from three programmes under the National Growth Fund (NGF), whose objective is to enhance the Netherlands' long-term sustainable earning capacity. Overall responsibility for the NGF rests with the **Ministry of Economic Affairs**, while the **Netherlands Enterprise Agency (RVO)** manages the day-to-day operations, including application handling, project selection, monitoring, and reporting.

The scheme is designed to be **complementary to other NGF programmes** such as GreenNL, Material Independence & Circular Batteries, and SolarNL. Together, these initiatives aim to stimulate future economic growth through sustainable innovation and industrial transformation, ensuring coherence between IMKE funding and the broader national strategy.

Applications are submitted via RVO's online portal, requiring companies to provide a detailed project plan with budget forecasts, income statements, proof of co-financing, and knowledge dissemination strategies. The evaluation process takes around eight weeks and is carried out by RVO on a **first-come, first-served basis**, without competitive ranking or external review committees. While this approach accelerates decision-making, it may also limit the scope for comparative assessment of project quality.

5.2.2.5 Enablers/Barriers

Regulatory hurdles remain a major barrier for clean technology investments. Complex and lengthy permitting procedures for new production facilities or infrastructure upgrades can delay projects by up to two years, significantly increasing costs and uncertainty. This undermines investor confidence and adds to the risks already associated with capital-intensive greentech projects. The IMKE grant partly mitigates this by reducing financial exposure, but regulatory simplification remains a crucial enabler for scaling.

A further challenge is the suspension of the NGF due to shifting government priorities and budget reallocations. This has created uncertainty for projects relying on NGF-financed schemes, including IMKE. With no new funding rounds expected in the near term, there is a risk of slowing down investments in critical technologies such as electrolysers, batteries, and solar panels. Without this source of public capital, companies may face even greater difficulties bridging the financing gap for high-cost, long-return greentech investments.

5.2.2.6 Results and impact

As the instrument is still recent, no formal results or evaluations have yet been published. To date, six companies have been supported, though official figures are incomplete. Of the total €148 million budget, approximately €39 million had been allocated by mid-2025, split between batteries (€19.8m), electrolysers (€19.2m), and solar panels (€0). This suggests that demand for battery and electrolyser production lines is currently stronger than for solar panel manufacturing.

While the number of firms supported and average grant size remain unspecified, the partial allocation of funds points to a slower uptake than expected. Uncertainty around NGF continuity could also affect leverage ratios and the capacity of IMKE to crowd in private co-investment.

The expected long-term impacts remain unchanged: strengthening domestic greentech manufacturing capacity, reducing dependency on fossil fuels and non-EU suppliers, and contributing to the Netherlands' and EU's climate neutrality and strategic autonomy. However, realising these impacts will depend on policy stability, regulatory streamlining, and continued access to public capital.

Table 22 Leverage

Outcome indicator	**Key output**
Number of firms supported	N/A
Capital invested	€.39.000.675, (Grant allocated on 16 July 2025 for batteries: €19.818.884, electrolysers: €19.181.791, and solar panels: €0)
Average support per company	N/A
Leverage ratio (specify if expected or/and actual)	N/A

5.2.3 Techleap

5.2.3.1 Instrument characteristics

Techleap is an **ecosystem builder** with a founder-centric approach, supporting the Dutch government in achieving economic and societal impact through innovation-driven entrepreneurship. The organisation builds and connects communities, provides actionable insights, and facilitates change through growth programmes, knowledge platforms, and curated networking opportunities for scaleup founders.

Originally launched in 2015 as StartupDelta, a government initiative to strengthen the national startup ecosystem, it evolved into Techleap.nl. Today, it is funded by the Ministry of Economic Affairs, with a reduced budget of €15 million for 2023–2026 (half its previous level). The overarching

goal is to attract more private investment into Dutch deep-tech companies by improving investor readiness, facilitating matchmaking, and strengthening ecosystem connections.

5.2.3.2 Activities and Support Model

Techleap does not provide direct funding. Instead, it supports startups and scaleups through mentoring, peer learning, fundraising guidance, and investor connections. Membership is free but selective and operates on a principle of reciprocity and founders are expected to actively contribute to the community by sharing experiences, giving feedback, or hosting events. Alumni frequently return as mentors, reinforcing a "pay-it-forward" culture that deepens ecosystem learning.

Members gain access to curated programmes, expert networks, and events such as MEET (community gathering) and the State of Dutch Tech (flagship conference with founders, policymakers, and investors). Participation also includes peer forums, international trips, and digital tools like the Member Finder platform.

5.2.3.3 Eligibility

Participation requires companies to be headquartered in the Netherlands and tech-driven, with at least 30% of staff in technical roles. Criteria differ by stage[137]:

- *Rise*: €1m+ annual revenue, >10 FTE, recent €10m funding or preparation thereof, or ≥50% revenue growth with proven market fit. [138]
- *Shine*: Dutch tech firms valued >€150m or raising €75m+, with >100 FTE, operations in at least two countries, and three years of ≥40% growth. [139]

Founders or C-level executives must attend and actively engage; non-participation can result in suspension.

5.2.3.4 Beneficiaries

Techleap targets Dutch tech entrepreneurs with strong growth potential, international ambitions, and technology at the core of their business model. To be eligible, companies must be headquartered in the Netherlands, employ at least 30% technical staff, and be led by founders or C-level executives who commit to active participation. Non-engagement can result in suspension,

[137] Techleap (n.d.). Terms and conditions. Source: https://techleap.nl/terms-and-conditions/

[138] Techleap (2024). Rise programma – Meet Batch#1. Source: https://techleap.nl/blog/launching-techleap-nl-rise-the-program/

[139] For more information, please see: https://scaleupsbackup.techleap.nl/offer/shine

as Techleap operates on a principle of reciprocity where members are expected to both benefit from and contribute to the community.

Two dedicated flagship programmes target different growth stages:

- **Rise targets high-potential scaleups in their early stages**, particularly during the commercialisation and internationalisation phase. The programme runs over eight intensive weeks, with cohorts of around ten companies supported by experienced entrepreneurs and executives from successful tech scaleups. The focus is on addressing critical growth challenges, building strong peer connections, and accelerating international expansion. To qualify, companies must be headquartered in the Netherlands and typically meet at least one of the following criteria: annual revenues above €1 million, more than 10 FTE, having recently raised (or preparing to raise) €10 million, or demonstrating ≥50% annual revenue growth with a proven product–market fit. [140]
- **Shine is designed for late stage scaleups** preparing for major exit events such as IPOs or acquisitions. Four times a year, carefully selected groups of founders meet in confidential settings to discuss leadership, expansion strategies, and the specific challenges of scaling globally. Sessions are led by seasoned entrepreneurs and experts and complemented by informal gatherings to foster trust and long-term networks. Participants are usually valued at more than €150 million or have raised over €75 million in capital, employ more than 100 staff, operate in at least two countries, and sustain ≥40% annual revenue growth for three consecutive years. [141]

While Techleap is not restricted to climate-related firms, it has increasingly engaged with greentech innovators through targeted calls such as Flattening the Climate Curve[142], which mobilised support for solutions like solar-integrated glass, advanced battery technologies, and zero-emission transport.

As of 2022, Techleap had supported over 250 scale-ups, including greentech success stories such as Sympower (a clean-energy flexibility platform) and other high-profile companies like TestGorilla and Crisp. By combining selective entry criteria with peer learning and reciprocal engagement, Techleap ensures that its beneficiaries are not only high-potential firms but also active contributors to the strength of the Dutch tech ecosystem.

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[140] Techleap (2024). Rise programma – Meet Batch#1. Source: https://techleap.nl/blog/launching-techleap-nl-rise-the-program/

[141] For more information, please see: https://scaleupsbackup.techleap.nl/offer/shine

[142] For more information, please see: https://techleap.nl/blog/rise-program-meet-batch-2/

5.2.3.5 Intervention logic

The Dutch government established Techleap in response to systemic barriers that limited the country's entrepreneurial growth compared to OECD peers: financing gaps (particularly in deeptech), limited access to international talent and networks, and weak links to corporate partners and procurement. The programme's intervention logic is to strengthen the startup ecosystem through four pathways: [143],

- Markets: better international access and visibility,
- Capital: stronger investor readiness and capital flows,
- Talent: greater availability of entrepreneurial and technical skills,
- Technology: stronger policy and support for deep tech and academic spin-offs.

This aligns with national strategies such as Ambitieus Ondernemerschap (2014) and the current National Technology Strategy.

Table 23 Intervention logic - Techleap

Level	Description
Problem/Need	• Systemic barriers hinder startup and scale-up growth in the Netherlands • Financing gaps, especially in early/deep tech stages (the "valley of death") • Limited access to international networks and top-tier talent • Weak connections to corporate partners and public procurement channels • Low share of high-growth firms and modest entrepreneurial ambition relative to OECD peers
Objectives	• Build a high-impact, founder-centric tech ecosystem • Improve investor readiness and attract private capital, especially in deep tech • Foster peer-to-peer learning and collaboration among tech entrepreneurs • Strengthen international connections and ecosystem cohesion • Contribute to national goals of economic prosperity, innovation, and tackling societal challenges • Align with national strategies such as 'Ambitieus Ondernemerschap' and the National Technology Strategy
Inputs	• €15 million funding from the Ministry of Economic Affairs (2023–2026) • In-kind contributions from entrepreneurs and alumni (mentoring, hosting events, feedback) • External experts and coaches from successful scale-ups

[143] Birch (2023). Evaluation of StartupDelta and Techleap. Source: https://open.overheid.nl/documenten/ronl-adbac92bce8f49d5a34e720c172ce3dd0d77443a/pdf

	• Partnerships with regional development agencies, incubators, ministries and other ecosystem actors • Internal Techleap staff for programme design, coordination, and evaluation
Activities	• Curate and manage cohort-based support programmes (e.g. Rise, Shine) • Organise expert-led sessions, workshops, and peer learning forums • Facilitate networking events, such as MEET and the State of Dutch Tech • Provide access to private online platforms and the Member Finder tool • Conduct intake assessments, interviews, and selective recruitment • Organise international trips and partner meetings for exposure and network building • Maintain a culture of reciprocity and active participation
Outputs	• 250 firms supported by 2022 with 79 in Rise and 19 in Shine. Techleap also consists of other programmes, for which the remaining 152 supported firms are connected to. • Creation of curated founder communities and support networks • Delivery of peer forums, mentoring sessions and tailored guidance • Annual high-profile events and international networking opportunities • Increased founder engagement in policy development and public-private dialogue • Development of structured programme criteria and transparent selection processes
Outcomes (Short to Medium-term)	• Improved investor readiness and international expansion among participants • Increased fundraising success and visibility of Dutch scale-ups • Formation of strong peer networks and mentoring culture (“pay-it-forward” mindset) • Enhanced collaboration across ecosystem actors and professionalisation of support infrastructure • Rise and Shine alumni report strategic growth and broader impact (e.g. Sympower, TestGorilla, Crisp) • Participants better prepared to access public and blended finance
Impacts (Long-tterm)	• Contribution to a dynamic, innovation-driven Dutch economy • Greater number and growth of technology-driven scale-ups • Attraction of private investment, particularly into deep tech sectors • Strengthened national and international positioning of the Dutch tech ecosystem • Long-term solutions to societal challenges in climate, digitalisation, and health • Embedded entrepreneurial culture and improved technology policy environment

Source: Technopolis Groups interpretation of the publicly available information collected

In March 2014, the Minister presented the 'Ambitieus Ondernemerschap' policy agenda[144] to Parliament, which focused on promoting not just more but higher-quality, growth-oriented entrepreneurship in the Netherlands. The programme responded to indicators showing relatively low shares of fast-growing enterprises and moderate ambitions among entrepreneurs compared to OECD peers. StartupDelta stemmed from this agenda. During the programme, there were policy changes. At the moment, Techleap is in line with policy objectives stated in de National Technology Strategy, which has the aim to stimulate and strengthen technological innovation in the Netherlands, so that the Netherlands can be at the forefront of technology.

5.2.3.6 Governance

Techleap operates under the authority of the Ministry of Economic Affairs, which provides funding and strategic alignment with broader innovation policy. Programme design and implementation are carried out by Techleap, often in partnership with regional development agencies, incubators, and other ecosystem actors. Coaching and mentoring are delivered by external experts rather than in-house staff.

Techleap complements financial instruments such as RVO subsidies or Invest-NL loans by preparing companies to attract and effectively deploy such capital.

5.2.3.7 Enablers/Barriers

On the enabling side, the Dutch IP regime and tax incentives such as the Innovation Box and WBSO (R&D tax credits) are supportive of technology development and commercialisation. These tools offer financial support for clean-tech companies in R&D, making them better candidates for scale-up instruments such as those offered through Techleap.

However, permitting and market access regulations can be obstacles, mainly in energy-related clean tech. For example, the length and complexity of environmental permitting for manufacturing facilities or pilot installations often delays deployment. Net congestion and regulatory barriers in the energy market (e.g. limitations around feed-in, dynamic pricing, and grid access for storage solutions) can restrict the commercial scalability of innovations even after technical validation.

5.2.3.8 Results and impact

Between 2015 and 2022, Techleap supported around 250 companies (e.g., 79 through Rise and 19 through Shine). While direct financial leverage cannot be measured (given its non-funding model),

[144] For more information, please see:
https://www.parlementairemonitor.nl/9353000/1/j9vvij5epmj1ey0/vji7kaahygwy?utm_

evaluations show participants gained faster international expansion, improved investor readiness, and stronger visibility. Qualitative impacts include[145]:

- Creation of a trusted, founder-led peer community,
- Professionalisation of incubators and accelerators adopting more structured mentoring,
- Enhanced dialogue between entrepreneurs and policymakers,
- A durable "pay-it-forward" mentoring culture among alumni.

Success stories include Sympower (clean energy flexibility platform, later selected into the EIC Scaling Club), TestGorilla (HR tech, raised €70m+), and Crisp (sustainable grocery delivery, raised €100m+).

Long-term, Techleap aims to contribute to a dynamic Dutch economy with more high-growth technology firms, stronger private investment flows into deep tech, and an embedded entrepreneurial culture capable of addressing societal challenges in climate, digitalisation, and health.

Table 24 Leverage

Outcome indicator	**Key output**
Number of firms supported	250 (until 2022, 79 were in the Rise programme and 19 in the Shine programme), Techleap also runs other programmes that the remaining 152 supported firms are part of.
Capital invested	n/a
Average support per company	n/a
Leverage ratio (specify if expected or/and actual)	n/a

5.3 Synthesis/summary

Public support for greentech scale-ups in the Netherlands rests on a diverse but fragmented ecosystem of ministries, agencies, financiers, and ecosystem builders. On the positive side, the country has established a solid foundation of instruments and institutions:

[145] Birch (2023). Evaluation of StartupDelta and Techleap. Source: https://open.overheid.nl/documenten/ronl-adbac92bce8f49d5a34e720c172ce3dd0d77443a/pdf

✅ **Financial support mechanisms** such as IMKE (grant-based, pari passu co-financing) help de-risk capital-intensive investments in electrolysers, batteries, and solar panels.

✅ **Capacity-building platforms** like Techleap complement this by focusing on investor readiness, internationalisation, and peer-to-peer learning.

✅ **Catalytic investors** such as Invest-NL and regional development agencies bridge early financing gaps, particularly in high-risk greentech segments.

✅ **Strong knowledge institutions** and sectoral clusters (e.g. Wageningen UR, TNO, Top Consortia) reinforce the innovation base.

However, several structural challenges persist:

✅ **Later-stage financing gaps** remain a critical bottleneck. Large funding rounds (>€50m) are rare, and Dutch firms take much longer than US counterparts to secure follow-on capital. This constrains the ability of scale-ups to grow into globally competitive champions.

✅ **Regulatory hurdles**, especially complex and slow permitting, delay deployment of new production capacity or infrastructure, increasing investor uncertainty and discouraging scale-up activity.

✅ **Policy instability**, illustrated by the suspension of the NGF, risks undermining long-term confidence in public co-financing schemes like IMKE.

✅ **Fragmentation and misalignment** among actors mean that the effectiveness of the ecosystem hinges on coordination. While collaborative models are emerging (e.g. Top Consortia, blended finance), they are not yet systemic.

The greentech sector itself shows promise but also fragility. Companies like Avantium, Lightyear, and Mosa Meat highlight the Netherlands' global relevance in green technologies, but also the volatility of financing and market access (e.g. Lightyear's bankruptcy and restart, Mosa Meat's limited regulatory approvals). This underscores both the opportunity and the risk profile of Dutch greentech scale-ups.

Taken together, the Dutch model illustrates a two-pillar approach: (1) **targeted financial de-risking** (IMKE, Invest-NL), and (2) **ecosystem and capacity building** (Techleap, Top Consortia). This mix is well-suited to tackling the dual challenges of financing and coordination, but its effectiveness depends on policy continuity and scale. Without long-term public capital and regulatory streamlining, the system risks reinforcing incremental progress rather than enabling transformational scaleup growth.

A concluding observation is that the Netherlands has the building blocks for a leading greentech scaleup ecosystem in Europe such as skilled talent, knowledge institutions, catalytic financiers, and

targeted instruments. Yet to fully realise this ambition, it must address persistent later-stage financing gaps, reduce regulatory friction, and ensure policy stability. Only then can Dutch greentech scale-ups move from promising innovators to global industrial leaders capable of driving both the national energy transition and Europe's strategic autonomy.

6 Public support instrument for greentech scaleups in the United Kingdom

6.1 Context and ecosystem overview

The UK clean technology financing ecosystem has developed rapidly in recent years, underpinned by a combination of public and private investment. Public support mechanisms play a critical role in de-risking innovation, validating small and medium-sized enterprises (SMEs), and catalysing further private sector participation. This approach has strengthened the UK's position as a global leader in clean technology and supports the nation's pathway to achieving net zero emissions by 2050.

Government intervention has been essential in providing capital, policy direction, and market certainty. Key funding initiatives include:

- **National Wealth Fund** (£27.8 billion) provides concessional finance, guarantees, and technical assistance to mobilise private investment in large-scale green infrastructure.
- **Innovate UK** offers research, development, and commercialisation support through grants, loans, and bespoke programmes such as the Scale Up Programme.
- **Net Zero Innovation Portfolio** (NZIP, £1 billion) is administered by the Department for Energy Security and Net Zero (DESNZ), supporting the deployment of breakthrough low-carbon technologies.

Government departments such as **DESNZ**, the **Department for Business and Trade** (DBT) and **HM Treasury** are responsible not only for funding but also for attracting foreign investment and promoting domestic businesses. These departments play a key role in identifying and supporting green scale-ups, facilitating access to international markets, and showcasing the UK's green finance ecosystem, as outlined in the UK's 2025 Modern Industrial Strategy. [146]

The ecosystem benefits from a comprehensive regulatory framework and long-term policy commitments, including the **10 Point Plan for a Green Industrial Revolution**[147]**, the Net Zero Strategy**, the **Green Finance Strategy**, and the **UK Science and Technology Framework**. These strategies establish clear priorities across key sectors, including offshore wind, hydrogen

[146] https://assets.publishing.service.gov.uk/media/68595e56db8e139f95652dc6/industrial_strategy_policy_paper.pdf

[147] https://assets.publishing.service.gov.uk/media/5fb5513de90e0720978b1a6f/10_POINT_PLAN_BOOKLET.pdf

production, carbon capture and storage (CCUS), low-carbon vehicles, greener buildings, and clean energy innovation. [148]

The UK has established leadership in offshore wind, supported by £160 million of investment in ports and manufacturing infrastructure to strengthen supply chains and attract inward investment. Beyond offshore wind, broader investment efforts target renewable energy, nuclear innovation, hydrogen, CCUS, and low-carbon heating solutions such as heat pumps. [149]

Public financial institutions play an equally important role. The British Business Bank has invested £351 million into 89 clean tech companies through its equity programmes since 2014, helping to unlock private investment and stimulate market growth. The National Wealth Fund also contributes to the development of green finance markets, aligned with commitments set out in the Green Finance Strategy. [150]

The UK scale-up ecosystem further reinforces this progress. According to the Scale-Up Institute, over 34,000 high-growth businesses operate across the country, defined by sustained annual growth in turnover or employment of more than 20% over three years. London, as a key hub, is home to approximately 230 renewable energy companies and attracted £637 million in venture capital investment in 2022, the highest in Europe. [151] [152] [153]

The infographic below is a snapshot from the UK's most recent Industrial Strategy[154] published in June 2025, showing the key actors and the commercialisation and scale up gaps in the UK:

6.1.1 Greentech funding landscape

Figure 32 illustrates the number of UK organisations by total funding range, distinguishing between manufacturing and other sectors. Manufacturing accounts for a minority across most brackets, except the middle range (€26–50 million), where 56 out of 107 organisations are manufacturing-related. Most organisations fall within the two lowest funding brackets, where manufacturing

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[148] https://assets.publishing.service.gov.uk/media/5fb5513de90e0720978b1a6f/10_POINT_PLAN_BOOKLET.pdf

[149] https://assets.publishing.service.gov.uk/media/68587856b46781eacfd71de4/industrial_strategy_clean_energy_industries_sector_plan.pdf

[150] https://assets.publishing.service.gov.uk/media/643583fb877741001368d815/mobilising-green-investment-2023-green-finance-strategy.pdf

[151] June 2024 Scale up institute report: https://www.scaleupinstitute.org.uk/wp-content/uploads/2024/11/Annual-Review-2024-Highlights.pdf

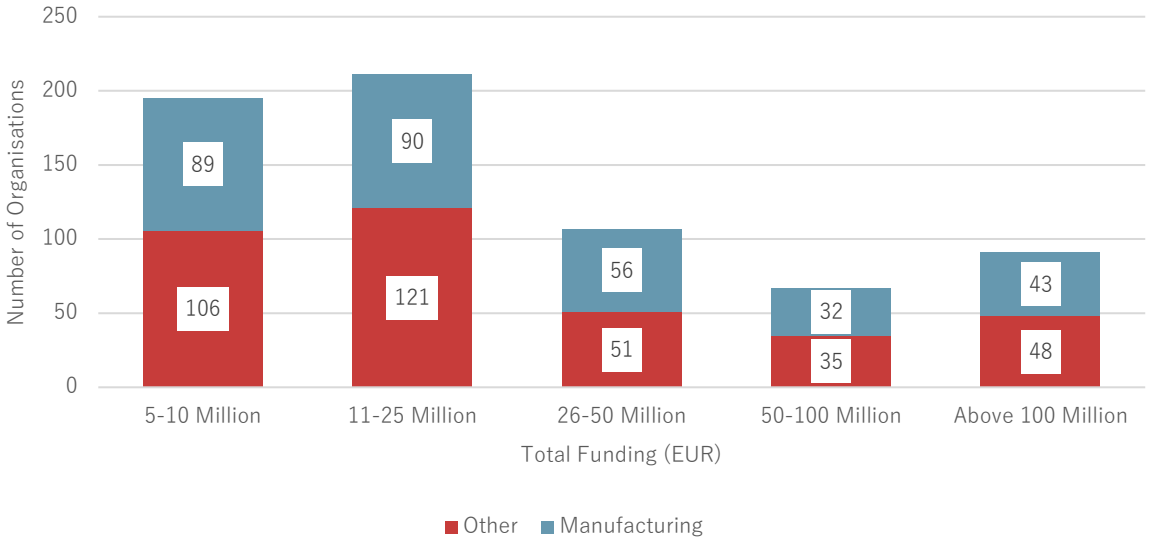
[152] https://www.grow.london/set-up-in-london/sectors/urban/cleantech

[153] https://www.scaleupinstitute.org.uk/reports/the-scaleup-landscape-2020/

[154] https://assets.publishing.service.gov.uk/media/68595e56db8e139f95652dc6/industrial_strategy_policy_paper.pdf

represents a particularly small share. In the two highest brackets (€50–100 million and over €100 million), manufacturing remains a minority but constitutes nearly half of the organisations.

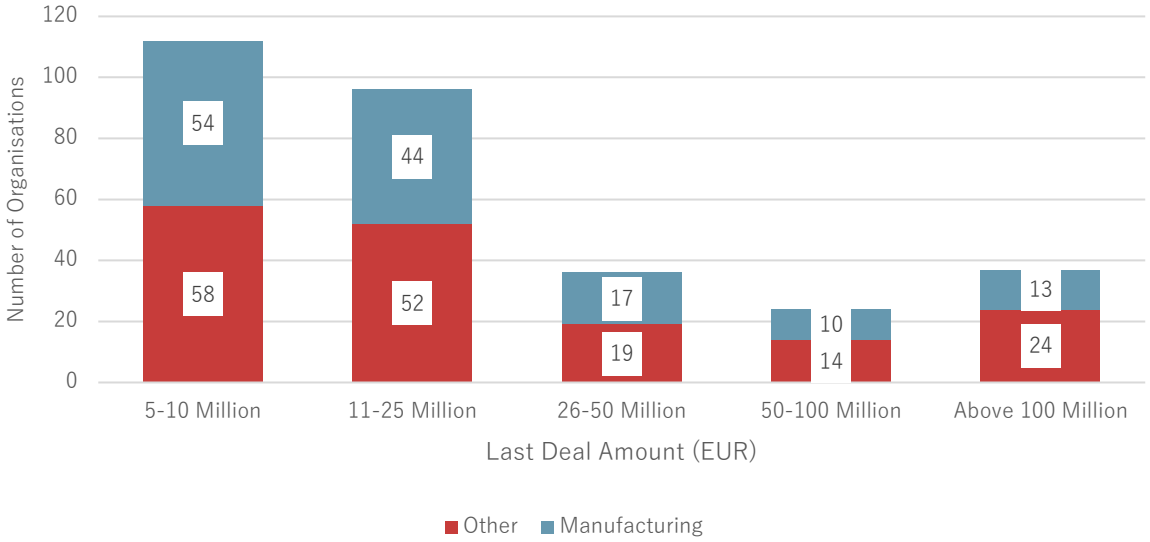
Figure 32 Total funding by organisation: manufacturing vs others



Source: Net Zero Insight database

Figure 33 shows the number of UK organisations by their most recent deal amount, divided between manufacturing and other sectors. Most deals are concentrated in the lower value ranges, specifically €5–10 million and €11–25 million, with 112 and 96 organisations in these categories respectively. Of the 208 organisations in these brackets, 98 are manufacturing-related, indicating that manufacturing represents a minority at this level. Manufacturing also accounts for a minority in all other funding brackets, particularly in the highest bracket above €100 million, where only 13 out of 37 organisations are from the manufacturing sector. This suggests that manufacturing constitutes a relatively small share of the UK funding landscape based on last deal amounts.

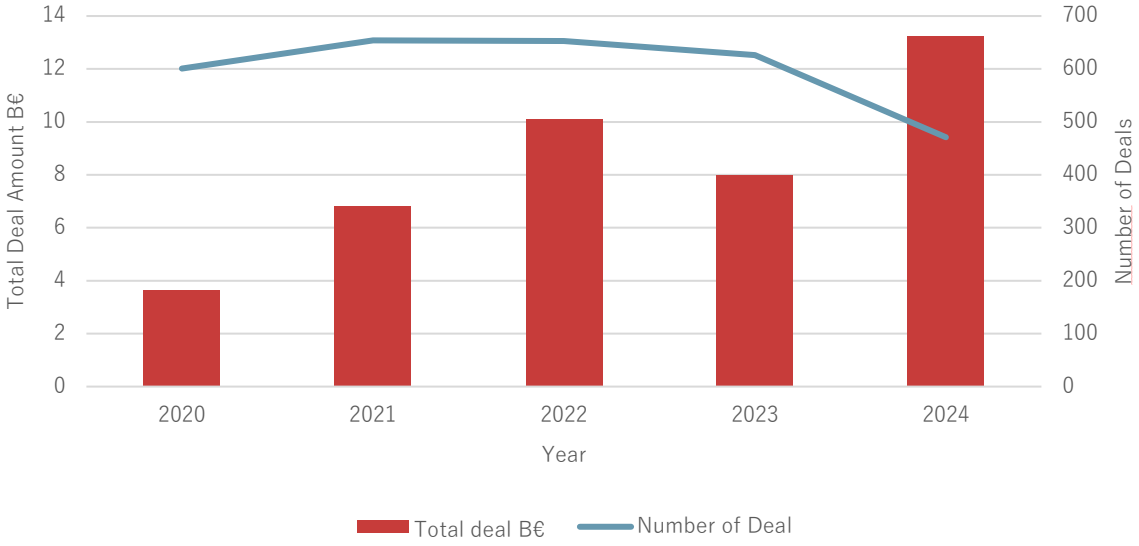
Figure 33 Number of organisations by last deal amount, split between manufacturing and other sectors



Source: Net Zero Insight database

Figure 34 presents total deal amounts (in billion euros) alongside the number of deals per year for UK organisations. The number of deals peaked in 2021 at 654 but declined to 471 by 2024. Despite fewer deals, total deal value rose significantly, from €3.7 billion in 2020 to €13.2 billion in 2024, indicating a sharp increase in the average deal size.

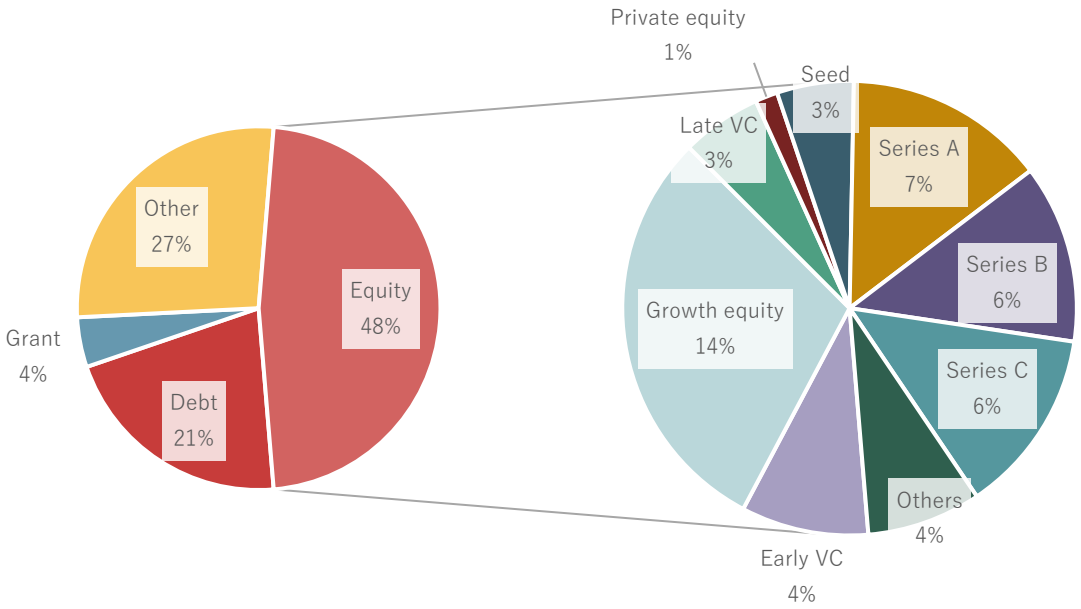
Figure 34 Total deal amount and number of deals by year



Source: Net Zero Insight database

Figure 35 illustrates the distribution of equity funding by total deal amount and deal type in the UK. Equity accounts for the largest share at 48 percent, followed by Other at 27 percent, debt at 21 percent, and grants at 4 percent. Within equity funding, Growth Equity represents the largest portion (14%), followed by Series A (7%), and Series B and Series C (each 6%).

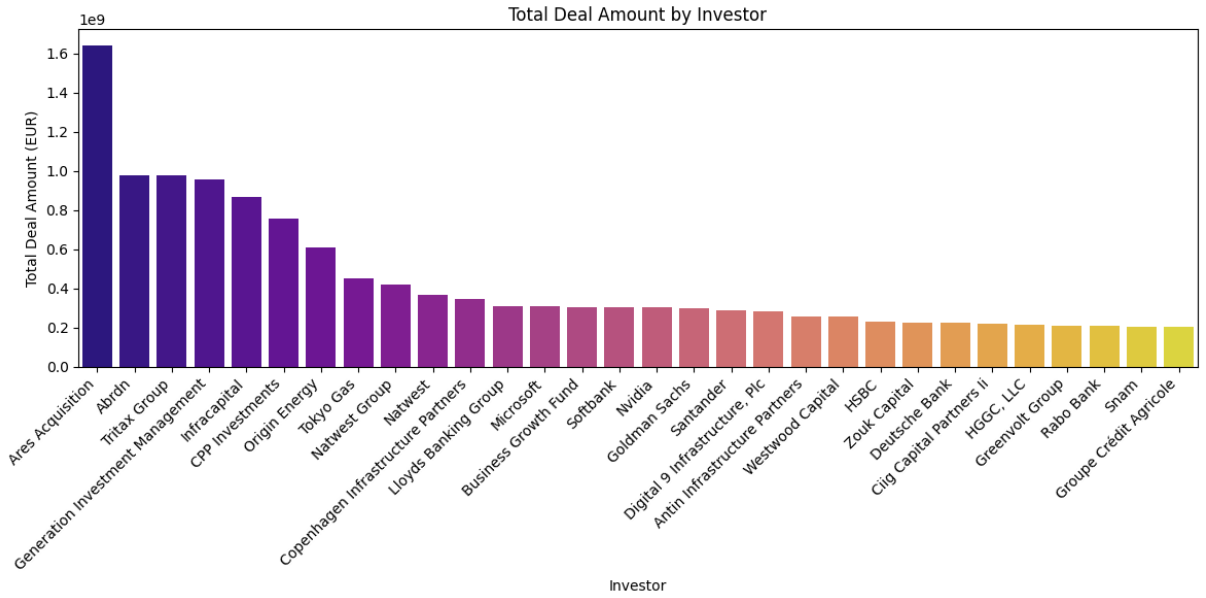
Figure 35 Equity funding: Total deal amount by deal type



Source: Net Zero Insight database

Figure 36 highlights the main investors in the UK clean technology sector, ranked by total deal amount, with larger bars indicating higher investment volumes. Ares Acquisition stands out as the largest investor by a substantial margin, exceeding €1.6 billion in deal amounts. Other leading investors approaching the one-billion-euro mark include Abrdn, Tritax Group, and Generation Investment Management.

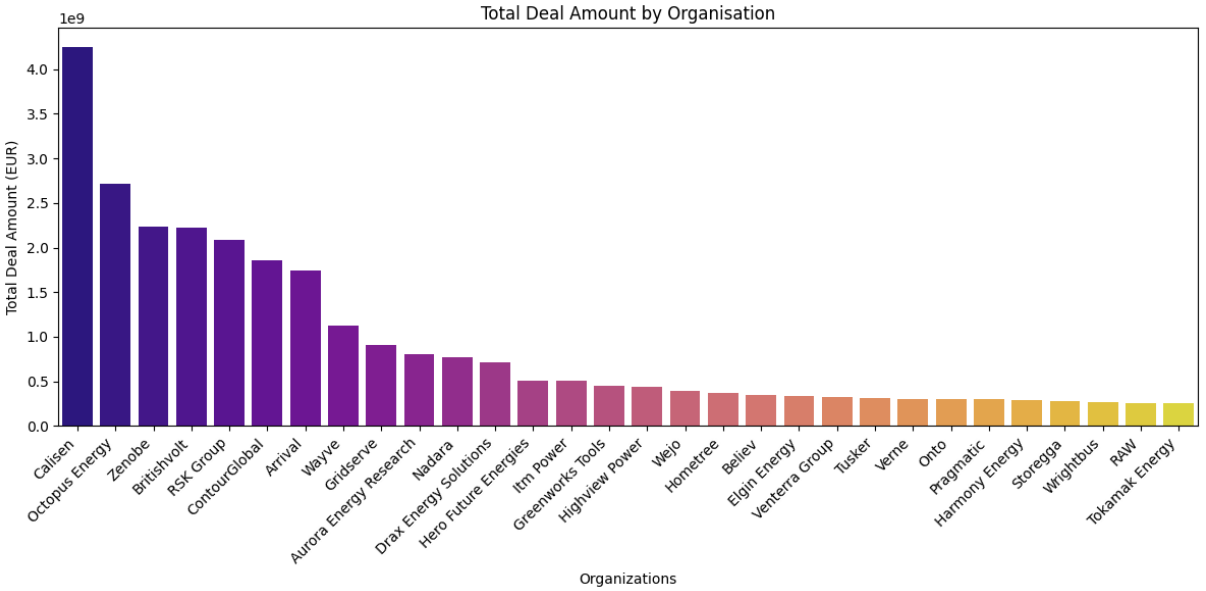
Figure 36 Total deal amount by investor



Source: Net Zero Insight database

Figure 37 shows total deal amounts (in EUR) by UK organisation. Calisen is the clear leader, with deal volumes exceeding €4 billion. Several other organisations also report substantial totals, including Octopus Energy, Zenobe, Britishvolt, and RSK Group, each surpassing €2 billion. This indicates a high concentration of deal amounts among a relatively small group of UK companies.

Figure 37 Total deal amount by organisation



Source: Net Zero Insight database

Overall, the UK funding ecosystem is robust and globally competitive but will benefit from targeted measures to ensure that investment is distributed across the full spectrum of clean technology innovation, from early-stage R&D to large-scale commercial deployment, while strengthening domestic industrial capacity for the green transition.

6.2 Green financial instruments

6.2.1 Methodology

The initial mapping of instruments involved a comprehensive review of the financial and non-financial tools available in the UK to support companies of various sizes in developing technologies and services that contribute to net zero goals, decarbonisation, and clean technology advancement.

The mapping process was primarily conducted through desk-based research, drawing on a wide range of sources, including official programme documentation, application guidelines, programme websites, case studies, impact assessments, and relevant media coverage. Additionally, one interview was conducted with a clean technology expert from Clean Tech Europe to provide contextual insights into the UK ecosystem and the specific challenges faced by scale-ups.

Based on this exercise, a diverse set of public support instruments were identified, including:

- **Public Sector Grant Funding**, e.g., the Net Zero Innovation Portfolio (£1 billion in grant funding), Innovate UK Innovation Loans – Future Economy (£25 million in total funding), Innovate UK Growth Catalyst (covering up to 70% of R&D costs), Innovate UK Scale-up Programme (financial and non-financial support), and the SME Scale-up Challenge – Energy Systems Catapult (up to £75,000 per firm).
- **Government-Backed Funding**, e.g., the Future Fund such as Breakthrough – British Business Bank (£425 million in total funding) and the National Wealth Fund, which finances large-scale projects and companies with a minimum £25 million in private investment.
- **Venture Capital Instruments**, e.g., the Clean Growth Fund, a £101 million VC
- programme supporting innovative clean technology ventures.

The second phase of the mapping process involved a more detailed assessment of three key instruments: the Net Zero Innovation Portfolio, the Innovate UK Scale-up Programme, and the National Wealth Fund. The following section focuses on these programmes in greater detail.

6.2.2 Net Zero Innovation Portfolio

6.2.2.1 Instrument characteristics

The Net Zero Innovation Portfolio (NZIP) is a **UK Government public grant programme** that provides funding specifically for projects aimed at accelerating the commercialisation of low-carbon

technologies, systems, and business models across power, buildings, and industry. The programme is managed by the Department for Energy Security and Net Zero (DESNZ) and consists of multiple funding streams targeting different sectors focused on decarbonisation.

Launched in 2021, NZIP is a five-year initiative with a **total budget of £1 billion**, running until 2025. Each funding stream within the portfolio varies in size, scope, and duration, with individual projects, whether single organisations or consortia subject to specific caps and limits. The programme builds on the foundations of its predecessor, the Energy Innovation Portfolio (EIP), and represents a key pillar of the UK's strategy to advance clean technology innovation.

In addition to direct grant funding, **NZIP also contributes to the Clean Growth Fund**, a privately managed venture capital fund established in 2020 to provide follow-on financing for innovative companies. As part of this initiative, the Department for Business, Energy & Industrial Strategy (BEIS)[155] invested approximately £20 million alongside an equivalent contribution from private investor CCLA.[156] By March 2022[157], the Clean Growth Fund had secured a total of £101 million in capital, backed by seven private sector investors and BEIS.

A core aim of NZIP is to leverage private capital by de-risking early-stage innovation and facilitating commercial bank lending. The programme operates with a leverage ratio of 1:2.4, meaning that for every £1 of public funding, an additional £2.40 of private investment is mobilised.

Figure 38 illustrates the allocation of the £1 billion NZIP funding, as presented in the UK Government's Net Zero Innovation Framework[158]

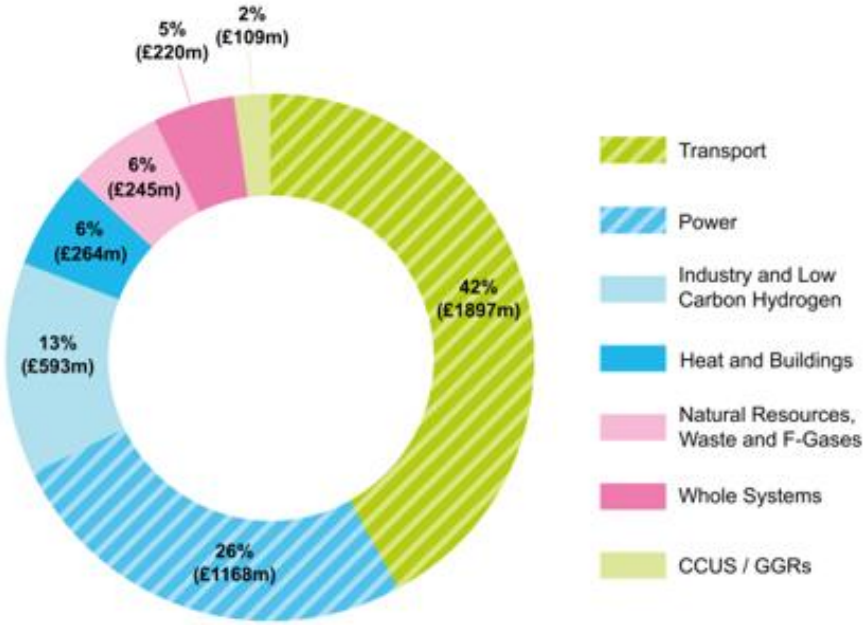
[155] BEIS was abolished in 2023 and its responsibilities split across 3 new departments: Department for Business and Trade (DBT), Department for Energy Security and Net Zero (DESNZ) and Department for Science, Innovation and Technology (DSIT)

[156] Churches, Charities and Local Authorities (CCLA) Investment Management Limited Investment Management https://www.ccla.co.uk/about-us/our-history

[157] https://www.gov.uk/government/publications/clean-growth-equity-fund

[158] https://www.gov.uk/government/publications/uk-net-zero-research-and-innovation-framework-delivery-plan-2022-to-2025/uk-net-zero-research-and-innovation-framework-delivery-plan-2022-to-2025

Figure 38 Planned proportion of spending per sector as announced by 31 December 2022



6.2.2.2 Beneficiaries

The instrument targets UK-based SMEs and scale-ups developing renewable or decarbonisation technologies across ten priority areas[159]: future offshore wind, advanced modular nuclear reactors (supported via the Advanced Nuclear Fund), energy storage and flexibility, bioenergy, hydrogen, homes, direct air capture and greenhouse gas removal (GGR), advanced carbon capture, usage and storage (CCUS), industrial fuel switching, and disruptive technologies.

While open to companies of all sizes, the programme primarily supports mid- to late-stage innovations, typically at Technology Readiness Levels (TRL) 5–8, from demonstration to scale-up.

To be eligible for NZIP funding, businesses must[160]:

- Be tax compliant with a valid Tax Clearance Certificate.
- Carry on a Case I trade or Case II profession (including charities and approved sporting bodies) and have taxable income.
- Register with BEIS or the Department for Energy Security and Net Zero.
- Present a clear business problem or innovation requiring external expertise and resources.

[159] https://www.gov.uk/government/collections/net-zero-innovation-portfolio

[160] https://www.celticdynamics.com/net-zero-innovation-portfolio/

- Demonstrate potential to increase sales, employment, or exports.
- Comply with the European Union State Aid Temporary Crisis Framework and Transition.

Funding is available across Great Britain and Northern Ireland. Individual funding streams, known as 'competitions,' have thematic focus and specific eligibility criteria, often operating under strict application timeframes. Each competition addresses research and innovation challenges within its theme.

Grant amounts[161] are determined by project type, size, location, and employment impact. NZIP covers up to 70 percent of eligible costs for studies and up to 50 percent for deployment projects, with maximum grants of £14 million for studies and £40 million for deployment projects. Eligible costs may vary by programme and funding stream, see Table 25[162]. For example[163], the Homes and Buildings theme currently comprises two programmes: the Heat Pump Ready programme and the Green Home Finance Accelerator, focusing on heat pumps and green home finance, respectively.

Programmes typically distribute funding in multiple phases. An initial feasibility phase supports a smaller number of projects to develop detailed plans, followed by a demonstration phase where a subset of projects receives larger grants to implement their innovations.

Table 25 Maximum subsidy levels for projects involving a mixture of research categories

Innovation activity	Maximum Subsidy Level (as a % of total eligible project costs)	Percentage of Project for Each Research Category	Effective Subsidy Level
Industrial Research	70%	40%	28%
Experimental Development	45%	60%	27%
Maximum Overall Project Subsidy Rate			55%

6.2.2.3 Intervention logic

The Net Zero Innovation Portfolio (NZIP) is designed to accelerate the commercialisation of low-carbon technologies, systems, and business models across power, buildings, and industry. The

[161] https://www.celticdynamics.com/net-zero-innovation-portfolio/

[162] https://assets.publishing.service.gov.uk/media/6536774926b9b1000faf1d72/heat-pump-ready-stream-2-wave-2-guidance.pdf

[163] https://assets.publishing.service.gov.uk/media/646f13627dd6e70012a9b34c/nzip-anf-progress-report-2021-22.pdf

programme addresses key challenges including high costs and technical barriers in deployment, regulatory and market obstacles, insufficient skilled workforce, and limited private investment due to long development timelines and high financial risk. NZIP also supports the UK's broader objectives to reduce greenhouse gas emissions, promote green industrial growth, and strengthen national and regional economic development.

The rationale for the programme builds on lessons from the predecessor Energy Innovation Portfolio[164] (EIP) and aligns closely with the Net Zero Research and Innovation Framework, the UK's 10 Point Plan for a Green Industrial Revolution, and the Net Zero Strategy. By combining substantial public funding with complementary private sector investment, NZIP seeks to de-risk innovation projects, increase private follow-on investment, and enhance the UK's leadership in clean technology.

The intervention logic, see Table 26, can be summarised as follows: public funding and expert support (inputs) are deployed through competitive, multi-phase funding rounds for projects at demonstration to scale-up stages (activities). These generate tangible outputs such as funded projects, business acceleration services, and technology demonstrations, leading to short- and medium-term outcomes including increased commercial readiness, private investment leverage, and a strengthened innovation ecosystem. In the long term, NZIP aims to accelerate the UK's transition to net zero, support sustained leadership in clean technology, and drive economic growth through green industries, job creation, and enhanced energy system resilience.

Table 26 Intervention logic - Net Zero Innovation Portfolio

Level	Description
Problem	• High costs and technical challenges in commercialising low-carbon technologies in power, buildings, and industry sectors • Market and regulatory barriers such as grid connection delays, planning permission hurdles, and coordination issues especially for hydrogen projects • Insufficient skilled workforce and regional deployment support for net zero innovations. • Need to reduce greenhouse gas emissions to meet UK net zero targets and support green industrial growth • Limited private investment due to high financial risk and long development timelines for greentech innovations
Objectives	• Accelerate commercialisation of low-carbon technologies, systems, and business models in power, buildings, and industry • Reduce costs of decarbonisation to enable greener industries and new green jobs

[164] https://www.gov.uk/government/collections/net-zero-innovation-portfolio

	• Increase private investment by leveraging public funds to de-risk innovation projects • Support UK leadership in science, innovation, and green industrial growth • Promote deployment of technologies across priority sectors such as offshore wind, nuclear, hydrogen, energy storage, CCUS and more • Enhance sustainable economic growth regionally and nationally
Inputs	• £1 billion total public funding from the UK Government through the Department of Energy Security and Net Zero (DESNZ), allocated over multiple funding streams and competitions • Up to £14 million grant per study project and £40 million per deployment project, covering up to 70% and 50% of eligible costs respectively • Complementary private sector investment leveraged, including £20 million from BEIS and matching private funds into the Clean Growth Fund • Expert assessment and external reviewers for project selection • Implementation support from contracted partners such as The Carbon Trust and Energy Systems Catapult
Activities	• Running competitive funding rounds ('competitions') for projects at TRL 5-8 (demonstration to scale-up stage) across 10 priority sectors • Managing multi-phase funding including feasibility studies followed by demonstration phases • Providing business support services to funded SMEs and scale-ups via acceleration programmes addressing skills and market readiness gaps • Monitoring projects through evaluations, reports, and external reviews • Coordinating with other innovation initiatives such as Energy Systems Catapult and the Clean Growth Fund to amplify impact and investment readiness
Outputs	• Approximately 600 projects funded across the portfolio • £1.3 billion capital invested in low-carbon innovation projects • Support to 199 climate tech startups and scale-ups, with over £500 million invested in small businesses • Creation and maintenance of around 5,500 jobs • Development of detailed project plans, technology demonstrations, and feasibility studies • Business acceleration services delivered to approximately 200 SMEs to improve commercialisation readiness
Outcomes (Short to Medium-term)	• Increased commercial readiness and deployment of low-carbon technologies in priority sectors • Enhanced private sector follow-on investment, with a leverage ratio of 1:2.4 public to private funding • Strengthened innovation ecosystem supporting green jobs and regional economic growth • Improved market confidence in UK clean technologies, fostering domestic and export opportunities • Addressed technical and regulatory barriers through targeted innovation programmes

Impacts (Long-term)	• Accelerated UK transition to net zero carbon emissions across power, buildings, and industry sectors • Sustained leadership in global clean technology innovation and green industrial development • Increased resilience and security of UK energy systems with diversified clean energy sources • Long-term economic growth driven by green industries, new employment opportunities, and reduced environmental impacts • Stronger public-private partnerships and innovation infrastructure supporting continuous climate technology advancement

Source: Technopolis Groups interpretation of the publicly available information collected

6.2.2.4 Governance

NZIP is funded by the UK Government through the Department for Energy Security and Net Zero (DESNZ). Implementation of the various funding streams differs depending on the programme, with some managed directly by DESNZ staff and others delivered with the support of external partners, including consultancies and specialised organisations. [165]

To support recipients, NZIP has contracted The Carbon Trust, alongside consortia of partners, to provide Acceleration Support Services[166] to approximately 200 SMEs and scale-ups receiving funding. These services focus on addressing skills and knowledge gaps that may prevent companies from successfully bringing low-carbon innovations to market. Support covers investment planning, market engagement, team and board advisory, product design, and commercialisation readiness.

NZIP is closely aligned with complementary initiatives such as the Energy Systems Catapult (ESC) Energy Launchpad[167], which provides additional commercial support and capacity building for green innovations. Other collaborators include KPMG, Eigen Ventures, and Mott MacDonald. These partnerships strengthen the portfolio by enhancing the capabilities of SMEs and scale-ups, improving their readiness to scale technologies and attract follow-on investment.

Application and selection process

NZIP funding streams operate through competitive, time-bound funding rounds. Most programmes include a multi-phase approach, with an initial feasibility phase (Phase 1) followed by a demonstration phase (Phase 2). Applications are evaluated based on clearly defined criteria, with scoring conducted by DESNZ staff alongside external reviewers. Projects—whether single

[165] https://assets.publishing.service.gov.uk/media/646f13627dd6e70012a9b34c/nzip-anf-progress-report-2021-22.pdf

[166] https://nzip.carbontrust.com/about-acceleration-support

[167] https://es.catapult.org.uk/news/catapult-part-of-expert-consortium-supporting-governments-net-zero-innovation-portfolio

companies or consortia—are awarded funding based on technical merit, innovation potential, and alignment with NZIP objectives

6.2.2.5 Enablers/Barriers

NZIP operates within a robust regulatory and strategic framework. Key enablers include the Energy Act 2023, the Review of Energy Market Arrangements (REMA), and overarching government strategies such as the Innovation Strategy (2021) and Net Zero Strategy (2021). Institutions such as Innovate UK, Catapult centres including the Energy Systems Catapult (ESC), and public-private partnerships further enhance the programme's effectiveness by fostering collaboration, knowledge sharing, and investment readiness.

Each funding stream is sector-specific, addressing technological challenges in priority areas. For example, the Future Offshore Wind theme comprises three programmes: Floating Offshore Wind, Windfarm Mitigation for UK Air Defence, and Composites. These initiatives support the UK's Powering Up Britain plan[168], which targets up to 50 GW of offshore wind capacity by 2030, including 5 GW from floating wind. NZIP's role is to overcome technological barriers, incentivise private investment, support UK firms, create green jobs, and expand export opportunities. [169]

Key barriers identified for NZIP-funded projects include[170],:

- Grid connection and planning permission delays, particularly for demonstration projects such as hydrogen deployment.
- High production and infrastructure costs associated with scaling up green hydrogen and other energy technologies.
- Limited availability of skilled workforce and regional deployment support, constraining project development and commercialisation.
- Technical expertise gaps in priority areas such as power, hydrogen, and carbon capture, usage and storage (CCUS), as highlighted in the Net Zero Research and Innovation Framework.

Overall, NZIP seeks to mitigate these barriers by providing targeted funding, expert support, and partnerships, while leveraging complementary programmes and regulatory alignment to accelerate the commercialisation of low-carbon technologies.

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[168] https://assets.publishing.service.gov.uk/media/646f13627dd6e70012a9b34c/nzip-anf-progress-report-2021-22.pdf

[169] https://assets.publishing.service.gov.uk/media/657a2a92095987000d95e086/hydrogen-projects-planning-barriers-and-solutions-report.pdf

[170] https://assets.publishing.service.gov.uk/media/657a2a92095987000d95e086/hydrogen-projects-planning-barriers-and-solutions-report.pdf

6.2.2.6 Results and impact

Since its launch, the Net Zero Innovation Portfolio (NZIP) has **significantly advanced the commercialisation of low-carbon technologies across power, buildings, and industry**. With £1 billion in public funding, NZIP has supported approximately 600 projects, leveraged substantial private sector investment, and strengthened the UK's clean technology ecosystem. The programme has helped create and maintain around 5,500 jobs, supported nearly 200 climate-tech start-ups and scale-ups, and facilitated over £500 million in small business investment, demonstrating measurable economic, environmental, and technological impact. [171]

Key results from NZIP's support for climate technology start-ups include[172]:

- At least £208 million granted directly to climate-tech start-ups.
- Follow-on private investment secured in the range of £500–900 million.
- A demonstrated leverage ratio of 2.4, meaning that for every £1 of public funding, £2.40 of private investment has been mobilised.
- At least one-third of start-up recipients have successfully raised follow-on funding.
- Analysis confirms that for every £1 of public money invested under NZIP, climate-tech start-ups have attracted £2.4 million in additional private sector investment.

Beyond these quantitative achievements, NZIP outputs include detailed project plans, feasibility studies, technology demonstrations, and business acceleration services provided to approximately 200 SMEs. These activities have increased commercial readiness, facilitated technology deployment across priority sectors (offshore wind, nuclear, hydrogen, energy storage, CCUS, and industrial fuel switching), and strengthened the UK's clean technology ecosystem.

In the long term, NZIP contributes to the UK's transition to net zero carbon emissions, supports sustainable industrial growth and job creation, enhances energy system resilience, and positions the UK as a global leader in clean technology innovation. By combining public funding with private sector investment and targeted support services, the programme effectively de-risks innovation projects and promotes scalable, commercially viable low-carbon solutions.

Table 27 Leverage

Outcome indicator	Key output
Number of firms supported	600 projects funded

[171] https://greenbackers.com/letter-calling-for-the-renewal-of-nzip

[172] https://greenbackers.com/letter-calling-for-the-renewal-of-nzip

Capital invested	£1.3bn
Average support per company	Varies as it is dependent on funding stream/programme
Leverage ratio (specify if expected or/and actual)	1: 2.4

External evaluations have been conducted for certain NZIP funding streams, providing detailed insights into programme performance, Key Performance Indicators (KPIs), and impact metrics. While NZIP-wide results are not yet published in a consolidated form, individual funding streams have produced assessments, case studies, and reports that demonstrate their outcomes. For example, within the industry theme, publicly available evaluations include the Green Distilleries Competition: Phase 1 feasibility reports[173] (May 2021) and the Findings of the Industry of Future Programme[174] (August 2024). Other streams have commissioned evaluations, though many reports remain unpublished. These assessments help track project-level outputs and outcomes, inform programme improvements, and provide evidence of NZIP's effectiveness in supporting the commercialisation of low-carbon technologies.

6.2.3 Innovate UK Scale Up Programme

6.2.3.1 Instrument characteristics

The Innovate UK Scale Up Programme provides bespoke technical assistance and business support designed to help high-potential businesses scale according to their ambitions[175]. Support is delivered through fully funded mentorship, including one-to-one coaching, peer networks, workshops, and the appointment of a dedicated Scaleup Director. A high-level Strategic Advisory Board further enhances connectivity, access to resources, and structured peer-to-peer networking opportunities.

The Scale-Up Director-led support addresses key challenges faced by scaling businesses, including market access, connections and resources, and attracting growth capital. The programme features a board of 33 Scale-Up Directors, each bringing expertise across multiple domains, including commercialising and launching innovations, collaborating with UK and international partners,

[173] https://www.gov.uk/government/publications/green-distilleries-competition-phase-1-feasibility-reports

[174] https://www.gov.uk/government/publications/findings-of-the-industry-of-future-programme

[175] https://iuk-business-connect.org.uk/programme/scaleup/

protecting and exploiting intellectual property, fundraising, and implementing financial strategies. This experience equips directors to guide companies effectively through their scaling journey. [176]

Directors can also facilitate access to complementary support, such as grant-funded opportunities offered by UKRI and other programmes, helping scaleups leverage additional financial resources alongside strategic guidance. The overarching aim of the programme is to deliver growth at scale, aligning with Innovate UK's broader strategy for fostering innovation and business growth in the UK.

The programme is funded by the UK Government through Innovate UK and delivered by Innovate UK Business Growth, part of the UK Research and Innovation (UKRI) framework. Open since 2017, the programme operates on a 12-18-month support cycle. As a bespoke initiative, the level of support varies depending on the needs of each scale-up; however, according to the Scale-Up Institute, eight scale-ups have secured a total of £20 million in complementary grant funding through the programme. [177]

6.2.3.2 Beneficiaries

The Innovate UK Scale-Up Programme targets a broad range of sectors, encompassing greentech, energy, sustainability, and net zero, alongside other innovation-intensive fields such as agrifood, biotech, chemistry, digital, materials, robotics, and space. While the programme is not exclusively focused on green technologies, greentech businesses form an important subset of supported firms.

The primary beneficiaries are UK-based scale-ups with strong research and development capabilities and high investor readiness. Eligible companies are typically post-seed to late-stage scale-ups with international ambitions and the potential to achieve at least 50% compound annual growth (CAGR). These high-growth firms are expected to participate actively in the programme through workshops, board meetings, progress reporting, and stakeholder feedback, ensuring that support is fully leveraged to accelerate growth and scale.

To be eligible, companies must:

- Be registered as a UK business entity (limited company, partnership, or sole trader).
- Have their primary operations based in the UK and demonstrate a commitment to continued development within the country.
- Be scaling businesses that are disrupting their industries and capable of international expansion.

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[176] https://iuk-business-connect.org.uk/projects/?_sft_programme=scaleup-directors

[177] https://www.scaleupinstitute.org.uk/programmes/innovate-uk-business-growth-scale-up-programme-2023/

- Demonstrate potential for high growth, targeting over 50% annual growth.

This focus ensures that the programme supports scale-ups with the highest potential for economic impact, innovation, and international competitiveness, aligning with UKRI and Innovate UK's strategic priorities for driving business growth and innovation at scale

6.2.3.3 Intervention logic

The Innovate **UK Scale Up Programme addresses a critical gap in the UK's innovation ecosystem** – the lack of high-growth support networks and structured scale-up ecosystems for high-potential firms. Its primary goal is to unlock the growth of high-potential UK scale-ups, driving innovation, productivity, and economic impact. By providing bespoke technical and business support, the programme helps the highest-potential businesses realise their ambitions and scale successfully. This aligns with Innovate UK's emerging strategy for business innovation, which aims to deliver growth at scale across the UK.

The programme is **delivered by Innovate UK Business Growth**[178], part of UK Research and Innovation (UKRI), which plays a central role in enabling this strategic priority. UKRI supports innovative development with large economic impacts by funding scale-ups that introduce disruptive solutions, create highly skilled jobs, drive productivity, and maintain UK competitiveness. In line with the Industrial Strategy[179] and sector plans, UKRI is increasingly pivoting its programmes and budgets toward research and innovation priorities, working closely with the Department for Science, Innovation and Technology (DSIT), other government departments, and industry to ensure investments focus on innovation, commercialisation, and scale-up.

The programme operates through a dedicated network of **42 Scale-Up Directors** and a **Strategic Advisory Board**, providing tailored mentorship, **one-to-one coaching, peer networks, workshops, and access to resources**. Scale-Up Directors bring expertise in commercialising innovations, protecting and exploiting intellectual property, fundraising, market engagement, and implementing financial strategies. They also facilitate connections to complementary grant-funded programmes and wider support mechanisms.

The Innovate UK Scale Up Programme leverages expert mentorship, and structured networks (inputs) to deliver bespoke business support, workshops, and peer-to-peer networks (activities), see intervention logic in Table 28. These activities strengthen scaleups' ability to access markets, attract investment, and accelerate growth (outputs). The programme's medium-term outcomes include improved commercial readiness, increased private sector investment, enhanced innovation

[178] https://iuk-business-connect.org.uk/business-growth

[179] https://assets.publishing.service.gov.uk/media/68595e56db8e139f95652dc6/industrial_strategy_policy_paper.pdf

capacity, and growth of high-potential UK scaleups. In the long term, the programme contributes to broader economic impacts such as job creation, increased productivity, enhanced UK competitiveness, and the accelerated commercialisation of disruptive technologies.

By addressing both structural ecosystem gaps and the specific challenges of scaling innovative businesses, the Innovate UK Scale Up Programme supports **the UK's wider innovation and industrial strategy objectives**, ensuring that high-potential scaleups can deliver meaningful economic and societal impact.

Table 28 Intervention logic - Innovate UK Scale Up Programme

Level	Description
Problem	• Lack of tailored support networks for high-growth UK scale-ups • Challenges include market access, capital attraction, scaling capacity and navigating fragmented support systems • Need for bespoke, continuous and connected assistance to realise growth ambitions and drive innovation
Objectives	• Unlock growth potential of high-potential UK scale-ups • Enable rapid scaling, innovation, and international expansion • Create highly skilled jobs and increase productivity • Enhance UK competitiveness • Deliver growth at scale aligned with Innovate UK's business innovation strategy
Inputs	• Strategic Advisory Board support • Team of 42 Scale-up Directors with diverse expertise (finance, IP, markets, M&A, talent management) • Access to complementary grant funding (£20 million awarded to eight scale-ups) • Integration with networks like KTN, Catapults and Global Business Innovation programmes
Activities	• One-to-one bespoke mentorship and coaching by Scale-up Directors • Assessment of individual business needs and tailored advice • Facilitation of grant access and external resources • Organisation of workshops, peer networks, and board meetings • Multi-stage selection process including expression of interest, evaluation, site visits and final selection • Ongoing monitoring and support via director network and Strategic Advisory Board
Outputs	• 222 firms supported since 2017 • 1,490 jobs created • 62 scale-ups expanded into international markets in past 12 months • 78 companies supported in entering international markets

	• £111 million Gross Value Added (GVA) • £561 million raised by participating scale-ups in grants and equity • High participation in workshops and networking events
Outcomes (short to medium-term)	• Accelerated commercialisation and market expansion • Improved strategic business growth plans • Enhanced investor readiness • Increased access to funding and business connections • Strengthened organisational structures • Enhanced skills in scaling leadership • Increased revenue and headcount growth in supported companies • Successful business model transitions (e.g., Talent Intuition) • Stronger peer-to-peer learning and collaboration
Impacts (long-term)	• Sustainable growth of high-potential UK scale-ups contributing to the economy • Creation of highly skilled jobs • Increased innovation and productivity • Enhanced international competitiveness of UK businesses • Strengthened innovation ecosystem with better connected support networks • Maintenance of UK's leadership in innovation and business growth • Alignment with Industrial Strategy and Net Zero ambitions

Source: Technopolis Groups interpretation of the publicly available information collected

6.2.3.4 Governance

Innovate UK Business Growth delivers one-to-one, bespoke, and fully funded support tailored to the specific needs of scale-ups. The programme is funded by Innovate UK, part of UK Research and Innovation (UKRI), a non-departmental public body supported by UK government grants.

The programme is aligned and complementary with other innovation and growth initiatives, including the Knowledge Transfer Networks (KTN), Catapults, Knowledge Transfer Partnerships (KTPs), Global Business Innovation and Investment Programmes, the EIC Accelerator, and the Net Zero Innovation Portfolio (NZIP). Participating scale-ups are also connected to wider Innovate UK initiatives, fostering access to additional networks, expertise, and opportunities. For example, around twelve scale-ups have been selected for Global Business Innovation and Investment Programmes, benefiting from international visits to cultivate relationships and explore potential collaborations.

Application and Selection Process

The selection process is structured and multi-stage:

1. Initial Call – A discussion with a Scale-Up Director to explore strategic business growth plans.
2. Expression of Interest (EOI) – Interested companies submit an EOI detailing their business and growth plans.
3. Evaluation of EOI – The Scale-Up Board evaluates submissions and Innovate UK EDGE identifies high-potential scale-ups. High-scoring companies advance to site visits.
4. Deep Dive Site Visit – Two Scale-Up Directors conduct a detailed assessment of the business and prepare a report mapping growth opportunities and challenges.
5. Final Evaluation by Scale-Up Board – Directors present the assessment report to the Board, which makes the final decision on programme acceptance.
6. Implementation – Once selected, each business is paired with a dedicated Scale-Up Director and as needed, other experts from the Scale-Up Board. Tailored support and resources are provided based on the company's specific growth challenges identified during the site visit.

Programme Delivery

The programme is delivered by **Innovate UK Business Growth** through a network of **42 Scale-Up Directors** supported by a **strategic advisory board**. Each scale-up is assigned a dedicated Director who acts as the primary point of contact, identifying key challenges and coordinating the collective resources of the Scale-Up Board. Directors bring expertise across multiple domains, including finance, mergers and acquisitions, international markets, intellectual property, supply chains, leadership, and talent management. The Strategic Advisory Board provides an additional layer of connectivity and access to high-level resources, enhancing support for scaling businesses.

Monitoring and Oversight

Programme delivery and monitoring are managed by **Innovate UK Business Growth**, with oversight provided through the Director network and Strategic Advisory Board. Internal panels handle both the selection of participants and ongoing monitoring of progress, ensuring that scale-ups receive targeted, high-impact support throughout the programme.

6.2.3.5 Enablers/Barriers

The Innovate UK Scale-Up Programme addresses key barriers faced by high-growth UK scale-ups, including market access, regulatory hurdles, and challenges in accelerating commercialisation. Scale-Up Directors provide one-to-one guidance, facilitating access to wider support networks and helping firms navigate market and regulatory complexities.

While the intensive, bespoke support is highly valuable, it can appear fragmented if not continuous at critical stages of a scale-up's growth. This potential gap is mitigated by ongoing light-touch support[180] through the Innovate UK alumni network, which provides access to masterclasses, exclusive events, and key account management, strengthening private sector connections.

Support for innovation and scale-up in the UK is distributed across multiple agencies, including Innovate UK, UKRI, the British Business Bank, and Catapult centres[181]. Firms have reported that navigating these channels can be complex and disjointed, particularly when transitioning from R&D to commercialisation. Ensuring clarity and alignment between programmes is therefore critical to mitigate these challenges and maximise support for scaleups.

Challenges such as market access for scaleups is a barrier this programme is mitigating by allowing opportunities for market expansion (both nationally and internationally) and accelerated commercialisation. Additionally, scale-up directors providing support and guidance facilitate access to wider support as required and help address any market or regulatory hurdles faced by scale-ups.

6.2.3.6 Results and impact

Since 2017, the programme has demonstrated measurable impacts on UK scaleups, particularly in terms of business growth, job creation, and international expansion. Key outputs and impacts include[182]:

- 222 firms supported
- 1,490 jobs created
- Gross Value Added (GVA) uplift: £111 million
- 62 scale-ups expanded into international markets in the past 12 months
- Supporting 78 companies in entering international markets
- Estimated return on investment: 565%

The programme has catalysed scaleup growth by providing mentorship from experienced Scale-Up Directors, accelerating technological development, enabling market expansion, and facilitating access to private capital. Participating firms have leveraged the programme to refine business models, secure funding, and strengthen organisational capacity.

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[180] https://www.scaleupinstitute.org.uk/programmes/innovate-uk-business-growth-scale-up-programme-2023/

[181] https://committees.parliament.uk/writtenevidence/130987/html

[182] https://www.scaleupinstitute.org.uk/programmes/innovate-uk-business-growth-scale-up-programme-2023/

An example is Hybrid Air Vehicles Ltd[183] who reported significant benefits from programme support, including investor connections, market access, and guidance on leveraging public support mechanisms. CEO Tom Grundy stated:

"*During our time with the Scale-Up Programme, we have enjoyed the support of a wide range of highly experienced and talented entrepreneurs and businesspeople. These Scale-Up Directors have contributed insightfully to our investment activities, connected us with potential investors and sales prospects, and helped us access public support mechanisms.*"

Another example is ICAX, a domestic heat pump developer who used the programme to[184]:

- Develop a commercial strategy and market-ready product
- Implement a new financial modelling process
- Secure R&D funding from the Welsh Government
- Expand staff and improve organisational structure
- Secure manufacturing opportunities in Wales

Talent Intuition[185], a workforce data intelligence company, received support to refine its go-to-market strategy, improve sales conversions, and execute commercial KPIs. Outcomes include:

- Revenue growth of 269% from 2020 to 2021
- Headcount increase with additional key hires planned
- Transition from a service to a software-led business, with software revenues exceeding 65% of total revenue
- Launch of a new website to serve a global audience

An Interim Summative Assessment and a series of case studies further demonstrate the programme's effectiveness, highlighting the significant impact of tailored support and mentoring on scaling high-growth UK businesses. [186]

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[183] https://www.scaleupinstitute.org.uk/programmes/innovate-uk-business-growth-scale-up-programme-2023/

[184] https://iuk-business-connect.org.uk/casestudy/Scaleup-Programme-puts-cleantech-company-ICAX-strong-position/

[185] https://www.ukri.org/wp-content/uploads/2022/05/IUK-240522-InnovateUKEDGEScaleupProgrammeInterimSummativeAssessment.pdf and www.talentintuition.com/

[186] https://www.ukri.org/wp-content/uploads/2022/05/IUK-240522-InnovateUKEDGEScaleupProgrammeInterimSummativeAssessment.pdf

Table 29 Leverage

Outcome indicator	Key output
Number of firms supported	222 firms supported since 2017
Capital invested	£111m
Average support per company	£561m raised by participating scaleups in grants and equity (No details on average support per firm)
Leverage ratio (specify if expected or/and actual)	1:5 leverage ratio

6.2.4 Instrument 3 – National Wealth Fund

6.2.4.1 Instrument characteristics

The National Wealth Fund (NWF) is the UK government's principal investment and policy bank, **providing debt, equity, and guarantees to large-scale green infrastructure projects and scale-ups**. Established in 2025, the NWF replaced the UK Infrastructure Bank (UKIB)[187], which was launched in June 2021 to tackle climate change and support economic growth across the UK. The fund is ongoing with no fixed end date.

The NWF **operates with a £27.8 billion funding capacity**, backed by HM Treasury (£22 billion from UKIB and £5.8 billion committed in 2025), allocated across **debt, equity, and guarantees**[188][189]:

- Debt: Senior, mezzanine, and bridge financing, tailored to each project, on fixed or floating-rate terms.
- Equity: Ordinary equity, preferred equity, and convertible loan notes. Focused on earlier-stage projects and technologies seeking to scale, often in partnership with the British Business Bank.
- Guarantees: Including financial guarantees, credit enhancement guarantees, first-loss guarantees, and performance guarantees to de-risk projects and mobilise private investment.
- Minimum investment per project is £25 million, with co-investment alongside banks and institutions. The NWF typically achieves a 1:3 leverage ratio, crowding in private capital.

[187] https://www.nationalwealthfund.org.uk/news/clean-energy-be-largest-sector-investment-ps22bn-infrastructure-bank-plan

[188] https://www.instituteforgovernment.org.uk/explainer/national-wealth-fund

[189] https://www.gov.uk/government/publications/national-wealth-fund-mobilising-private-investment/national-wealth-fund-mobilising-private-investment-accessible

6.2.4.2 Beneficiaries

The NWF targets **UK-based projects and technologies** with high capital intensity and net-zero impact, spanning clean energy, manufacturing, and infrastructure. **Large-scale businesses, such as gigafactories or industrial consortia**, are prioritised at the demonstration and commercialisation stages.

Projects must meet four investment principles:

1. Support government growth and clean energy missions.
2. Involve capital-intensive projects or assets.
3. Deliver positive financial returns.
4. Mobilise significant private capital over time.

Minimum investment per project is £25–50 million, and the NWF is selective, prioritising projects with the highest mission impact.

6.2.4.3 Intervention logic

The National Wealth Fund (NWF) is designed to tackle two main challenges in the UK's green and industrial economy: systemic underinvestment in large-scale infrastructure and the high market risk associated with pioneering or first-of-a-kind projects. These challenges arise because private investors are often unwilling or unable to take on the substantial financial, technical, and regulatory risks inherent in such projects. Without public intervention, many high-impact green infrastructure projects, such as gigafactories, industrial clusters, or CCUS facilities, would either be delayed, scaled down, or fail to materialise entirely.

The rationale behind the NWF is therefore to fill these critical gaps in financing by providing tailored debt, equity, and guarantees that:

- **De-risk investments by absorbing some of the financial and operational risks**, NWF encourages private investors to commit capital that they would otherwise withhold.
- **Enable strategic alignment**. Investments are targeted toward projects that advance the UK's national priorities, including the 10 Point Plan for the Green Industrial Revolution, the Net Zero Strategy, Green Prosperity, and the 2025 Industrial Strategy[190].
- **Catalyse innovation and scale**. Funding is deployed to projects at demonstration, build, and commercialisation stages, allowing cutting-edge technologies to move from pilot to full-scale deployment.

[190] https://assets.publishing.service.gov.uk/media/68595e56db8e139f95652dc6/industrial_strategy_policy_paper.pdf

- **Mobilise private capital** by providing co-investment and guarantees, the NWF acts as a crowd-in mechanism, typically achieving a 1:3 leverage ratio, thereby multiplying the impact of public funds.
- **Support regional economic growth**. Large-scale projects create high-skilled jobs, strengthen supply chains, and stimulate local economies, ensuring that benefits are geographically distributed.

The National Wealth Fund deploys a range of financial instruments across the capital structure, providing **debt**, including senior, mezzanine, and bridge financing, **equity** in the form of ordinary, preferred, and convertible notes, as well as **guarantees** such as credit enhancement, first-loss, and performance guarantees. Projects considered for investment are evaluated against selective criteria, including their alignment with government missions, capital intensity, expected financial returns, and potential to mobilise private capital. Throughout the investment process, rigorous due diligence and ongoing monitoring ensure that funded projects deliver measurable outputs and outcomes, while contributing to long-term impacts consistent with national policy objectives, see intervention logic in Table 30.

Table 30 Intervention logic - National Wealth Fund

Level	Description
Problem	• Underinvestment in large-scale green infrastructure and industrial projects • High market risks, especially for first-of-a-kind large manufacturing or industrial projects • Need to mobilise private capital to bridge finance gaps • Regulatory and planning delays slowing infrastructure development • Need to support UK's clean energy and economic growth missions
Objectives	• Support large-scale green infrastructure, scale-ups, and net-zero technologies • Drive regional economic growth aligned with UK government's growth and clean energy missions • Mobilise private sector investment through crowd-in mechanisms • Deliver positive financial returns while addressing climate change • Align with UK's 10 Point Plan for Green Industrial Revolution, Net Zero Strategy and 2025 Industrial Strategy
Inputs	• £27.8 billion total funding capacity (£22bn existing from UKIB + £5.8bn new capital in 2025) • Financial instruments including debt (senior, mezzanine, bridge), equity (ordinary, preferred, convertible loan notes) and guarantees (financial, credit enhancement, first loss, performance) • Operational independence backed by HM Treasury • Partnerships and co-investments with banks, institutions and Scottish National Investment Bank • Integration with complementary UK funding programmes and networks

Activities	• Ongoing, rolling investment enquiry and application process • Rigorous project evaluation against investment principles and due diligence by investment committee • Provision of tailored financial products across capital structure • Co-investment alongside private sector to leverage funding (1:3 leverage ratio) • Monitoring and reporting via annual NWF report • Strategic prioritisation of projects supporting clean energy, advanced manufacturing, digital, and transport sectors
Outputs	• £3.1 billion committed to projects since 2021 • 18 deals signed in 2024 across clean energy, transport, natural capital, and digital sectors • Mobilised £10.5 billion in private capital • Supported creation or safeguarding of over 30,980 jobs, with 8,340 attributable directly to NWF financing • Reduction of over 24.7 million tonnes CO2 equivalent emissions projected, with 4.9 million tonnes attributable to NWF • Backing high-impact projects such as Pulpex (£62m), Peak Cluster (£28.6m), GeoPura (£30m)
Outcomes (short to medium-term)	• Accelerated deployment of large-scale infrastructure and technologies • Increased private sector investment in green and innovative sectors • Enhanced financial viability and scaling of demonstration and commercialisation stage projects • Improved market confidence in UK's clean energy and industrial projects • Strengthened collaboration between public and private investment partners
Impacts (long-term)	• Significant contribution to UK's Net Zero targets and climate goals • Sustained economic growth and regional development through green infrastructure investment • Creation of high-skilled jobs and enhanced industrial competitiveness • Reduction in greenhouse gas emissions and progress towards a low-carbon economy • Strengthened financial ecosystem for clean energy and advanced manufacturing projects • Long-term alignment with UK's Industrial Strategy and clean energy transition ambitions

Source: Technopolis Groups interpretation of the publicly available information collected

6.2.4.4 Governance

The National Wealth Fund (NWF) operates as a government-owned but operationally independent institution, with HM Treasury[191] serving as its sole shareholder and sponsoring department. While the Fund is fully owned by the UK Government, it maintains autonomy in its day-to-day investment decisions and operational activities, ensuring strategic flexibility in deploying its capital. HM

[191] https://www.gov.uk/government/publications/ukib-framework-document

Treasury is represented on the NWF Board through a senior official from UK Government Investments (UKGI), providing oversight and alignment with broader government priorities.

The Fund's investment process is structured yet flexible, with projects able to submit enquiries on an ongoing, rolling basis. Applications are rigorously assessed by an **internal investment committee** against the NWF's investment principles, with **detailed due diligence conducted prior to funding decisions**. In addition to managing investments independently, the NWF collaborates with co-investment partners, such as banks, other public investment institutions, and the Scottish National Investment Bank, to leverage private capital and maximise the impact of each investment.

The NWF also operates in a complementary role alongside other UK funding programmes, **allowing projects to combine support from initiatives** such as Innovate UK, the Net Zero Innovation Portfolio, Knowledge Transfer Networks, Knowledge Transfer Partnerships, and Catapult centres. This integrated governance structure ensures that the Fund's strategic objectives are achieved while maintaining accountability, transparency, and alignment with national policy goals.

6.2.4.5 Enablers/Barriers

Key barriers for large-scale infrastructure projects include:

- Long planning and regulatory approval processes slowing development.
- Potential policy reversals or future funding cuts affecting continuity.
- High upfront costs and technology risks, particularly for emerging sectors such as CCUS and cluster-based industrial projects.

Government initiatives like the Review of the Energy Market Arrangements (REMA, 2022) aim to mitigate regulatory uncertainties, supporting investor confidence and project delivery.

Enablers include strong government backing, operational independence, and integration with complementary funding programmes, which collectively enhance the NWF's ability to mobilise private capital and accelerate large-scale deployment

6.2.4.6 Results and impact

The National Wealth Fund (NWF) has delivered substantial outputs since its inception, demonstrating both financial leverage and tangible contributions to the UK's green infrastructure and industrial sectors. By deploying capital across debt, equity, and guarantee instruments, the NWF has supported a range of large-scale projects aligned with national clean energy and economic growth priorities. Key outputs include:

- **Capital deployed**: £3.1 billion committed to projects since 2021, spanning clean energy, transport, natural capital, and digital sectors.

- **Private finance mobilisation**: £10.5 billion in private capital leveraged through co-investments, reflecting a 1:3 leverage ratio.
- **Project support:** 18 deals signed in 2024 alone, including high-impact projects such as Pulpex (£62m), Peak Cluster (£28.6m), and GeoPura (£30m).
- **Job creation:** Over 30,980 jobs created or safeguarded, with 8,340 attributable directly to NWF financing.
- **Environmental impact**: Estimated reduction of 24.7 million tonnes of CO_2 equivalent emissions, with 4.9 million tonnes directly linked to NWF-supported projects.

These outputs highlight the NWF's role in accelerating large-scale infrastructure and technology deployment, stimulating private investment, and generating both economic and environmental benefits across the UK.

Table 31 Leverage

Outcome indicator	Key output
Number of firms supported	No exact number (focus is on projects)
Capital invested	£3,103m
Average support per company	No exact number (focus is on projects)
Leverage ratio (specify if expected or/and actual)	1:3

6.2.4.7 Formal evaluation

The National Wealth Fund (NWF) is subject to a formal evaluation and reporting framework, primarily through its annual report, which provides detailed insights into financial commitments, project outcomes, and overall impact. The NWF's evaluation approach combines quantitative and qualitative measures to track both financial performance and policy-aligned objectives.

Key aspects of the evaluation framework include:

- **Annual reporting**: The NWF publishes a yearly report detailing capital deployed, deals signed, private finance mobilised, and sectoral distribution of investments. The most recent report (2023–24) outlines 18 deals across clean energy, transport, natural capital, and digital sectors, increasing financial commitments by £1.7 billion, see Table 32. Of the £3.1 billion committed

cumulatively, £2.5 billion has been allocated to private sector investments, while £0.6 billion towards public sector deals.[192]

- **Impact metrics.** Reports include both financial and environmental indicators, such as jobs created or safeguarded and greenhouse gas reductions. To date, the NWF has supported or created over 30,980 jobs, of which 8,340 can be directly attributed to NWF financing. Similarly, over 24.7 million tonnes of CO_2 equivalent emissions are projected to be saved, with over 4.9 million tonnes attributable to NWF-backed projects. These metrics demonstrate the Fund's contribution to national climate and industrial targets. [193]
- **Project-level assessment**. Each investment undergoes rigorous due diligence and ongoing monitoring to ensure alignment with the Fund's investment principles, including capital intensity, financial return, and the potential to mobilise private sector funding. In 2023-2024 the NWF mobilised £10.5b in private capital.
- **Case studies and success stories**. Selected projects, such as Pulpex, Peak Cluster, and GeoPura, are highlighted to demonstrate both tangible outcomes and the Fund's catalytic role in accelerating high-impact initiatives. [194]

Overall, while the NWF's evaluation framework is formalised through annual reporting and due diligence processes, it also captures broader systemic impacts, including market confidence, regional economic growth, and progress toward UK net-zero goals.

Table 32 NWF Deals signed in 2024

Deal name	Investment	Description	GHG (tCO2e, 000s)	Att. GHG (tCO2e, 000s)	Jobs	Att. jobs	PFM £m
Pulse Clean Energy	£62.5 million (debt)	The Company invested in Pulse Clean Energy's proposed portfolio investment, to support the construction of 20 battery energy storage sites and one synchronous condenser. Our investment has the potential to unlock up to £500 million of private investment across these projects in the future, while supporting new jobs and the UK's green energy transition.	1,900	116	214	13	113

[192] https://static-files.nationalwealthfund.org.uk/s3fs-public/download/E03127595_NWF%20ARA%2023-24_Accessible.pdf?VersionId=vjqjcyOKq9jCTbO2W3jfahYVLIBTkQR5

[193] https://static-files.nationalwealthfund.org.uk/s3fs-public/download/E03127595_NWF%20ARA%2023-24_Accessible_0.pdf?VersionId=Vy9qF7aiUlebUMMAZHOHbplCgowfJWTp

[194] https://www.nationalwealthfund.org.uk/news

Cornish Lithium	£24 million (equity)	The Company invested in Cornish Lithium to support the development of a lithium extracting and exploration project in Cornwall. To meet the UK's net zero targets, transport emissions will need to fall by 70% with EV uptake increasing. This project supports the lithium supply chain and EV market because a successful demonstration phase will allow the project to deliver 8,000 tonnes of lithium per year, roughly equivalent to 190,000 to 300,000 EV batteries. Our participation unlocked additional private capital, while supporting Cornish Lithium's demonstration phase and eventual scale-up and commercialisation.	(180)	(81)	30	13	30
Gresham House	£75 million (equity)	The Company invested in the Gresham House Secure Income Renewable & Storage Fund, which will develop co-location renewable generation and short-duration electricity storage. Our investment was intended to help maximise grid connection and allow for efficient deployment of renewable generation into new locations, accelerating the under-utilised co-location business model and growing the market by scaling up available capital and speeding up deployment.	4,140	621	154	23	425
Pacific Green	£60 million (debt)	The Company invested in Pacific Green to support the construction and operation of a 250MW capable battery storage facility. Our investment will unlock finance for large-scale asset storage projects where the private sector is currently constrained, with the technology essential for utilising intermittent renewables.	361	115	56	18	60
Envision AESC	£200 million (debt)	The Company invested in Envision AESC to finance an AESC EV battery manufacturing plant adjacent to the Nissan factory in Sunderland, which will allow car manufacturers to transition away from internal combustion engines. Our investment helped prevent delays to the construction of the plant, ensuring that operational benefits are seen as soon as possible.	(87)	(24)	1,000	276	50

Greater London Authority	£190 million (debt)	The Company's loan to the Greater London Authority (GLA) for the Green Finance Fund (GFF) supports the GLA's ambition to accelerate the decarbonisation of buildings, energy, and the transport system, in line with London's net zero 2030 target. Our role will support the fund's projects in delivering energy-efficiency benefits, clean transportation and renewable energy sources, while growing the green economy.	31	12	3,000	1,140	0
Equitix	£125 million (equity)	The Company committed investment on a match-funding basis into the Equitix UK Electricity Storage Fund, which will support the development of longer-duration storage technologies and new business models within the sector that are not yet deployed at commercial scale.	3,500	583	899	150	625
Pragmatic	£60 million (equity)	The Company invested in Pragmatic to support the scale-up and manufacture of semiconductors in County Durham. Our role as a co-lead investor helped mobilise additional private capital and signalled support for UK-based semiconductor manufacturing to the wider market, noting that semiconductor production has a low carbon footprint.	2,284	846	470	60	102
GeoPura	£30 million (debt)	The Company invested in GeoPura to support their roll-out of 600 proprietary Hydrogen Power Units and the development of one of the UK's largest green hydrogen production facilities. Our financing helped unlock additional private investment and contributes to the build-out of the development of the hydrogen supply chain, given the necessity of a low-carbon hydrogen market.	1,300	696	75	40	26

Source: NWF annual reporting 2024

6.3 Synthesis/summary

✅**The UK has established a strong and coordinated clean technology funding ecosystem**. Strategic government programmes, including the NWF, Innovate UK Scale-Up Programme, and NZIP provide financial support across the full innovation lifecycle, from early-stage R&D to large-scale demonstration and commercial deployment. These instruments de-risk projects, validate

SMEs and scale-ups, and leverage private capital, helping position the UK as a global leader in offshore wind, renewable energy, and green finance.

✅**Each programme targets distinct stages and needs of innovation while remaining complementary**. NZIP focuses on R&D and post-R&D technology development for decarbonisation, lowering costs and supporting the UK's net zero emissions target by 2050. The NWF prioritises large-scale infrastructure and commercial-stage projects, mobilising private capital via debt, equity, and guarantees to stimulate regional economic growth. Innovate UK's Scale-Up Programme addresses high-growth firms with strong commercial potential, offering bespoke business support, mentorship, and market expansion guidance. Collectively, these instruments provide a coherent pathway for companies progressing from R&D to demonstration, commercialisation, and scale-up.

✅**Despite progress, structural concentration and gaps remain in the funding landscape**. A small number of large organisations capture a significant share of total deal volumes, while manufacturing-related clean technology companies are underrepresented across most funding categories. Although overall deal values have risen sharply, the total number of deals has declined since 2021, suggesting larger individual investments but reduced diversity among recipients. Broadening access to capital for smaller firms and emerging sub-sectors—such as hydrogen, carbon capture, and low-carbon manufacturing—remains a key priority.

✅**Public support is effectively combined with regulatory alignment and ecosystem development**. By leveraging government funding to attract private investment, these programmes stimulate job creation, enhance productivity, and strengthen the green innovation ecosystem. Public backing also provides credibility and market validation for scale-ups. Remaining barriers, including complex electricity market arrangements, slow permitting, and planning delays for large infrastructure projects, are being addressed through the 2025 Industrial Strategy and the Review of Electricity Market Arrangements (REMA).

✅**The UK is well-positioned to sustain long-term green growth and achieve net zero targets**. The funding ecosystem is globally competitive and strategically aligned with national climate and industrial objectives. Continued focus on expanding access to capital, supporting domestic manufacturing, and streamlining regulatory processes will ensure the UK maintains its leadership in clean technology innovation.