ODYSSEE-MURE

Industry Pact: A key driver for the French Industrial Transition ?

Policy-design, impacts and insights from ODYSSEE MURE

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Outline

Outlook on French Industry

National industrial policy framework

Industry Pact: a support programme for SMEs

Comparative approach: the Irish LIEN programme

Key takeaways and Policy Implications

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Main figures

€2,9tn
GDP 2024 – World Bank

€270bn
Industry value (manufacturing)- *World Bank / INSEE*

9,4%
Industry share (manufacturing) of GDP in 2024 - *World Bank*

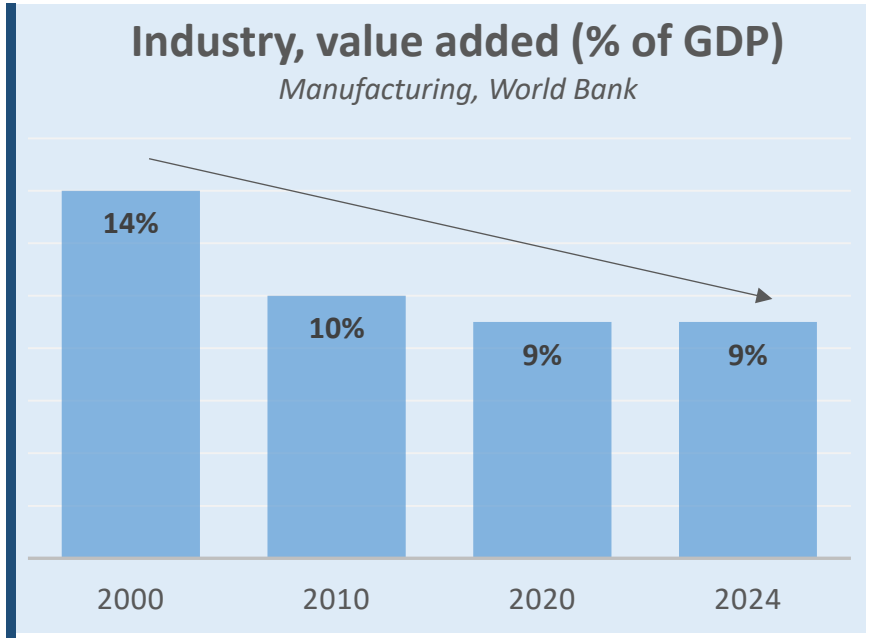
2,8M
Direct industrial jobs (manufacturing) in 2024 - INSEE

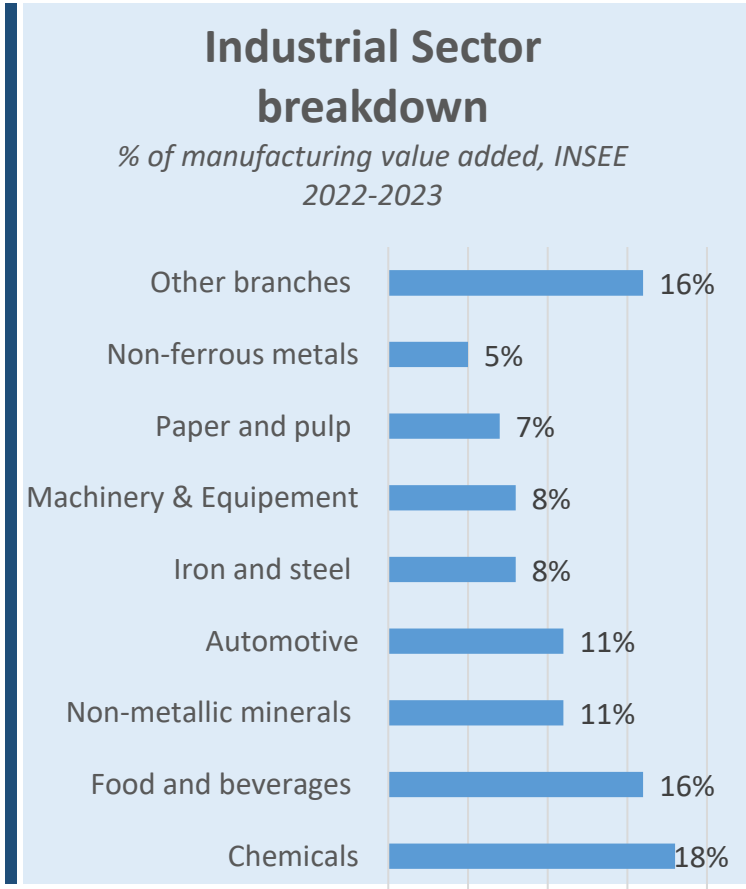
French Industrial Key Issues

(1) **An energy-intensive INDUSTRY facing an unprecedented rise of costs.** Sharp increases in electricity and gas prices since 2021 have significantly burdened energy-intensive industries.

(2) **A long-term structural shift requiring renewed industrial ambitions.** Manufacturing's share of French GDP has declined from 15% in 1980 to 9.4% in 2024. With €270Bn in value added and 2.8M direct jobs, the sector remains a cornerstone of the French economy and a priority target for energy performance investments.

(3) **A 2030 target that calls for immediate, large-scale mobilization.** France's commitment to −35% industrial GHG emissions by 2030 vs. 2015 requires a significant change in the pace of decarbonisation investments, precisely the ambition Industry Pact is designed to contribute to such target.





Evolution of Key Industry Indicators (1/2)

Energy Consumption

279 TWh in 2023

2% decrease per year over the last decade

•The main energy sources are:
- Natural gas, widely used for heat generation and in some industrial processes.
- Electricity, powering machinery, motors, and electrochemical processes.
- Petroleum products, primarily in chemical and petrochemical industries.

•**Energy consumption has decreased thanks to ongoing energy efficiency** improvements.

Energy Efficiency

1% improvement per year over the last decade

- **Energy efficiency** has improved by **8%** between 2013 and 2023, as measured by the technical ODEX.
- **Efficiency gains differ by industrial sector** with the automotive sector achieving the largest savings since 2000 (48%).
- The most energy intensive industries are not necessarily the ones achieving the largest gains with steel and cement efficiency improved respectively by 5% and 12% **between 2000 and 2023.**

Industrial Output

In 2023, back to 2015 level after COVID low

- Industrial output has experienced moderate growth after 2020.
- This includes both recovery from the COVID-19 downturn and ongoing modernisation in manufacturing.
- **IPI shows stable performance, with some resilience** despite energy price shocks.
- **Growth is uneven** : the automotive and especially the primary metals sector have struggled, while others like the chemical industry, have grown.

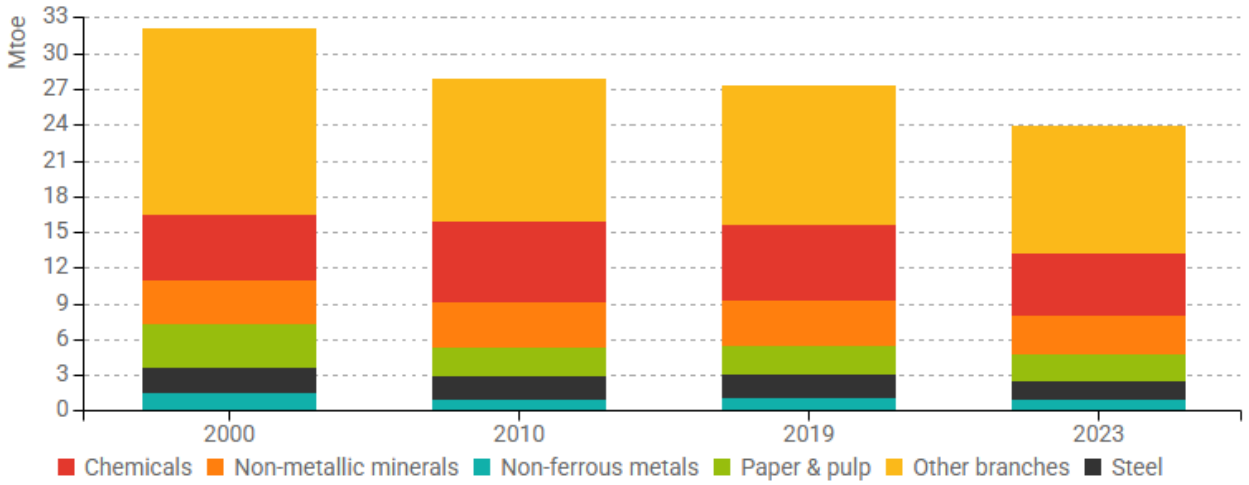
CO2 Emissions

65 MtCO2eq in 2023

8,7 % decrease between 2022 and 2023

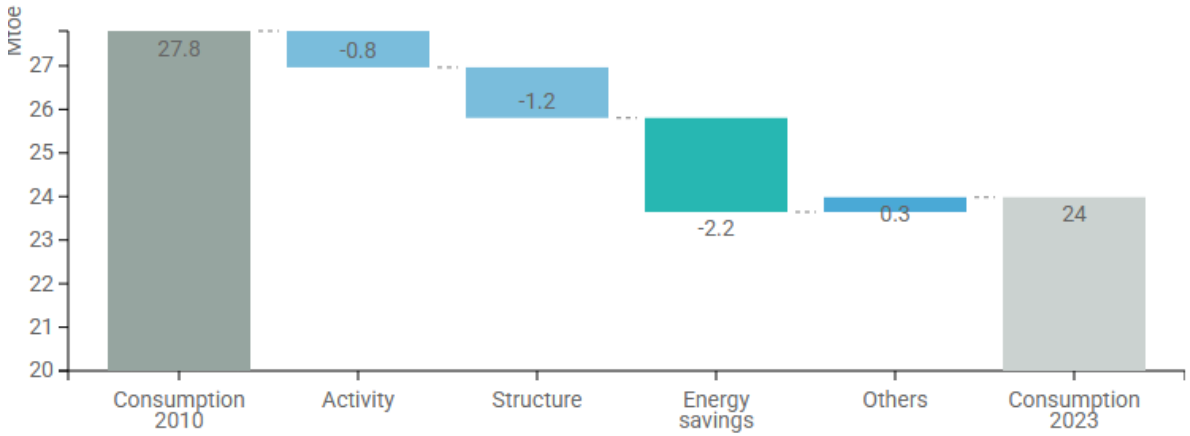
- French industrial GHG Emissions represent 20% of total emissions, one of the largest share mainly through the combustion of fossil fuels (natural gas, coal, oil) and industrial processes (steelmaking, chemicals);
- Reduction is mainly **due to the improvements in energy efficiency in plants** (shift in the energy mix toward lower-carbon sources, modernization of industrial processes).

Evolution of Key Industry Indicators (2/2)



Final energy consumption of industry by sector

Industry's final energy consumption decreased by 1.3%/year on average between 2000 and 2023, reaching 24 Mtoe. Over half of the sector's consumption remains concentrated in 5 energy-intensive branches with 21.9% of total final energy consumed by the chemical industry, 14% by non-metallic minerals, 9.2% by paper, pulp and printing, 6.6% by steel, and 3.7% by non-ferrous metals. The consumption of chemicals and non-metallic minerals is slightly below their 2000 level, while consumption in the other intensive sector decreased more noticeably.



Main drivers of the energy consumption variation in industry

Since 2010, final energy consumption in the industrial sector declined by 3.8 Mtoe. This can be explained by the drop-in industrial activity (-0.8 Mtoe), by the structural changes towards less energy-intensive branches (-1.2 Mtoe) and mainly by the energy savings (-2.2Mtoe).

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Decarbonisation levers in the Industrial Sector

2006

Energy Savings Certificates

Mechanism: Energy suppliers are required to fund or carry out energy efficiency measures. Industries can generate **CEEs** through standardised actions (e.g., high-efficiency motors, heat recovery, insulation) and sell them on a market.
Key figures: Estimated market value: **~€5 billion/year** (2024)
Impact: Massive uptake among SMEs for common efficiency measures
Contributed to a steady decrease in **industrial energy intensity** (−30% since 2006).

2009

ADEME Support – Fond Chaleur

Public subsidies and technical support for all sizes of industrial actors (feasibility studies/Demonstrator and pilot projects/renewable heat (e.g., biomass, solar thermal)/Industrial heat recovery). This device also targets buildings and districts heating.
Key figures: Budget of ~€800millions in 2024 (varies by year)
Impact: Enabled low-carbon heating and efficiency upgrades (food industry, paper, wood, and chemicals)/ Deployed in over 4,000 industrial projects.

2015

Mandatory Energy Audits

Regulatory requirement (EU directive transposed in French law) for large companies (>250 employees or >€50M turnover)
Rules: Energy audits every 4 years or certified energy management system (ISO 50001)
Impact:
•Raised awareness of inefficiencies
•Helped identify ROI-positive projects
•Often a gateway to further use of CEE or ADEME grants

2021

EU ETS Phase IV

Carbon pricing (EU-level) for energy-intensive industries under the EU ETS (cement, metallurgy, chemicals, refining…)
Key figures:
•CO_2 price: ~**€80–100/tCO_2** (2024)
•~1,000 industrial sites covered in France
Impact:
•Strong incentive to reduce fossil fuel use
•Complemented by French national schemes like DECARB IND
•Pushed large emitters to electrify or modernise

2023

DECARB IND & DECARB FLASH (France 2030)

Grant-based public support for mid-sized and large emitters (focusing on process electrification, deep energy efficiency upgrades, fuel switching, CCUS)
Key figures:
•Projects must reduce ≥ **1,000 tCO_2/year**
•Minimum investment: **€3 million**
•Grants up to **€30 million/project**
•DECARB IND has already supported projects avoiding **> 3 $MtCO_2$/year** (as of 2024)
Impact:
•Major enabler for **deep decarbonisation** in hard-to-abate sectors (cement, steel, refining)
•Supports the national goal of reducing industrial emissions from **~78 $MtCO_2$eq (2021)** to **~45 $MtCO_2$eq (2030).**

Focus on the Energy Savings Certificates scheme

The Energy Savings Certificates are a European market-based scheme that obliges energy suppliers to fund energy efficiency actions to reduce overall energy consumption. CEE provide private funding from energy suppliers to support industrial decarbonisation under the Industry Pact.

Energy Savings Certificates (CEE) – Key figures

- Main tool used by France to meet EU energy savings targets
- Targets set every 5 years
- 2022–2025 target: 3100 TWh cumac

Progress so far

- 2023: 534 TWhc delivered (18%)
- 2024: 631 TWhc delivered (20%)

How savings are achieved

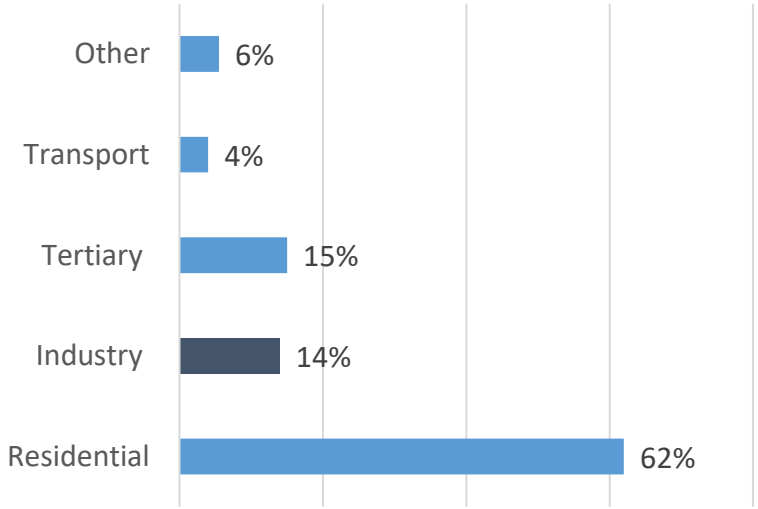
- Mainly through standardised energy efficiency actions
- Industry accounts for ~16% of these savings (e.g. heat recovery, efficient motors)
- A smaller share comes from support programmes : it represents ~5% of total savings, has an indirect impact and is capped
- French specificity: unlike most European equivalent schemes (where industry savings must be individually verified through audit or ISO 5000) France also allows standardised operations, though these represent a very small share of total CEE volumes.

Next period (CEE 6)

- Target increases by +27%
- Around 1050 TWhc/year to be delivered
- Support programmes: capped at 500 TWhc over 5 years with a target of +40% vs the previous period

Sectoral Split

*CEE 2022-2025 DGEC – Lettre d'information CEE**



** Opérations standardisées et spécifiques, CEE Classique et précarité.*

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Industry Pact: a support programme for SMEs (1/2)

2019-2022

ADEME and ATEE have acquired solid feedback through

Test of innovative support methodologies

EXPEDITE the industrial transition

- Multi-site investment roadmaps
- Energy mix transition opportunity studies
- Electrical efficiency audit
- Energy purchasing strategy audit

ACT Pas à pas

Building an energy efficiency & decarbonisation strategy with an associated transition plan (for less mature companies)

ACT évaluation

Assessment of the alignment of the company's strategy with the Paris Agreement (for mature companies)

Management of CEE programmemes for industry

PROREFEI

Training of energy referents in industry

INVEEST

Training of industry finance managers in the financing of energy efficiency and low-carbon projects

PRO-SMEn Programme

ISO 50 001 certification (energy management)

2023-2028

Amplification by Industry Pact

Which offers a solution tailored to the maturity level of each industrial company (multimodal approach)

and

Which respects the new CEE programme doctrine (5th period)

Industry Pact: a support programme for SMEs (2/2)

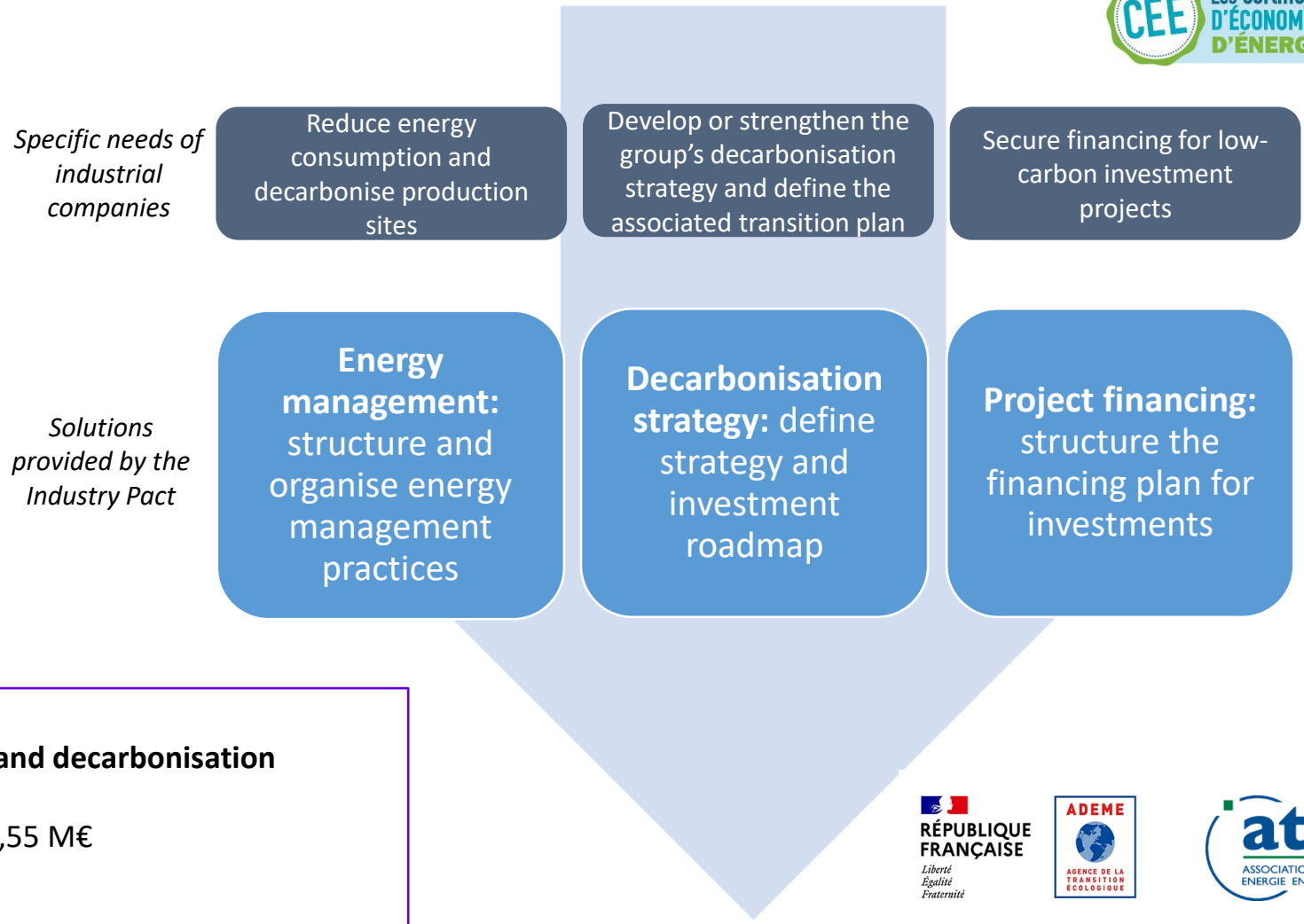
The Industry Pact is a public programme that supports industrial companies in developing and implementing their decarbonisation strategies. It provides funding for training, technical support and project structuring to help move from planning to investment.

What is offered

💡 **Build capabilities**
Training programmes (online and in-person/remote)

💡 **Structure the approach**
Technical studies and financial coaching

Up to 80% funding, depending on company size



🎯 **Objective**
Support industrial companies in their **energy transition and decarbonisation**
Period: 2023–2028
Budget: 46,5 M€ (CEE) / ADEME: 3,63 M€ / Industries: 9,55 M€
Training: more than 2,600 people trained
Studies: more than 1,500 completed

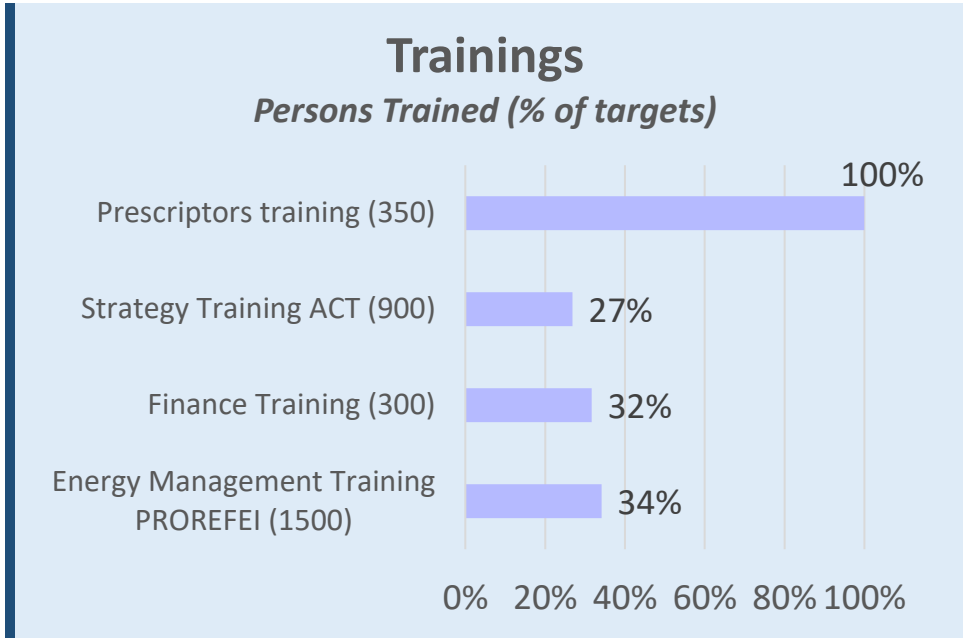
Projected outcomes

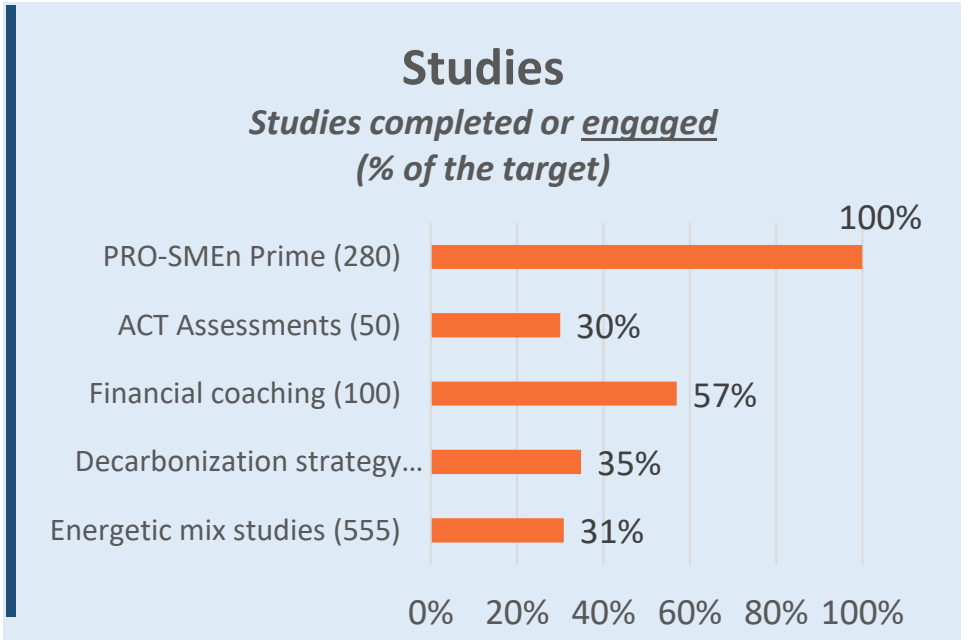
Estimated energy savings over the programme duration*:
- Training: **227 GWh/year**
- Support programmes: **955 GWh/year**
- **Total: 1,2 TWh/year**

Estimated GHG emissions avoided*
196 kt CO_2e avoided/year
(Assuming an industrial energy mix of 70% natural gas and 30% electricity)

Strong momentum on energy mix transition studies *
- **+115 % increase in support between 2024 and 2025**
- **171 studies engaged by the end of 2025**
- **30 individual support requests per quarter**

**based on the programme targets.*





Feedback from beneficiaries (1/2)

Blanchisserie Wartner
Industrial laundry - Activity : Specialized in laundry services for luxury hotels – 160 employees

Energy Efficiency and decarbonisation actions :
Reducing unnecessary electricity consumption through improved equipment monitoring,
Optimization of water heating and waste heat recovery,
Plan for the complete phase-out of gas, a strategic step towards carbon neutrality

Perspective: explore the possibility of ultra-high temperatures heat pumps identified by the energy mix study

Key Results

-50%

energy consumption
per kg of laundry processed
from 1.2 kWh → 0.6 kWh

Feedback from beneficiaries

Sicoly Fruit Processing company – Energy-intensive production processes

Energy Efficiency and decarbonisation actions :
Tailored decarbonisation roadmap accounting for Sicoly's specific constraints as an energy-intensive food processing group:

- Electrification of production processes
- Overhaul of the refrigeration production system
- Implementation of an energy supervision system
- Development of renewable energy sources

Programme outcome
Through a educational, structured and pragmatic approach, Industry Pact enabled the Sicoly group to build autonomy and expertise in leading decarbonisation and energy management actions.

The company is now in a position to deliver on the targets set during its carbon footprint assessment, conducted before joining Industry Pact.

Key Figures

2030 Targets set against previous carbon footprints

-40%

CO_2 emissions

-30%

Energy consumption

Future outlook of the programme

1 Continued Deployment

Continue the deployment of the programme to support as many industrial companies as possible in their energy management and low-carbon transition and help them reach their decarbonisation objectives.

=> Why it matters

Industry Pact is a critical enabler for companies that have not yet engaged in their low-carbon transition. Scaling up reach (especially among SMEs) is essential to meet France's −35% industrial GHG target by 2030.

2 Support for Less Mature Companies

A structured support programme is essential to enable the effective deployment of decarbonisation and energy management practices among companies that are less advanced in their low-carbon transition.

Target Audience

SMEs and mid-size industrial firms with limited internal energy management capacity (sectors including chemicals, non-ferrous metals, paper & pulp, and non-metallic minerals).

3 Key Challenges

Sustaining company engagement

Company involvement may depend on external factors beyond the programme's control:

- Energy Prices ;
- Place of decarbonisation on the national agenda ;
- Geopolitical context.

Securing long-term funding

Identify new and sustainable funding mechanisms to ensure the programme continuity and provide long-term visibility to industrial companies engaged in their decarbonisation journey.

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The Large Industry Energy Network (LIEN) is Ireland's national voluntary programme for large industrial energy users, operated by the Sustainable Energy Authority of Ireland (SEAI). Founded in 1995, LIEN brings together Ireland's major energy-consuming companies in a structured peer-learning and energy management framework. Its dual mission is to drive continuous improvement in energy performance and to support Ireland's statutory decarbonisation targets (Climate Action Plan 2023: −51% GHG by 2030 vs. 2018). Membership is open to companies spending ≥€1M/year on energy or certified to (or pursuing) ISO 50001. Members commit to annual energy targets, implementing energy management plans, and reporting verified results to SEAI.

Energy management framework

- Mandatory annual energy target-setting and performance reporting to SEAI
- Verified energy savings tracked by sector (pharma/chem, food/drink, MedTech, electronics)

Knowledge Sharing and peer learning

- Free dedicated SEAI energy advisor for each member company
- Special Working Groups (SWG) on specific technologies & processes
- 40+ events/year: site visits, briefings, expert-led focus sessions

Decarbonisation and Strategic Alignment

- Industry Decarbonisation Partnership for the most ambitious members (est. 2024)
- Scope 1 & 2 emissions tracking; integration with EU ETS reporting
- ▸ Aligned with Ireland's Climate Action Plan 2023 & EU EED (−55% GHG by 2030 vs. 2005)

Main figures

1995
Year founded

210
Members Companies

434 $ktCO_2$
Avoided emissions in 2023 – SEAI, Nov 2025

- 14,7%
Emissions since 2018 – SEAI, Nov 2025

280 GWh
Energy Savings – SEAI Annual Report 2024

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(1) Energy-intensive industry: a sector still absorbing the energy shock

French manufacturing industry remains significantly below its pre-crisis output level (steel −23.7%, chemicals −16.6%, glass −20.2% vs. Q2 2021). Industrial energy consumption stabilised at 285 TWh in 2024, after two years of sharp decline. Restoring competitiveness in these sectors is also one of the challenge addressed by the Industry Pact. (INSEE)

(2) Industrial GHG: significant progress, with decarbonisation still accelerating

Industrial GHG emissions have fallen by 55% since 1990, reaching 62 Mt CO_2eq in 2024, driven by energy efficiency gains, fuel switching and structural change. The reindustrialization dynamic is green by design: green industry (batteries, solar, wind, H_2) represented 1/3 of all net plant openings in 2024. France's −35% industrial GHG target by 2030 vs. 2015 aligns with current trajectories in emerging sectors. (Scope 1 GHG Emissions from French Industry - SDES)

(3) CEE: industry's second-largest energy efficiency financing channel

Industry captures 16% of all CEE volumes: the second-largest sectoral share after residential. The mechanism mobilizes significant financing for industrial energy efficiency actions, including waste heat recovery and energy management systems. The forthcoming P6 (2026–2030), with an obligation of 5,250 TWhc, reinforces this role with a deeper focus on industrial electrification and low-carbon heat. (SDES)

(4) Pacte Industry: a structured tool for decarbonisation

Industry Pact provides a coherent policy response: subsidized training (40–80%), studies, ISO 50001 deployment, and investment coaching, funded by the CEE mechanism. Its structure, combining capability building at individual and site level, aligns with France 2030 objectives and the EU Energy Efficiency Directive. With 2,600 actors to train and 1,500 sites to accompany by 2028, it targets the diffuse industrial base that large-firm programmes leave underserved.

(5) Lessons for European industrial energy policy

- Long-term programme continuity matters: LIEN's 30-year track record demonstrates that sustained engagement outperforms short-term measures.
- Combining financial support (CEE/PACTE) with structured management frameworks (ISO 50001/LIEN) yields stronger, more verifiable outcomes than either instrument alone.
- The CEE obligation model (one implementation pathway under the EU Energy Efficiency DirectiveEED, Art. 7) demonstrates how private energy supplier funding can be effectively channelled towards industrial decarbonisation.

PACTE industrie

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Thank you!

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ADEME Agency for Ecological Transition
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TNO innovation for life
MEKH Hungarian Energy and Public Utility Regulatory Authority
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Netherlands Enterprise Agency
The Energy & Water Agency
AYEP SEDA
Jožef Stefan Institute, Ljubljana, Slovenia

Annexe : méthodologie d'évaluation des impacts

Axe 1 - formations : le calcul du gain projeté d'efficacité énergétique des formations Industry Pact est le suivant :

2,2% * consommation moyenne d'un site industriel de Industry Pact * nombre sites industriels uniques (quel que soit le nombre de salariés formés dans le programmememe Industry Pact dudit site)

Axe 2 : accompagnements : les calculs des gains projetés d'efficacité énergétique des accompagnements Industry Pact sont les suivants :

- Etudes d'opportunité mix énergétique et Trajectoires d'investissements bas carbone. :
  ∑ Gains d'EE du plan d'actions (MWh/an) * Taux de concrétisation à 63 %

- Etudes ACT pas à pas :
  ∑ % gain d'EE issu du CEREN par secteur d'activité * Conso moyenne d'un site industriel Industry Pact * Nb de sites industriels de l'entreprise * Taux de concrétisation à 63%

- Coachings financiers :
  ∑ Gain d'EE du projet (GWh/an) * Taux de concrétisation à 81%

  Les gains liés à des coachings sur projet d'investissement réalisés sur un projet identifié dans un autre accompagnement Industry Pact ne devront pas être comptés. Seule la part liée à une augmentation du taux de passage à l'acte sera comptabilisée sur le projet concerné. L'augmentation du taux de passage à l'acte correspond à 18 points dans le cas des études d'opportunités et TIBC. Une question dans le questionnaire de fin d'accompagnement permettra d'identifier ces études.

- Prime PRO-SMEn :
  ∑ 5,5% * Consommation énergétique du périmètre certifié (un ou plusieurs sites) (GWh)

En attendant de connaître, sur la base d'un échantillon solide et représentatif, les gains d'efficacité énergétique des plans d'actions pour les études d'opportunité du mix énergétique, pour les trajectoires d'investissements bas carbone et pour les coachings financiers, cette valeur est remplacée par le pourcentage de gain d'efficacité énergétique issu du CEREN par secteur d'activité multiplié par la consommation moyenne d'un site industriel dans les équations précédentes :

Gains d'EE du plan d'actions = gain d'EE issu du CEREN par secteur d'activité * Conso moyenne d'un site industriel Industry Pact