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The Sleeping Giant of the Energy Transition

Direct Electrification of Industrial Heat in Europe

Europe's critical transformation to strengthen economic resilience by reducing reliance on imported fossil fuels while advancing ambitious climate goals.

ABSTRACT

Industrial heat electrification represents an overlooked yet critical pathway to achieving Europe's climate neutrality and energy independence goals. Despite heat accounting for half of global final energy consumption and constituting over two-thirds of global industrial energy consumption—with fossil fuels still dominant—electrification technologies can already address 60% of Europe's industrial energy demand, potentially rising to 90% by 2035. Technologies like industrial heat pumps and plasma torches provide solutions across the temperature spectrum from low to high-temperature applications. Beyond emissions reduction, electrification delivers superior efficiency, improved process control, and operational advantages. While economic, technical, and organizational barriers exist, innovative Heating as a Service (HaaS) models eliminate upfront investments and technical complexities. For institutional investors, energy efficiency project debt offers stable returns with meaningful climate impact, representing a prime opportunity to address the €150+ billion annual funding gap.

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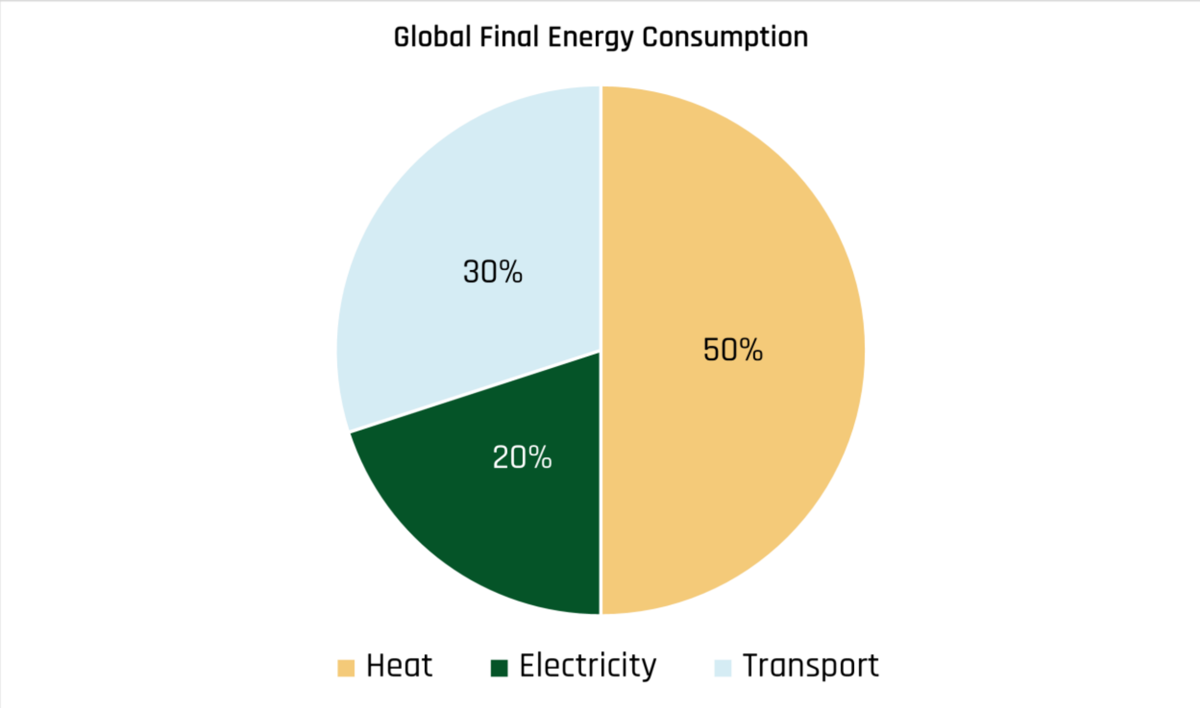
Introduction

Heat electrification remains an overlooked climate solution opportunity.

The electrification of heat - the process of replacing fossil fuel-based heating with electric alternatives - is increasingly recognized as a critical pathway to achieving climate neutrality, given that heat accounts for half of the global final energy consumption, making it the largest source of energy end use, ahead of electricity (20%) and transport (30%).[1, 2] Despite its potential, it has received less attention compared to other decarbonization strategies like solar PV deployment or electric vehicle adoption. This "sleeping giant" of the energy transition deserves greater focus, particularly as Europe seeks to strengthen its economic resilience by reducing its reliance on imported fossil fuels while simultaneously advancing its ambitious climate goals.

Heat constitutes more than two-thirds of the global industrial energy consumption, with fossil fuels remaining the dominant energy source, and renewable energy sources still only meeting a fraction of this demand.[3] In Europe, natural gas is the predominant fuel used in the industrial sector, accounting for 35% of industrial process heat, followed by coal at 27%.[4] This heavy reliance on fossil fuels for heat generation represents both a significant challenge and opportunity in Europe's decarbonization journey and its path to strengthen energy independence.



Source: International Energy Agency (IEA) (2023) and World Economic Forum (WEF) (2023)

[1] International Energy Agency (IEA) (2023)
[2] World Economic Forum (WEF) (2023)
[3] International Energy Agency (IEA) (2018)
[4] Fraunhofer ISI (2024), p. 10

The Landscape of Heat Consumption

Heat applications span from household warming to high-temperature industrial processes.

Heat is ubiquitous across residential, commercial, and industrial applications. In homes, it primarily serves space heating needs, while in industry, it has become an essential component of virtually all manufacturing processes - from cooking and sterilizing to melting metals, producing fertilizers for agriculture, and creating building materials like cement.

The industrial sector accounts for approximately 23% of the EU's final energy consumption.[5] Within this, process heating is the single largest energy use in European industry, representing approximately 47% of industrial energy demand and responsible for roughly three-quarters of the CO_2 emissions generated by the industrial sector.[6]

Heat requirements vary considerably across different sectors and applications:[7]

- **Low-temperature processes (below 150°C)** include thermal treatments such as boiling, pasteurizing, sterilizing, cleaning, drying, bleaching, steaming, and cooking. These processes are essential in industries like food and beverages, paper manufacturing, textiles, and pharmaceuticals.
- **Medium-temperature processes (150-400°C)** encompass thermal applications such as distilling, nitrate melting, dyeing, and compression. These processes are vital for production in food and beverages, chemicals, plastics, and mining industries.
- **High-temperature processes (above 400°C)** involve advanced material transformation that can require temperatures exceeding 1,500°C. These thermal processes are fundamental to industries such as steel, cement, glass, ceramics, chemicals, metal processing, and refining.

Technological Feasibility of Heat Electrification

Proven technologies already enable widespread industrial heat electrification potential.

Residential and Commercial Heat Electrification

While residential heat electrification is not the primary focus of this white paper, it provides important context for understanding the broader electrification landscape and demonstrates that widespread implementation is achievable with appropriate policy support, market development, and technological advancement.

Heat pumps have emerged as the primary technology for electrifying residential heating. Norway, Sweden, and Finland have achieved some of the highest heat pump penetration rates globally, with heat pumps becoming standard in new construction and increasingly common in retrofits. In Sweden,

[5] Global Efficiency Intelligence (2024a), p.1
[6] Fraunhofer ISI (2024), p. 16
[7] Cleantech for Europe (2023)

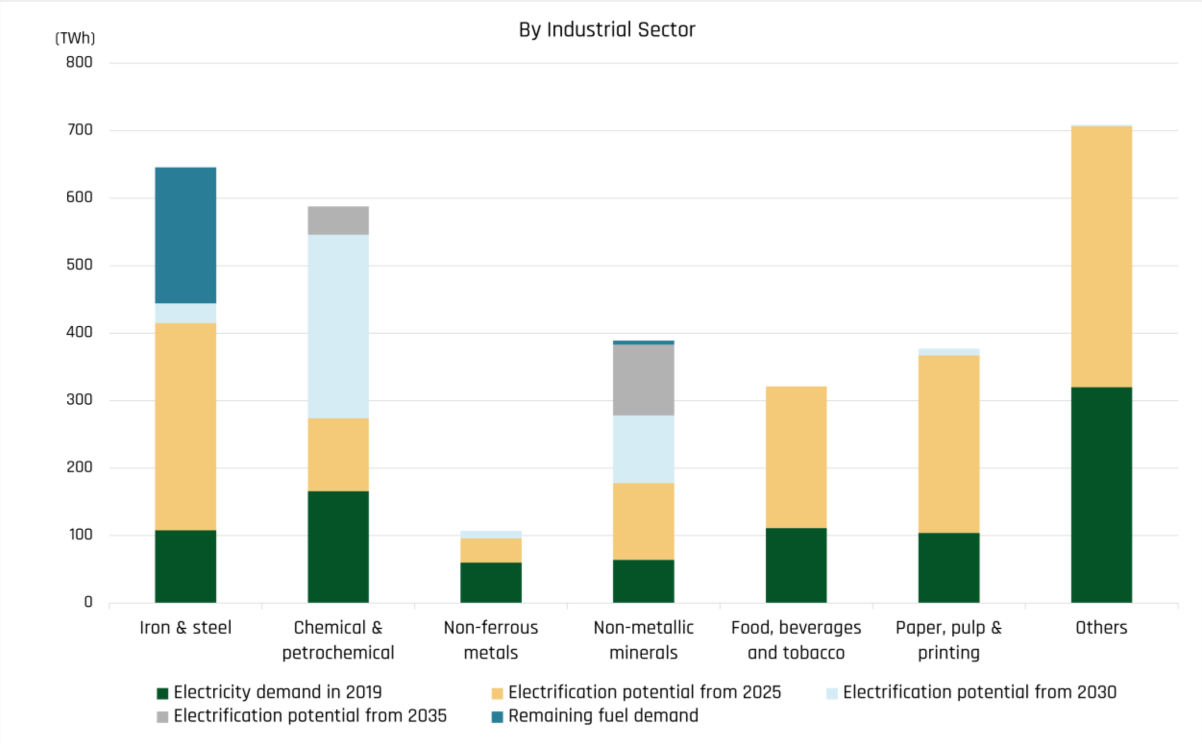
for example, heat pumps account for more than 40% of heating systems installed in existing buildings and achieve a market share of 94% of all new heating systems currently sold.[8]

The success of heat pump adoption in Scandinavian countries stands as compelling evidence that widespread electrification of heat is feasible. This case is particularly important as it challenges common misconceptions about electrification technologies, such as concerns about performance limitations in challenging environments. The Scandinavian case demonstrates that when properly implemented, heat electrification can exceed expectations and overcome perceived technical barriers.

Industrial Heat Electrification

The electrification potential for industrial processes is remarkable. Research indicates that 60% (up to 78% when excluding the use of natural gas as feedstock or reducing agent[9]) of Europe's industrial energy demand could be electrified using technologies that are already fully developed and established in industry, with the potential rising to over 90% when including technologies at lower stages of development, expected to be available by 2035.[10]

Technical potentials for direct electrification in the EU-27

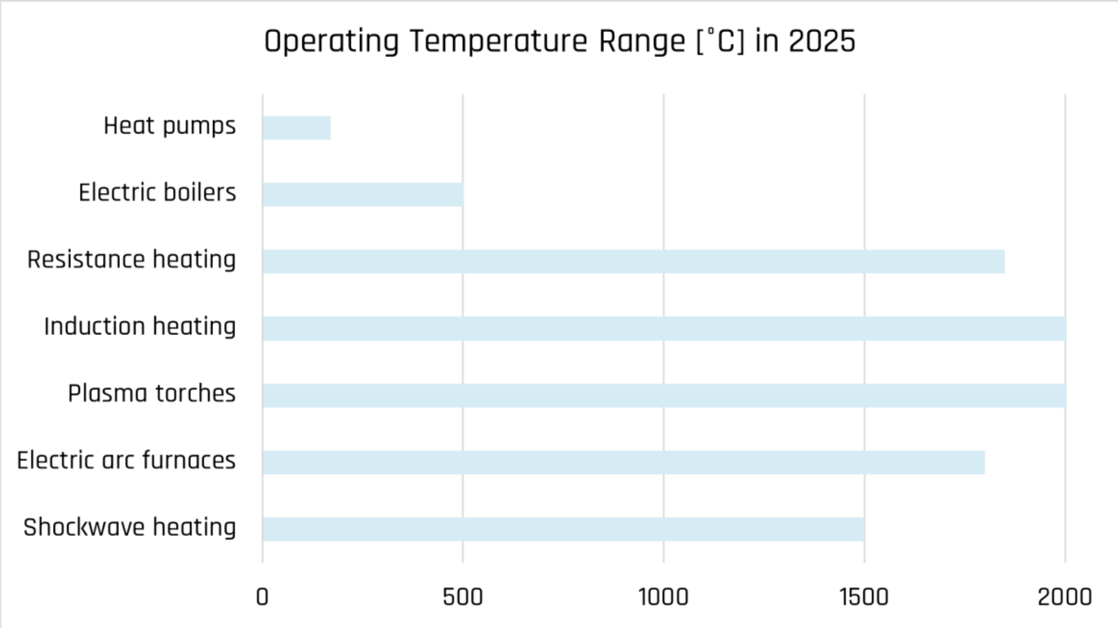


Source: Fraunhofer ISI (2024), p. 10

[8] KfW Research (2025), p.4
[9] Madeddu et al (2020), p.10
[10] Fraunhofer ISI (2024), p. 3

Technologies

These technologies are available with varying capabilities across the temperature spectrum and offer promising pathways to decarbonize industrial heat processes that have traditionally relied on fossil fuels. The main criterion for this selection is the expected impact of the individual technology by 2035.



Source: Fraunhofer ISI (2024), p. 12

Industrial heat pumps operate by moving heat from low-temperature sources to high-temperature applications, offering exceptional efficiency rates of 150-600%. Rather than converting electricity directly into heat, they transfer thermal energy, making them particularly valuable in industries like paper production, food processing, and chemical manufacturing. While heat pumps currently reach temperatures up to 170˚C, technological advancements are expected to push this range to 200-300˚C by 2035, with modular expandable systems becoming the standard deployment method.[11, 12]

Complementing heat pumps in the low-temperature range, **electric boilers** have emerged as reliable alternatives to fossil-fired systems, delivering consistent 500˚C heat with 99% efficiency. Already established in industry, they offer easier integration into existing systems than heat pumps, though at lower efficiency rates. Their principal advantage lies in their straightforward implementation and lower investment costs compared to heat pump technologies.[13], [14]

As temperature requirements increase, **resistance heating** provides precise temperature control by sending electric current through a resistor. This established technology reaches temperatures of 1850˚C, projected to increase to 2000˚C by 2030, with applications in heat storage, calcination, aluminium processing, and container glass manufacturing. Despite its 99% efficiency, power density remains a limiting factor for wider implementation.[15]

[11] Fraunhofer ISI (2024), p. 26
[12] International Energy Agency (IEA) (2022)
[13] Fraunhofer ISI (2024), p. 24
[14] Schoeneberger et al (2022), p. 4
[15] Fraunhofer ISI (2024), p. 28

For conductive materials, **induction heating** generates heat directly within the material through electromagnetic induction, eliminating heat transfer losses. Capable of reaching extreme temperatures up to 3000°C with 90% efficiency, this technology excels in metal processing applications including melting and holding. However, its limitation to conductive materials and geometric constraints restricts its broader application despite its impressive temperature capabilities.[16]

For high-temperature industrial processes, **plasma torches** present a promising alternative to fossil fuel burners. By generating an electric arc between electrodes to heat a carrier gas, they can reach temperatures of 5000°C. Although similar in application to natural gas burners, their effectiveness is limited by short component lifetimes and cooling requirements. Currently used for applications like cement clinker sintering, their capacity is expected to increase significantly from 8 MW to 50 MW by 2035.[17]

Electric arc furnaces represent a mature high-temperature technology, particularly in steel production where they hold approximately 40% market share in European operations. Unlike plasma torches, they transfer heat through direct exposure to the arc rather than a carrier gas. With consistent 1800°C maximum temperatures and 200 MW capacity, they serve primarily in secondary steel production and metal melting, though process-related emissions from graphite electrode consumption remain a disadvantage.[18]

Among emerging technologies, **shock-wave heating** shows promising potential for industrial heat applications. This innovative approach uses high-pressure waves to rapidly heat materials through sudden compression, generating considerable heat in fluids. Still in development with a technology readiness level of 6, initial experiments have achieved 700°C at 1 MW power input. Commercial launch is planned for this year, with temperature capabilities expected to reach 1500°C and capacity expanding to 50-100 MW by 2035.[19]

The Importance and Impact of Industrial Heat Electrification

Beyond Emissions Reduction: Electrification delivers efficiency and operational advantages.

The electrification of industrial heat offers multiple benefits across environmental, economic, and operational dimensions.

The electrification of industrial heat presents a critical decarbonization opportunity for Europe. Current heat pump technology could already reduce the industrial sector's carbon emissions by up to 146 million tonnes of CO2 annually—more than the Netherlands' total annual emissions.[20] By 2050, implementing heat pumps and electric boilers throughout the EU27 could eliminate approximately 250 million tonnes of CO2 emissions annually, paving the way for a more sustainable and economically viable industrial future with established technology.[21]

[16] Fraunhofer ISI (2024), p. 30
[17] Fooladgar et al (2024)
[18] Fraunhofer ISI (2024), p. 32
[19] Fraunhofer ISI (2024), p. 34
[20] European Heat Pump Association (2025a)
[21] Global Efficiency Intelligence (2024b)

Besides the environmental gains, electric heating technologies are inherently more efficient than fossil fuel-based alternatives. Heat pumps can already achieve efficiencies exceeding 300%, while other electric technologies typically operate at 90-99% efficiency, significantly outperforming conventional fossil fuel systems. This translates to substantial primary energy savings, helping to address energy security concerns while reducing operational costs over the long term.

The benefits extend beyond efficiency and emissions reduction. Electric heating systems can potentially offer more precise temperature control and uniform heat distribution, leading to improved product quality, reduced defects, and shorter processing times. These operational benefits could offset higher energy costs in some cases, providing additional incentives for industrial facilities to transition to electric technologies.

From an energy systems perspective, electrified heating systems coupled with thermal storage can provide grid balancing services, helping to integrate variable renewable energy and potentially generating additional revenue for industrial users. By shifting heat production to times when renewable electricity is abundant, industrial facilities can reduce costs and support grid stability, creating a synergistic relationship between industrial operations and the broader energy transition.[22]

Europe – Positioned to Lead Global Heat Electrification

Europe retains competitive edge in customized heat electrification solutions.

Europe is particularly well-positioned to lead in heat electrification technologies. Unlike the solar PV sector, where manufacturing has largely shifted to Asia, Europe still maintains a strong industrial base and knowledge ecosystem in heating electrification technologies. European companies are at the forefront of developing and manufacturing advanced industrial heat pump systems and other electric heating technologies.[23]

This existing industrial strength presents a strategic opportunity for Europe to maintain technological leadership in a rapidly growing sector, enhancing its economic resilience while advancing climate goals.

A key difference between heat electrification and solar PV deployment is the customization required, particularly for industrial applications. While solar PV installations follow relatively standardized designs, industrial heating systems often require tailor-made solutions specific to the process, temperature requirements, and existing infrastructure. This necessity for customization creates both challenges and opportunities for European manufacturers and engineering firms, allowing them to leverage their engineering expertise and manufacturing capabilities to develop specialized solutions for diverse industrial applications.

Barriers to Industrial Heat Electrification

Despite its potential, several barriers have hindered widespread adoption of heat electrification in European industry so far. These obstacles span economic, technical, and organizational dimensions, creating a complex challenge for industrial decarbonization efforts.

[22] McKinsey & Company (2020)
[23] Liebreich (2023)

The relative cost of electricity compared to natural gas is a primary obstacle. In many European countries, electricity is significantly more expensive than gas due to taxes, levies and grid fees, creating a market distortion that disadvantages electrification. The price ratio of electricity to gas for medium-sized industrial consumers can range from 1.5 to 4 across EU countries, even before taxes and levies are considered. This unfavourable economics may make it difficult for companies to justify the transition to electric heating technologies on cost grounds alone, particularly for energy-intensive industries operating in competitive global markets.[24]

Beyond economics, technical barriers persist, particularly for specialized applications. While most technical barriers are expected to be overcome by 2035, integration challenges remain, particularly for high-temperature, high-capacity applications like clinker burning in cement production. These processes demand specific temperature profiles and heat transfer characteristics that current electric technologies may still struggle to replicate cost-effectively at industrial scale.[25]

Organizational and infrastructural challenges further complicate electrification efforts. Infrastructure limitations, both on-site and in the vicinity, often favour fossil technologies. Many industrial facilities would require significant grid connection upgrades to support full electrification.[26] Additionally, the long lifetime of existing process heat installations (often 40+ years) creates limited windows of opportunity for replacement. This creates a challenging dynamic where companies must time their electrification investments to align with existing equipment replacement cycles, potentially delaying adoption for decades in facilities with recently installed fossil-based systems.

The combination of these barriers creates a substantial hurdle for industrial electrification, requiring coordinated policy interventions, technological innovation, and business model evolution to overcome. Addressing these challenges will be essential to accelerate the transition toward electrified industrial heat and capture the substantial environmental and operational benefits it offers.

The Rise of Heating as a Service (HaaS) Solutions

Heat-as-a-Service: Eliminating financial and technical barriers to industrial electrification.

Energy Service Companies (ESCOs) offering "Heat as a Service" present a proven and scalable solution to overcome several key barriers to electrification. Under this model, ESCOs design, finance, install, operate, and maintain the electrified heating system, while the industrial customer pays only for the heat consumed, typically at a predetermined rate over a long-term contract.

First, it eliminates the significant upfront capital investment which can deter many industrial companies from electrification projects. By converting what would be a major capital expenditure into an operational expense, companies can preserve capital for their core business activities while still transitioning to cleaner heating technologies. Second, the ESCO model mitigates technical barriers by transferring implementation and operational risks to specialized experts. ESCOs bring technical expertise in system design, integration, and optimization that many industrial companies lack internally. This expertise helps overcome the integration challenges that can be particularly problematic

[24] European Heat Pump Association (2025b)
[25] Wolde et al (2025)
[26] World Economic Forum (2024)

for high-temperature, high-capacity applications. Third, the model addresses organizational barriers by providing a turnkey solution that minimizes disruption to existing operations. ESCOs can plan implementations around production schedules and equipment replacement cycles, helping companies navigate the limited windows of opportunity for system replacements.

The ESCO approach also creates aligned incentives for energy efficiency, as both parties benefit from reduced energy consumption. ESCOs are motivated to maximize system efficiency to increase their margins, while industrial customers benefit from lower energy costs. This alignment drives continuous optimization of system performance, helping to offset the higher unit cost of electricity compared to fossil fuels through superior efficiency.

The effectiveness of the HaaS model is well-illustrated by a recent project in the Irish whiskey industry. A leading distillery worked with Astatine Ltd, a valued ESCO partner of Solas Capital, to tackle significant energy efficiency challenges while maintaining their exceptional production standards. Astatine delivered customized heat solutions featuring advanced heat pump systems that capture waste heat and convert it into usable energy for the distillation process, alongside comprehensive energy usage optimization. This implementation yielded impressive results: 14 GWh of annual energy savings and a reduction of 6,000 kg in annual CO_2 emissions, along with substantial cost reductions and strengthened environmental leadership. The distillery now benefits from a scalable, future-proof efficiency solution that supports continued growth while ensuring optimal energy use. Through a years-long collaboration, Astatine and Solas Capital have already enabled multiple energy efficiency projects across various industries, helping traditional businesses achieve their sustainability targets while improving operational efficiency and reducing costs.[27]

Source: Astatine

[27] Astatine (2025)

The Institutional Investment Opportunity

Energy efficiency project debt – A green fixed-income alternative.

For institutional investors seeking stable, long-term returns with meaningful climate impact, energy efficiency project debt represents a compelling opportunity. These investments offer several distinct advantages compared to traditional green investments:

- fixed and long-term cash flows through contractual off-take agreements that eliminate electricity price risk;
- extremely diversified counterparty exposure across public sector, large corporates, SMEs, and residential customers;
- limited correlation to traditional asset classes; and
- energy efficiency assets are typically essential for building operations, meaning payments continue even during economic downturns.

Solas Capital stands out as **the European expert specializing in structuring financing solutions for Heating as a Service (HaaS) business models**. With their deep industry knowledge and innovative approach, they have established themselves as a reliable partner for ESCOs looking to implement or optimize Heating as a Service financing structures across Europe.

The projects align with Art. 9 SFDR requirements and EU Taxonomy eligibility, satisfying increasingly stringent ESG mandates.

With energy efficiency representing over 40% of emissions abatement needed by 2040 according to the International Renewable Energy Agency's (IRENA) 2050 scenario, and the EU's Energy Performance of Buildings Directive driving regulatory momentum, institutional capital can play a pivotal role in addressing the €150+ billion annual funding shortfalls for building efficiency.[28]

By investing in highly diversified portfolios of energy efficiency projects through specialised asset managers, institutional investors can achieve attractive risk-adjusted returns while directly advancing the energy transition and European energy security.

[28] Bruegel (2024)

Conclusion – Europe's Sleeping Giant

Heat electrification emerges as a cornerstone technology for European industrial decarbonization.

The electrification of industrial heat represents a "sleeping giant" in Europe's energy transition - a massive opportunity, as heat is currently accounting for half of global final energy consumption, with the potential to significantly reduce emissions, enhance energy efficiency, strengthen industrial competitiveness and increase energy independence. Research demonstrates that a remarkable share of Europe's industrial energy demand could be electrified using fully developed and industry-established technologies. This figure increases to over 90% when including technologies which are expected to be ready for industry applications in 2035. By harnessing Europe's existing strengths in heating technology manufacturing and engineering expertise, and addressing the key barriers to adoption, industrial heat electrification can become a cornerstone of the continent's path to climate neutrality while enhancing its energy security and economic resilience.

About Sebastian Carneiro

Sebastian Carneiro is the Chief Executive Officer and Co-founder of Solas Capital AG, a specialised investment advisory firm that pioneers financing solutions for decentralised energy efficiency and behind-the-meter assets across Europe. Sebastian has over 15 years of experience in project finance, including his previous role as Director at Europe's largest private energy efficiency fund. As a CFA Charterholder and engineer by trade, Sebastian is driven by developing innovative investment solutions that accelerate the deployment of green assets and make the energy transition a reality.

About David Salomon

David Salomon is an Investment Analyst at Solas Capital's Munich office. He holds an MSc in Climate Change & Finance from Imperial College London and a BSc in Management & Technology from TU Munich. His background has equipped him with a holistic understanding of the intersection between technology, sustainability, and finance.

About Solas Capital

At Solas Capital we provide specialised financing solutions for demand-side energy projects, bridging the gap between institutional investors and high-impact energy efficiency projects. Unlike traditional renewable energy investments focusing on supply, we specialise in reducing energy demand at scale—an often-overlooked but equally important pillar to reach Net-Zero.

We focus on the building sector—responsible for 40% of Europe's energy consumption—and industrial efficiency, providing capital to project developers to offer zero upfront cost solutions. Our team of experts structures funding solutions for distributed energy transition projects across Europe, delivering cost savings while reducing fossil fuel dependence.

Our asset-backed private credit strategy offers investors fixed-income like returns from EU Taxonomy aligned assets while accelerating Europe's transition to a carbon-neutral economy. We firmly believe that the best energy is the energy we don't use.

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References

1. Astatine (2025), "Case Study Pernod Ricard I Irish Distillers", https://astatine.ie/case-studies/irish-distillers/
2. Bruegel (2024), "Financing European Union's buildings' decarbonisation strategy", https://www.bruegel.org/external-publication/financing-european-unions-buildings-decarbonisation-strategy
3. Cleantech for Europe (2023), "Decarbonizing Industrial Heat - an important puzzle piece to solving climate change", https://www.cleantechforeurope.com/news/decarbonizing-industrial-heat-an-important-puzzle-piece-to-solving-climate-change
4. European Heat Pump Association (2025a), "EU industry can cut quarter of CO2 emissions through heat pumps", https://www.ehpa.org/news-and-resources/press-releases/eu-industry-can-cut-quarter-of-co2-emissions-through-heat-pumps/
5. European Heat Pump Association (2025b), "Electricity versus gas prices: what's the picture for industry?", https://www.ehpa.org/news-and-resources/news/electricity-versus-gas-prices-whats-the-picture-for-industry/
6. Fooladgar E, Sepman A, Ögren Y, Johansson A, Gullberg M, Wiinikka H (2024), "Low-NOx thermal plasma torches: A renewable heat source for the electrified process industry", Fuel 378
7. Fraunhofer ISI (2024), "Direct electrification of industrial process heat. An assessment of technologies, potentials and future prospects for the EU", Study on behalf of Agora Industry.
8. Global Efficiency Intelligence (2024a), "Region Summary: Electrification of Industry in the EU27"
9. Global Efficiency Intelligence (2024b), "Electrifying European Industry", https://www.globalefficiencyintel.com/electrifying-european-industry#:~:text=By%202050%2C%20the%20adoption%20of,emissions%20reductions%20from%20heat%20pumps.
10. International Energy Agency (IEA) (2018), "Commentary: Clean and efficient heat for industry", https://www.iea.org/commentaries/clean-and-efficient-heat-for-industry
11. International Energy Agency (IEA) (2022), "The Future of Heat Pumps", https://iea.blob.core.windows.net/assets/4713780d-c0ae-4686-8c9b-29e782452695/TheFutureofHeatPumps.pdf
12. International Energy Agency (IEA) (2023), "Renewables 2023 Heat", https://www.iea.org/reports/renewables-2023/heat
13. KfW Research (2025), "Heat pumps are gaining ground in Europe – electricity prices matter"
14. Liebreich M (2023), "The Next Half-Trillion-Dollar Market – Electrification of Heat", Bloomberg NEF
15. Madeddu S, Ueckerdt F, Pehl M, Peterseim J, Lord M, Kumar K, Krüger C, Luderer G (2020), „The CO2 reduction potential for the European industry via direct electrification of heat supply (power-to-heat)", Environmental Research Letters 15
16. McKinsey & Company (2020), "Plugging in: What electrification can do for industry", https://www.mckinsey.com/industries/electric-power-and-natural-gas/our-insights/plugging-in-what-electrification-can-do-for-industry
17. Schoeneberger C, Zhanga J, McMillanb C, Dunna J, Masanet E (2022), „Electrification potential of U.S. industrial boilers and assessment of the GHG emissions impact", Advances in Applied Energy 5

18. Wolde I, Starke A, Da Silva A, Cardemil J (2025), "A detailed multi-component heat configuration assessment for complex industrial plants through Monte Carlo simulations: A case study for the cement industry", Sustainable Energy Technologies and Assessments 75
19. World Economic Forum (WEF) (2023), "Why heat is a challenge in the fight against climate change, and what we can do about it", https://www.weforum.org/stories/2023/03/heat-heres-why-its-the-elephant-in-the-room-for-decarbonization/#:~:text=Heat%20comprises%20half%20of%20the,carbon%20dioxide%20(CO2)%20emissions.
20. World Economic Forum (WEF) (2024), "Briefing Paper: Industrial Electrification: Strategies and Policies for Europe", In collaboration with Accenture

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