

Nordic Innovators Group

We bring innovative ideas to life to help
shape a better and sustainable future

Innovation Fund IF26 Heat Auction

EUR 1 billion for industrial process heat

September 2026

“The only advisory delivering grant and debt financing support”



AGENDA

01

Purpose of the IF Heat Auction

02

Lessons from IF25 Pilot Auction

03

IF26 Heat Auction Design Requirements

04

Building a Competitive Bid

05

Post-Award Considerations

1. Purpose of the IF Heat Auction

Industrial heat – EU industry's largest emission source

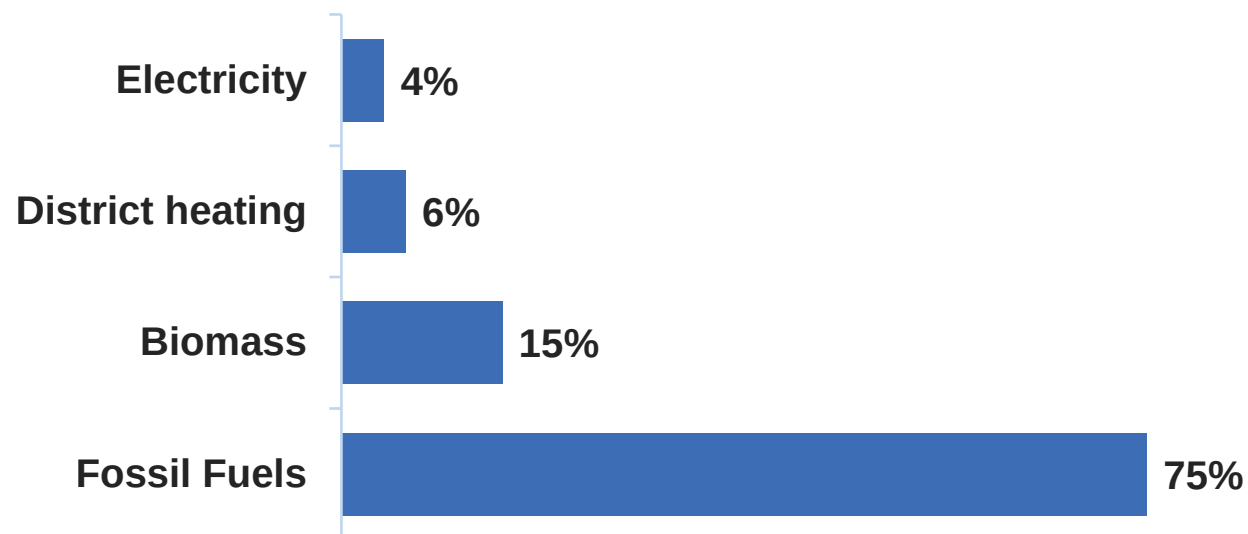
47%

of EU industrial energy demand is process heat, the single largest energy use in industry

75% of emissions

Tonnes of CO₂ emitted directly by EU industry from process heating (2018)

EU Industrial Process Heat: Today's Energy Sources



Why it hasn't happened on its own

Electrified heat technologies face a cost gap against fossil alternatives at today's energy prices. The auction closes that gap with a payment per tonne abated and relies on the bidding to reveal the actual size of the gap.

Heat Auction: Description



An Innovation Fund instrument, funded by ETS revenues



One stage, static, pay-as-bid



Ranked on price alone, in EUR per tonne of CO₂ abated



Paid as a fixed premium on heat actually produced



Five years of payments, then you are on your own

2. Lessons from IF25 Pilot Heat Auction

Learnings from IF25 Pilot Heat Auction: Undersubscribed

€397m of €1bn budget awarded – only 40%

85

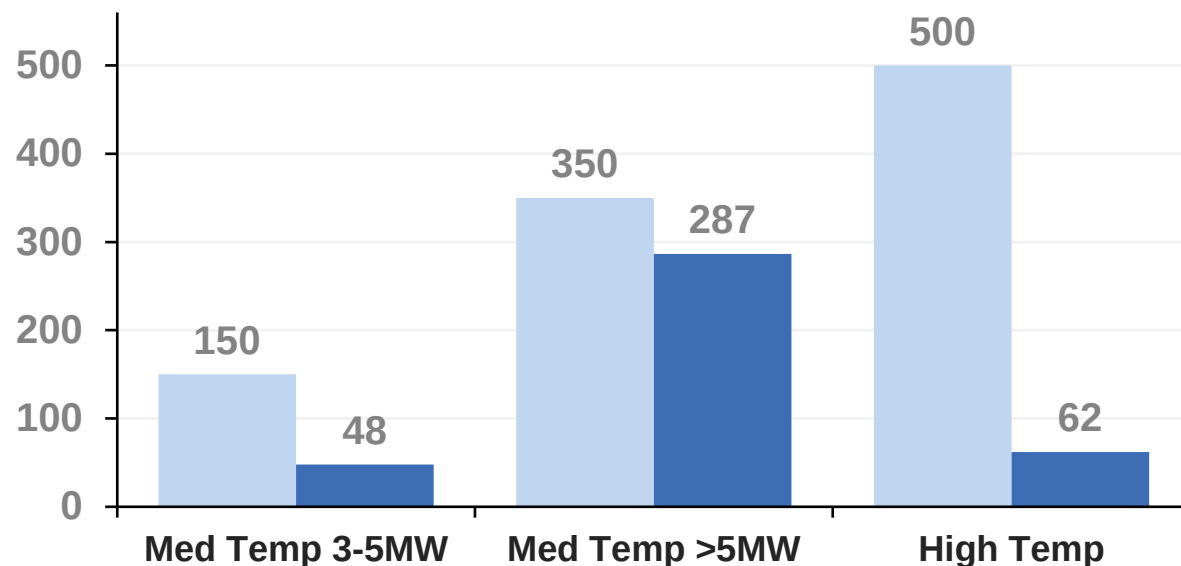
submissions, 14 countries

65

Selected, 10 countries

Budget vs Amount Awarded (€M)

■ Budget Available ■ Awarded



1

20 of 85 submission rejected – 24%

- 16 not eligible
- 4 were admissible and eligible, not awarded

2

Various reasons for low response

- Not enough time to prepare
- Minimum size of 3MW
- Grid upgrade issues
- Minimum temperature threshold of 100 C
- Application complexity

3

Median Grant Size, €3.9M

4

IF26 will be more competitive

Ceiling prices introduce: €400/tCO₂ in medium temperature, €800/tCO₂ in high temperature.

Distribution by geography, sector & technology

High concentration (69%) in France & Spain, wide sector coverage & two heat technologies dominating

Where the winners are

- **Spain: 24 projects, €135.6m**
- **France: 21 projects, €100.6m**
- **Eight countries: 20 projects - Austria, Belgium, Czechia, Denmark, Germany, Hungary, Portugal and Slovenia**

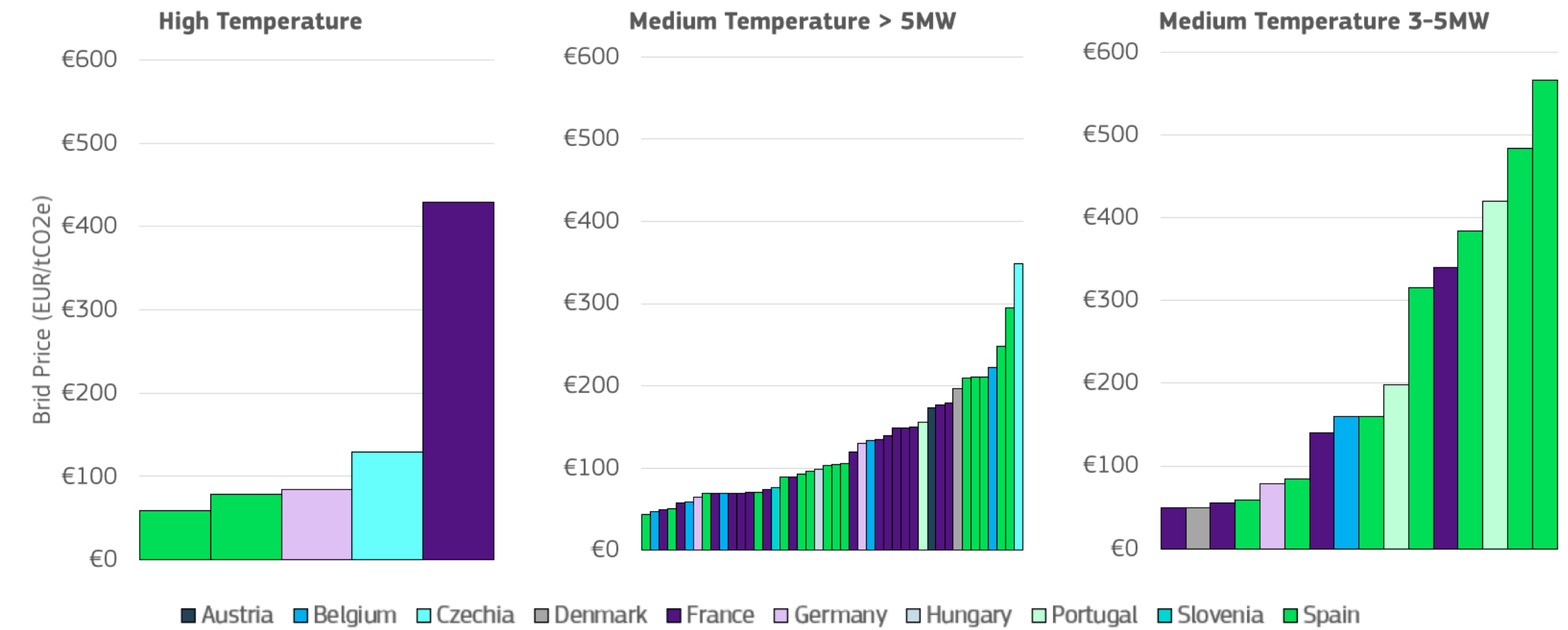
Sectors represented

- Pulp and paper
- Food and beverage
- Chemicals
- Glass and ceramics
- Construction materials
- Iron and steel
- Textiles
- Pharmaceuticals

Technologies deployed

- ***Electric boilers dominated the medium-temperature baskets, furnace dominated high temp***
- Direct resistance heating
- Indirect resistance heating
- Heat pumps
- Electromagnetic and dielectric heating
- Solar thermal
- Hybrid configurations

IF25 Bid Curves



3. IF26 Heat Auction Requirements

Three Temperature Baskets

NEW: Low Temperature

- **Temperature:** 80 to 100 °C, w/ heat pumps with COP>1.5, direct renewables or nuclear heat
- **Budget:** €100 million
- **Minimum size:** 5 MW thermal, one site
- **Maximum grant per bid:** €100 million
- **Ceiling price:** €400 per tonne CO₂
- **Financial Close:** within 2.5 years of a GA signature
- **Entry into operation:** within 5 years of GA signature

Medium Temperature

- **Temperature:** 100 to 400 °C
- **Budget:** €600 million
- **Minimum size:** 3 MW thermal, one site
- **Maximum grant per bid:** €100 million
- **Ceiling price:** €400 per tonne CO₂
- **Financial Close:** within 2.5 years of GA signature
- **Entry into operation:** within 5 years of GA signature

High Temperature

- **Temperature:** above 400 °C
- **Budget:** €300 million
- **Minimum size:** 3 MW thermal, one site
- **Maximum grant per bid:** €250 million
- **Ceiling price:** €800 per tonne CO₂
- **Financial close:** within 2.5 years of GA signature
- **Entry into operation:** within 5 years of GA signature

Eligible Technologies: Nuclear heat is new



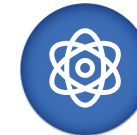
Electrification

- Heat pumps, including mechanical vapour recompression and thermochemical heat transformers
- Direct and indirect resistance heating
- Electromagnetic and dielectric heating
- Plasma heating



Direct-renewable heat

- Solar thermal
- Geothermal
- Qualifies automatically for the 25% bid bonus



Nuclear heat

- New for 2026
- Small modular fission reactors, advanced modular reactors, microreactors and fusion
- For heat generation only



Hybrid

- Any combination of the three families above
- Heat produced from fossil fuels is never supported

4. Building a Competitive Bid

Grant Calculation Methodology

Price-only ranking in terms of €/tCO₂ after application of the bid bonus

1 Bid Price Definition, €/tCO₂

- Nominal thermal capacity (MW),
- Subsidy needed per MWh of heat, financial model
- Expected average yearly heat volume (MWh)
- Bid Price Definition (€/tCO₂)

Single Default EF: Natural gas standard emissions factor (0.202 tCO₂/MWh_{th}) w/ assumed 90% conversion efficiency i.e., 0.224 tCO₂/MWh_{th}

2 Total Grant Submission

$$\left[\text{Subsidy requested in } \frac{\text{€}}{\text{MWh}_{th}} \right] * \left[\frac{\text{MWh}_{th}}{\text{year}} \right] * 5 \text{ years}$$

Example Calculation: without/before bonus calc

1 Expected Annual Heat Volume for 20 MW electric boiler, no bonus claimed

- (a) Based on financial model, €30/MWh subsidy required, determine bid price per CO₂ abated:
- (b) 70% of 8,760 hr/yr x 20 MW = 122,640 MWh/yr
- (c) 122,640 MWh/yr x 0.224 tCO₂/MWh_{th} = 27,471 tCO₂/yr

$$\text{€}30/\text{MWh} / 0.224 \text{ tCO}_2/\text{MWh}_{th} = \text{€}133.93/\text{tCO}_2$$

2 Determining total subsidy

$$\text{€}30/\text{MWh} \times 122,640 \text{ MWh/yr} \times 5 \text{ yrs} = \text{€}18.4\text{m}$$

The 70% cap applies because this project does not claim the flexibility bonus.

The 25% bid bonus, and the hours cap behind it

Reduction of bid price for ranking only, with an increase in subsidy

✓ Storage

Electricity or thermal storage able to replace the project's grid electricity draw, or the process heat demand, for 4 hours, by 20% within 1 hour.

✓ Efficient heat pumps

Heat pump or pumps with a coefficient of performance of at least 1.5

✓ Direct renewable or nuclear heat

Direct renewable or nuclear heat qualifies automatically

Claimed at bid stage only, you cannot add it later. If you claim it and cannot prove it at entry into operation, the grant is terminated and any money paid is recovered.

What it 's worth

Same 20 MW project, same EUR 30/MWh request

	Without bonus	With bonus
Hours you may claim	70% of the year	100% of the year
Eligible heat volume	122,640 MWh	175,200 MWh
Bid price used for ranking	€133.93/tCO ₂	€100.45/tCO ₂
Maximum grant over 5 years	€18.4 million	€26.3 million

The bonus reduces your bid for ranking purposes only, you are still paid the EUR 30/MWh you asked for.

The auction pays you to stay off the grid at peak. This one decision moves both your ranking and your revenue.

Four gates to pass

Pass or fail screening on relevance and quality, technical, financial, and operational maturity

Admissibility

- Submitted before the deadline, through the Funding and Tenders Portal
- Correct application forms and self-declarations
- All mandatory documents present

Eligibility

- Located in EEA
- Eligible technology, temperature band and at least 3 MW in one location
- New thermal capacity, with no start of works
- Within the grant cap for the topic
- New CAPEX req.

Relevance & quality

- Technical, financial and operational maturity, evidenced by the feasibility study and annexes
- Must use CINEA application templates
- Compliance with DNSH
- Cybersecurity measures described for projects of 5 MW thermal or more

Pre-signature checks

- Financial capacity and legal entity validation
- Completion guarantee of 6% of the maximum grant, issued within two months of the result letter
- Bank rated at least BBB- (S&P or Fitch), Baa3 (Moody's) or BBB low (DBRS), established in the EEA

The Submission Package

Successful proposal requires 3-4 months of preparation

Mandatory documents

- Application forms A, B and C (spreadsheet & online portal) using mandatory templates
- Detailed budget table, the financial model file containing the bid calculation
- Participant information
- Timetable and Gantt chart
- Feasibility Study
- Permits, licences and authorisations strategy
- Completion guarantee Lol
- Other annexes: e.g., equipment procurement evidence, electricity sourcing strategy, heat off-taker strategy.

Feasibility Study – four sections:

- Project description and requirements: objectives, resources, main equipment and costs backed by supplier quotes, location, regulatory situation
- Technology readiness, expected heat output and impacts
- Project organisation, staffing and schedule
- Risk analysis and management

Permits strategy:

- Process description for all permits required to build and operate
- Timeline, environmental and construction permits are needed at financial close
- A credible grid connection strategy
- Description of national permitting context

5. Post-Award Considerations

The commitments of a winning bid...

Various obligations can jeopardize the project

✓ Obligations: GA can be terminated and 6% completion agreement called

Reach financial close & entry into operation

Reach FC within 2.5 years and EiO within 5 years of GA signature with contracts signed and conditions met

Bid bonus must be proven at entry into operation

Grant agreement terminated and any money paid recovered, the bid price is no longer valid.

Output below 30% of the volume you bid

Measured as a rolling three-year average: the grant may be reduced or the agreement terminated.

Direct or Indirect Measurement of Heat

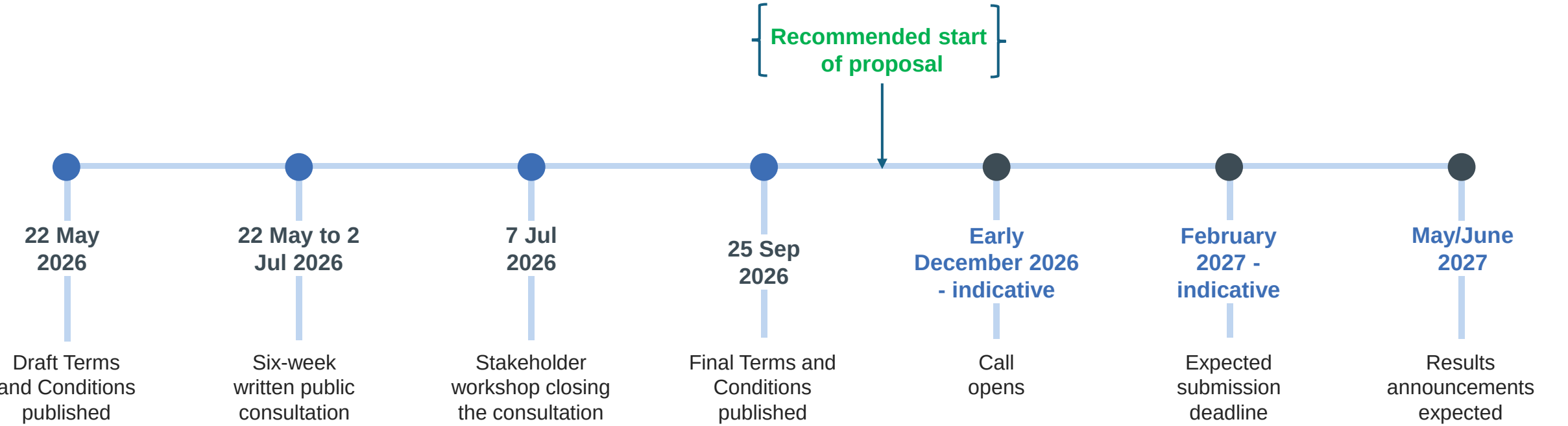
An EMAS or ISO 50001 compliant system with calibrated meters or measure electricity consumption instead.

Third-party Verification

Independent third-party verification every 6 or 12 months. Annual progress reports until entry into operation.

Heat Auction timeline

T&Cs are now final - following steps are indicative, based on the 2025 cycle



The 2025 cycle, for calibration

4 Dec 2025 Call opened	19 Feb 2026 Deadline, 11 weeks later	22 May 2026 Results announced	Sep to Nov 2026 Grant agreements signed	Round one gave bidders about eleven weeks. Assume no more than that.
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Looking ahead, steps to a winning bid by February 2027 . . .

IF25 Pilot revealed preparation time, not budget, was the constraint

- 1 Define your project** Confirm process, new thermal capacity and temperature basket (e.g., > 100 °C or 80 to 100 °C with capacity 5 MW capacity, using heat pump with COP>1.5, direct renewables or nuclear heat). Note a minimum €2.5m CAPEX requirement.
- 2 Ensure eligibility** Only new thermal capacity is eligible. Plan project around the call's eligibility requirements.
- 3 Design bonus approach** Storage, heat pump above COP 1.5, or direct renewable heat - this impacts ranking and increases eligible heat volume from 70% to 100% of the year.
- 4 Build the bid model** Determine cost gap per MWh to verify resulting €/tCO₂ falls below €400 or €800 price ceiling.
- 5 Start project plan** Permits and grid connection strategy, the stand-alone feasibility study with supplier quotes, the bank letter of intent, electricity sourcing and heat offtake strategies.

CV - Dr. Félix Urbain



FÉLIX URBAIN, Dr.-Ing., MBE
Partner, Head of Energy and Climate Business Unit

EU Innovation Fund Expert
 Energy Project Expert
 (Climate, Energy, and Mobility)

Key Competencies

Absolute & relative GHG emissions, LCA, consortium management, stakeholder management, proposal writing & review, technical reporting, coaching, networking, financing strategy, technology transfer, funding fit assessment.

Funding tools for mentoring, evaluation and writing

EU Innovation Fund, Hydrogen Action, LIFE, Joint Undertaking Hydrogen, ERC, HUE Cluster 5, RIA, IA & CSA, KDT calls, MSCA, Interreg, EIT, EIC Accelerator, EIC Pathfinder, EIC Transition, Eurostars

Relevant thematic disciplines

Renewable Energy, Project Engineering, Hydrogen, Green ammonia, Biofuel, Climate, Transport, Key Enabling Technologies, SMEs, Industrial Engineering, Clustering and Innovation Ecosystems, Energy storage

Education

Dr.-Ing. (Materials Science),
 M.Sc. (Management, Business and Economics)

Languages

German, French, English, Spanish and Luxembourgish/Dutch

Experience

2024 - Present: Partner and Head of Energy and Climate Business Unit, Nordic Innovators (Spain): Responsible for leading the team of consultants within the Greentech area, with special focus on CAPEX-intensive Renewable Energy projects. Target programmes such as EU Innovation Fund, Hydrogen Actions, LIFE, CEF, IPCEI, Horizon Europe Cluster 5.

2021 - present: Senior Consultant, Nordic Innovators (Spain): Responsible for proposal preparation, including writing, sparring and reviewing with internal proposal writers, continuous development of internal proposal tools and processes and taking the lead on green tech innovation clients, programme expert for Cluster 5, Climate, Energy and Mobility. Was supporting projects to get >€105M in direct funding. See references and recommendations from clients here: [Dr. Félix Urbain | LinkedIn](#)

2019 - 2020: Consultant, Nordic Innovators (Spain): Responsible for proposal preparation processes from concept analysis to business and innovation model development for several high-profile innovation funds. Was supporting projects to get >€25M in direct funding.

2016 - 2019: Post-doctoral research, Energy Research Institute of Catalonia: CO2 Recycling into value-added chemical products, solar hydrogen production and solar redox flow batteries. During this time, he published 10 papers in peer-reviewed international journals and directly wrote and participated in 3 European-funded projects.

2012 - 2016: PhD Student, Forschungszentrum Jülich/RWTH Aachen University: Thesis title: Renewable Energies – Hydrogen production via photoelectrochemical water splitting using adapted thin film silicon solar cells. Authored 11 international peer-reviewed publications, over 30 as co-author, and an academic textbook. Gave talks at 12 international conferences.

Key achievements:

- Félix directly supported (as a lead consultant or sparrer) 6 winning EU Innovation Funds totalling over €350M in funding received by his clients.

CV - Tony Haske



TONY HASKE

Senior Consultant

Energy & Climate Project Expert

Key Competencies

Project Management, Carbon Management & Reporting, GHG Protocols, Technical Feasibility, Contract Management, Financial Reporting, Business Planning, Financing Strategies.

Funding tools for mentoring, evaluation and writing

EU Innovation Fund

Relevant thematic disciplines

Renewable Energy, Solar Generation + Storage, Energy Storage, Green Technologies, Hydrogen, Green Mobility, Climate Science, Engineering, EU Sustainability Framework

Education

M.S. Atmospheric Physics
Certified Carbon management Leader (CCML)
BSc Mechanical Engineering

Languages

English and Spanish (conversational)

Experience

January 2025 – Present: Energy & Climate Consultant, Nordic Innovators (Denmark): Technical advisory in support of developing proposals for Clean Energy and Climate-related projects, within the EU Innovation Fund and other EU green tech funding programmes. Role includes conducting technology feasibility studies, evaluating their level of innovation and assessing their GHG emissions benefits.

2022 – 2024: Director of Project Management Office (Denmark), Nel Hydrogen A/S: Create Nel's Project Management Office to establish best practices and internal processes for the installation of hydrogen refuelling stations across the EU and US markets. Develop process improvements with internal stakeholders to standardize procedures, improve efficiency and manage risk. Standardize contracts in coordination with contract management, project management, safety and sales teams; provide ongoing contract management guidance to project teams.

2020 - 2022: Senior Project Manager (USA), Nel Hydrogen: For Shell, managed development, installation and commissioning of first three public high-capacity hydrogen refuelling stations for heavy duty (HDV) Fuel Cell Electric Vehicles (FCEVs) in Los Angeles, California; coordinated fuelling development and performance tests with Toyota's development of its FCEV truck fleet; also integrated on-site green hydrogen generation plant with an HDV refuelling station.

2017 - 2019: Solar + Storage Project Development, GLC New Energy, Inc.: Led market research, financial modelling and project development strategy for utility BESS projects, an emerging California market.

Thank you

Tony Haske
Energy, Climate & Circular Bioeconomy (ECC)

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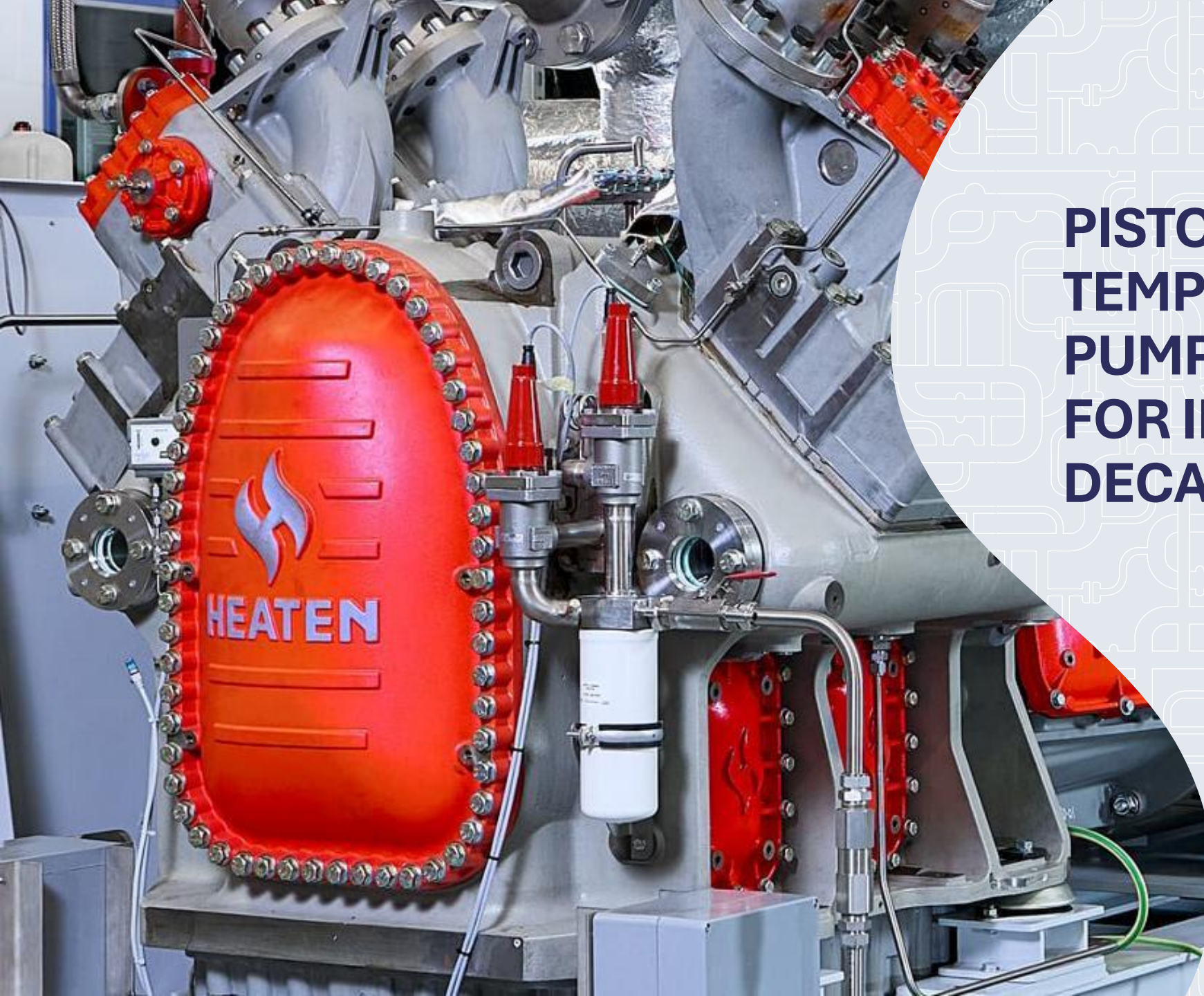
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PISTON-BASED HIGH-TEMPERATURE HEAT PUMP TECHNOLOGY FOR INDUSTRIAL DECARBONIZATION

Heat Auction Webinar

September 29th 2026



> 15 YEARS OF DEVELOPMENT



Concept Development

2011-2012

- › **Development of Single Cylinder ORC Heat Engines for up to 215°C**

2013-2015

- › Worldwide commercial deployment of demonstrators
- › Gaining operational experience with refrigerants and lubrication

Technology Development

2016 – 2017

- › Enhancement of technology

2018-2019

- › **Commercial installation of Heat pumps one-cylinder (now running for more than 50,000h each)**

2020

- › Acquisition of Viking IP, inventory and team by HEATEN

Product Development

2022-2023

- › Product specification for HBL4 and HBL16
- › Product development for HBL4

2024

- › **Acquisition of HEATEN by Advent & Strategic Partnership INNIO**

2024-2025

- › Testing on test bench and in field
- › Stabilization of HBL4
- › Concept study 2-stage conducted
- › Serialization of HBL4 incl. variants

Portfolio Development

2025

- › **Commercial role out**
- › **Product development for HBL16**
- › **Invest in test infrastructure Jenbach for HBL4 & HBL16**

2026-2027

- › HBL16 testing on test bench and in field
- › Launch of HBL4 2-stage
- › Launch of HC's products

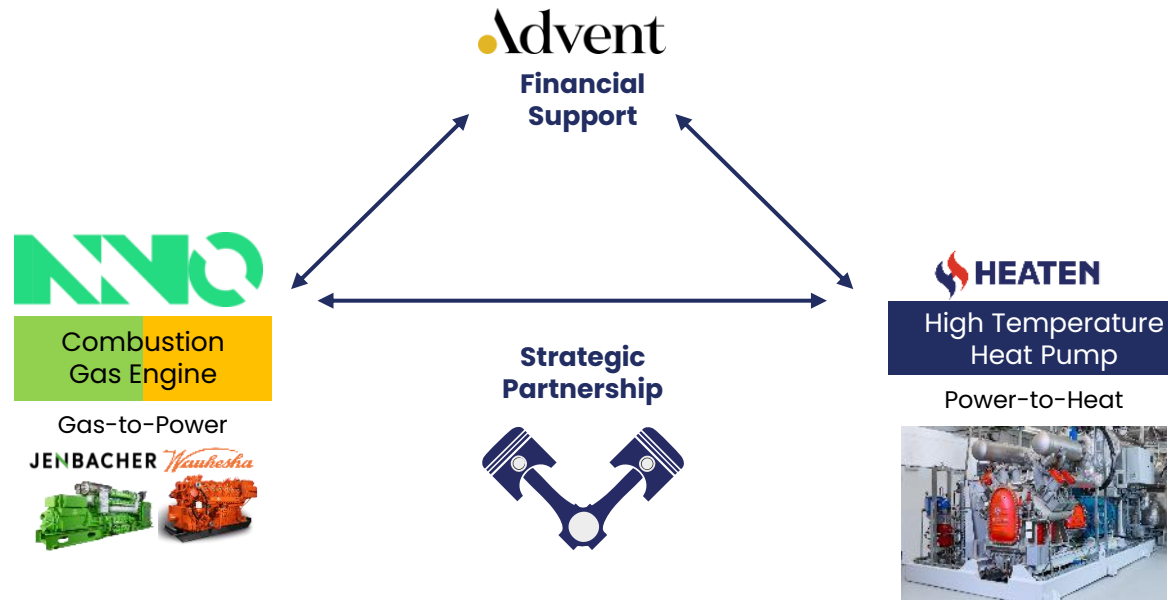
2028-2029

- › Launch of HBL16 2-stage
- › Standardization



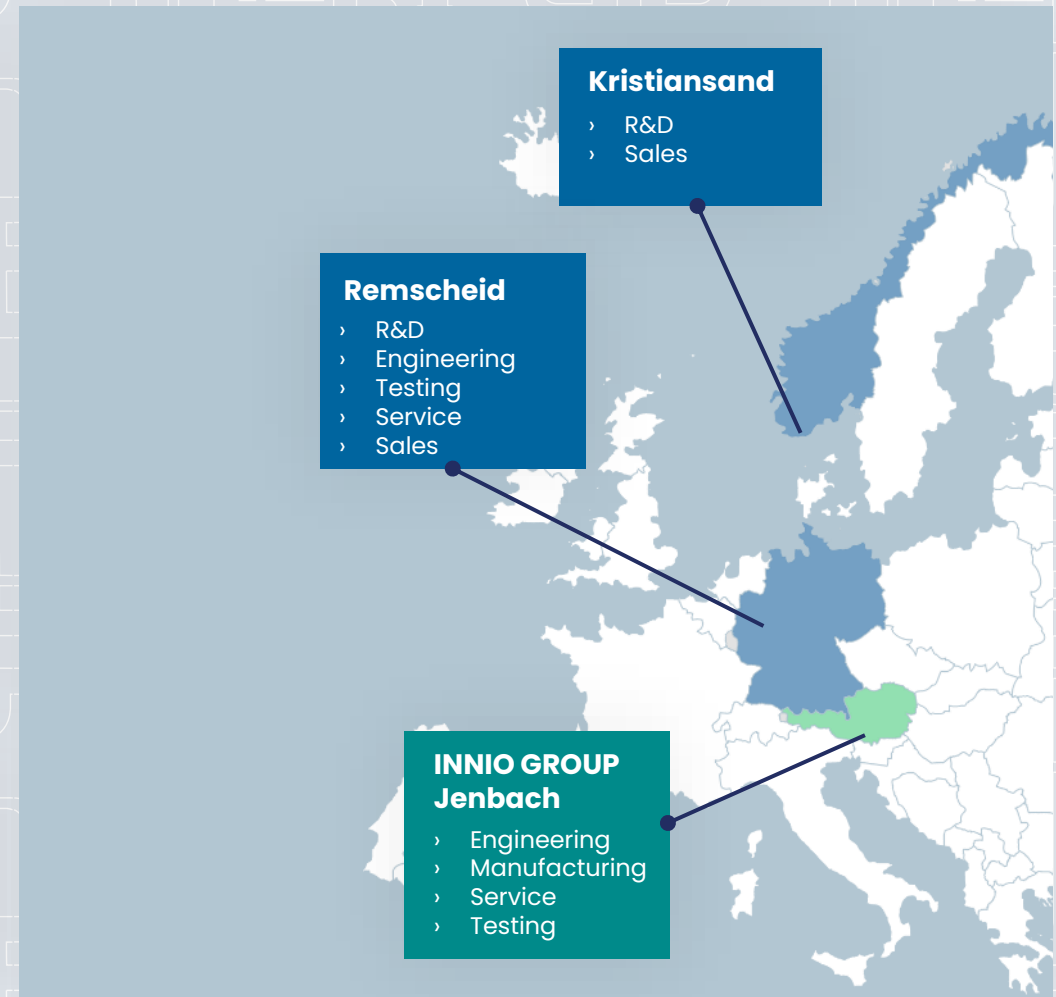
STRATEGIC PARTNERSHIP

between INNIO and HEATEN



INNIO has delivered more than 59,000 engines globally

- › Through a team of more than 4,500 experts
- › And a service network in more than 100 countries



Continuous progress – Status update

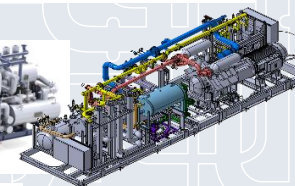
Commercial roll out started



	Testing Remscheid HBL4-W/W & Beneo	Testing Remscheid HBL4-S/S 130°C Steam	Südzucker 2x HBL4-S/S 130°C Steam	Südzucker 2x HBL4-S/S 100°C Steam	Energy C. Jenbach 1x HBL4-W/W 150°C Water	Plasterboard 2x HBL4-W/W Incl. Container	Dornoch HBL4-W/W 120°C	Felix Schoeller HBL4-W/S 120°C Steam
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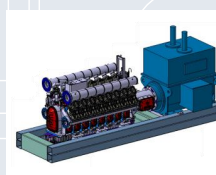
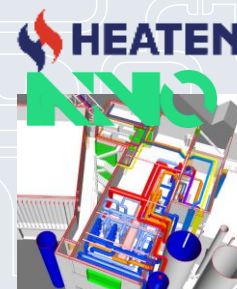
Rain



Offenau



Publish
soon



V16 Design
finalized

Testing Jenbach
HBL16

HBL16-W/W
130°C



2023

2024

2025

2026

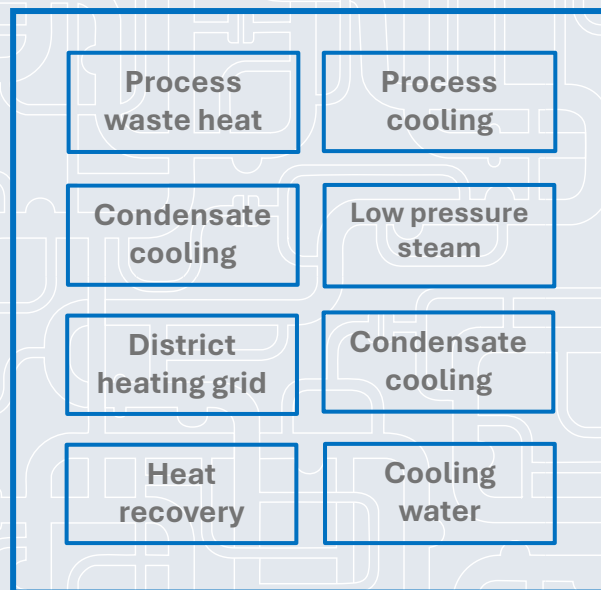
2027

MADE FOR MANY USE CASES

Efficient. Flexible. Scalable. Powerful.

Cooling Heat Source

Waste Heat: Water or Steam

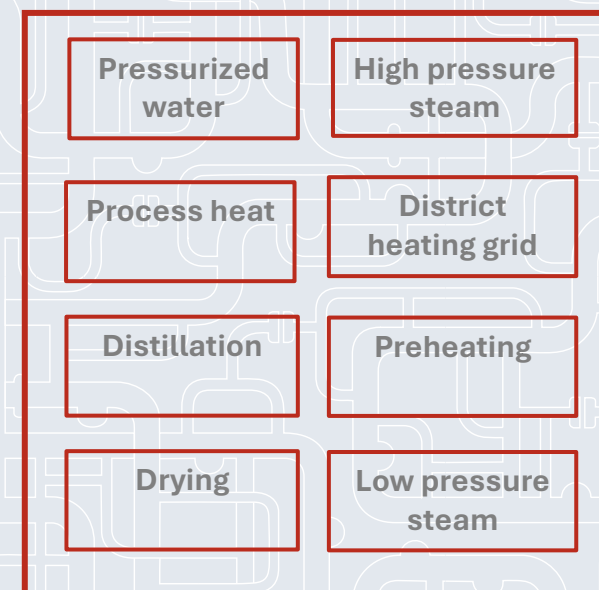


10-150°C



Heating Heat Sink

Valuable Process Heat: Water or Steam



90-200°C

0,6 – 40 MW_{th}

1 – 50 MW_{th}

Current product portfolio

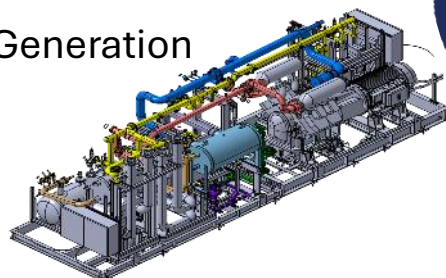


HBL4 & HBL16

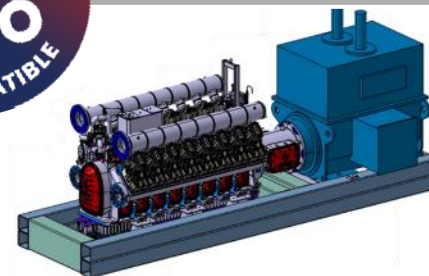
HBL4 (V4 → 1500 m³/h)
(4-cylinders)



2nd Generation



HBL16 (V16 → 6000 m³/h)
(16-cylinders)



Operating range

Temperature heat source	10-150°C
Temperature heat sink	90-200°C (HC), 90-165°C (HFO)
Thermal power range	0.8-2.5 MW _{th}

Dimensions

Length	mm	9,000
Width	mm	2,400
Hight	mm	2,500



Datasheets

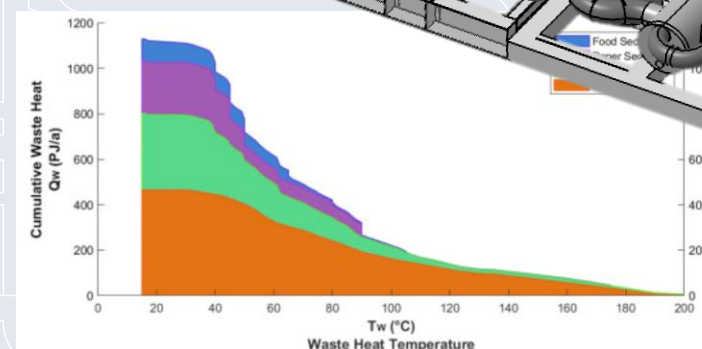
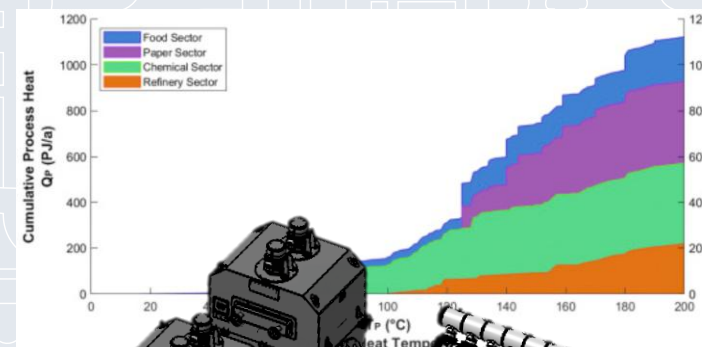
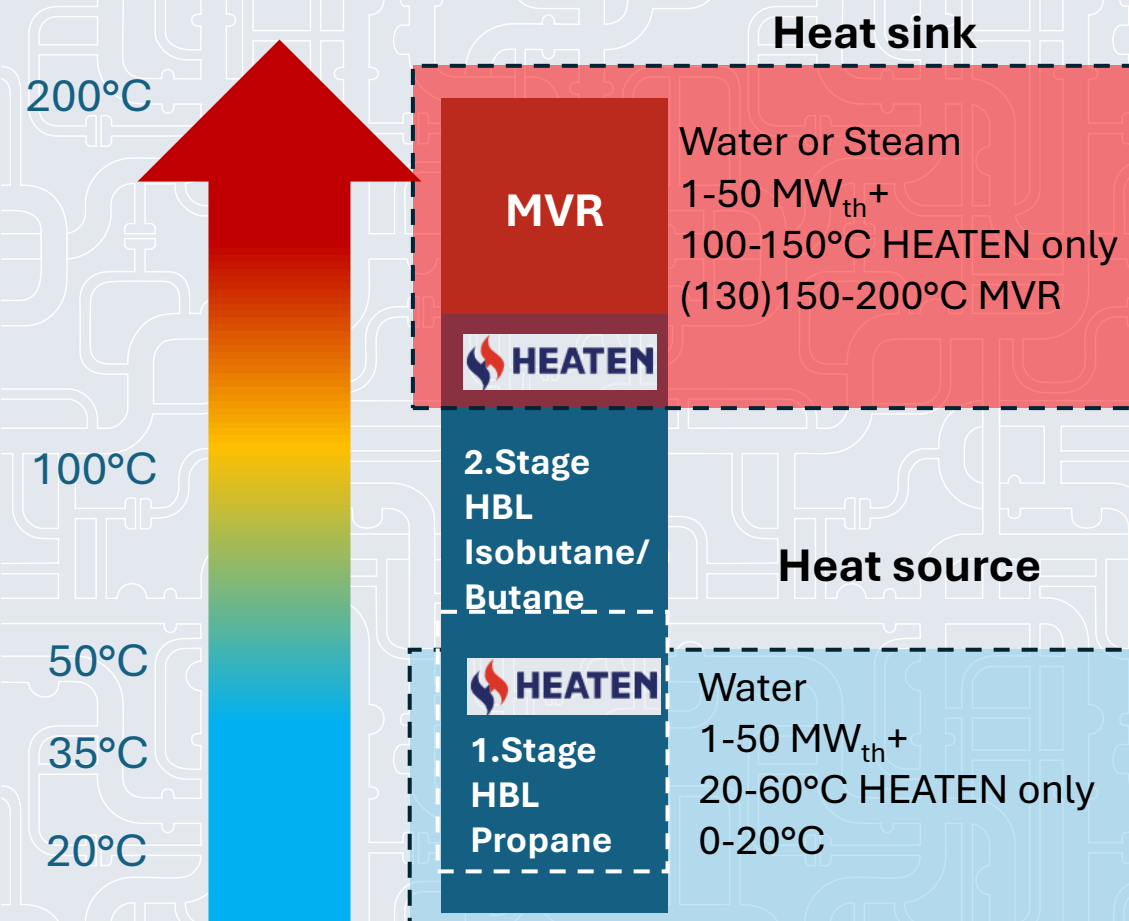
Operating range

Temperature heat source	10-150 °C
Temperature heat sink	90-200 °C
Thermal power	3.2-10 MW _{th}

Dimensions

Length	mm	11,000 (2 skids)
Width	mm	2,400
Hight	mm	2,500

2-Stage HeatBooster to cover most processes which require temperature lifts beyond 80 K



Why Heat Pumps Fit IF26



Six auction rules that play into the hands of heat pumps

Key point: every MWh of heat counts 0.224 t CO₂ – ranking is decided by the €/MWh you ask for.

IF26 rule (final T&Cs, 24.09.2026)	What it means for a heat pump project
Medium topic: 100–400 °C, ≥ 3 MWth, €600m budget	Steam up to 150 °C with HTWP – higher with HTWP + MVR
Low topic: 80–100 °C, ≥ 5 MWth, only HP (COP > 1.5), direct renewables, nuclear – €100m	Hot-water users can bid – without competition from e-boilers
Bonus: bid –25 % for ranking; 100 % instead of 70 % of hours	HP with COP ≥ 1.5 qualifies (average of all HPs; MVR counts as HP)
Fixed factor 0.224 t CO₂/MWh (gas at 90 %)	Bid €/MWh ÷ 0.224 = €/t – no advantage for replacing dirtier fuels
Paid on metered heat for 5 years, annually	Direct heat metering; waste-heat user ISO 50001 or EMAS certified
Source: ambient or industrial waste heat	Not from power/CHP; fossil boiler may stay, no new fossil capacity

Source: European Commission, IF26 Heat Auction Final Terms & Conditions (24.09.2026) – call documents prevail

HEATEN Project-Readiness Checklist



Formal IF26 requirements plus what we check first

EEA site; industrial process heat – no space heating or district heating sales

≥ 3 MWth (≥ 5 MWth at 80–100 °C) and $\geq$ €2.5m project CAPEX

Evidence that the source is waste heat (RED Art. 2(9)) and resource availability – ideally hourly data

Grid connection: credible strategy, secured by Entry into Operation

Financial close $\leq$ 2.5 yrs, Entry into Operation $\leq$ 5 yrs; 6 % completion guarantee

No start of works before applying – no other public CAPEX/OPEX support (feasibility/FEED support is OK)

Three project killers: unproven waste heat, the grid connection, and cumulation with other support.

Start of works = first firm commitment (e.g. equipment order); permits, feasibility studies and grid requests are not

How to Calculate a Bid

One transparent way from business case to €/MWh

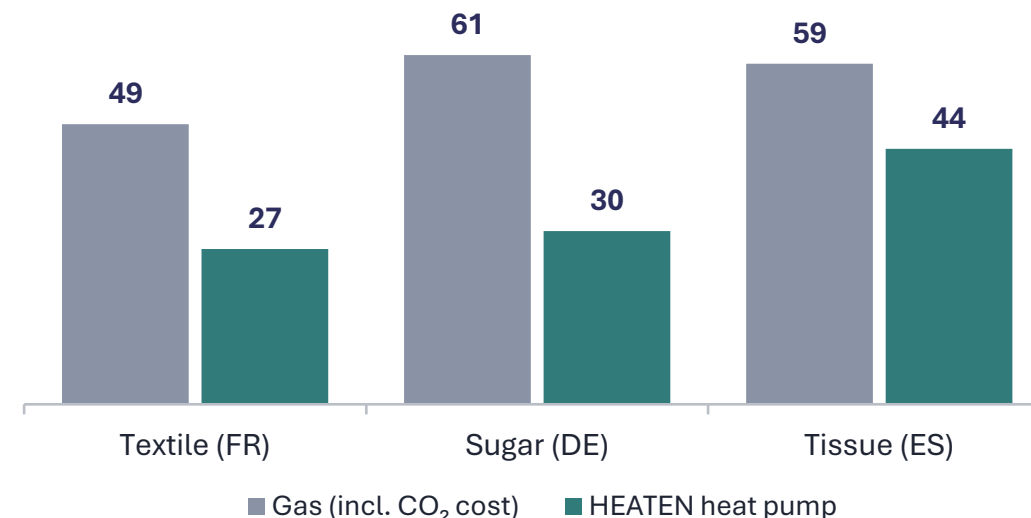
1 Heat per year
 $\text{MWth} \times \text{full-load hours} = \text{MWh/yr}$

2 Savings per year
 $(\text{heat cost gas} - \text{heat cost heat pump}) \times \text{MWh/yr}$

3 Support for a 5-year simple payback
 $\text{project cost} - 5 \times \text{annual savings}$

4 Bid
 $\text{support} \div (5 \times \text{MWh/yr}) \cdot \text{€/t} = \text{€/MWh} \div 0.224 \cdot \text{ranking} \times 0.75$

Heat cost in our three cases (€/MWh heat)



Eurostat H2 2025 prices; tissue incl. EU ETS €75/t; energy costs only

Note: no prescribed formula – you set the €/MWh, but must substantiate it in the financial information file.

Ceiling €400/t after bonus ≈ €119.5/MWh for a bonus heat pump (€89.6/MWh without) · max. grant = €/MWh × MWh/yr × 5

Bidding Strategy & Disclaimer



How to read the following cases

Bidding strategy

A 5-year payback is our illustrative target – not a rule.

Set your bid from your own investment criteria (payback, IRR, hurdle rate) and your view on competition.

Lower bid: better ranking, less support.
Higher bid: more support, lower chance to win.

Cases 1 and 3 also show a bid for a 3-year payback.

Illustrative cases

The cases are illustrative and do not reflect actual payback times.

Real paybacks are highly case-specific – and can be considerably better.

All numbers: constant 2025 energy prices, undiscounted, energy costs only.

Not included – real upside

Rising CO₂ prices (EU ETS, ETS2 from 2028)

Electricity price development and flexible operation (cheap hours, storage)

Further revenues, e.g. white certificates

Avoided reinvestment in boilers and burners

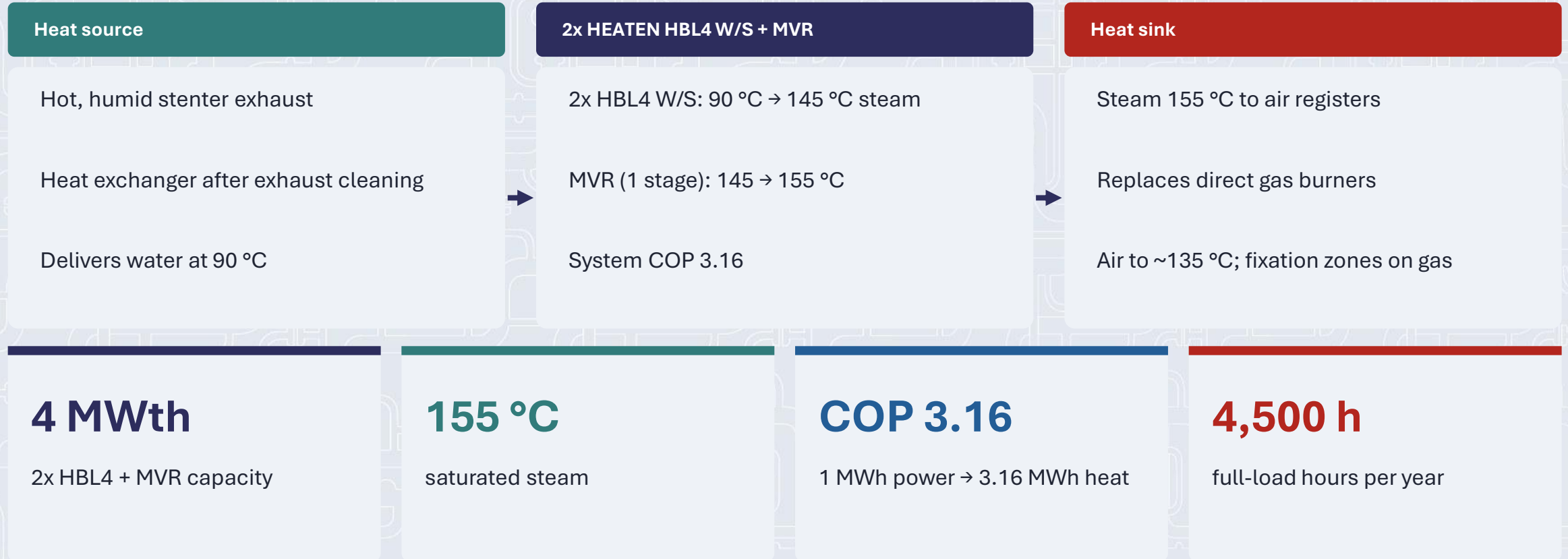
Bottom line: real business cases are often better than shown here – ask us for a site-specific calculation.

Illustrative examples, not an offer · bids, grants and paybacks depend on site data and investor criteria

Case 1 – Textile



Textile finishing, France: where the heat comes from and goes



In the auction: MVR counts as a heat pump · system COP ≥ 1.5 → bonus · gas fixation zones may stay.

Illustrative case – capacity, hours and COP are assumptions

Case 1 – Calculating the Bid



Textile finishing, France: from plant data to the auction bid

Inputs

Input	Value
Capacity	4 MWth
Full-load hours	4,500 h/yr
Gas price (FR, incl. CO ₂ part)	€44.8/MWh
Gas efficiency	92 %
Power price (FR)	€85.3/MWh
COP heat pump + MVR	3.16
Total project cost	€4.6m

Calculation steps

- Heat per year**
 $\text{capacity} \times \text{full-load hours}$
 $4 \text{ MWth} \times 4,500 \text{ h}$
18,000 MWh
- Heat cost – gas**
 $\text{gas price} \div \text{efficiency}$
 $€44.8 \div 0.92$
€48.7/MWh
- Heat cost – heat pump**
 $\text{power price} \div \text{COP}$
 $€85.3 \div 3.16$
€27.0/MWh
- Savings per year**
 $(\text{gas} - \text{heat pump}) \times \text{heat per year}$
 $€21.7 \times 18,000 \text{ MWh}$
€391k
- Support for 5-yr payback**
 $\text{project cost} - 5 \times \text{savings}$
 $€4.6\text{m} - €1.95\text{m}$
€2.65m
- Bid (5-yr payback)**
 $\text{support} \div (5 \text{ years} \times \text{heat per year})$
 $€2.65\text{m} \div 90,000 \text{ MWh} = €29.4$
€30/MWh
 $= €134/\text{t} \cdot \text{rank } €100/\text{t}$
- Bid (3-yr payback)**
 $(\text{cost} \div 3 - \text{savings}) \div \text{heat per year}$
 $€1.14\text{m} \div 18,000 \text{ MWh} = €63.5$
€64/MWh
 $= €286/\text{t} \cdot \text{rank } €214/\text{t}$

Eurostat H2 2025 industrial prices excl. VAT; French gas price includes the carbon component • €/t = €/MWh ÷ 0.224

Case 1 – Funding & Result



Textile finishing, France: what the Heat Auction changes

€0.54m

per year for 5 years (€30 × 18,000 MWh)

€2.70m

maximum grant over 5 years

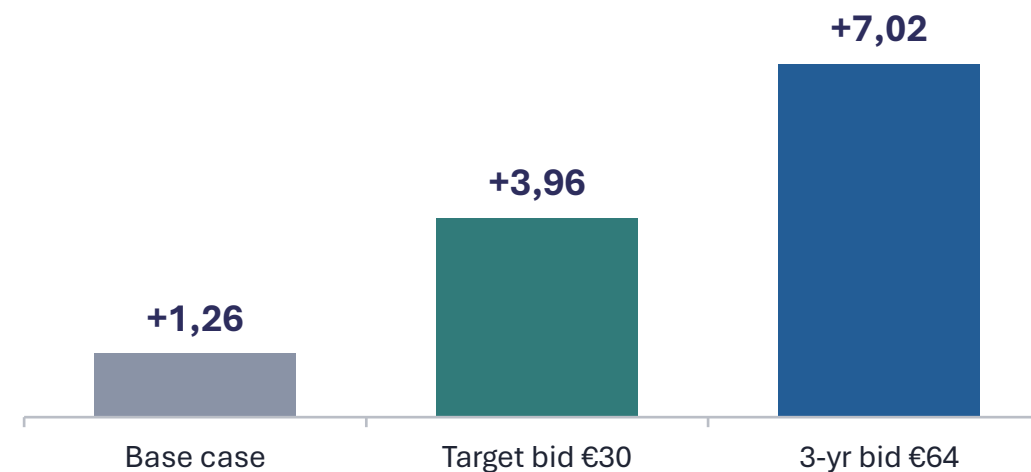
€100/t

ranking price (€134/t × 0.75 bonus)

€162k

completion guarantee (6 % of max. grant)

Cash result after 15 years (€m, undiscounted)



Payback: 11.8 → 4.9 yrs (€30) → 3.0 yrs (€64)

15 × annual savings – project cost (+ grant) · not an NPV: no discounting, constant prices

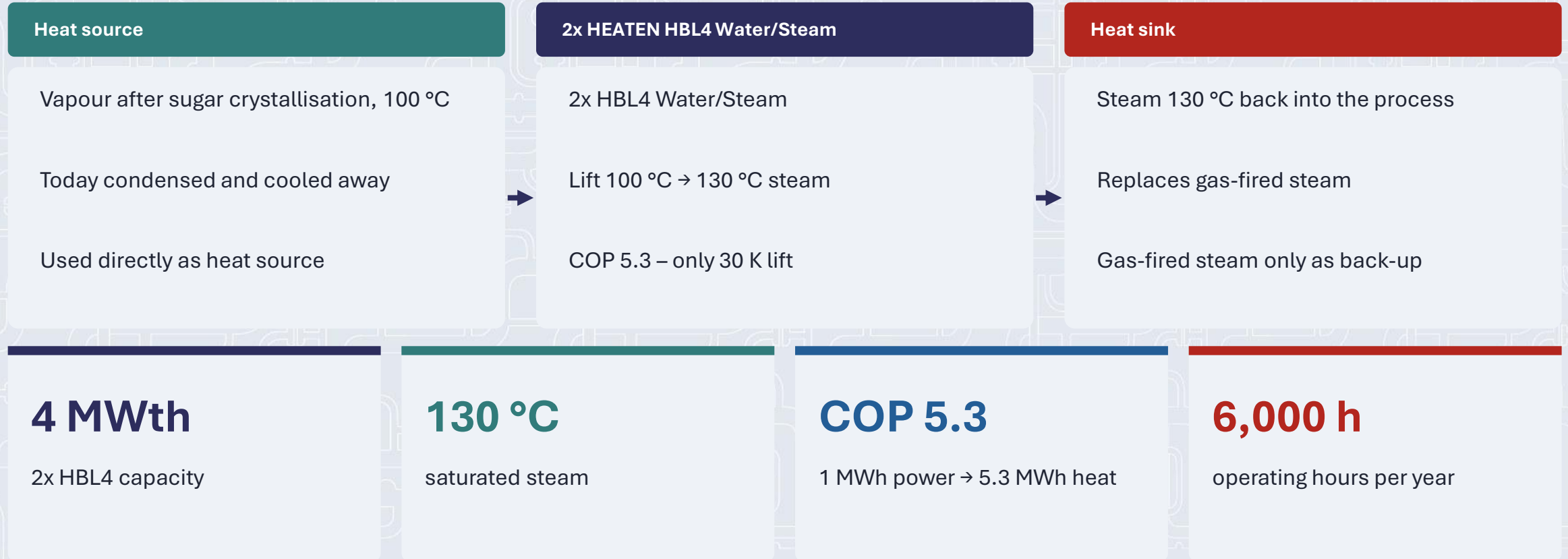
Auction check: medium topic ✓ · ≥ 3 MWth & ≥ €2.5m ✓ · COP bonus ✓ · €100/t < €400/t ceiling ✓

Paid annually on metered heat (6-monthly only on request if the consortium includes an SME) · illustrative, not an offer

Case 2 – Sugar



Sugar factory, Germany: where the heat comes from and goes



In the auction: 130 °C → medium topic · 4 MWth, €4.4m CAPEX · COP 5.3 → bonus and a very low bid.

Illustrative case – capacity, hours and COP are assumptions; 6,000 h assumes beet campaign plus thick-juice campaign

Case 2 – Calculating the Bid



Sugar factory, Germany: from plant data to the auction bid

Inputs

Input	Value
Capacity	4 MWth
Full-load hours	6,000 h/yr
Gas price (DE, incl. CO ₂ levy)	€54.6/MWh
Gas-fired steam efficiency	90 %
Power price (DE)	€159.5/MWh
COP heat pump	5.3
Total project cost	€4.4m

Calculation steps

- Heat per year**
 $\text{capacity} \times \text{full-load hours}$
 $4 \text{ MWth} \times 6,000 \text{ h}$
24,000 MWh
- Heat cost – gas**
 $\text{gas price} \div \text{efficiency}$
 $€54.6 \div 0.90$
€60.7/MWh
- Heat cost – heat pump**
 $\text{power price} \div \text{COP}$
 $€159.5 \div 5.3$
€30.1/MWh
- Savings per year**
 $(\text{gas} - \text{heat pump}) \times \text{heat per year}$
 $€30.6 \times 24,000 \text{ MWh}$
€734k
- Support for 5-yr payback**
 $\text{project cost} - 5 \times \text{savings}$
 $€4.4\text{m} - €3.67\text{m}$
€0.73m
- Bid**
 $\text{support} \div (5 \text{ years} \times \text{heat per year})$
 $€0.73\text{m} \div 120,000 \text{ MWh} = €6.1$
€7/MWh
 $= €31/\text{t} \cdot \text{rank } €23/\text{t}$

Eurostat H2 2025 industrial prices excl. VAT; German gas price includes the national CO₂ levy · €/t = €/MWh ÷ 0.224

Case 2 – Funding & Result



Sugar factory, Germany: what the Heat Auction changes

€0.17m

per year for 5 years ($€7 \times 24,000$ MWh)

€0.84m

maximum grant over 5 years

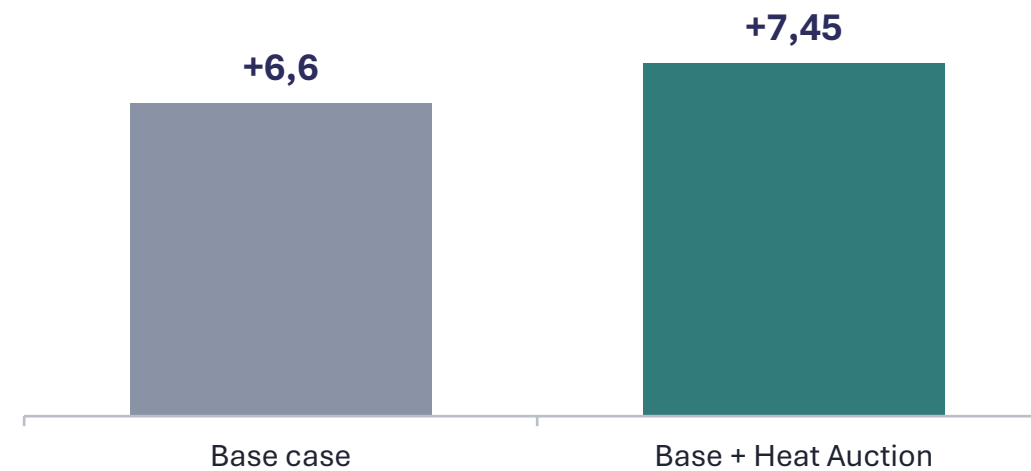
€23/t

ranking price ($€31/t \times 0.75$ bonus)

€50k

completion guarantee (6 % of max. grant)

Cash result after 15 years (€m, undiscounted)



Payback: 6.0 → 4.9 years (target bid, by definition)

15 × annual savings – project cost (+ grant) · not an NPV: no discounting, constant prices

Auction check: medium topic ✓ · ≥ 3 MWth & $\geq €2.5m$ ✓ · COP bonus ✓ · $€23/t < €400/t$ ceiling ✓

Paid annually on metered heat (6-monthly only on request if the consortium includes an SME) · illustrative, not an offer

Case 3 – Tissue



Tissue machine, Spain: where the heat comes from and where it goes

Heat source

Humid Yankee-hood exhaust, dew point ~72 °C

Condenser recovers latent heat

Delivers water at 65 °C

HEATEN HBL16 (two-stage)

Two-stage HBL16 Water/Steam

Lift 65 °C → 145 °C saturated steam

COP 2.45

Heat sink

Steam 145 °C directly into the Yankee

Replaces gas-fired steam

Gas-fired steam only as back-up

6 MWth

heat pump capacity

145 °C

saturated steam

COP 2.45

1 MWh power → 2.45 MWh heat

6,500 h

full-load hours per year

In the auction: 145 °C → medium topic · 6 MWth, €8.8m CAPEX · COP ≥ 1.5 → bonus.

Illustrative case – capacity, hours and COP are assumptions

Case 3 – Calculating the Bid



Tissue machine, Spain: break-even, 5-year and 3-year bids

Inputs	
Input	Value
Capacity	6 MWth
Full-load hours	6,500 h/yr
Gas price (ES)	€39.3/MWh
Gas efficiency	92 %
CO ₂ price (EU ETS)	€75/t
Power price (ES)	€108.5/MWh
COP heat pump	2.45
Total project cost	€8.8m

Calculation steps		
1	Heat per year	$\text{capacity} \times \text{full-load hours}$ 6 MWth $\times$ 6,500 h 39,000 MWh
2	Heat cost – gas	$\text{gas price} \div \text{efficiency} + \text{CO}_2 \text{ cost}$ €39.3 $\div$ 0.92 + €16.5 CO ₂ €59.2/MWh
3	Heat cost – heat pump	$\text{power price} \div \text{COP}$ €108.5 $\div$ 2.45 €44.4/MWh
4	Savings per year	$(\text{gas} - \text{heat pump}) \times \text{heat per year}$ €14.8 $\times$ 39,000 MWh €578k
5	Cash result 15 yrs, no funding	$15 \times \text{savings} - \text{project cost}$ €8.66m – €8.8m –€0.14m
6	Break-even bid	$\text{shortfall} \div (5 \text{ years} \times \text{heat per year})$ €0.14m $\div$ 195,000 MWh = €0.7 €1/MWh = €4.5/t
7	Target bid (5-yr payback)	$(\text{cost} - 5 \times \text{savings}) \div (5 \times \text{heat})$ €5.91m $\div$ 195,000 MWh = €30.3 €31/MWh = €138/t · rank €104/t
8	Bid (3-yr payback)	$(\text{cost} \div 3 - \text{savings}) \div \text{heat per year}$ €2.36m $\div$ 39,000 MWh = €60.4 €61/MWh = €272/t · rank €204/t

Eurostat H2 2025 industrial prices excl. VAT · CO₂ cost = 0.202 t/MWh gas $\div$ 0.92 $\times$ €75/t · €/t = €/MWh $\div$ 0.224

Case 3 – Funding & Result



Tissue machine, Spain: what the Heat Auction changes

€1.21m

per year for 5 years at target bid
(€31 × 39,000 MWh)

€6.05m

maximum grant over 5 years

€104/t

ranking price (€138/t × 0.75
bonus)

€363k

completion guarantee (6 % of
max. grant)

Cash result after 15 years (€m, undiscounted)



Payback: 15.2 → 4.9 yrs (€31) → 3.0 yrs (€61)

15 × annual savings – project cost (+ grant) · not an NPV: no discounting, constant prices

Auction check: medium topic ✓ · ≥ 3 MWth & ≥ €2.5m ✓ · COP bonus ✓ · €104/t < €400/t ceiling ✓

Paid annually on metered heat (6-monthly only on request if the consortium includes an SME) · illustrative, not an offer

Case 3 – Plus Spanish CAEs



Tissue machine, Spain: white certificates on top of the Heat Auction

Inputs

Input	Value
Heat per year	39,000 MWh
Gas saved (92 %)	42,391 MWh
Power used (COP 2.45)	15,951 MWh
CAE price (€/MWh, 2025)	€115–140
CAEs issued on	1st-year savings

Combinable with the Heat Auction

IF26 T&Cs: white-certificate schemes (no State resources) are outside the cumulation rules.
 Spain (RD 36/2023): CAE compatible with public aid except FNEE-funded aid; aid must be declared.
 Check overall caps and CAE eligibility per project.

Calculation steps

1	Final energy before	$gas = heat \div efficiency$ $39,000 \text{ MWh} \div 0.92$	42,391 MWh
2	Final energy after	$power = heat \div COP$ $39,000 \text{ MWh} \div 2.45$	15,951 MWh
3	Final energy saved	$before - after$ $42,391 - 15,951 \text{ MWh}$	26,440 MWh
4	CAE value (one-off)	$saved \text{ MWh} \times CAE \text{ price}$ $26,440 \text{ MWh} \times €115\text{--}140$	€3.0–3.7m
5	Option A: keep bid €31	$grant + CAE \text{ on top}$ $€6.05\text{m grant} + €3.0\text{m CAE}$	+€8.9m cash result 15 yrs
6	Option B: bid lower	$(cost - 5 \times savings - CAE) \div (5 \times heat)$ $€2.87\text{m} \div 195,000 \text{ MWh} = €14.7$	€15/MWh = €67/t · rank €50/t

CAE prices: DEKRA market review 2025 (€115–140/MWh) · RD 36/2023 · IF26 Final T&Cs, section IV · illustrative, not an offer

Three Cases Compared



From stand-alone winner to auction-dependent project

	Case 1 Textile (FR)	Case 2 Sugar (DE)	Case 3 Tissue (ES)
Plant · COP	2x HBL4 + MVR, 4 MWth · 3.16	2x HBL4 W/S, 4 MWth · 5.3	HBL16 2-stage, 6 MWth · 2.45
Source → sink	water 90 °C → steam 155 °C	vapour 100 °C → steam 130 °C	water 65 °C → steam 145 °C
Savings/yr · project cost	€391k · €4.6m	€734k · €4.4m	€578k · €8.8m
Target bid (ranking)	€30/MWh = €134/t (€100/t)	€7/MWh = €31/t (€23/t)	€31/MWh = €138/t (€104/t)
Grant over 5 years	€2.70m	€0.84m	€6.05m
Payback: base → target bid	11.8 → 4.9 years	6.0 → 4.9 years	15.2 → 4.9 years
3-yr payback bid (ranking)	€64/MWh (€214/t)	–	€61/MWh (€204/t)
Cash result 15 yrs: base	+€1.3m	+€6.6m	–€0.14m
Cash result 15 yrs: + grant	+€4.0m	+€7.5m	+€5.9m (+€3.0m CAE)

Takeaway: sugar pays off alone, textile slowly, tissue only with the auction – CAEs add on top in Spain.

Eurostat H2 2025 prices · undiscounted, constant prices · target bid = 5-year simple payback by definition · illustrative

Next Steps



The work that decides your bid starts now

7 of 65

IF25 projects use heat pumps – around three quarters resistance-based

Dec 2026

IF26 call opens (expected)

Feb 2027

submission deadline (expected)

- 1** **Oct – Nov**
Measure the waste heat source; request grid connection
- 2** **Nov**
Fix concept and sizing with HEATEN and ESCO/Engineering
- 3** **Dec – Feb**
Bid calculation in the financial information file; submit with Nordic Innovators
- 4** **2027**
Grant agreement; financial close $\leq$ 2.5 yrs, operation $\leq$ 5 yrs

Next step: send us your site data – HEATEN runs a first check against today's list.

Sources: European Commission (IF26 Final T&Cs 24.09.2026; IF25 project list); PNO Innovation (timeline)

FUNDING OPTIONS / SUBSIDIES



Subsidies for industrial heat pumps in Europe



Subsidies for industrial heat pumps in Europe - details per country

Netherlands					
Subsidy Name	Description	Type of subsidy	Amount granted (€)	Type of heat pump	Start & end date
Nieuwste Stimuleringsimpuls (NSI) Accelerated Climate Investment Incentive More information	Subsidy for investments in equipment, systems or measures that reduce CO ₂ emissions. • Group: reducing CO ₂ emissions • Group: reducing CO ₂ emissions • Group: reducing CO ₂ emissions • Group: reducing CO ₂ emissions	Investment subsidy	The maximum subsidy amount is €10 million. The maximum amount of subsidy per project is €500,000.	Industrial heat pumps for heating and cooling	2019 - 2020
Stimuleringsimpuls Energiebesparing (SIE) Stimulus for Energy Efficient Energy Production and Climate Transition (SEET) More information	Subsidy for projects generating large-scale energy savings or reducing CO ₂ emissions. • Phase 1: 2019 • Phase 2: 2020 • Phase 3: 2021 • Phase 4: 2022 • Phase 5: 2023 • Phase 6: 2024	Investment subsidy	Phase 1: 40% Phase 2: 30% Phase 3: 20% Phase 4: 10% Phase 5: 5% Phase 6: 5%	Industrial heat pumps for heating and cooling • Industrial heat pumps for heating and cooling • Industrial heat pumps for heating and cooling • Industrial heat pumps for heating and cooling • Industrial heat pumps for heating and cooling • Industrial heat pumps for heating and cooling	2019 - 2024

26 Subsidies for industrial heat pumps in Europe

Subsidies for industrial heat pumps in Europe - details per country

Netherlands					
Subsidy Name	Description	Type of subsidy	Amount granted (€)	Type of heat pump	Start & end date
Stimuleringsimpuls Energiebesparing (SIE) Stimulus for Energy Efficient Energy Production and Climate Transition (SEET) More information	Subsidy for projects generating large-scale energy savings or reducing CO ₂ emissions. • Phase 1: 2019 • Phase 2: 2020 • Phase 3: 2021 • Phase 4: 2022 • Phase 5: 2023 • Phase 6: 2024	Investment subsidy	Phase 1: 40% Phase 2: 30% Phase 3: 20% Phase 4: 10% Phase 5: 5% Phase 6: 5%	Industrial heat pumps for heating and cooling • Industrial heat pumps for heating and cooling • Industrial heat pumps for heating and cooling • Industrial heat pumps for heating and cooling • Industrial heat pumps for heating and cooling • Industrial heat pumps for heating and cooling	2019 - 2024
Stimuleringsimpuls Energiebesparing (SIE) Stimulus for Energy Efficient Energy Production and Climate Transition (SEET) More information	Subsidy for projects generating large-scale energy savings or reducing CO ₂ emissions. • Phase 1: 2019 • Phase 2: 2020 • Phase 3: 2021 • Phase 4: 2022 • Phase 5: 2023 • Phase 6: 2024	Investment subsidy	Phase 1: 40% Phase 2: 30% Phase 3: 20% Phase 4: 10% Phase 5: 5% Phase 6: 5%	Industrial heat pumps for heating and cooling • Industrial heat pumps for heating and cooling • Industrial heat pumps for heating and cooling • Industrial heat pumps for heating and cooling • Industrial heat pumps for heating and cooling • Industrial heat pumps for heating and cooling	2019 - 2024



Subsidies for Industrial Heat pumps in Europe

Matthis auf dem Graben
Public Funding Manager
matthis.aufdemgraben@heaten.com



Thank you for your attention!