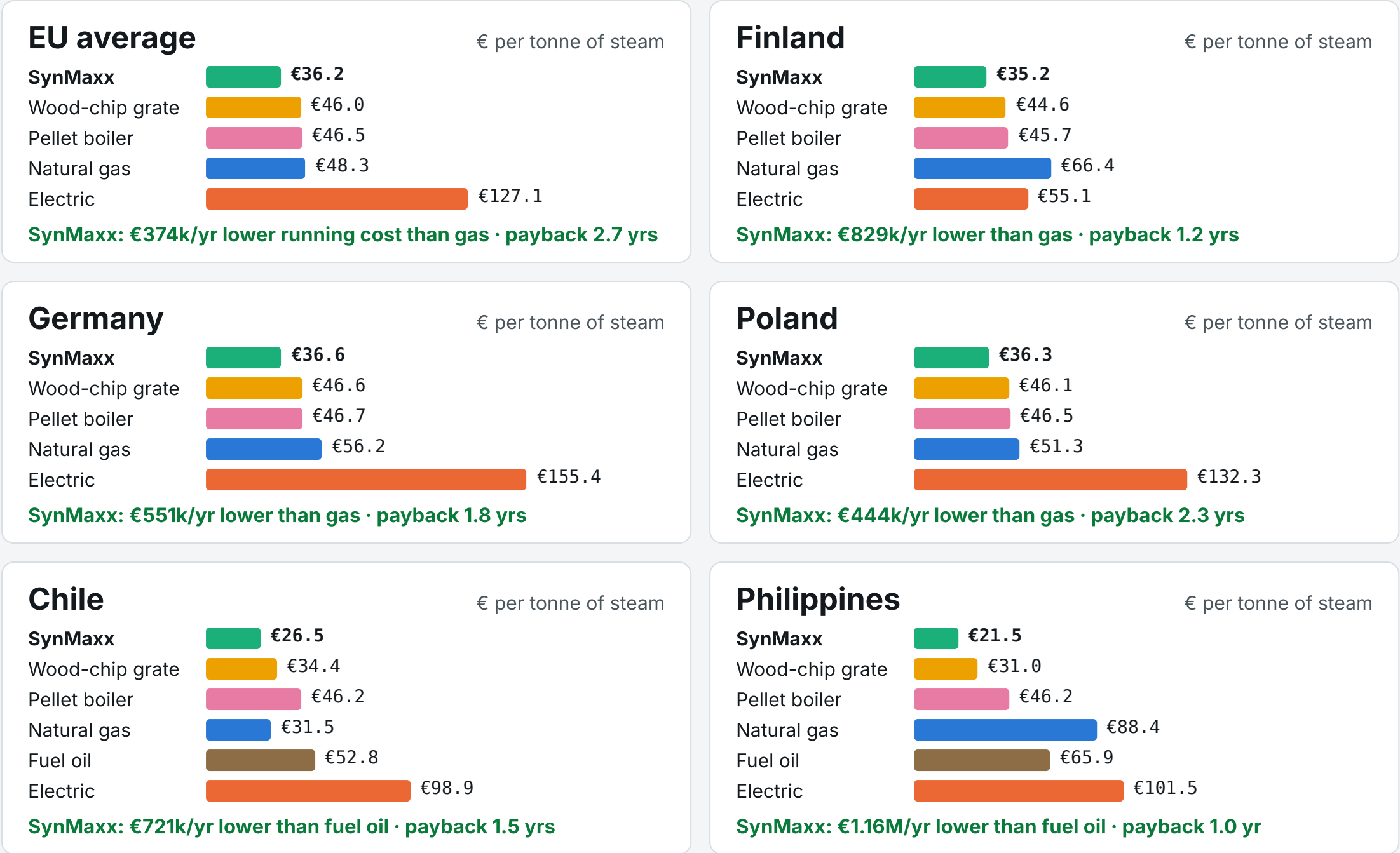


What one tonne of steam costs.

Local biomass, regulated like gas.

Example: 3 MW steam boiler (≈4.6 t/h) running round the clock Mon–Fri and Saturday until 14:00 (≈6,700 h a year). Full cost per tonne of steam: investment, fuel, maintenance, auxiliary power, staff and ash handling. All markets converted to € so they can be compared.

SynMaxx Wood-chip grate Pellet boiler Natural gas Fuel oil Electric



SynMaxx Jenesis: a hybrid burner that makes one controllable flame from controlled conversion of the fuel's solid carbon plus combustion of its volatile gases. Not syngas, not a grate. Local biomass, 5–15 min start-up, modulates like a gas burner. **1–15 t/h (≈0.7–10 MW), 12–100 barg, saturated or superheated steam, optional gas burner backup, CE marked, ready to extend to CHP.**

Running 2 shifts? A grate boiler then wastes about **15%** of its fuel keeping the fire alive and making steam nobody uses. SynMaxx: about 1%. The cost gap to the grate boiler almost doubles.

Founders Series: first 10 units.
Try the online calculator with your own country, currency and prices.

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€ per tonne of saturated steam, VAT excluded, no CO₂ charge on gas included. Energy prices: national statistics and Eurostat non-household prices; Chile and the Philippines converted from local currency at the dated rate shown in the calculator. SynMaxx fuel: dried wood chips or other local biomass, incl. fuel storage. Indicative example; site-specific results vary. All 35 assumptions and their sources are listed at the end of this document.

What does a tonne of steam really cost? Gas, electricity, wood chips and SynMaxx side by side

Levelised cost per tonne of steam, including the boiler investment, fuel, maintenance, auxiliary power and CO₂. Pick a market and a boiler size, or type in your own prices. Every number is shown and can be changed.

Example shown in this PDF: market EU average · boiler 3 MW 4.6 t/h · Round the clock Mon–Fri, Sat until 14:00 · ≈6 700 h/yr · current boiler: Natural gas · currency EUR, energy prices per MWh.
Try it with your own numbers in the online calculator: country, currency, units, fuel prices, plant size and operating hours.

THE TECHNOLOGY

What is SynMaxx Genesis?

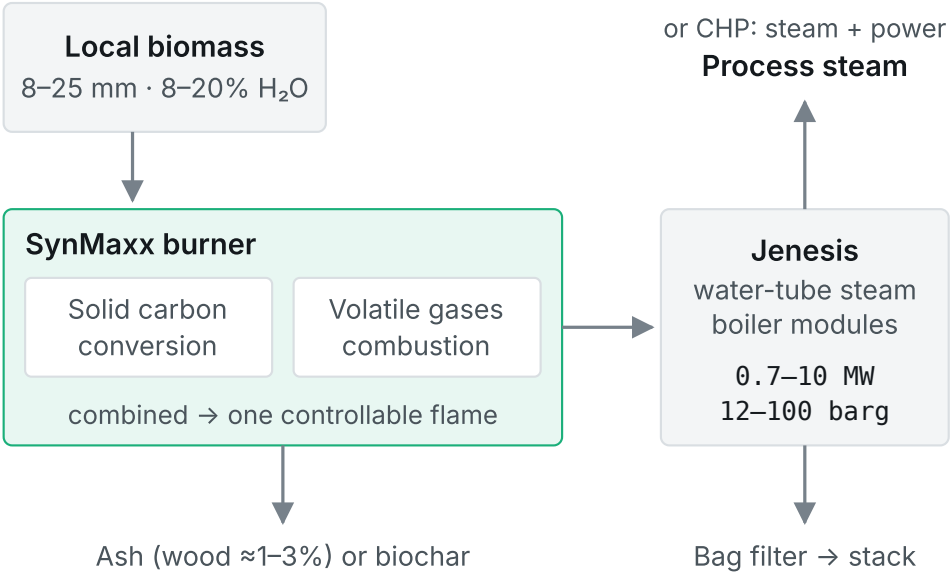
The **SynMaxx burner** is a hybrid technology. It produces the final flame and heat from a partial, controlled combination of two processes: conversion of the carbon in the solid fuel, and combustion of the volatile gases released from it.

Genesis are horizontal water-tube steam boilers fired by the burner. Their tube design takes into account fuels with a low ash melting point, so ash does not foul the heat-transfer surfaces. Burner and boiler are always supplied together: the boiler is designed around the SynMaxx flame and its ash, so that even demanding fuels such as agricultural residues do not foul it, and this is what makes the guaranteed efficiency and emissions possible. Every new fuel is checked before an offer is made. Plants from 1 t/h (≈0.7 MW) to 10 MW are built from modules. The boilers are designed for 12 to 100 barg, for saturated or superheated steam, according to the process data. Depending on the design, the turndown range is 5–35% of rated output.

✓ CE marked ✓ Optional gas burner backup in the same unit

✗ Not a syngas / producer-gas plant ✗ Not a direct solid-fuel burner ✗ Not a grate boiler

How is this different from gasification? A gasifier first turns the fuel into a gas in a separate reactor, and that gas usually has to be cleaned of tar and dust before it is burned in a boiler or engine. In SynMaxx the gases released from the fuel are burned immediately in the same unit, together with the solid carbon, so there is no separate gas cleaning or tar handling, and the steam comes straight from the boiler.

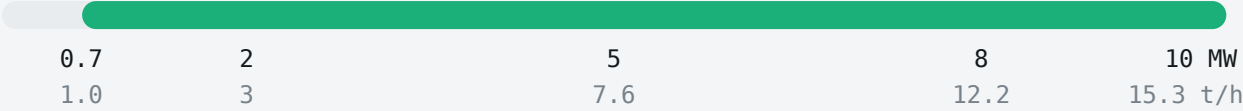


BUILT FOR

0.7–10 MW

1–15 t/h of saturated or superheated steam · 12 to 100 barg, according to the process data · modular design for a new or existing boiler house, with a relocatable container plant as an option · ≈1.3× the footprint of a gas boiler

Modular plant: run only the modules you need, keep one as a spare, and add more as production grows.



Wood and farm biomass Chipped, shredded or pelletised, from your own site, your region or a fuel supplier. Prepared to 25 mm and 8–20% moisture. Wood chips · Shredded clean wood waste · Wood pellets · Straw & straw pellets · Miscanthus · Sunflower husk · Cereal & rice husks · Palm & coconut shells · Sugarcane residues · Other prepared biomass	Fast start 5–15 min to full readiness Hot or cold. A classic biomass grate needs hours.	Modulates like gas follows demand smoothly and fast Output follows the process quickly when steam demand swings, close to a gas burner.
Biochar option a second product	Secure, stable fuel local, storable, no import exposure	Ready to grow into CHP steam today, steam + power later

Controlled carbon conversion allows biochar to be taken out as a by-product instead of ash.	Fuel comes from regional suppliers and can be stockpiled on site for weeks. Steam for critical sites keeps flowing when pipelines, LNG shipments or energy markets are disrupted. Compact and relocatable: the container plant can be installed in a protected location and moved if needed. Several modules and several fuels mean no single point of failure.	The same type of burner fires superheated-steam water-tube boilers with a turbine, producing process steam and electricity. Where the grid is weak or power is expensive, the same plant can generate part of your own electricity. <i>Example:</i> a 12 t/h plant at 38 barg / 380 °C delivers 10 t/h of process steam at 12 barg plus 350 kWe from a synchronous generator, so the plant can also run without a grid connection: after a short start-up supply it covers its own electricity needs.
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SynMaxx at 3 MW (4.6 t/h)

EU average prices · round the clock mon–fri, sat until 14:00 · ≈24 000 t steam a year

With these inputs, SynMaxx steam costs **€36.2 per tonne** instead of €48.3 with your natural gas. That saves about **€374k a year**; the investment of about €1.00 M pays back in about **2.7 years**.

Over 15 years: running your natural gas boiler costs ≈€16.82 M; SynMaxx costs ≈€12.22 M including the investment, ≈€4.60 M less. A natural gas boiler is cheap to buy but expensive to own: the fuel, not the boiler, is the real cost.

Calculation basis: saturated steam at 18 barg (≈ 260 psig), the pressure range most common in industry (up to about 20 barg). SynMaxx Jenesis boilers are built for 12–100 barg (175–1,450 psig); lower pressure costs less, while higher pressure or superheated steam changes the investment. Ask for a calculation for your own pressure.

FUEL SYNMAXX NEEDS · DRIED, SCREENED WOOD CHIPS, 15% MOISTURE

≈ **4,270 t** per year (≈ 18,200 MWh)

≈ **85 t** a week ≈ **15.3 t** per 24 h of operation ≈ **640 kg/h** on average ≈ **4 truckloads** a week (22 t)

This is the quantity to secure from a fuel supplier. Your region's supply can be checked together with you before an offer.

STEAM COST	SAVED VS NATURAL GAS	PAYBACK	INVESTMENT
€36.2 /t	€374k /yr	2.7 years	€1.00 M
-25% vs €48.3/t with your natural gas	fuel, maintenance, staff, ash and CO ₂	investment ≈€1.00 M ÷ saving ≈€374k a year	turnkey, incl. 15% for fuel storage
		▼ Buying a new boiler anyway? SynMaxx costs ≈€723k more than a new natural gas boiler; the saving covers that in ≈1.9 years.	

Also available on request (not included in the calculation above; mention it in your request if you are interested)

- Clean or culinary steam:** for steam in contact with the product (food, beverages, pharmaceuticals), we also supply the clean steam generator.
- Biochar:** SynMaxx can take out biochar as a by-product instead of ash, a second product to sell or use on soil.

Where SynMaxx pays most

The presets above are examples. Wherever your plant is, these are the situations where the numbers are strongest.

Oil, LPG or diesel today Steam raised from fuel oil, LPG or diesel: the biggest saving per tonne of steam.	No gas grid Regions without pipeline gas, islands, and sites at the end of a weak power grid, where a steam turbine can add your own power.	Residues on the doorstep Food, farm and wood industries with their own husks, shells, straw or sawdust, or regions where these are plentiful.
Old boiler, new emission limits Existing boilers that must meet new limits, such as EU rules for existing 1–5 MW plants from 2030.	A tight boiler house Replacing an oil or gas boiler in the existing boiler house, where a grate boiler and its fuel yard would not fit.	Stop-start production Batch processes and plants that stop at night or at weekends: SynMaxx starts in 5–15 minutes and follows the load.

Reserve one of the first 10 units

The first production series is limited to 10 SynMaxx Genesis units between 0.7 and 10 MW. Reserved projects get the earliest delivery slots and launch-partner terms. Once the plant runs, a gas price spike no longer changes what your steam costs.

1 · Site calculation

Send your steam load, pressure, operating hours and the fuels available near you. You get this comparison redone with your own numbers.

2 · See it running

Ask for the demo-plant video, measured data or a live video walk-through: start-up, load changes and flue gas readings in real time. Sent on request to the named contact at your company.

3 · Reserve a slot

A reservation deposit of 10% of the order value, credited in full to the order, secures your production slot and launch-partner terms. Delivery about 4–5 months from order.

Gas backup on request

An optional gas burner in the same unit keeps steam flowing if biomass supply is interrupted. Added only where the site needs it.

CE marked, factory warranty

Manufacturer's warranty on burner and boiler, plus performance figures written into the contract.

Deposit credited

The 10% reservation deposit is deducted in full from the order price.

Your steam, our responsibility

For more than 30 years we have worked side by side with the world's leading names in steam and condensate technology, in well over 100 boiler houses and steam plants across some 20 countries. We commission your plant ourselves and stay with you long after the first tonne of steam.

Talk to us

ProCon SLS

Process Control and Steam Liquid Solutions · Estonia

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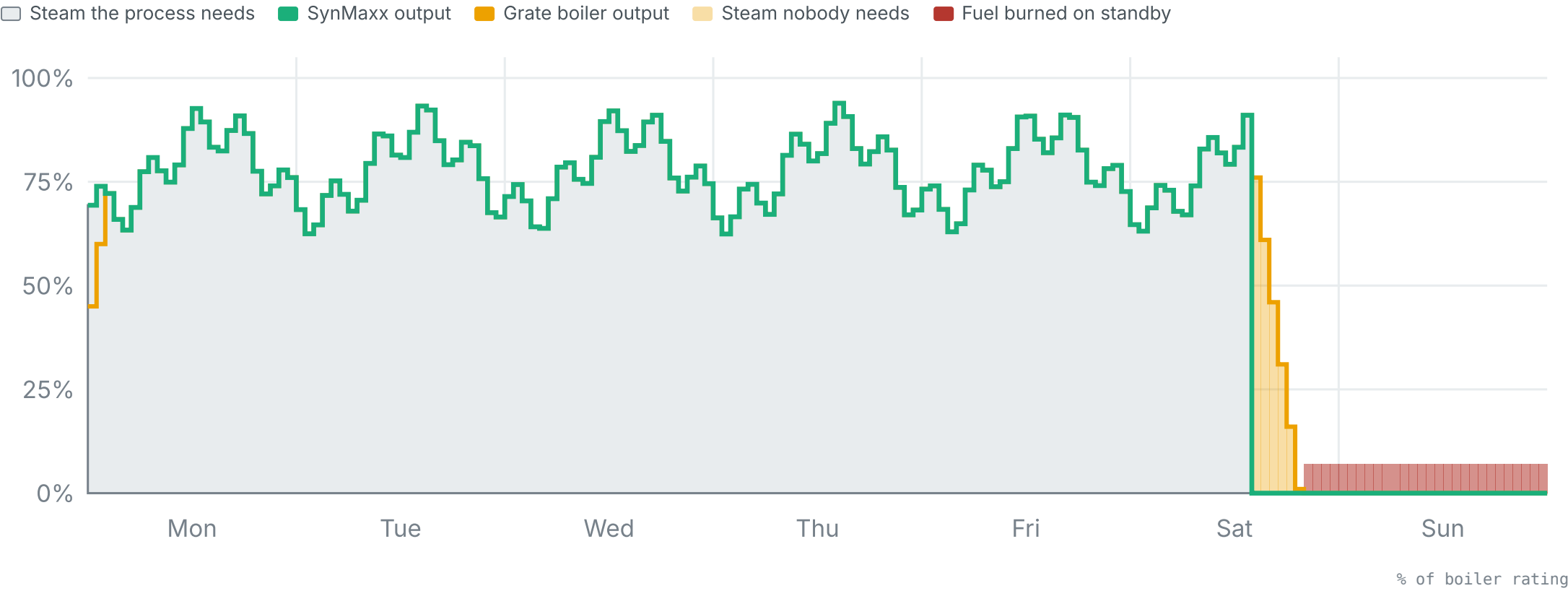
Request a calculation

WhatsApp

One week in the boiler house

EU average prices · 3 MW · round the clock mon–fri, sat until 14:00 · ~6,700 h/yr

Selected size and operating profile. SynMaxx switches off when the process stops and restarts in minutes. A grate boiler keeps its fire alive, cannot go below its minimum load and follows load changes slowly.



GRATE: FUEL WASTED

4%

801 MWh a year, worth €22k

SYNMAXX: FUEL WASTED

0%

22 MWh a year, mostly start-ups

GRATE: UNMET STEAM DEMAND

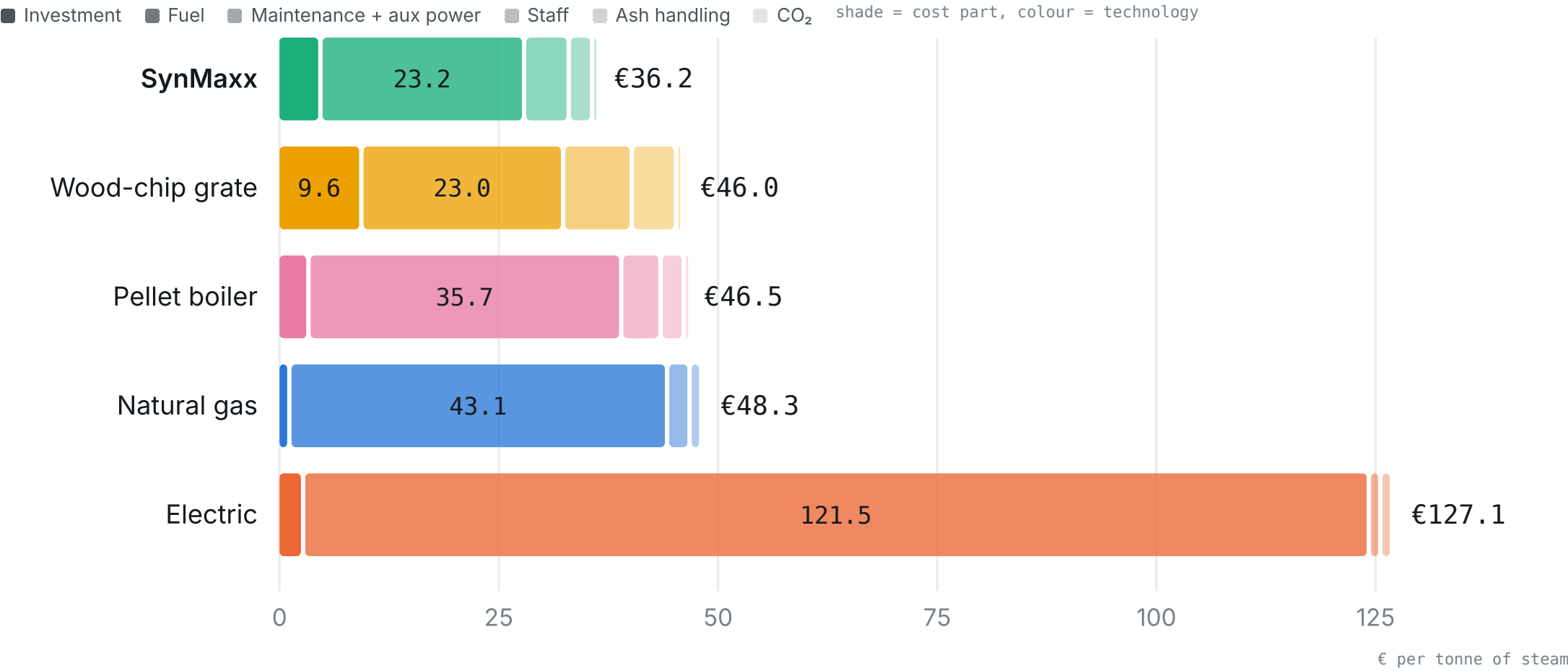
0.4%

of demand not covered on time, because the load rises faster than the grate can follow

Cost per tonne of steam

EU average prices · 3 MW · round the clock mon–fri, sat until 14:00 · ≈6,700 h/yr

What makes up the price of one tonne, at the selected size and market.



€ PER TONNE	INVESTMENT	FUEL	MAINTENANCE + AUX POWER	STAFF	ASH	TOTAL
SynMaxx	4.9	23.2	5.1	2.7	0.3	36.2
Wood-chip grate	9.6	23.0	7.8	5.1	0.6	46.0
Pellet boiler	3.5	35.7	4.5	2.7	0.1	46.5
Natural gas	1.4	43.1	2.6	1.3	–	48.3
Electric	2.9	121.5	1.3	1.3	–	127.1

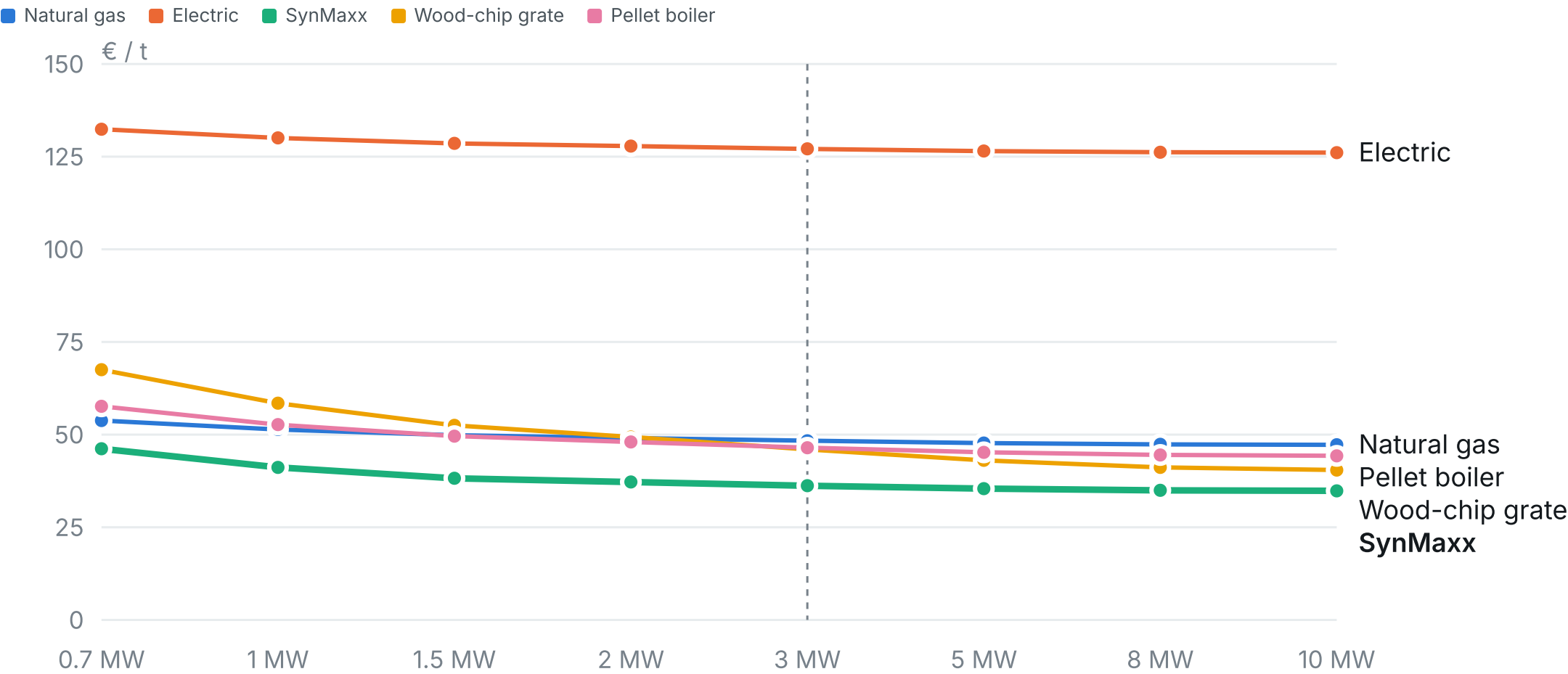
Each technology is shown as the only boiler. It must cover every hour of demand, so it has no choice about when it runs, and electric pays the average electricity price. In practice an electric boiler is often used as a second boiler, running only in hours when electricity is cheap. In those hours it can make steam more cheaply than any fuel, and it can also earn income on grid reserve markets for standing ready to change its load. Whether this pays depends on local hourly prices, network charges and reserve-market income, which vary a lot by country and year.

Option: SynMaxx + electric boiler as a hybrid. SynMaxx can drop to its minimum load or switch off within minutes when electricity is cheap and take over again when the price rises, which a grate boiler cannot do. We calculate a hybrid plant for your site on request.

Across the size range

EU average prices · 3 MW · round the clock mon–fri, sat until 14:00 · ≈6,700 h/yr

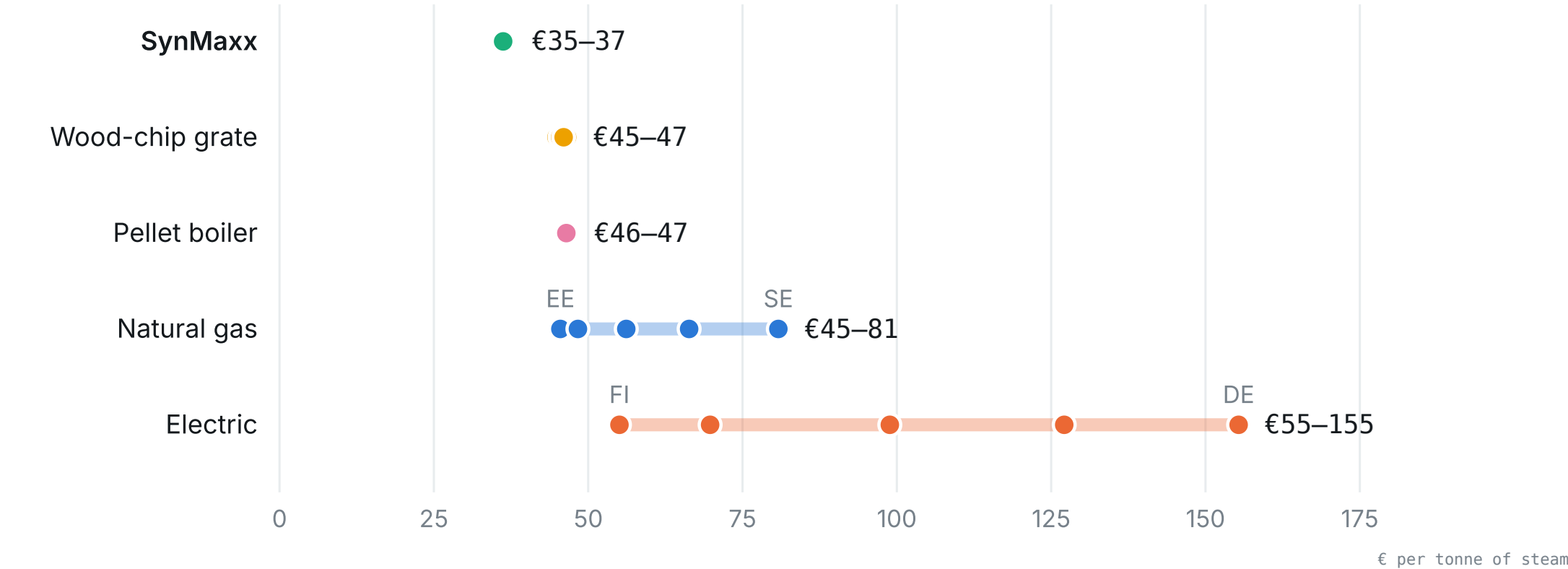
€ per tonne of steam from 0.7 to 10 MW, each technology as the only boiler. Small boilers carry more investment per tonne.



Same boiler, different countries

3 MW · round the clock mon–fri, sat until 14:00 · ≈6,700 h/yr

€ per tonne of steam for each technology with the gas and electricity prices of the European presets. A short line means the cost hardly depends on the country; a long line means it depends heavily on imported energy prices.



€ PER TONNE	FINLAND	SWEDEN	ESTONIA	GERMANY	EU AVERAGE
SynMaxx	35.2	35.4	35.8	36.6	36.2
Wood-chip grate	44.6	44.9	45.5	46.6	46.0
Pellet boiler	45.7	45.9	46.2	46.7	46.5
Natural gas	66.4	80.8	45.5	56.2	48.3
Electric	55.1	69.8	98.9	155.4	127.1

Biomass prices (dried chips, wet chips, pellets) are held equal in all countries, because they come from suppliers in Estonia and Finland. In practice they also vary between countries, though usually much less than gas and electricity.

Investment and running cost

EU average prices · 3 MW · round the clock mon–fri, sat until 14:00 · ≈6,700 h/yr

Selected size. Investment is indicative turnkey cost; your site changes it.

TECHNOLOGY	INVESTMENT	EFFICIENCY	FUEL €/MWH	FUEL PER YEAR	COST €/T	FUEL WASTED	RUNNING COST / YR	SAVING VS CURRENT / YR	PA
SynMaxx	€1.00 M	86%	30.5	4,270 t	36.2	0%	€748k	€374k	
Wood-chip grate	€1.95 M	80%	27.0	8,040 t	46.0	4%	€867k	€255k	
Natural gas (current)	€280k	92%	60.5	17,000 MWh	48.3	0%	€1.12 M	—	
Electric	€600k	99%	183.7	15,800 MWh	127.1	0%	€2.96 M	–€1.84 M	
Pellet boiler	€725k	89%	48.4	3,700 t	46.5	0%	€1.02 M	€97k	

Running cost / yr: fuel, maintenance, auxiliary power, staff and ash handling, without the investment. **Saving vs current / yr:** how much lower the annual running cost is than with the boiler selected as your current one. **Payback, current boiler kept:** the full investment divided by the annual saving (simple payback, no interest). The cost per tonne (€/t) also includes the investment, with interest.

▼ Investment case for your bank NPV, IRR, loan cover, sensitivity · open

EU average prices · 3 MW · round the clock mon–fri, sat until 14:00 · ≈6,700 h/yr

SynMaxx replacing a natural gas boiler: investment €1.00 M, running-cost saving €374k a year.

Financed by loan70%

Loan interest %6

Loan term, years7

Investment grant0%

NET PRESENT VALUE

€2.20 M

over 15 years at 8.0%

INTERNAL RATE OF RETURN

37 %

return on the SynMaxx investment

PAYBACK

2.7 years

simple; at 8.0% interest 3.1 years

LOAN COVER (DSCR)

3.0 x

saving €374k vs loan payment €126k a year

CO₂ AVOIDED

3,434 t/yr

worth €155k a year at €45/t (EU ETS2)

Cumulative cash flow

Based on saturated steam at 18 barg; see the calculation basis above.



What if prices change?

SCENARIO	SAVING / YR	PAYBACK	NPV	IRR
Today's prices	€374k	2.7 yrs	€2.20 M	37%
Natural gas price –30%	€65k	15.4 yrs	–€445k	–0%
Natural gas price +30%	€682k	1.5 yrs	€4.84 M	68%
SynMaxx fuel price +30%	€207k	4.8 yrs	€771k	19%
Investment +20%	€374k	3.2 yrs	€2.00 M	30%
Operating hours –30%	€262k	3.8 yrs	€1.24 M	25%

Break-even prices. SynMaxx has the lower running cost as long as natural gas costs more than **€39/MWh** (today €61/MWh), or as long as the SynMaxx fuel costs less than **€218/t** (today €130/t).

The existing boiler stays in place as back-up, so the whole SynMaxx investment is compared with the running-cost saving. Prices are held at today's level for the whole period, with no inflation and no price-rise assumptions. NPV and IRR use the interest rate and the number of years set on the left. DSCR (debt service coverage ratio) = annual saving ÷ annual loan payment; banks usually look for at least 1.2–1.3. CO₂ counts only direct emissions at the site.

What the numbers leave out

Operating characteristics that decide whether a boiler fits the process.

	START-UP	RESPONSE TO LOAD CHANGES	FOOTPRINT	FUEL PRICE & SUPPLY
SynMaxx	5–15 min	gas-burner-like	≈1.3× gas	local fuel
Wood-chip grate	hours	slow, min ≈30%	large, with storage	local fuel
Pellet boiler	15–30 min	good, min ≈30%	compact, with silo	premium fuel price
Natural gas	minutes	fast	compact	import, CO₂
Electric	minutes	fast	compact	spot price, grid capacity

Flue gas emissions

Manufacturer's guaranteed values for a 12 t/h, 18 barg reference plant, against EU limits for new medium combustion plants (Directive 2015/2193). mg/Nm³.

	BIOMASS	EU LIMIT	GAS BURNER	EU LIMIT
Reference O ₂	6%	6%	3%	3%
Dust	≤20	20–50 ¹	≤5	–
NO _x as NO ₂	≤180	300–500 ¹	≤60	100
SO ₂	≤50	200 ²	≤10	–
CO	≤100	–	≤30	–
TOC / VOC	≤10	–	≤10	–
Boiler efficiency	≥88%		≥92%	
Ash	depends on fuel; wood 1–3%		none	

¹ Depends on plant size: 1–5 MW dust 50, NO_x 500; 5–20 MW dust 30, NO_x 300; above 20 MW dust 20, NO_x 300. ² Does not apply to plants firing only woody biomass. – = no EU limit set. The Directive applies to plants from 1 MW; smaller plants (0.7 MW) follow national rules. National or local permits can be stricter. Bag filter included in SynMaxx price. Fuel: chips, pellets or agricultural biomass, 8–25 mm, 8–20% moisture.

Assumptions and sources ▼Close

Every figure in this calculator is referenced: 35 assumptions and sources, from Eurostat and national statistics to manufacturer data. Open to see them all.

- **Steam:** 1 t/h saturated steam at 18 barg from 105 °C feedwater ≈ 0.655 MW heat.
- **SynMaxx investment:** manufacturer price €315 000 for a 2 t/h (≈1.3 MW) biomass-only plant without container (a relocatable container plant costs about €35 000 more) and about €2.475 M for a biomass-only 12 t/h plant at 18 barg (€2.5 M with gas-burner readiness, which adds about €25 000); scaled in between and below. Prices are for 18 barg; boilers up to 12 barg belong to a lower pressure class and cost less (a biomass-only 18 t/h plant at 12 barg is quoted at about €2.3 M), so for low-pressure steam the results here are on the conservative side. Fuel storage and import cost as set in the inputs.
- **SynMaxx:** performance figures (efficiency, start-up time, turndown range, emissions) are manufacturer design data, to be confirmed by measurements at the first demo plant. Efficiency 86% (82–90% depending on fuel quality). Maintenance €5/MWh and auxiliary power 1.5% are estimates until operating data from the first demo plant is available.
- **Staff:** per shift, scaled with plant size: SynMaxx and pellet boilers (automatic feed from a silo) 0.25 up to 1 MW, 0.4 up to 2 MW, 0.5 at 3 MW, 0.75 at 5 MW, 1 from 8 MW; grate boiler 1.5 times that (operator plus loader driver) plus €25 000 a year for the wheel loader; gas, oil and electric boilers half of the SynMaxx value; €3 000 per person per month including employer taxes; our estimates, editable. The KPI payback is on the full SynMaxx investment with the existing boiler kept; the table compares two new installations.
- **Operating profile:** one typical week, repeated for as many weeks as the annual operating hours require (50 weeks by default). SynMaxx follows demand down to its minimum load (turndown range 5–35% depending on the design; 20% used unless changed) and needs about 15 minutes at half fuel input to start. The grate boiler cannot go below its minimum load, changes load at a limited rate per hour and burns standby fuel when no steam is needed; steam above demand is lost. Gas and electric boilers follow demand without losses. These grate values are typical estimates and can be changed.
- **Sizes above 12 t/h (≈7.9 MW)** are extrapolated from the largest priced configuration.
- **Comparison boilers** (indicative turnkey estimates): pellet steam boiler €95k + €210k/MW, 89%, min. load 30%, start about 15–30 min; gas €40k + €80k/MW, 92%, gas connection not included; electric €30k + €190k/MW incl. grid connection, 99% (grid connection is the main and most site-specific cost of an electric boiler: from a few MW upwards it may need a new medium- or high-voltage connection costing far more than assumed here, or the capacity may not be available at all); wood-chip grate €0.81 M × MW^{0.8}, 80%, maintenance €8/MWh.
- **Oil boilers** (shown when selected as your current boiler): light fuel oil boiler €60k + €85k/MW, 90%, maintenance €4/MWh; shale oil boiler €80k + €95k/MW incl. heated tank, 88%, maintenance €6/MWh. Light fuel oil: national average heating oil prices of 5 October 2026 (EU Weekly Oil Bulletin, via fuel-prices.eu), VAT removed (Finland 25.5%, Sweden 25%, Estonia 24%, Poland 23%, Italy 22%, Latvia, Lithuania, Czechia and Romania 21%, Germany 19%; Croatia 25%, Ireland 13.5%), 10.0 kWh/L; these are

- retail prices, and large industrial buyers usually pay somewhat less. The same price applies to diesel used as boiler fuel; road diesel carries higher tax. LPG boiler €55k + €85k/MW incl. tank, 92%, maintenance €3/MWh; LPG €1.00/kg without VAT, 12.8 kWh/kg ($\approx$ €78/MWh), our estimate: LPG prices vary widely between countries and contracts, so enter your own price. Shale oil (shown for Estonia and “Your country” only, as it is sold as a boiler fuel mainly in Estonia): about €50/MWh delivered ($\approx$ €550/t at 11.0 MWh/t), indicative Estonian industry information from October 2026, to be confirmed; enter your own price. The standard excise on oil shale fuel oil is €481 per 1 000 kg ($\approx$ €44/MWh; the increase planned for May 2026 was cancelled, the next is planned for May 2027), so a user paying full excise pays more than this. Shale oil boilers also carry a CO₂ cost from 2028 under EU ETS2 (0.279 t CO₂/MWh), which is not included unless set with the CO₂ slider. CO₂: 0.267 t/MWh for light fuel oil, 0.279 t/MWh for shale oil, 0.227 t/MWh for LPG, 0.202 t/MWh for gas.
- **Today's gas price** (optional): adds €55/MWh to the Eurostat H2 2025 gas price, the rise in the Dutch TTF wholesale price from about €32/MWh a year earlier to about €87/MWh on 14 October 2026 (Trading Economics). Network charges and taxes are assumed unchanged. Wood-chip prices often rise as well when gas becomes expensive; they are not adjusted here.
 - **Ash**: calculated from the ash content and the ash-handling price entered in step 3, for every biomass boiler. Default ash content, % of dry fuel: dried, screened wood chips 1.5; wet chips for the grate boiler 2; wood pellets 0.5; shredded clean wood waste 2; miscanthus 3; straw 6; sunflower husk and other agricultural residues 8. Wood fuels usually contain 1–3% ash, rarely up to 4%; agricultural residues such as cereal residues and sunflower husk about 8%, rice husk considerably more. Default ash handling €150 per tonne of ash, our estimate; where ash is used as fertiliser it can cost nothing. With the biochar option, the residue is taken out as biochar instead of ash, a product to sell or use on soil rather than a disposal cost; biochar keeps part of the fuel's energy, so it pays where it has a market. The biochar option is not included in the calculation.
 - **Gas and electricity**: Eurostat, non-household prices, 2nd half 2025, excluding VAT and recoverable taxes (gas band 10–100 TJ/yr, electricity 500–2000 MWh/yr). Existing national energy taxes are included in these prices. Source file: Eurostat Statistics Explained figures for gas and electricity, 2025 S2 (data extracted April 2026). Electricity is held at the same price for every boiler size. In practice, larger users pay less per MWh (an electric boiler of a few MW uses far more than this consumption band), but they also face high grid-connection and capacity charges, and at the upper end of the size range such a connection may not be available at all.
 - **Fuel prices (supplier prices, Estonia/Finland)**: SynMaxx: dried, screened wood chips €130 per tonne delivered, 10–20% moisture (15% used), $\approx$ 4.3 MWh/t, which gives €30/MWh. Wood-chip grate: wet chips, 30–55% moisture, €27/MWh. Pellet boiler: premium wood pellets €230/t, $\approx$ 4.75 MWh/t, which gives €48/MWh. SynMaxx can also burn pellets or prepared agricultural residues; choose the fuel in the inputs. Other SynMaxx fuels, our estimates (delivered, without VAT): shredded clean wood waste €70/t, 15% moisture; straw pellets €170/t, 10%; shredded straw €90/t, 15%; chopped miscanthus €110/t, 15%; sunflower husk pellets €140/t, 10%; other agricultural residues €110/t, 12%. Local prices vary widely. Every SynMaxx fuel price is for fuel ready to use (8–25 mm, 8–20% moisture); chopping, crushing or drying would add to it.
 - **Asia-Pacific presets** (prices without VAT or GST; our conversions and estimates as stated): **New Zealand**, NZ\$1 = €0.50 (14 Oct 2026): electricity 21.4 c/kWh, MBIE 2024 industrial average; gas $\approx$ NZ\$25/GJ, our estimate for a mid-size user between the MBIE 2024 industrial (4.4 c/kWh, dominated by very large users) and commercial (10.1 c/kWh) averages, with domestic supply falling; diesel NZ\$3.21/L at the pump on 15 Oct 2026 less GST; wet wood fuel $\approx$ NZ\$12/GJ and dried, screened chips $\approx$ NZ\$22/GJ (€170/t), our estimates from Bioenergy Association delivered-cost data (in-forest residues NZ\$13.5–15/GJ, sawmill chip NZ\$17/GJ, August 2026); import cost 10%, assuming no duty under the EU–New Zealand trade agreement. **Indonesia**, €1 = Rp 20 445 and US\$1.14 (ECB, 1 Jul 2026): electricity PLN tariff I-3 Rp 1 114.74/kWh (Q3 2026); gas US\$13/MMBtu, within the US\$11.5–15 that manufacturers pay for gas beyond the HGBT quota (HGBT US\$7, regasified LNG about US\$21); diesel Dextrite Rp 23 700/L from 1 Sep 2026 less 12% VAT; palm kernel shell about Rp 1 000 000/t delivered (Java, 2026), 12% moisture, ash 3%; import cost 20%, including the 10% MFN duty on steam boilers (an EU–Indonesia trade agreement is signed but not yet applied). Comparison boiler prices are the European estimates.
 - **Croatia, Ireland, Slovakia and Moldova presets**: gas and electricity from the same Eurostat source (H2 2025). Ireland: the Support Scheme for Renewable Heat pays an operating tariff for biomass heat for 15 years (5.66 c/kWh up to 300 MWh a year, 3.02 c/kWh up to 1 000 MWh, then 0.50 and 0.37 c/kWh), not included in the results. Slovakia: no national heating oil price is published, so the EU average is used. Moldova: diesel at the ANRE maximum price of 33.06 lei/L (August 2026), VAT removed, converted at about 19.75 lei/€; import cost 10%; indicative.
 - **United Kingdom and Ukraine presets** (without VAT): **United Kingdom**, £1 = €1.163 (ECB, 1 Jul 2026): DESNZ Quarterly Energy Prices September 2026, manufacturing industry averages for Q2 2026 (provisional), which exclude the Climate Change Levy; the levy from 1 April 2026 (0.801 p/kWh on gas and electricity) is added, giving gas 4.65 p/kWh and electricity 18.2 p/kWh; gas oil 9.34 p/kWh (oils and biomass do not pay the levy). Wood fuel prices are held at the Nordic level. Import cost 10%, assuming no duty on EU-origin goods under the EU–UK trade agreement. **Ukraine**, indicative, €1 = 50.31 UAH (NBU, 12 Oct 2026): gas 23 500 UAH per 1 000 m³ incl. VAT (Naftogaz business plan, October 2026) plus 663 UAH transmission, without VAT, plus $\approx$ 1 500 UAH for distribution (our estimate), at 9.4 kWh/m³; electricity: day-ahead base index for 1–20 August 2026, 7 277 UAH/MWh without VAT (Market Operator), plus $\approx$ 2 000 UAH/MWh for transmission, distribution and supply (our estimate); winter prices were much higher (above 12 000 UAH/MWh on the day-ahead market in February 2026); diesel 98.46 UAH/L average on 6 Oct 2026 (A-95 monitoring), without VAT; sunflower husk pellets from about 8 000 UAH/t (wholesale, 10 Oct 2026; taken as including VAT, so €133/t without VAT), loose sunflower husk about 3 150 UAH/t (March 2026) for the grate boiler; import cost 10%, assuming no duty on EU goods under the EU–Ukraine trade agreement.
 - **CO₂**: natural gas 0.202 t CO₂/MWh fuel. Biomass counted as zero under EU rules. EUA (ETS1) traded around €82/t in early October 2026.
 - Results are indicative and exclude buildings, permits and subsidies. A site-specific calculation needs the steam load profile, pressure and local fuel offer.
 - **Philippines and Latin America presets** (prices without VAT; our conversions; exchange rates from central banks or market rates, October 2026): diesel and LPG from official or press-reported government prices (Philippines DOE, Chile CNE, Costa Rica RECOPE, Dominican Republic MICM, Guatemala MEM); electricity from published tariffs (ENSA Panama, Costa Rica medium-voltage tariff, Guatemala CNEE) or GlobalPetroPrices, several as estimates for a medium industrial customer. No pipeline natural gas for industry in the Philippines, Guatemala, Costa Rica, Dominican Republic or Panama: the gas field uses the LPG price there. **Biomass prices for these markets are our estimates**, because no current published prices were found; ask your local supplier. Import duty: 0% on EU steam boilers under the EU–Chile Interim Trade Agreement and the EU–Central America Association Agreement; 10% MFN in the Philippines; Dominican Republic under the EU–CARIFORUM agreement, check your duty line. Guatemala has suspended fuel taxes on diesel until 31 Dec 2026.
- [Eurostat: non-household gas prices, 2nd half 2025](#)
 - [Eurostat: non-household electricity prices, 2nd half 2025](#)
 - [Konkurentsiamet: electricity and gas market 2025](#)
 - [European Commission: ETS2](#)
 - [DESNZ: Quarterly Energy Prices, September 2026](#)
 - [HMRC: Climate Change Levy rates from 1 April 2026](#)
 - [Naftogaz: gas prices for business](#)
 - [Market Operator \(Ukraine\): day-ahead price index, August 2026](#)
 - [Teagasc: Ireland's Support Scheme for Renewable Heat](#)
 - [Logos Press: Moldova diesel price, August 2026](#)
 - [MBIE via Figure.NZ: commercial and industrial electricity prices, New Zealand](#)
 - [Bioenergy Association: NZ woody biomass residues and resources 2026](#)
 - [WoodCentral: New Zealand gas transition loan scheme, May 2026](#)
 - [Electricity Authority \(NZ\): what was behind high wholesale electricity prices, winter 2024](#)
 - [Jakarta Post: gas shortages and industrial gas prices, June 2026](#)
 - [Investortrust: PLN tariffs Q3 2026](#)
 - [EU Directive 2015/2193 on medium combustion plants](#)
 - [S&P Global: EU carbon prices, 5 Oct 2026](#)

- [CNE Chile: monthly report, September 2026](#)
- [European Commission: EU–Chile Interim Trade Agreement](#)
- [CNEE Guatemala: electricity tariffs Aug–Oct 2026](#)
- [JASEC Costa Rica: electricity tariffs 2025](#)
- [RECOPE Costa Rica: fuel prices, May 2026](#)
- [PhilRice: rice husk as an energy resource](#)