

New version released

5.1



Version 5.1 revolutionises the
underlying data structure.



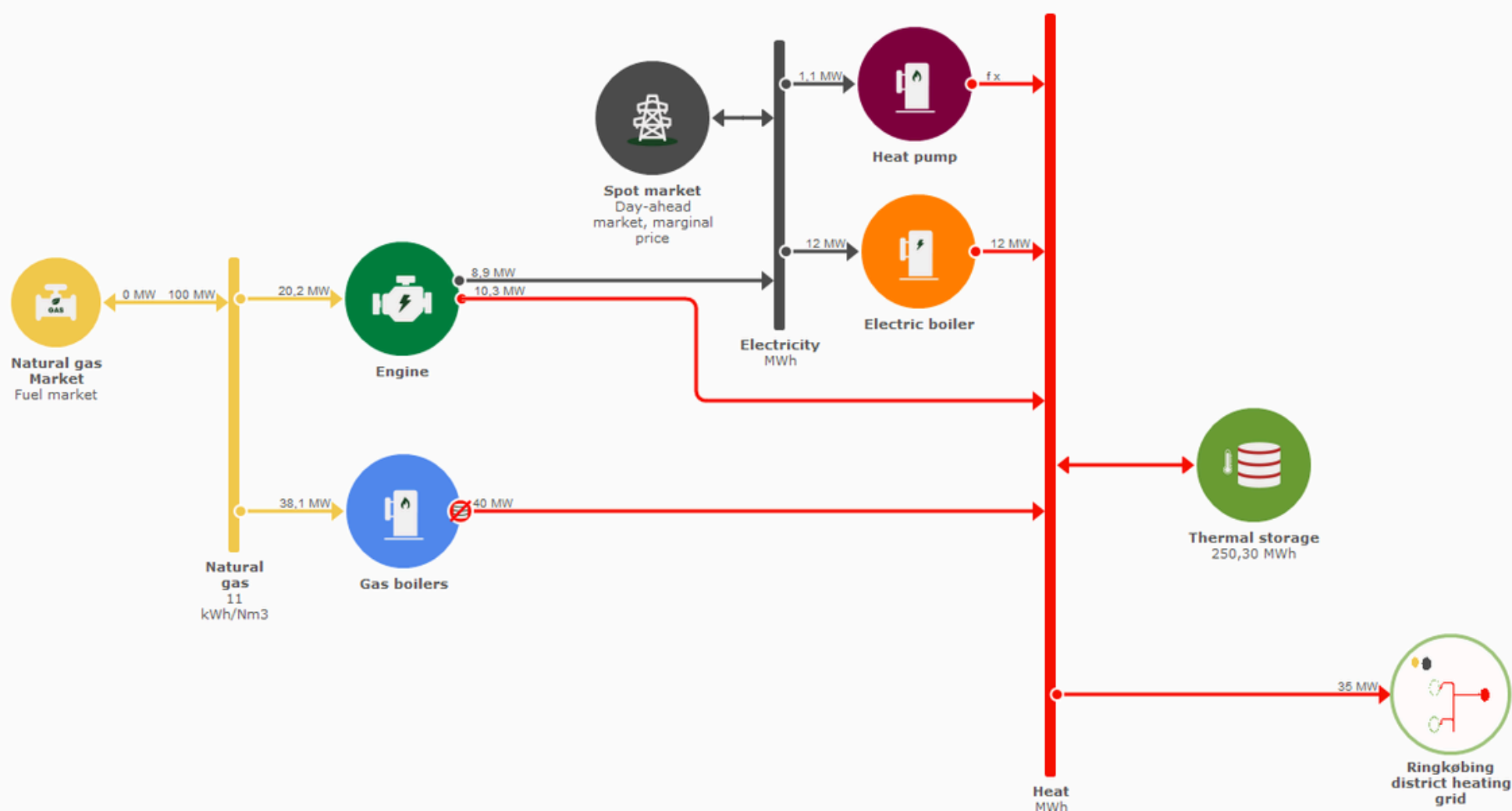
“This update all in all is very appreciated and valuable. The development with resources, markets and new economics bring the software to **a new level** and opens up new possibilities in the use of the software.”

Urs Truttmann

Technology Manager at AEW Energie AG



→ UI enhancements



Distribution bars

A new graphical feature acting as a distribution bar, visually connecting all inputs and outputs from conversion units, demands, and storages.



→ Professional reporting

11-03-2026 11:10:39

Energy conversion, annual

Danish cogeneration plant with more sites_REGION module(7).eppx

Ringkøbing Fjernvarmeværk

Calculated period: 01-2026- 12-2026


Heat				
The Rindum central				
Demand loss consumption transmission and export	Quantity MWh		Share %	Peak MW
Sent to Ringkøbing district heating grid	99.950,8		100,00	35,00
Total	99.950,8		100,00	
Production transmission and import	Quantity MWh		Share %	Peak MW
Heat pump	22.130,2		22,14	4,89
Engine	29.530,1		29,54	10,30
Electric boiler	25.704,0		25,72	12,00
Gas boilers	22.586,5		22,60	35,03
Total	99.950,8		100,00	
Solar collector field				
Demand loss consumption transmission and export	Quantity MWh		Share %	Peak MW
Storage loss	29,1		0,14	
Loss on transmission from Ringkøbing district heating grid	43,8		0,21	
Sent to Ringkøbing district heating grid	20.400,2		99,64	23,66
Total	20.473,0		100,00	
Production transmission and import	Quantity MWh		Share %	Peak MW
Solar collector	13.939,2		68,09	22,50
Received from Ringkøbing district heating grid	6.533,8		31,91	19,87
Total	20.473,0		100,00	
Ringkøbing district heating grid				
Demand loss consumption transmission and export	Quantity MWh		Share %	Peak MW
Heat demand	113.510,5		94,32	31,42
Loss on transmission from Solar collector field	43,8		0,04	
Loss on transmission from The Rindum central	262,8		0,22	
Sent to Solar collector field	6.533,8		5,43	19,87
Total	120.351,0		100,00	
Production transmission and import	Quantity MWh		Share %	Peak MW
Received from Solar collector field	20.400,2		16,95	23,66
Received from The Rindum central	99.950,8		83,05	35,00
Total	120.351,0		100,00	
Electricity				
Demand loss consumption transmission and export	Quantity MWh		Share %	Peak MW
Heat pump	7.469,9		13,42	1,12
Electric boiler	25.704,0		46,19	12,00
Spot market Export	22.475,4		40,39	8,90
Total	55.649,3		100,00	
Production transmission and import	Quantity MWh		Share %	Peak MW
Engine	25.516,3		45,85	8,90
Spot market Import	30.133,0		54,15	13,12
Total	55.649,3		100,00	
Natural gas				
Demand loss consumption transmission and export	Quantity MWh	Quantity Nm3	Share %	Peak MW
Engine	57.913,4	5.264.854,7	72,91	20,20
Gas boilers	21.513,6	1.955.783,1	27,09	33,37
Total	79.427,0	7.220.637,8	100,00	
Production transmission and import	Quantity MWh	Quantity Nm3	Share %	Peak MW
Natural gas Market Import	79.427,0	7.220.637,8	100,00	53,57
Total	79.427,0	7.220.637,8	100,00	




Updated reports


Clean, targeted updates to reporting reflect the new generalised data structure for better clarity and professional presentation.



→ From energy types to “Resources”

 Heat

 Color 2  ... Name: 

Unit 

Restricted transmission between sites

Resources

The traditional categories of heat, electricity, cooling, and fuels have been replaced by a universal Resources system.



Infinite variety

Define any resource, from natural gas and water to methanol or heat at specific temperatures.

Natural gas

Color 1 Name:

Unit: Calorific Value:

Select energy measuring unit for reports:

Measuring unit used in graph and export:

Restricted transmission between sites

More Units

Unit name	Conversion value	Conversion ratio
kg	0,84	kg/Nm3

+ -

Enhanced units

Access more measuring units and customise resource settings via the intuitive left-side menu.

Seamless migration

Files from version 5.0 automatically convert original energy types into the new resource format.



→ Transmissions
and sites

5.1

The new generalised structure
allows for restricted transmission
of **any** resource type.



Solar collector field _ Rindkøbing diistrict heating grid

Color 11 Name: Solar collector field _ Ri

Energy type: Heat

Site A: Heat, Cooling, Process Heat

Site B: Ringkøbing district hea

Non availability periods

Site A can transmit to B

Site B can transmit to A

Type of Transmission

Simple (Capacity and loss) Hydraulic

Capacity [Cap]: 30,00 MW

Loss: 10,00 kW

Flexible routing

Easily switch between standard and hydraulic settings on transmissions between sites to ensure precise modelling.

Hydraulic calculations

Support for multiple thermal flow-based systems.



→ Universal demands

5.1

Specify a demand for any resource type, including fuels.



New Oxygen demand

Color 14 Name: Oxygen demand Energy type: Oxygen

Development of Demand in Planning Period

Demand in Specified year

Symbol: OD1

Demand: Fixed Calculated 01-2023

Demand depends on external conditions

Fixed profile of demand

Monthly amounts

Month	[kg]
January	849,3
February	767,1
March	849,3
April	821,9
May	849,3
June	821,9
July	849,3

10000,0 kg

As timeseries

As timeseries function

Move timeseries on

Weekly basis Date basis

Developing over the years

Restricted period

Demand window

The Demand window works the same way as before, offering several ways to define demand:

- Degree-day dependent demand
- Monthly values
- Time series functions



→ Conversion

Engine

Name: Connected to Site:

Technical Operational

Production unit type:

Input(s):

Output(s):

Load change restrict

Power curves

Heat
 Electricity
 Cooling
 Process Heat
 Natural gas

Operation	Power Curves Input		Power Curves Output	
	Natural gas input		Heat output	Electricity output
Performance	MW		MW	MW
Linear		20,2	10,3	8,9

Enable formulas in power curve

Conversion units

In the conversion units, you can choose from predefined conversion units and select the input and output types from the included resources.



→ Overhauled storage management

5.1

Fuel storage is no longer nested within fuel definitions; it is now **a standalone component**, allowing for multiple storages of the same fuel type.



Hydrogen 200 bar Storage

Color 12 Name: Hydrogen 200 bar Storage Energy type: Hydrogen 200 bar

Capacity

Max Capacity 12*

Utilization

Capacity (01-01-2023) 3060,00 kg

General
General
Battery
Thermal
EVs
Hydro pump station

Non availability periods

Charging / Discharging

Storage loss

Storage content at start and end of calculation $6 \cdot 17 \cdot P_{el}()$ kg

Cross-resource capability

Toggle between thermal and electrical storage types for any resource.

New restrictions

Include charging/discharging restrictions on thermal units and account for losses in electrical storage.



→ Smarter markets

5.1

Create markets for **any type** of resource, such as electricity, heat, or natural gas.



Spot market

Color 3 Name: Spot market Energy type: Electricity

Market type: Day-ahead market, marginal price

Settlement prices
Wholesale electricity prices West Denmark 2022

pl: Cooling Process Heat
Natural gas

CO2 emission factor for import
Replaced CO2 emission factor for export
CO2_DK2021() g / kWh

Market Restrictions

Operation dependent on other markets

Flexible multi-market trading

Set up multiple markets for the same resource, enabling units like CHP plants to export to the most suitable market at any time.

Hydraulic calculations

For each market, you can define grid restrictions and CO₂ parameters for both import and export.

Exporting

Markets enable the export of resources, including electricity, heat, methanol, and more.



→ Simplified economics

5.1

Payment modelling has been simplified and unified. Instead of using unit-specific payment definitions, all payments now follow a clear, **consistent structure.**



Electricity tax

Name:

Unit Selection

Payment concerns	Unit	Energy type
<input type="text" value="Energy conversion unit"/>	<input type="text" value="Electric boiler"/>	<input type="text" value="Electricity"/>

Type

Formula selecting amounts in each timestep

Price per Unit

DKK/MWh

Include in operation strategy

Payment included in operation strategy calculation

Define payments

Based on resource flows – for example, Output(CHP; heat) or Input(Boiler 1; natural gas) – making economic modelling more intuitive, transparent, and flexible.

Download
energyPRO 5.1 today



-emd

→ Think energy
differently