

## TECHNICAL DETAILS

Operating environment	Outdoor container
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Dimensions: L x W x H	12,0 x 4,9 x 3,2 m
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Weight	32 ton
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Power engine	Turbec T100 micro turbine
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Compressor pressure	4,5 bar
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Turbine inlet temperature	950 °C
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Speed	70 000 rpm
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Oil consumption	< 3 litres/6000 h
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### Power output

Electric power	100 kW
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Frequency	50 Hz (60 Hz)
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Nominal current	120 A
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Nominal voltage	400/230 V AC, 3-ph
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Startup voltage	400 V AC, 50 Hz
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Startup power	max 15 kW
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### Heat output

Heating capacity	300...350 kW
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Heating media	Warm water
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Temperature	80...150 °C
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Nominal pressure	16 bar
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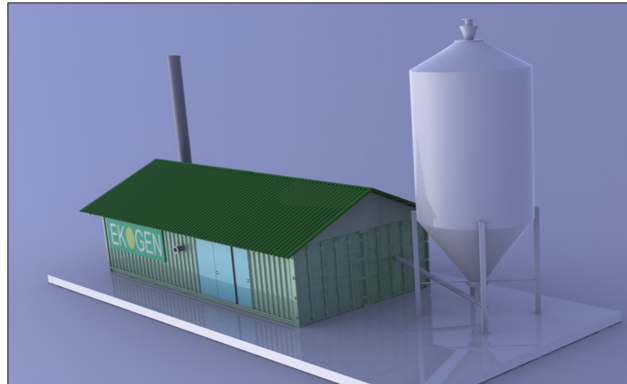


Illustration of a pellet fired EKOGEN Micro Power Plant

- Renewable energy locally - even in smaller locations
- Cogeneration of heat and power
- A new solution to improve energy efficiency and reduce emissions

EKOGEN

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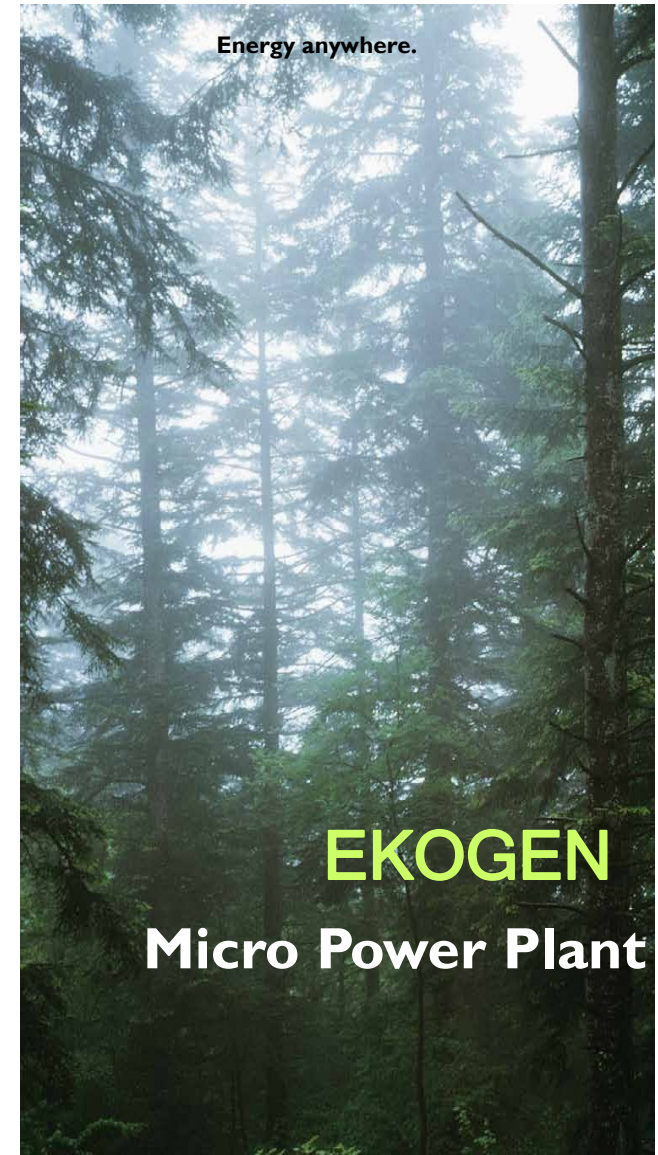
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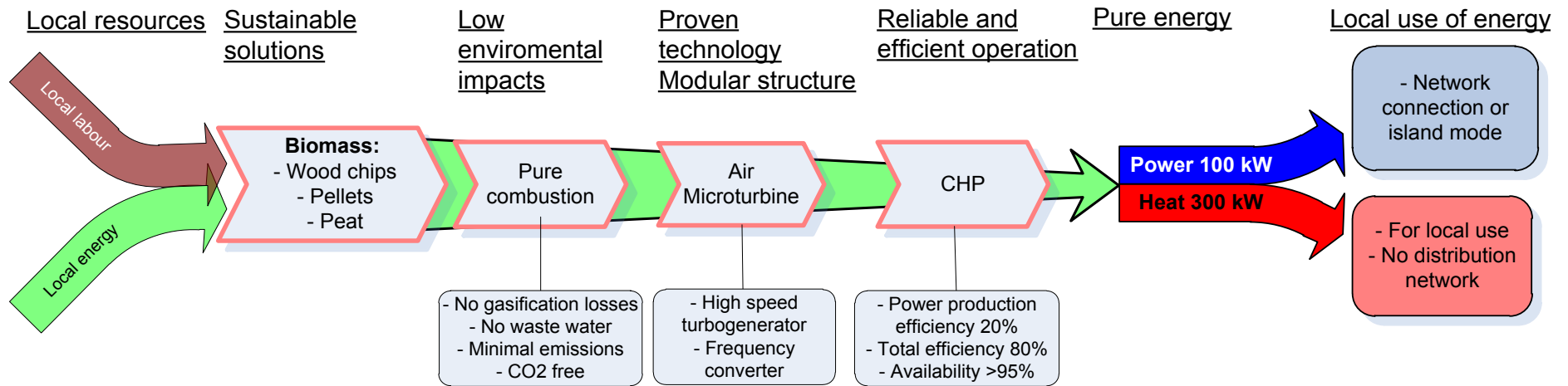
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Energy anywhere.



EKOGEN  
Micro Power Plant



## Benefits of local resources

Biomass - in different forms - is available practically everywhere in the world. It is carbon free, and it also plays an important role in efforts to increase renewable energy's share of Europe's energy supply.

Biomass is a local source of energy, and it is most effectively utilized in satisfying local energy demands. In addition, CHP is the best way to utilize biofuels for this purpose. Co-production requires an adequate heat load, which can be utilized near the production site. Thus the fuel transport and heat transfer distances are shortest possible.

Local energy production also improves employment. Many tasks, such as installation, fuel supply, operation, maintenance and energy distribution are made locally.

## Power and heat generation

Suitable fuels wood pellets and chips, with maximum moisture content of 45%. The fuel produces high temperature flue gases to the process.

The core of the system is High Temperature Heat Exchanger for external firing. Electric power is produced in Turbec T100 microturbine. Also other crucial components of the system are based on proven technology.

The power generation efficiency is up to 20% and total efficiency about 80%. Rest of the heat is used to produce heat in form of warm water.



## CHP application

Small, independent power unit producing

- 500-800 MWh/a electric power
  - 1500-2500 MWh/a heat
- Local heat and power production for 50...100 dwellings/unit  
Houses, commercial buildings, hotels  
Green communities
- Renovation of heating systems -> Renewable energy -> Electricity production
- Small industries, eg. Wood production and food factories  
Greenhouses, Agricultural farms

## Low environmental impacts

Plant emissions are minimal. Due to efficient combustion and flue gas cleaner, particulate emissions are negligible. The plant is also carbon neutral due to the biomass fuel. No waste water is produced in the process.