



# KPA Unicon

Energy for  
good.

Energy  
for  
good.

Ada Herranen,  
Project Development  
Manager



# What we do

---



## “Decentralized energy production”

Form of energy production where small energy production units are built close to the end user and which utilize local fuel sources.

# KPA Unicon briefly



Professionals

**250**

Family  
owned  
company

Turnover

**80 milj. €**

Local sales representatives  
in over

**15 countries**

**Founded**

**1990**





# Typical Fuels

---

## Industrial Waste Gases

- Associated petroleum gas
- Refinery gases
- Coke oven gas
- Blast furnace gas
- Odorous gases.

## Wood Based Biomass

- Bark
- Wood chips
- Sawdust
- Forest residues
- Harvesting residues
- Pellets
- Landscape residue

## Industrial Waste

- Demolition wood
- RDF
- Spent Grain





# Energy for good - globally

## Renewable energy funds and developers



## Industrial waste /Biomass



## Waste gases



## Energy companies



# Energy for Good - globally



**Katrinefors Kraftvärme AB / Metsä Group  
Mariestad, Sweden**

- Unicon Reneflex 28 MW

**Olvi Oyj, Iisalmi, Finland**

- Unicon Biograte 4,5 MW

**Keitele Timber Oy, Alajärvi sawmill, Finland**

- Unicon Renefluid 12 MW
- Unicon Bag filter

**Cartulinas CMPC S.A.,  
Valdivia, Chile**

- Unicon Biograte 30 MW
- Plantsys

**OAO Rosneft Oil Company, Sahalin, Russia**

- Unicon MST 125
- Plantsys

**Energostatik d.o.o, Grubisno Polje, Croatia**

- Unicon Altius 5 MWe
- Plantsys

**Dalkia Est.  
Pomacle, France**

- Unicon  
Renefluid 45  
MW 12 MWe
- Plantsys

**ArcelorMittal South Africa,  
Vanderbijlpark, South Africa**

- Unicon ST50

**Russian and American Governments,  
Chemical Weapons Destruction Complex, Russia**

- Unicon WSF 89

**Termoflorestal LDA, Juncal, Portugal**

- Unicon Altius 5 MWe
- Plantsys

# Biomass

---

Biograte —● 4 – 25 MW

Pellet —● 3 – 60 MW

Renefluid —● 3 – 60 MW

Renegrade —● 2 – 12 MW

\*The sizes are for one unit

## Our solutions:



- Hot water boiler plants for district heating and process industry
- Steam boiler plants for process steam production
- Power Plants
- All plants can consist from 1 or more boilers and plant size can be increased by plant having several boilers
- Our boiler concepts are based on modular structures to enable effective site phase of the projects.
- Scope of supply of the deliveries can vary from small scope process technology deliveries to full EPC deliveries!
- Typical fuels: bark, sawdust, wood chips, peat, forest residues, pellet, briguettes, agro fuels. Landscape residues, REF

# Biograte

---



- Biograte combustor which is specially good for wet and low calorific value biomasses
- Modular and productized structure
  - Hot water boilers
  - Steam boilers
  - Power plants
- Boiler
  - Integrated fire-tube boilers
  - Water tube boilers
- Low O&M- costs due to no cold corners
- Easy to operate and maintain



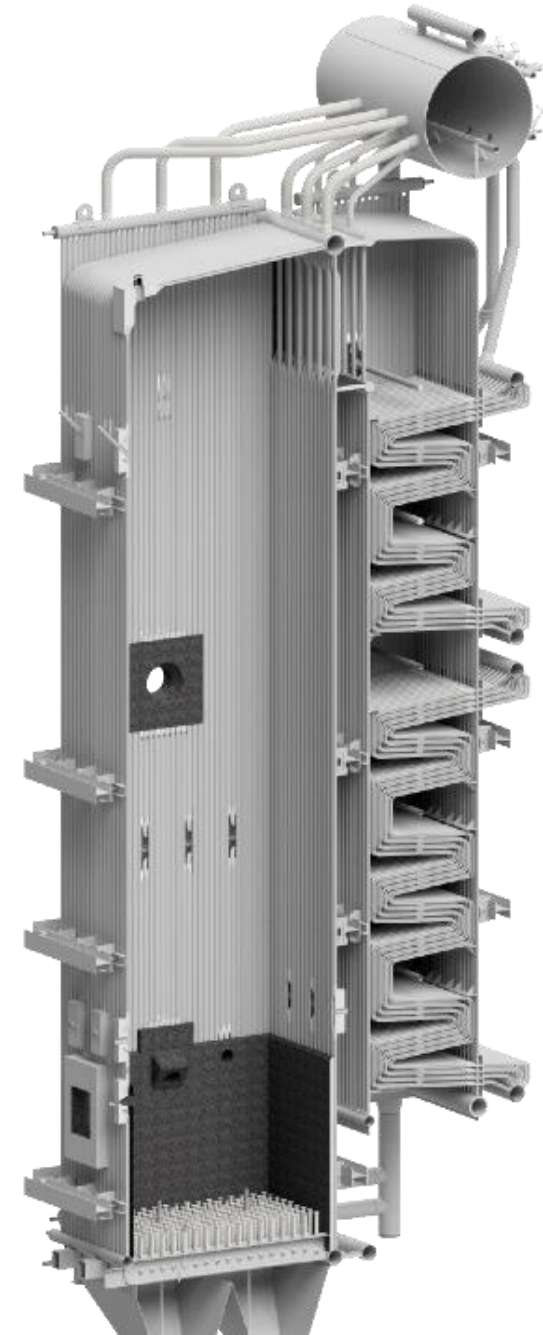


# Renefluid

---



- Renefluid bubbling fluidized bed combustion technology
- Tailor made projects and modular boilers
  - Hot water
  - Process steam
  - Electricity
- Modular boiler structures up to 60MW



# Waste

---

Reneflex —● 6 – 60 MW

- Boiler plant concept for waste-derived (SRF/RDF) fuels
- Capacity up to 60 MW
- Suitable for wide range of fuels
- Complies with EU directives on waste incineration
- High efficiency
- Compact and robust design
- Low emissions





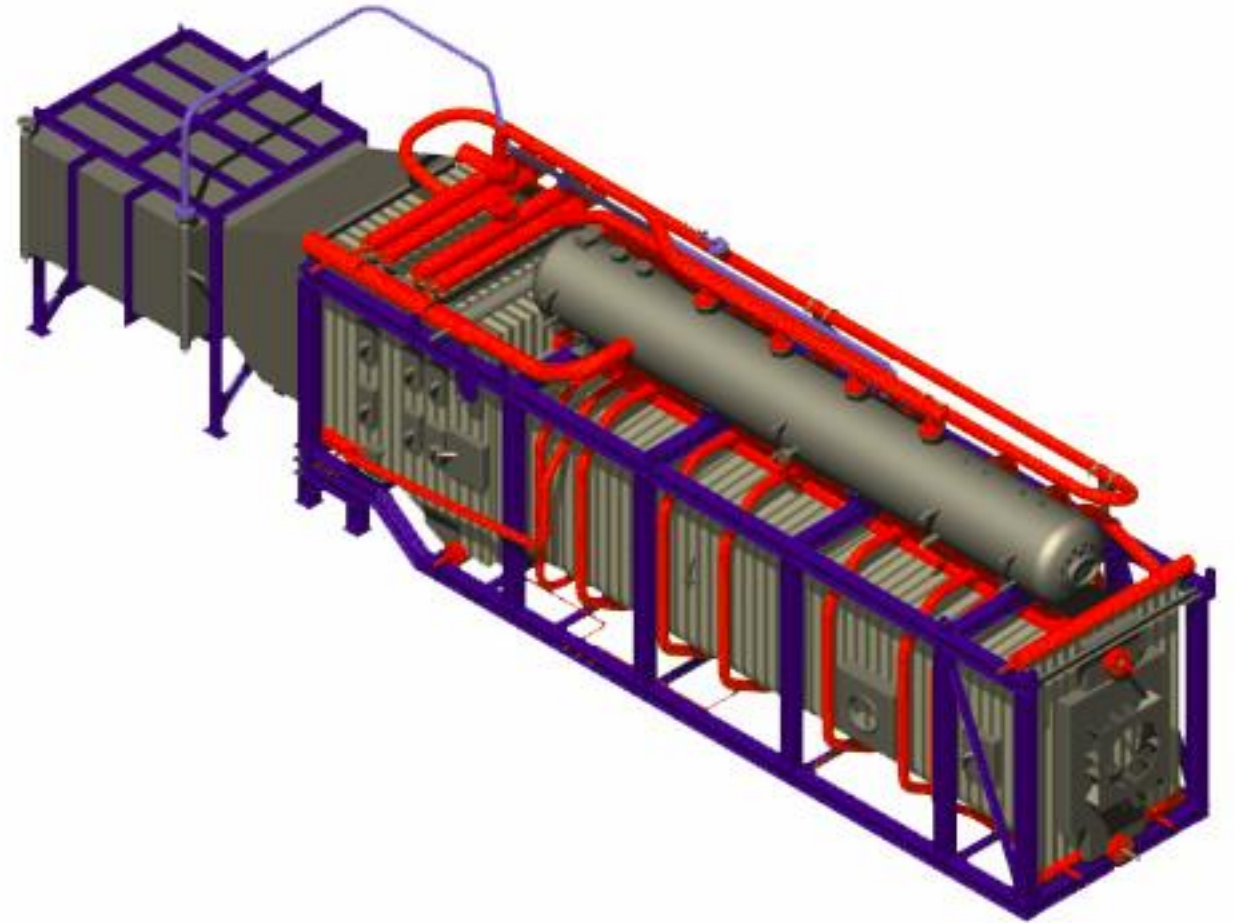
# Gaseous & liquid

---



## Case

- Arcelor Mittal South Africa  
Unicon MST-50 (2 x 25 t/h, 66 bar(g), 495 C)
- The steel plant which needs more electricity generation capacity
- Fuels: BFG, COG, natural gas – simultaneous combustion
- Module type prefabricated Unicon MST boiler
- The project was implemented on "turnkey" basis in 2015-2016



# Energy for good - globally

<b>342</b>	Biomass boiler plants
<b>39</b>	Biomass power plants
<b>1650</b>	Oil and gas boiler plants





# Decentralised Energy production



- Biomass
- Industrial Wastes
- Industrial Waste
- Gases



**kpa unicon**

# Service centers



60 plants operated  
from our control  
room in  
Haapavesi, Finland



## Local Centers provide:

- Established network for operation and maintenance of several plants
- Work according to local legislation
- Fast reaction and support
- Redundancy for remote operation
- Exchange of experience and know-how
- Cost optimization for the Customer



# Energostatik, Grubisno Polje, Croatia

---



- Plant type: Unicon Biograte 23
- Capacity: 5 MW<sub>el</sub>
- Purpose: electricity and heat
- Fuel: biomass
- Contract scope: Full O&M
- Contract duration: 14 years
- Start of operation: spring 2018

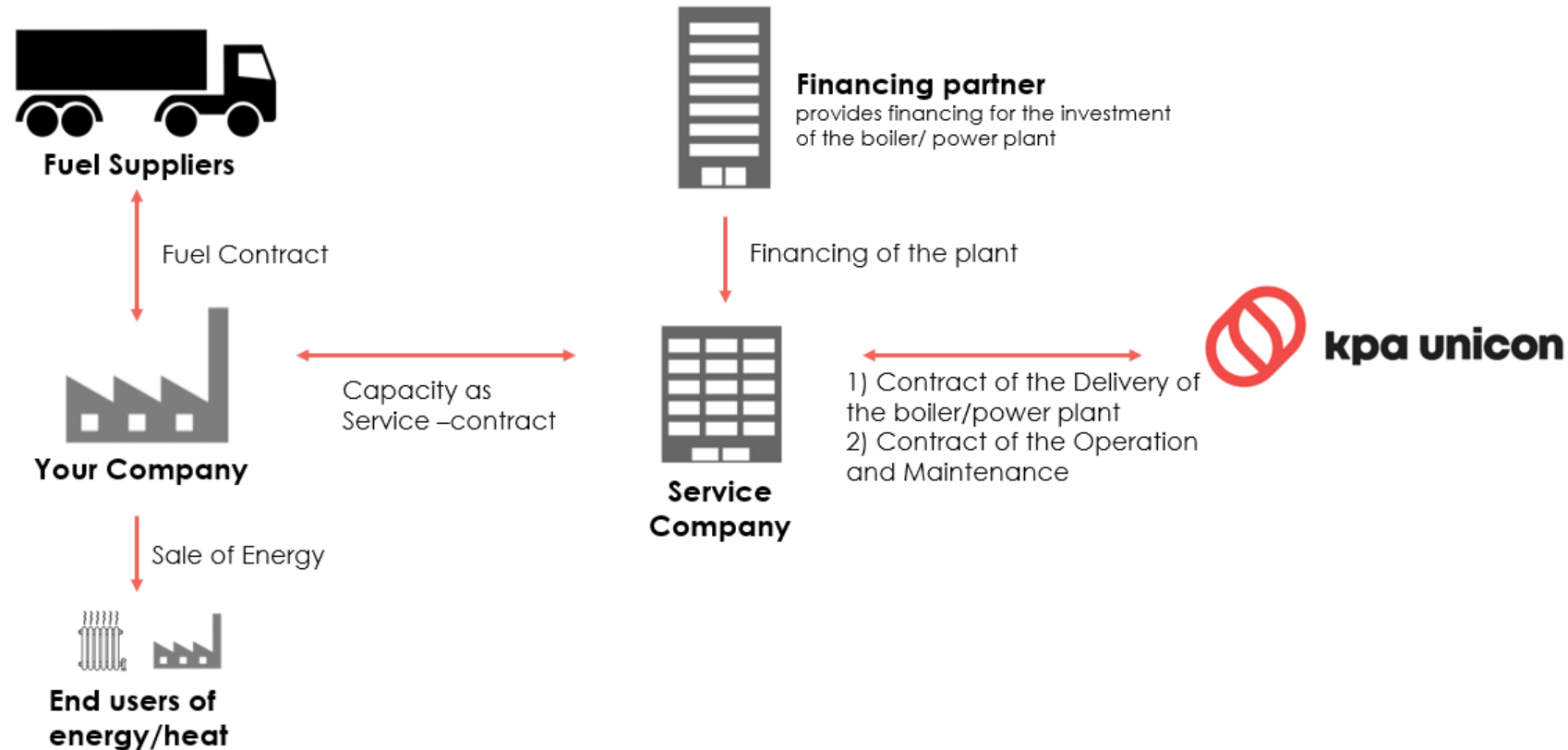


# Capacity as a Service



## Key Facts

- Long term contracts 10-25 years
- Fixed monthly fee over the contract period
- Positive impact on your Balance sheet, as the fee is considered as a rent
- Guarantee of the availability of the heat/steam





# We lead our customers to the new era



Joint venture together with Arcelor Mittal, Zenica city and Finnfund.  
EBRD is providing the loan of 41 M€ to the JV.

Location ————— Zenica, Bosnia and Hertzegovina

Solution ————— Unicon ST, 150 t/h power plant

Contract status ————— Contract signed

Project status ————— Formation of JV finalized

Duration ————— Project 22 months, JV > 10 years

Highlights ————— Our long term customer chose us as a partner for energy production. Like many others Arcelor Mittal want to carve out energy production to the partners and this is one of many more to come. This has also a huge impact to the local environment and heat supply to the city of Zenica.



ArcelorMittal

With annual achievable production capacity of approximately 113 million tonnes of crude steel, and some 199,000 employees across 60 countries, ArcelorMittal is the world's leading steel and mining company.

68,7 billion USD in revenue  
8,4 billion USD EBITDA



An aerial photograph of a winding asphalt road that snakes through a rugged, mountainous landscape. The terrain is characterized by dark, rocky outcrops and patches of dry, yellowish-brown vegetation. The road features several sharp, hairpin turns, creating a complex, S-shaped path across the frame. The lighting is soft, highlighting the textures of the rocks and the curve of the road.

**Always local**

**Always future  
oriented**





**kpa unicon**

Energy for good.