

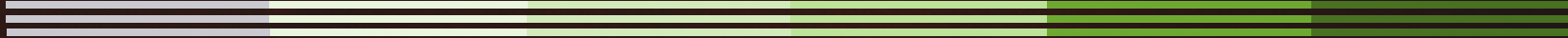


HAFNER

S L I M L I N E - 2 5 , 0 0 0 t / y r .

Small modular decentralized W2E plant

E n e r g y f r o m W a s t e





About Us

Plant construction or, more specifically, the building of thermal treatment plants, i.e. energy generation through the processing and treatment of waste (household waste, medical waste, industrial waste) is still the core business of the Hafner group.

Changing environmental requirements in the waste sector have led the Hafner company to rethink its business model, coming to new insights based on its own experience and the results of trend analyses. An essential point of this knowledge is now reflected in the new concept of **Small Modular Decentralized W2E Plant**, also called “**SLIMLINE**”.

The father of this new business strategy is an initiative that **Hafner** started as a pioneer already back in the 80s and which gained positive experience in the field of treatment plants for thermal and material recycling of waste that can be transported in modular design. This concept will now be taken up again and developed and offered according to the latest state of the art and scientific knowledge.

The arrival of THE “**SLIMLINE**” **25,000 t/yr...**

Practical experience has shown that implementing decentralized treatment plants has achieved greater acceptance among the population.

Hafner takes this practical experience into account and reacts to it with the development of a small thermal treatment plant for waste with lower acquisition costs.



Heinrich Hafner
CEO - Hafner EfW

The waste management of the past decades left us and the next generations a number of time bombs.

The deposit of untreated waste belongs to the past. We must now move towards treating waste more economically and ecologically. Our „Waste to Energy“ plants contribute positively to our climate and guarantee safe disposal of waste at the same time.



Bolzano



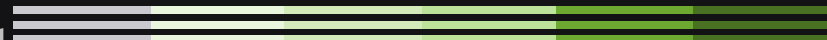


The Slimline

FOCUS:

Even today,
a large majority of the world's waste
is thrown into unauthorized and/or
improperly utilized landfills.

*Hafner "Waste to Energy" technology is a
forward-looking solution for a faster journey
towards combating **climate change**.*





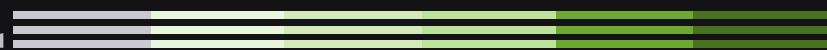
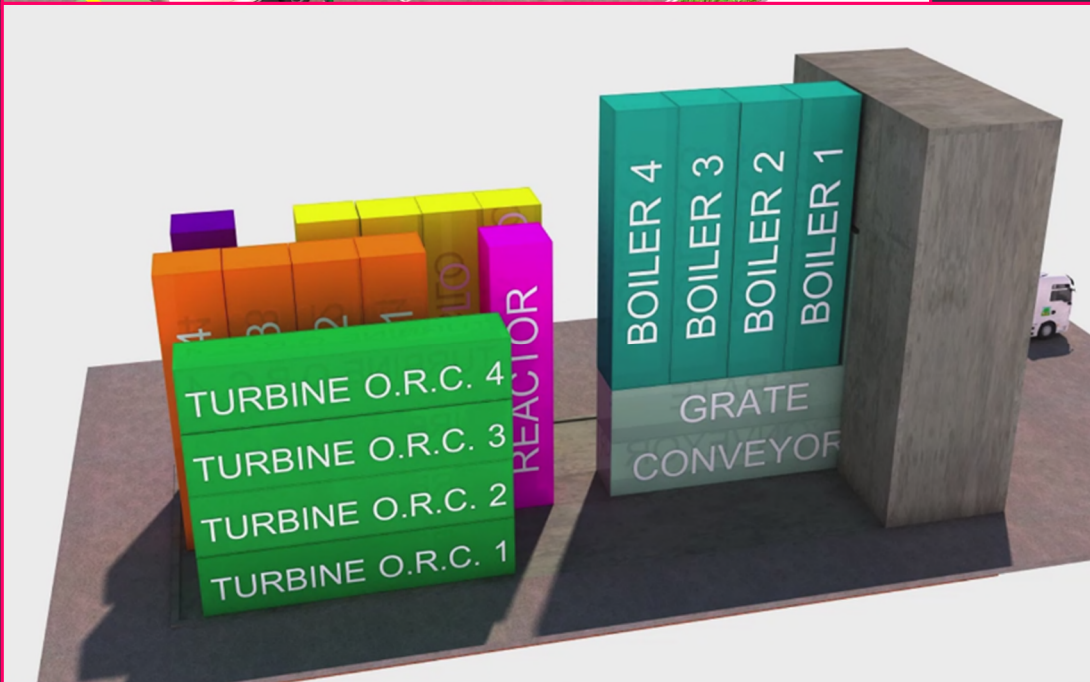
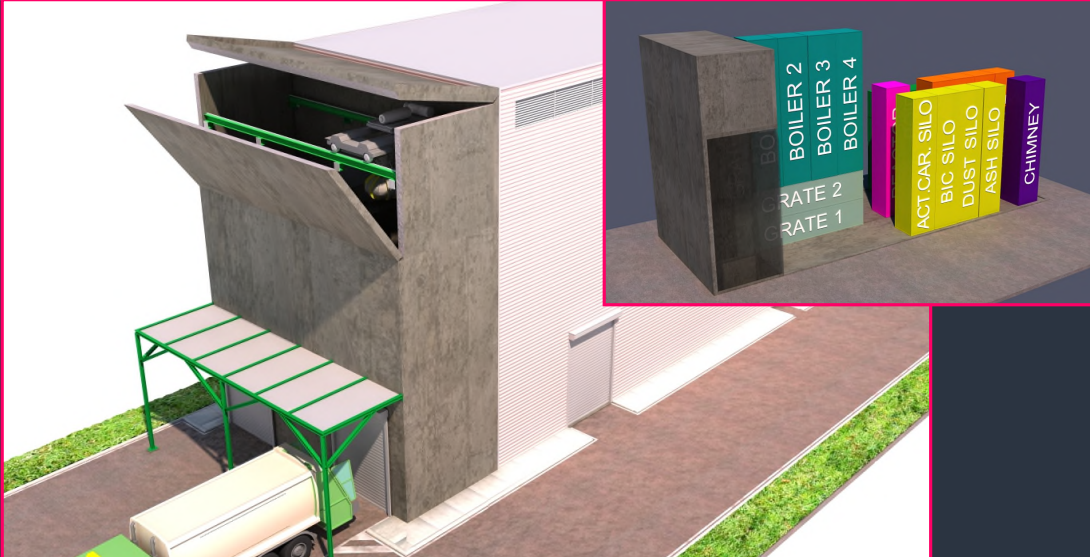
The Slimline

SOLUTION:

a Small Modular Decentralized W2E-Plant called:

"SLIMLINE" 25,000 t/yr.

The small modular decentralized "Slimline" 25,000 t/yr. concept is leading the way, especially for its novel design, which has a much higher level of pre-assembly in the workshops compared to a standard incinerator design.





The Slimline

VALUE OF INNOVATION:

The new plant concept "**SLIMLINE**" **25,000 t/yr.** by Hafner means the following advantages and innovations:

- *Solution to waste problems even for smaller surroundings (up to 25,000 t/yr.);*
- *Fast assembly on-site thanks to the well-designed modular block structure system;*
- *Less space required for installation compared to conventional incineration plants or W2E-plants;*
- *Energy from Waste: Energy (electricity, cooling, district heating) from household or hazardous waste;*
- *The lowest flue gas emissions in Europe;*
- *Fixed price guarantee – guaranteed from the beginning;*
- *Clearly defined construction times and fixed date for commissioning;*
- *Re-introduced CO₂ technologies;*





The Slimline

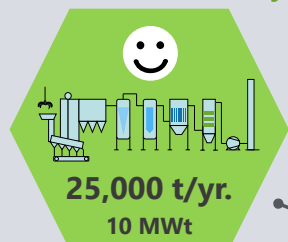
ECOLOGICAL & ENERGETIC ADVANTAGES:

"SLIMLINE" 25,000 t/yr....

A great deal of benefits such as CO₂ savings, electrical power & energy availability for district heating → best way for the circular economy...



"SLIMLINE" 25,000 t/yr.

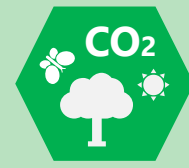


25,000 t/yr.
10 MWt

HAFNER

Energy from Waste Ltd.

CO₂ Benefit



CO₂ savings
6,725 t CO₂ equiv./yr.

Energy-Benefits *approx.*



Electrical Power
19.53 - GWh/y



District Heating
65.12 - GWh/y

or



District Cooling (to convert)
65.12 - GWh/y

or



District Warm Water
65.12 - GWh/y

or



Slags

20 %
5,000 t/yr.



16 %
4,000 t/yr.

Landfill



4 %
1,000 t/yr.

Reusable materials
for the recycling
industry:

- Glass
- Ferrous Metals
- Non-ferrous Metals
- Stainless Steel
- Copper
- Precious Metals
- Minerals

Material-Benefits



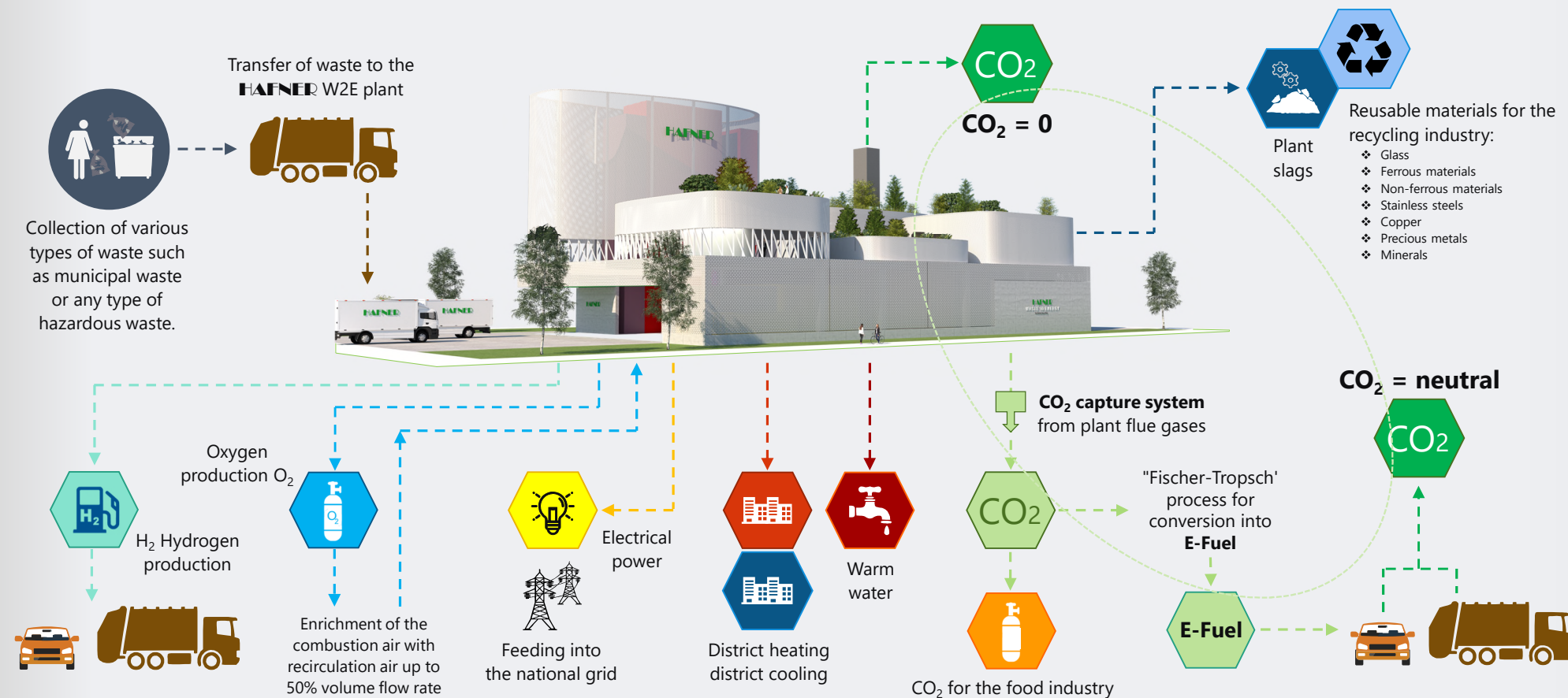
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A CLEANER PLANET FOR ALL OF US...

A European citizen produces about 500 kg of household waste (MSW) per year and emits an average of 5,533 kg of carbon dioxide (CO₂) each year.

There is still a long way to go before Europe is becoming climate-neutral and environmentally friendly.

WASTE TO ENERGY and CO₂ reduction



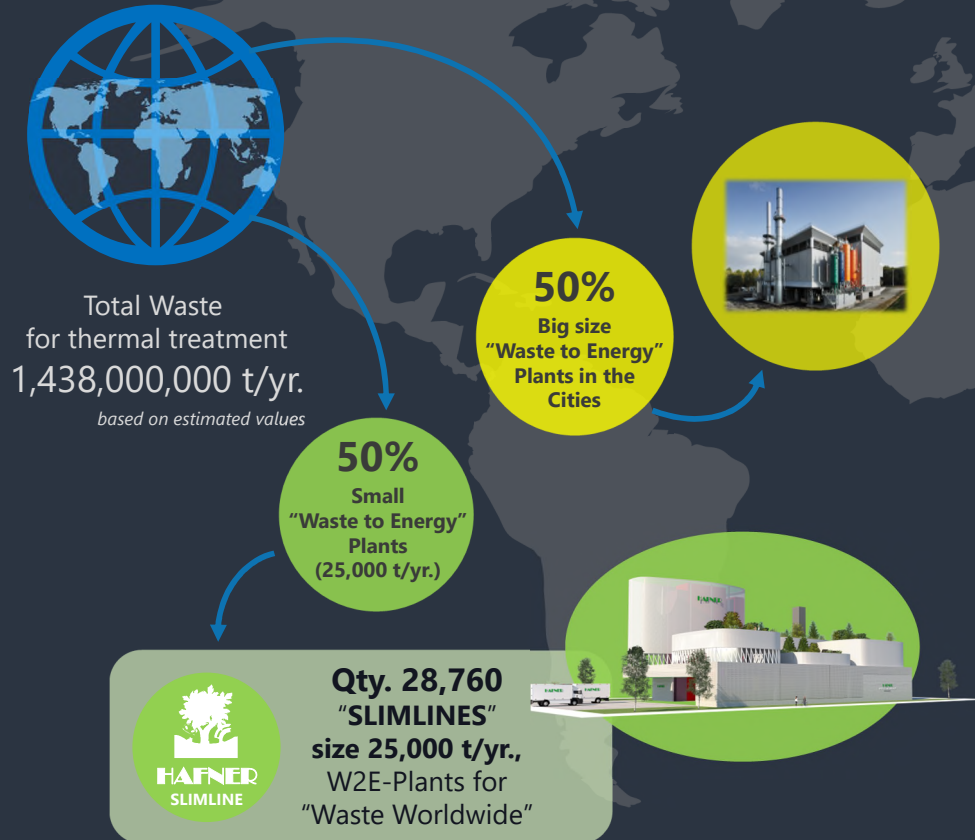
Among the different instruments to be adopted to achieve greenhouse gas emission neutrality, it is particularly relevant to promote the construction of modular decentralized thermal power plants powered by residues (waste), as they bring the following advantages, in **line with the "zero" net emissions targets reported in the European document "Brussels, 28.11.2018 COM (2018) 773 final"**:

- CO₂ savings based on the tons of waste fed into the plants to substitute fossil fuels;
- capture and storage of residual CO₂ in flue gases and its reuse in the various production food industries, achieved through the adoption of innovative technologies (Fischer-Tropsch" process) to produce E-Fuel → neutral CO₂ cycle.
- electricity generated by the W2E plant can be used to produce oxygen and hydrogen through an Electrolysis Unit.
- W2E plant produces electricity and thermal energy which can be used for district heating, internal production processes and for cooling.
- Various materials can be recycled from the slags.





The "Waste to Energy" market Worldwide



The Slimline

THE MARKET & VISION FOR NEW "SLIMLINES" 25,000 t/yr....

We are one of the market leaders in the construction of "transportable" waste power plants on a modular basis. Our target market is worldwide. All 194 countries have problems with various waste materials - in the sense of a circular economy. We offer the most cost-effective alternative to the conventional centralized "large waste incinerators".

*According to the estimated global waste and considering that 50% of this could be burned in Slimlines, the market share for this would amount to approx. **28,760 single plants.***



HAFNER Energy from Waste



Address

Via Giuseppe di Vittorio 16,
Bozen/South Tirol, 39100 - ITALY



Contact Info

Email: heinrich.hafner@hafner.it
Email: office@hafner.it



Telephone

Office Phone: +39 (0) 471 566 300
Office Fax: +39 (0) 471 566 301



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APP - Hafner
Waste Calculator
for Android

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SLIMLINE
25,000 t / yr.

a c o n t r i b u t i o n t o
CLIMATE
CHANGE

a n d t h e
b e g i n n i n g o f a
NEW AGE



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