Gasification

A proven path towards Advanced Biofuels

GIDARA® ENERGY

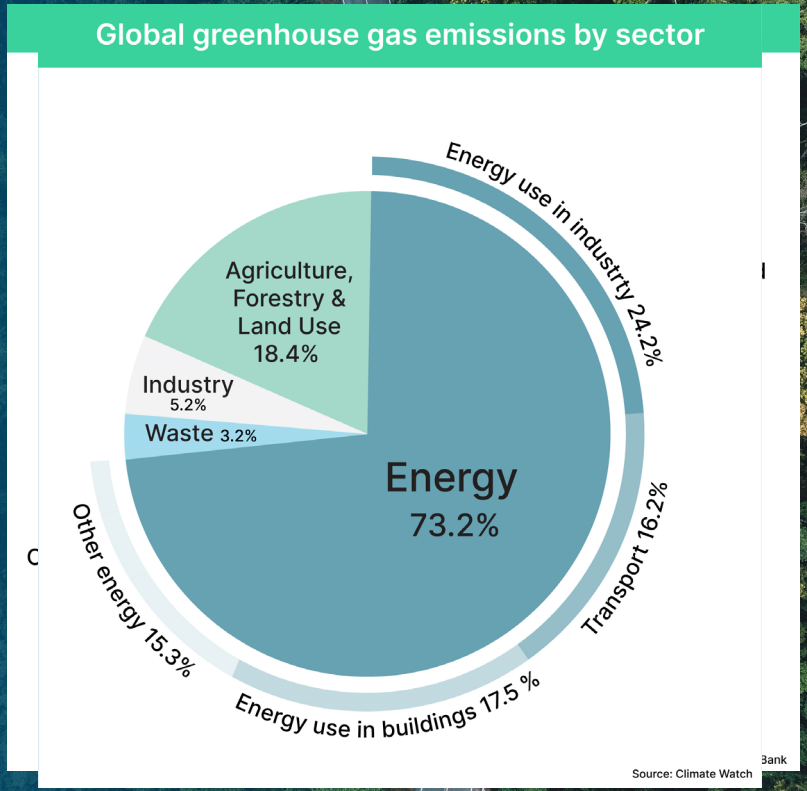
GIDARA is jointly owned by **Ara Partners**, US private equity firm, and **GI Dynamics**, Dutch engineering and project development firm, for the sole purpose of taking on today's waste and climate challenges

Ara Partners

GIDARA® ENERGY

Global challenges

- Waste generation and waste disposal
- Climate change challenges



GIDARA ENERGY

Climate targets

- European Union
  - RED II, Fit for 55
- UK
  - RTFO
- USA
  - Renewable Fuel Standard

- **Demand for “waste-based” biofuels**

This presents us with an enormous challenge - and opportunity

GIDARA ENERGY

Converting non-recyclable waste into advanced biofuels

The waste issue

- Wood Waste 
- Sewage Sludge 
- Municipal Solid Waste 
- Non-Recyclable Plastics 
- Waste Paper 
- Agricultural Residue 
- Construction & Demolition Waste 

Our solution

Emission reductions

Road Transport Fuels

- Green Gasoline
- Biomethanol
- Renewable Diesel
- Green Hydrogen
- Renewable Natural Gas (CNG, LNG)
- Bio-mmtpa

Marine Fuels

- Biomethanol
- Bio-Ammonia
- Bio-DME
- Renewable Natural Gas (CNG, LNG)

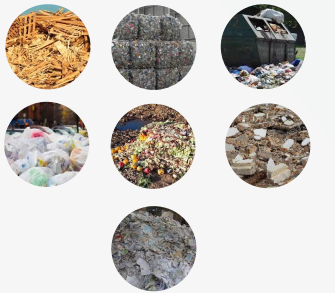
Sustainable Aviation Fuels

High Growth End Markets (e.g. Chemicals)

Gasification

Gasification is a process that converts organic or fossil fuel-based material into carbon monoxide (CO) and Hydrogen (H_2) and carbon dioxide (CO_2).

Feedstock



Carbon

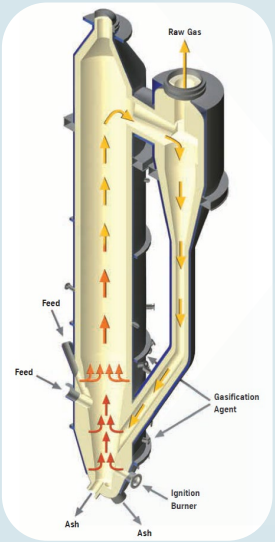
Hydrogen

Oxygen

Gasifying agents

Air, Steam or Oxygen

HTW® gasifier

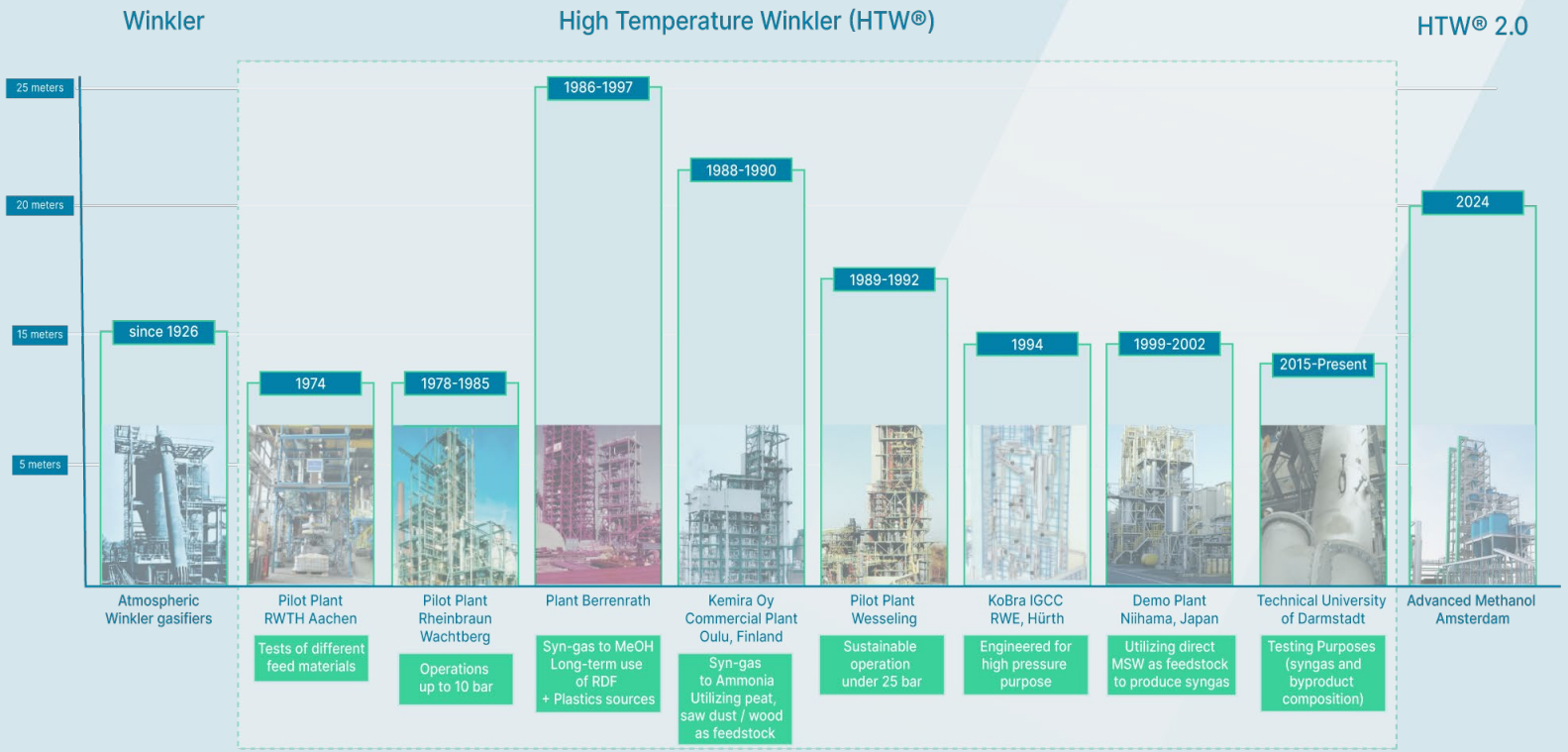


Syngas

CO
H_2
CO_2
CH_4
H_2O
$<C_{10}$
trace components

Technology proven and applied for more than 10 years and with mixed feedstock

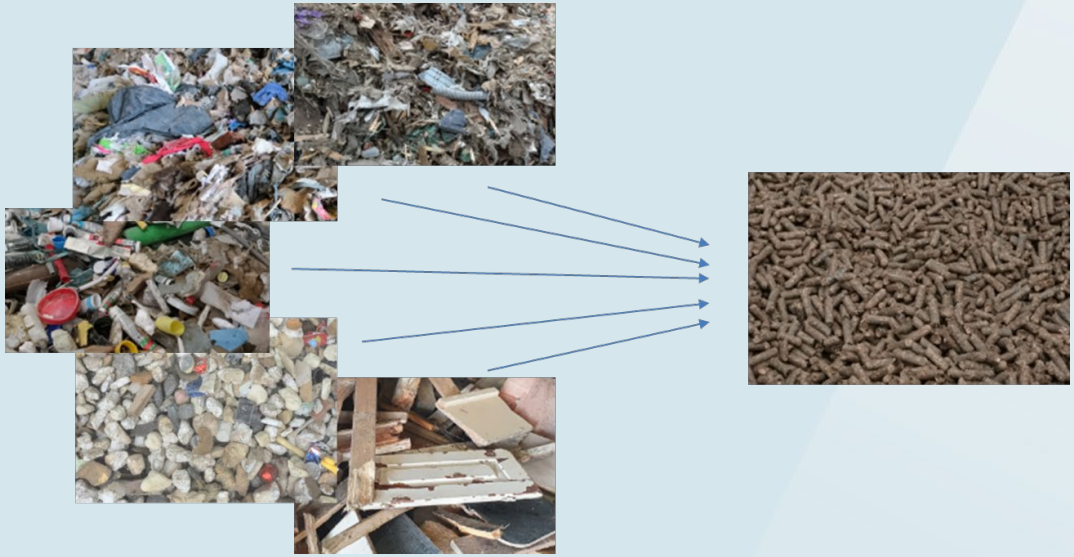
✓	**+500 Mio Euro:**	- Investment in the development of HTW
✓	**3 commercial facilities:**	- Successfully built and operated
✓	**+10 years:**	- Operational time of a single plant.
✓	**+91% Availability:**	- Average availability in 10 year
✓	**+5% Extra availability:**	- Can be increased by process improvements
✓	**Existing Testing facility:**	- Recent successful test on all mixtures of RDF and biomass waste



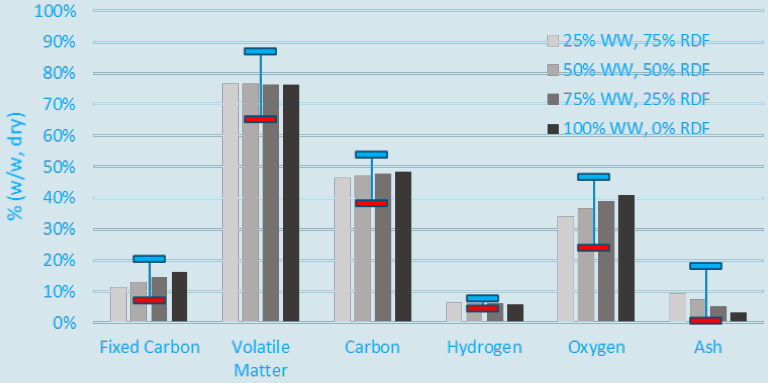
Feedstock Range

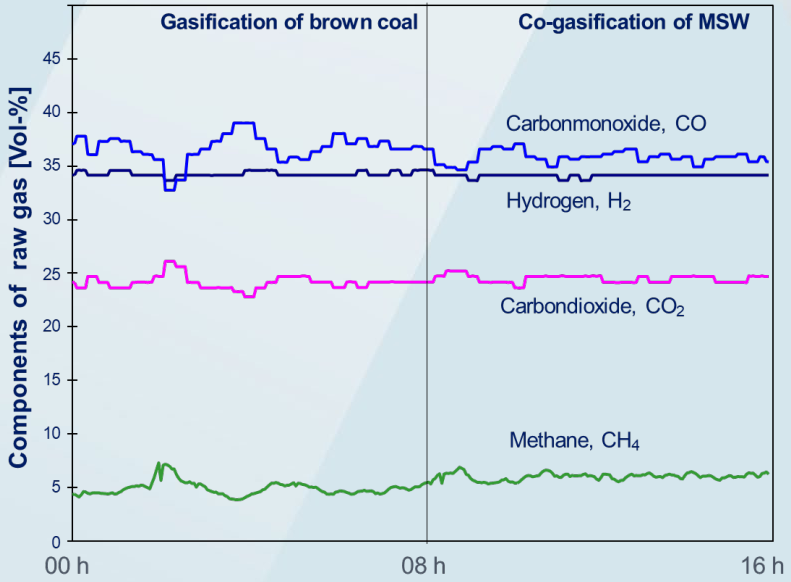
- To define a basis for the AMA project, literature data of refused derived fuel and waste wood was used.
- The collected data was analyzed and used to define a range of feedstock composition which provided the basis for the design of the AMA facility.
- The references used for analyzing the Feedstock Composition:
  - TNO data: phyllis.nl
  - Vendor data:
    - 39 references of RDF were extracted
    - 23 references of Waste wood were extracted (TNO data + PARO data)
    - 4 Cases where evaluated.
    - Total of 3588 different feedstock compositions.
- From the extracted references for each of the characteristics statistical parameters were obtained

From flexible feedstock input…

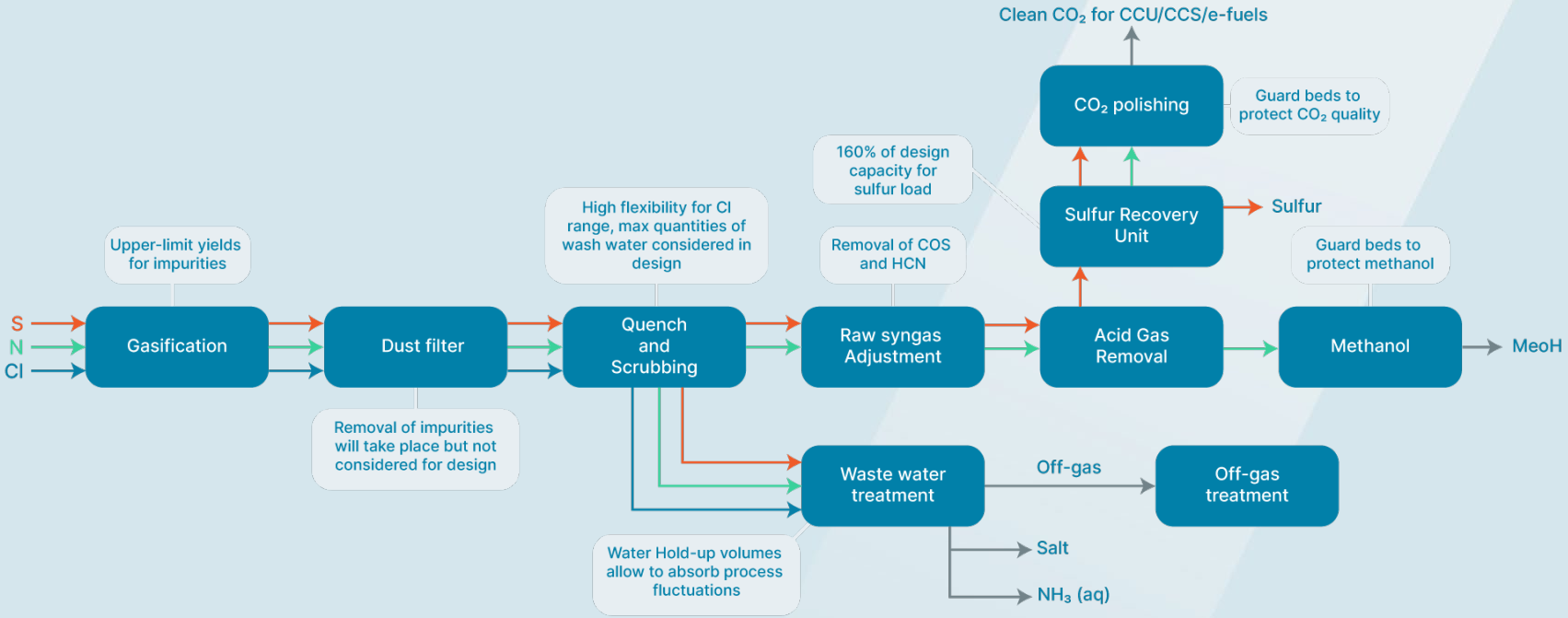


...to a consistent composition of raw syngas…





...achieving purified clean syngas...



...for the production of high-quality value end products

End Products

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Advanced Methanol Amsterdam

GIDARA Energy's first facility "Advanced Methanol Amsterdam"
is located conveniently in the Port of Amsterdam


voorbij prefab
1
PARO
2
5
Zenith Energy
3
4
6
7
bp
Linde
aeb
amsterdam

Future of Advanced Biofuels

Advanced Methanol Rotterdam

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We make sure
our waste isn’t wasted

gidara-energy.com

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