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GoBiGas:
An Industry Relevant State-of-The-Art Reference for Advanced Biofuel Production via Gasification

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GoBiGas

Gothenburg Biomass Gasification Project
0.8 TWh/year SNG production by 2020

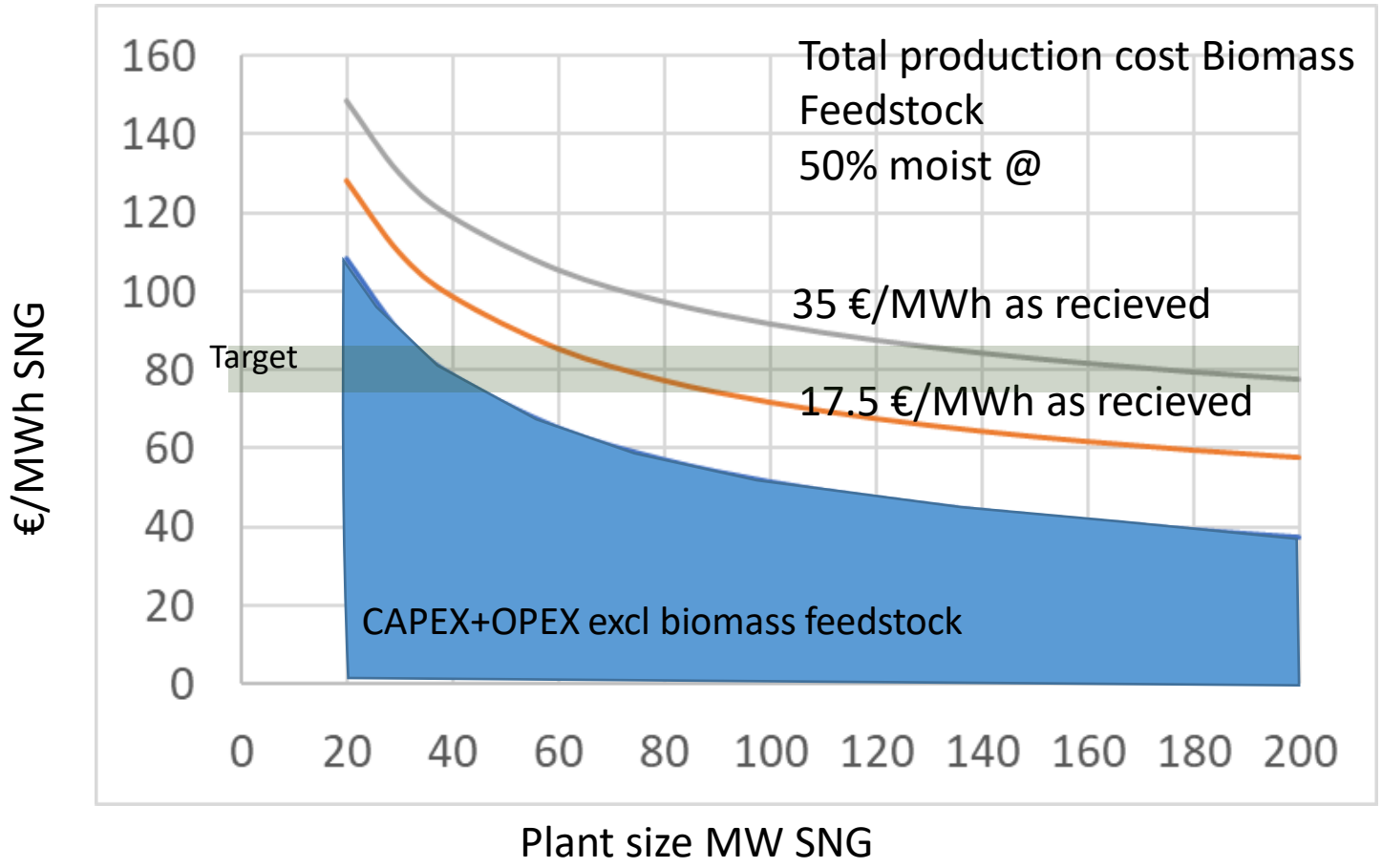
Planned to be implemented in two phases:

1. Demonstration/Commercial (together with phase 2)
   20 MW Biomethane (160 M€ investment)
   (32 MW fuel, 6 dry ton biomass/h)
   Performance goal of demonstration
   - Biomass to Biomethane ≥65 %
   - Biomass to Energy ≥90 %
   - 8,000 hours continuous operation per year

   Produced SNG to grid 2014 – 2018

2. Commercial (Plans canceled 2015)
   80 – 100 MW Biomethane
   (125-150 MW fuel 25-30 dry ton biomass/h)

Ecomomics



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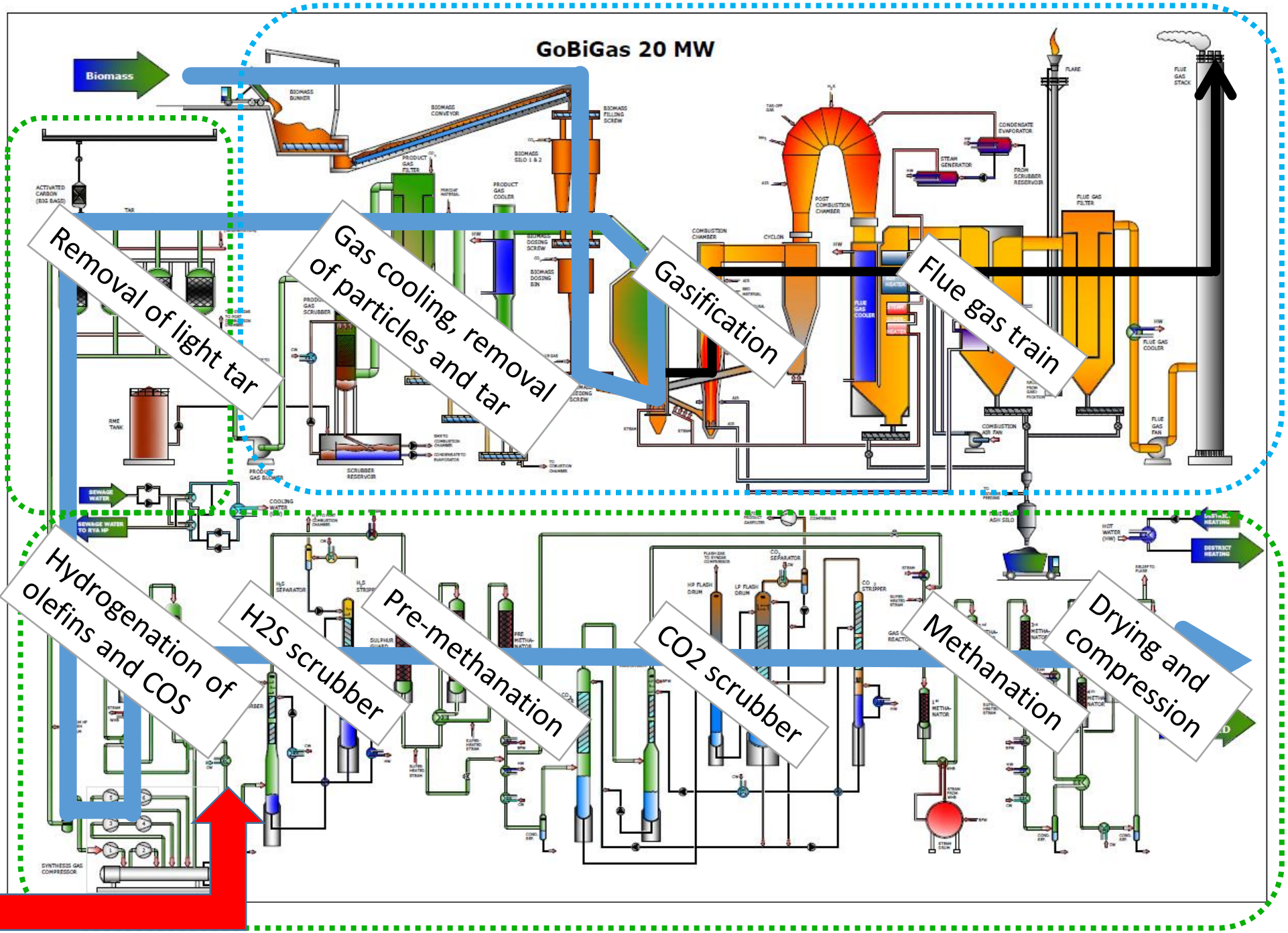

Flue gas

Biomethane

H2 from electrilysis Investigated but not installed

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Development of Gasification technology

Retrofit of commercial designs of fluidized boilers

2-4 MW
Gothenburg

2 MW
Yokohama

15 MW
Kujan Indonesia

Target
Production of Fuels, Materials, Chemicals
>100 MW

Upscaling of dedicated gasification design

32 MW
Gothenburg

8 MW
Güssing

FIRST GENERATION

8.5 MW
Oberwart

SECOND GENERATION

15 MW
HGA Senden

THIRD GENERATION

Target
Decentralized Heat and Power Production
<50 MW

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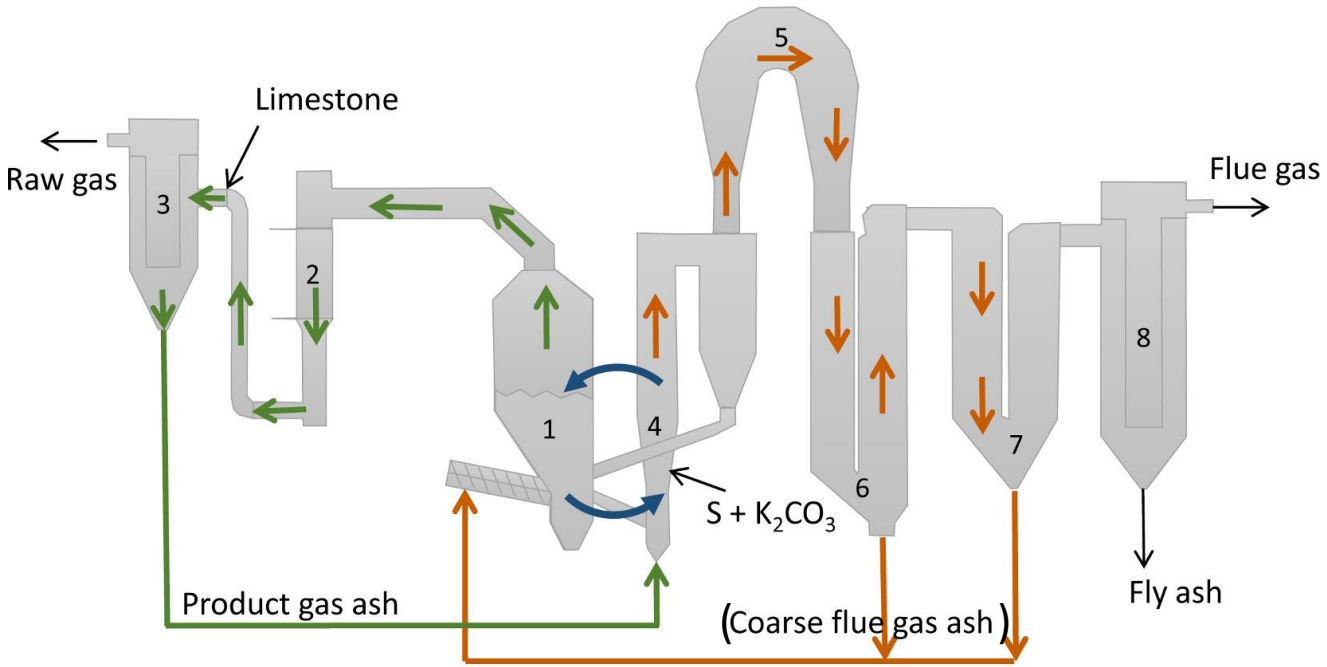
Control of the Gasification Process



1 Gasifier
2 Product gas cooler
3 Product gas filter
4 Combustion chamber
5 Post combustion chamber
6 Convection path and flow reversal space
7 Convection path and flow reversal space
8 Flue gas filter