BIOMACON

DECARBO ENERGY SYSTEMS

HEAT THAT SAVES THE CLIMATE

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Date: *02.09.2020*

Norsk Biokullnettverk

Agenda:

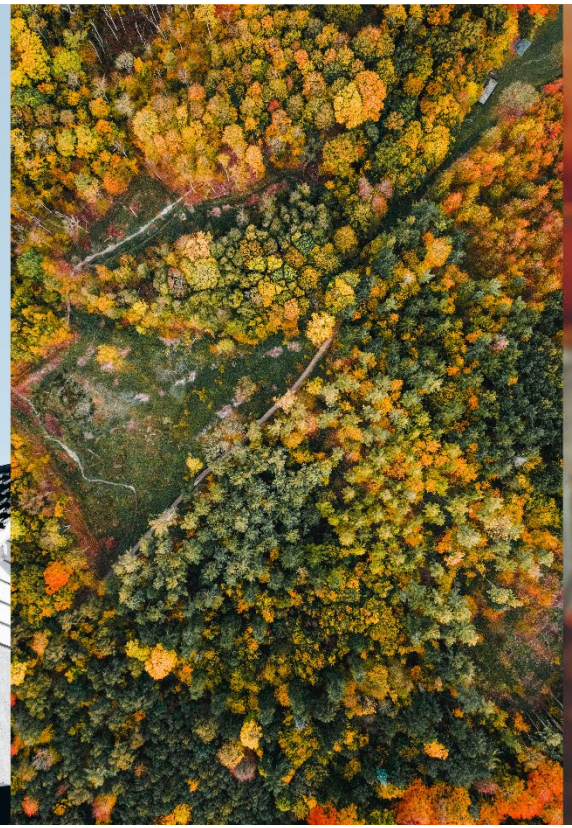
1. About Biomacon
2. Client Groups
3. System explanation
4. Project examples

1. About Biomacon:

- Founded in 2009
- First pyrolysis system installed 2012 at botanical garden Berlin
- 16 pyrolysis systems installed until 2020 – 4 more this year
- Pyrolysis systems installed in: Germany(5), Belgium(1), Switzerland(2), Sweden(5), Norway(1), France(1), India(1)
- Nominal heat power ranges from 40kW to 500kW
- Investment cost range from 80.000€ to 450.000€

2. Clients Groups:

Energy Contractors



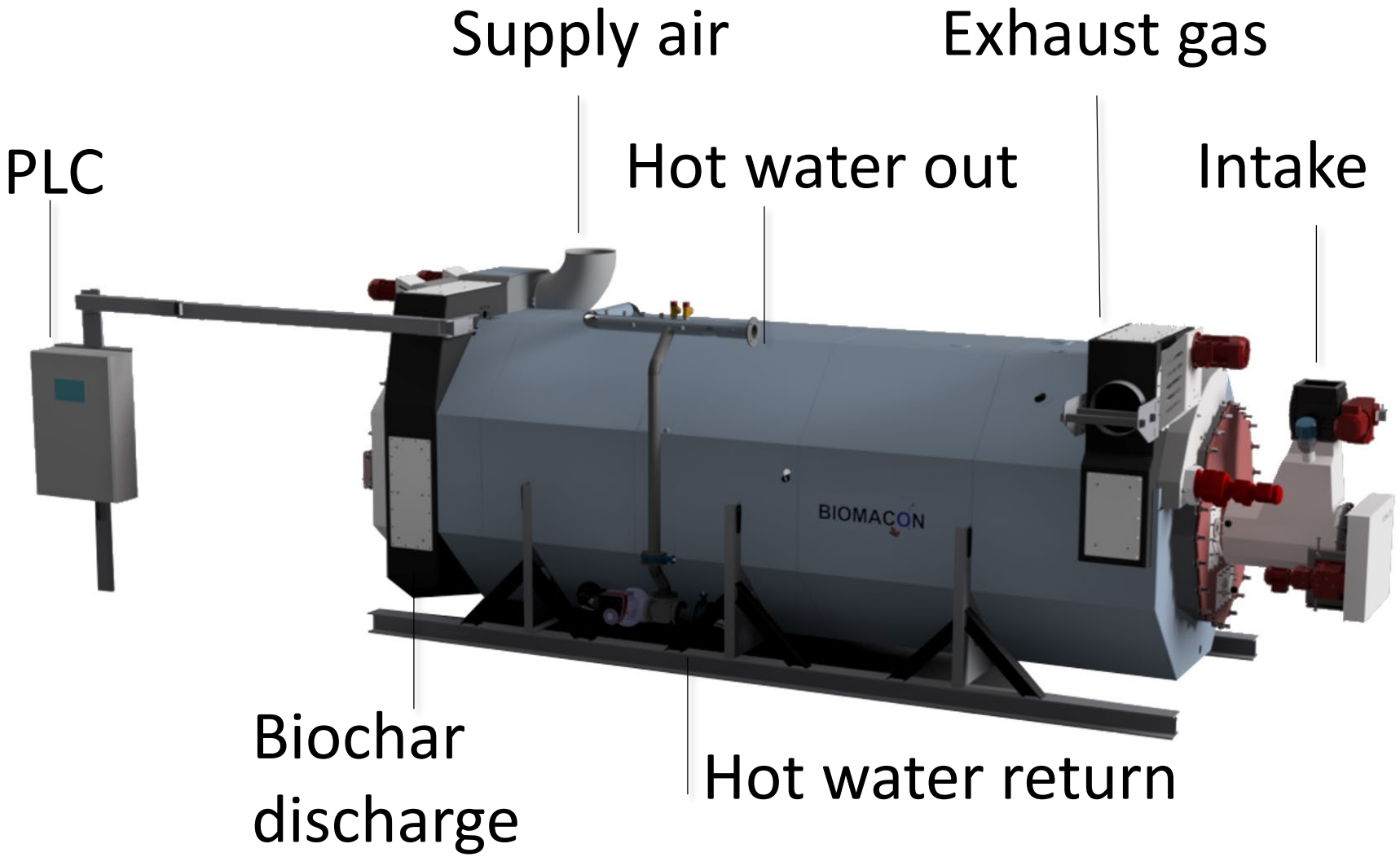
Forestries

Industry

Farmers

WWTP

3. System explanation :



Robust & Easy to Operate & Maintain!

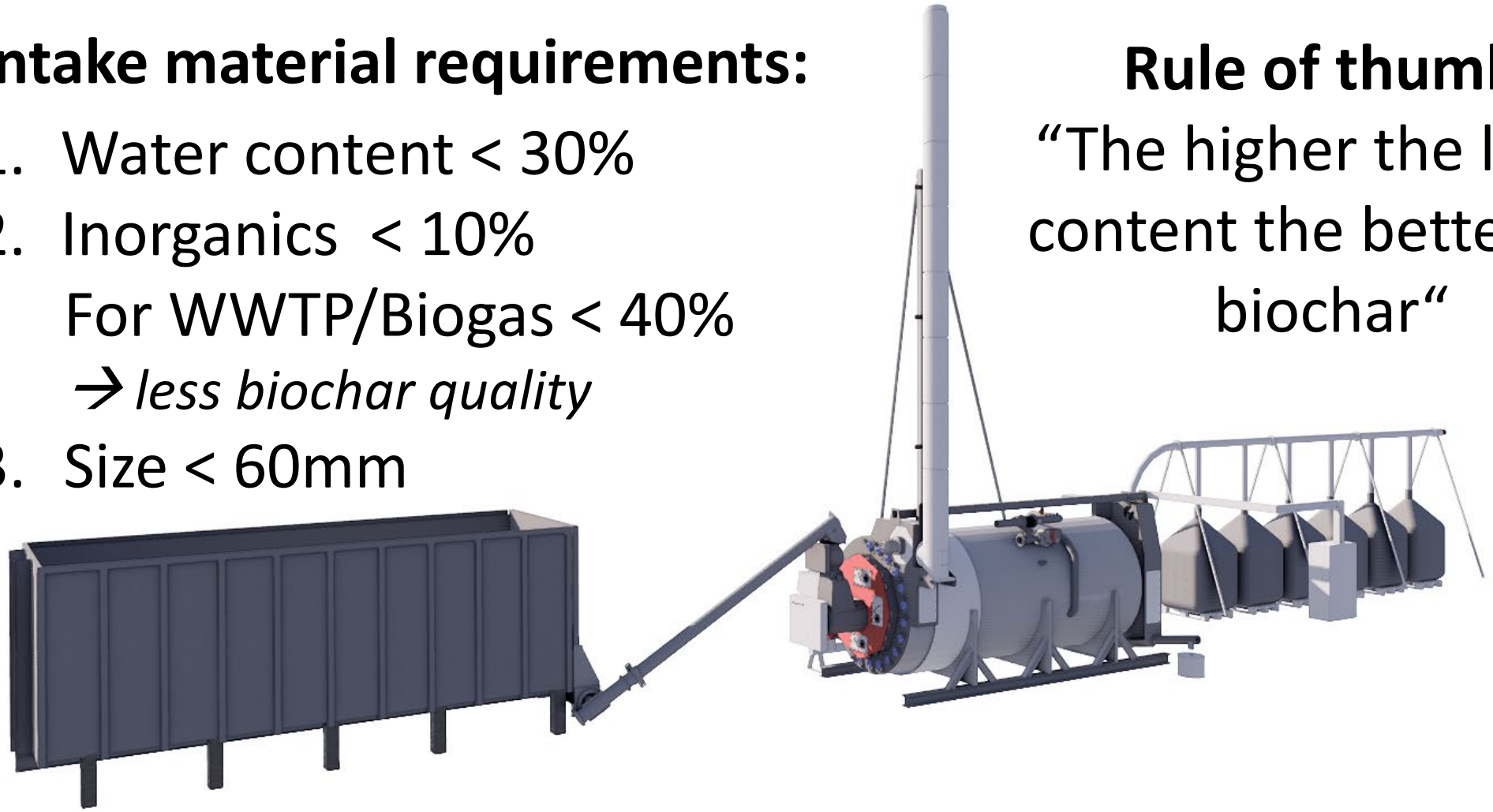
3.1 Intake Requirements

Intake material requirements:

1. Water content < 30%
2. Inorganics < 10%
   For WWTP/Biogas < 40%
   → *less biochar quality*
3. Size < 60mm

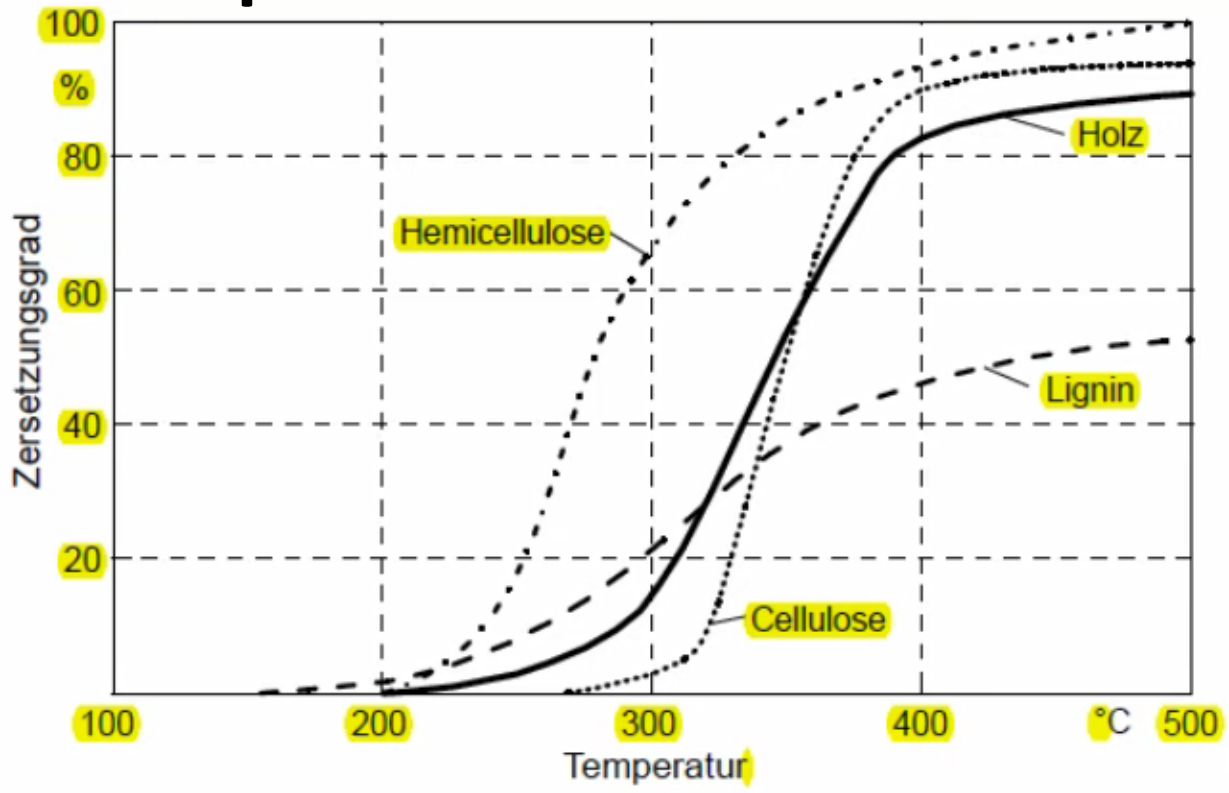
Rule of thumb:

"The higher the lignin content the better the biochar"



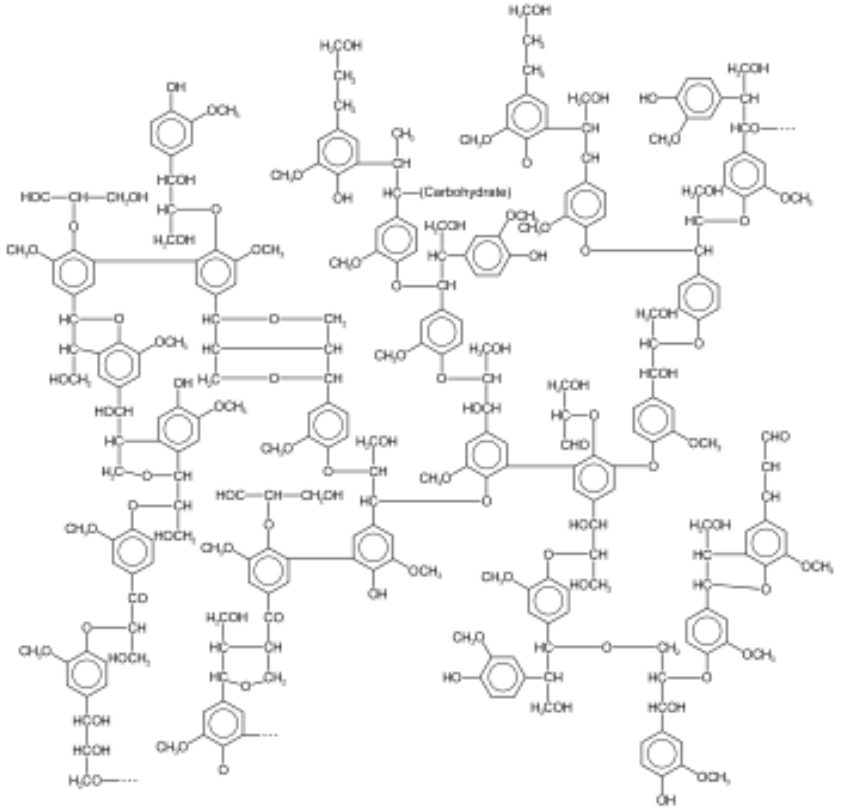
3.1 Intake Requirements

Basics of thermo-chemical decomposition



Source: Martin Kaltschmitt, Energie aus Biomasse, 2009

Lignin-structure

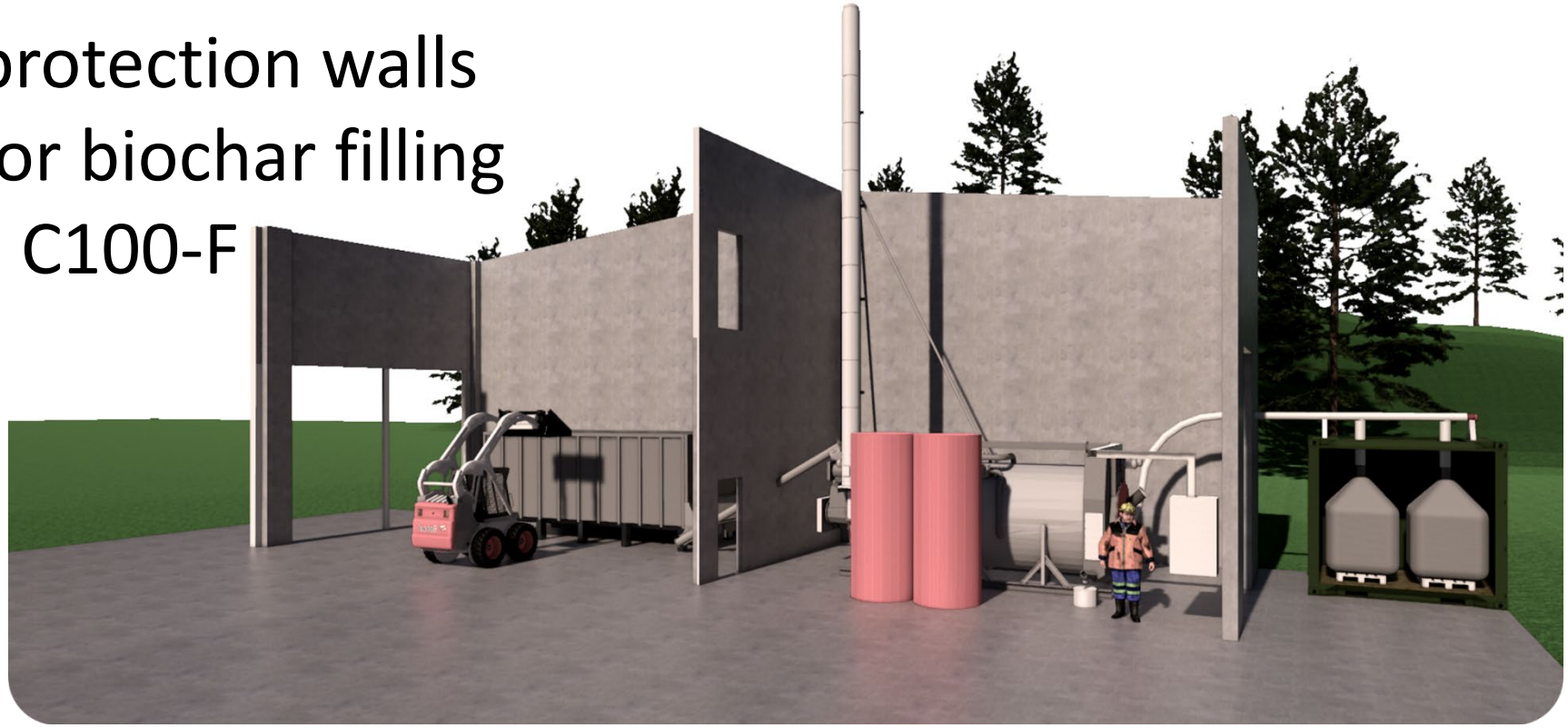


Source: https://de.wikipedia.org/wiki/Lignin

3.2 Instal. Requirements

Installation requirements:

1. Heat sink
2. Space and fire protection walls
3. Outside space for biochar filling
4. Container up to C100-F



4.1 Project Example C400-I

C400-I in Switzerland:

2019: 8000h operation and 330t of EBC Biochar production

4.1 Project Example C400-I

4.2 Project Example C160-F

C160-F in Sweden

2019: 7000h operation and 145t of EBC Biochar production

4.2 Project Example C160-F

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Thank you!

For further information please contact us via
info@biomacon.com with reference “Biokullnettverk“

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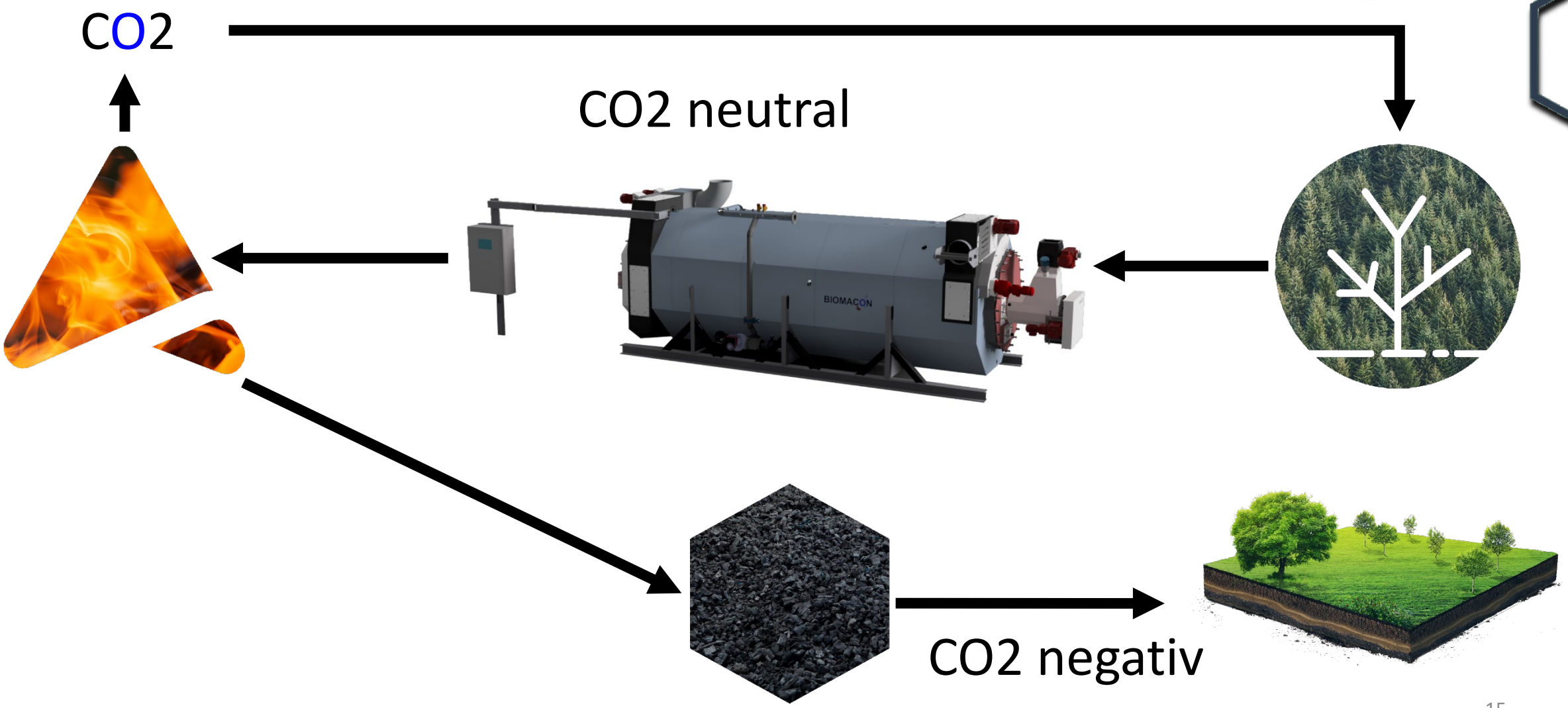
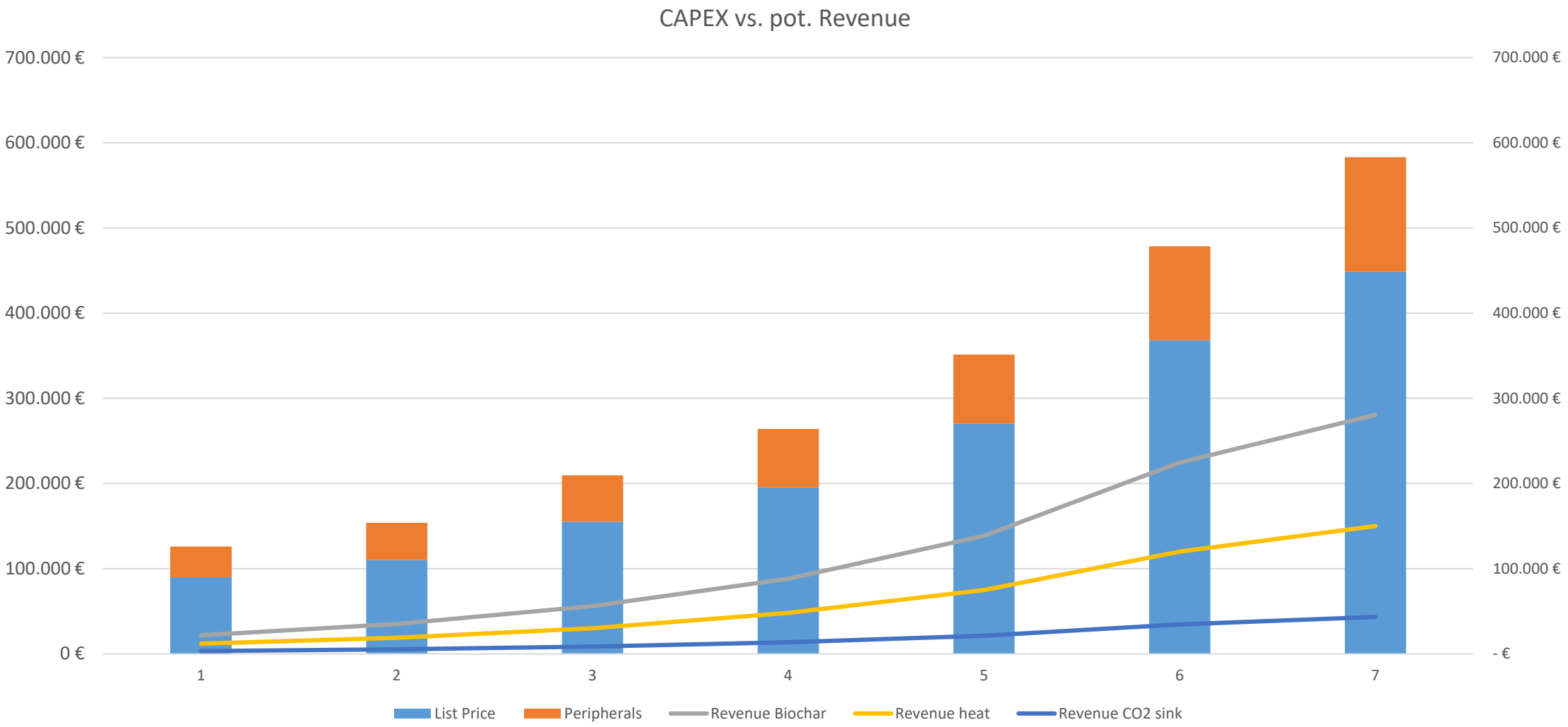
Back-up slides

The carbon cycle



Economics


CAPEX vs. pot. Revenue
700.000 €
600.000 €
500.000 €
400.000 €
300.000 €
200.000 €
100.000 €
0 €
1
2
3
4
5
6
7
List Price
Peripherals
Revenue Biochar
Revenue heat
Revenue CO2 sink

Economics

Capex	
C400 - I	3.860.320,00 kr
Discharge	8.050,00 kr
Peripherals	524.500,00 kr
Total Capex	**4.392.870,00 kr**

Opex	
Maintenance	92.053,40 kr
Operation	192.544,00 kr
Total Opex	**284.597,40 kr**

Revenue		325t/a
Biochar selling	2.481.192,00 kr	700€/t
Trading	265.842,00 kr	50€/tCO2
Heat	2.180.998,40 kr	8,9€ct/kWh
Total Revenue	**2.747.034,00 kr**	