

6th International Conference on Smart Energy Systems
6-7 October 2020
#SESAAU2020



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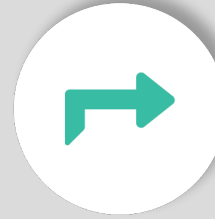
Re-turn on investment



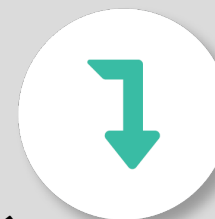
Re-think innovation



Re-circulate resources/energy



Re-move pollutants



Re-duce CO₂ and GHG emissions

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Yes, our planet is under pressure

Yes, we are running out of Phosphorus

- But, our ancestors **can** be able to grow crops

Yes, we have environmental challenges

- But, our groundwater **can** be protected

Yes, we have climate challenges

- But, CO₂ emissions **can** be reduced
- And, we **can** produce sustainable energy



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Re-turn on Investment

- RoI is short, as **we turn a problems into resources**
- Our solution turns biomasses into sustainable thermal energy for **district heating** or local process heat
- Besides **sustainable energy**, our solution produces marketable **biochar** and **activated carbon**
- Our solution **eliminates disposal costs** for biomass/sludge
- We handle **all types of biomasses** – also the difficult-to-handle fractions, like sewage sludge
- We **solve a global problem** – consequently the whole World will be the marketplace



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Re-think innovation

Our solution **is better** than our competitors offerings

The solution is developed together with the **best scientists**

The technology is **patented**

We own the **software** and all **production** drawings

Our solution is **modulized** and the production is **outsourced**

Upscaling of our business can happen very fast



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Re-circulate resources, Energy

UN's Intergovernmental Panel on Climate Change (IPCC) states:
“We need sustainable energy production”.

IPCC recommends that we stop using fossil fuels

- We produce **thermal energy** from biomasses, and
- We produce **pyrolysis gases** from biomasses

IPCC recommends that we **regain energy**

- After a tar reforming process the pyrolysis gases from the biomasses can be used to produce **electricity** in gas engines
- Next step is to produce **biooil and jetfuel** from the pyrolysis gases



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Re-circulate resources, Nutrients

UN's IPCC states that we have to **take CO₂ out** of the atmosphere - if we want to solve the climate challenge

- That's what we do when we store **BIOCHAR** in the soil

We are running short on the fertilizer Phosphorus and future generations cannot cultivate farmland efficiently

- **BIOCHAR** is recirculated and contains plantavailable phosphorus

More farmland has to be established to supply food and feed to the future generations

- **BIOCHAR** is a soilimprover which can be used for this

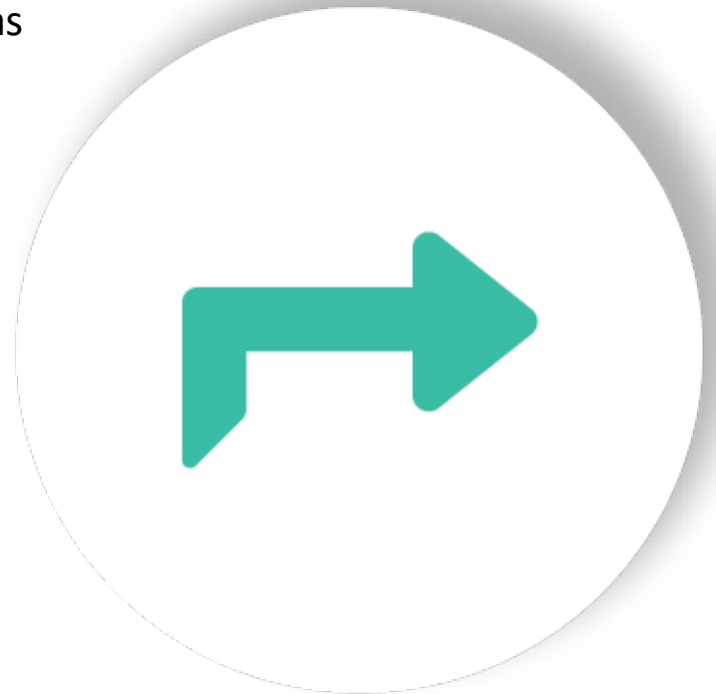


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Re-move pollutants

Today we use environmental pollutants and heavy metals as fertilizer

- We eliminated all organic environmental pollutants
 - **Micro plastics**
 - **Medical residue**
 - **PAH, LAS +++**
- We remove the heavy metals
 - **Mercury**
 - **Arsenic**
 - **Cadmium**



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Re-duce CO₂ and other greenhouse gasses

Implementing AquaGreen's technology

- **Reduces emissions from farming with 50%**, as manure is turned into biochar – instead of being stored for later direct use on farmland
- **Eliminates emissions of CO₂**, nitrous oxide (300 times more potent) and methane (30 times more potent), than CO₂.
- Enables **sustainable district heating** by pyrolyzing manure and straw – **turning problems into resources**
- **Avoids transport** of wood pellets cross the Atlantic
- **Reduces deforestation**



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AquaGreen's technology supports **11 out of UN's 17** SDG's



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