

ETIP Bioenergy
12th Stakeholder Plenary Meeting
Brussels – March 12th, 2025

## Challenge



### 150 mio. t per year wasted biomass on EU fields – equals 600 TWh heat energy



#### Why:

Farmers sell their residues mostly not as a product, but like residues – with less respect to biomass users' needs for heat generation.



#### **Current Situation:**

Biomass users don't invest and request more biomass, regarding uneven biomass residues. Biomass-energy scaleup is blocked.



#### Our Goal:

We transform farmers residues to easier usable, valuable PRODUCTS with proven qualities for our own and others biomass-energy projects.

# Solution - Value Chain Integration

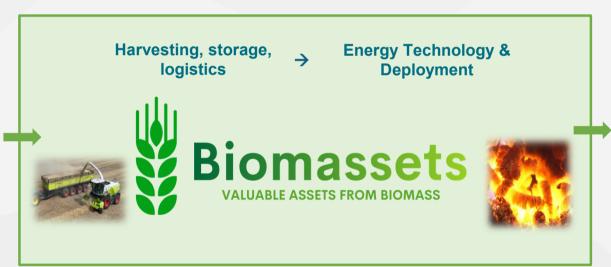


### Our services from biomass source to energy

# Straw & grass etc. from farms & municipalities



Farmers: always on the lookout for new value-added options



Electricity, heat, syngas, cooling, steam for our customers



Local heating
Halls
Swimming pools
Accommodations
Schools

Trade & Industry
Buildings,
thermal processes

Ash & nutrients as fertilizer back to the fields

# With ESA-BIC funding: quality and availability



### Optimal, digitalized biomass value creation

Multi-year satellite and statistical data for the evaluation, e.g. of biomass quantities and types in a defined radius



The lighter, the lower the quality, derived from phytosanitary indices



High predictability, availability & qualities are given

# Straw transformation (challenging biomass)



### From residue to a solution for energy

Harvesting with dedusting | Flexible, decentralised storage | Optimized logistics & direct feeding of energy production



Our innovative & unique process based on cooperation with technology providers

## **Current Portfolio**



### Value chain integration of agriculture and energy output

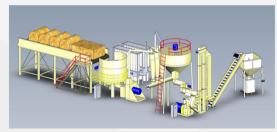
#### Sun2Fold - Mobile Solar Power Plant



#### Radviliskis pellet mills and lines

1.2 or 2.4 t/h of straw per lineGood value for moneyOptional semi-mobile on steel frame





#### **ReGaWatt Combi Power System**

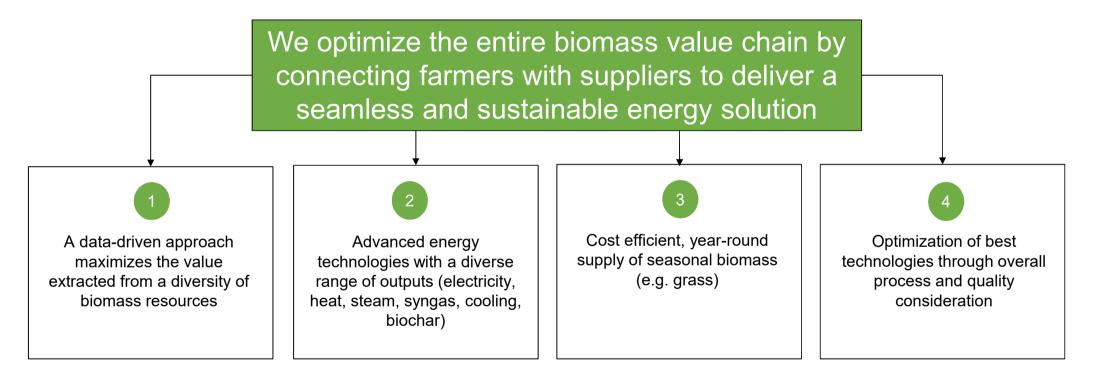
up to 20 MWth or 8 MWel Fuel-flexible for wet biomass without pre-drying Optional electricity, pyrolysis oil or biochar production







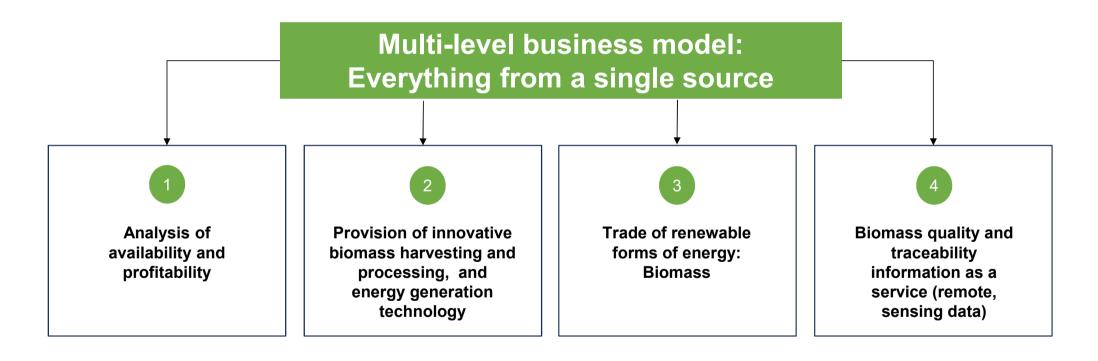
### Our USP



We accelerate and scale biomass use and value chain efficiency through standardization



### **Business Model**

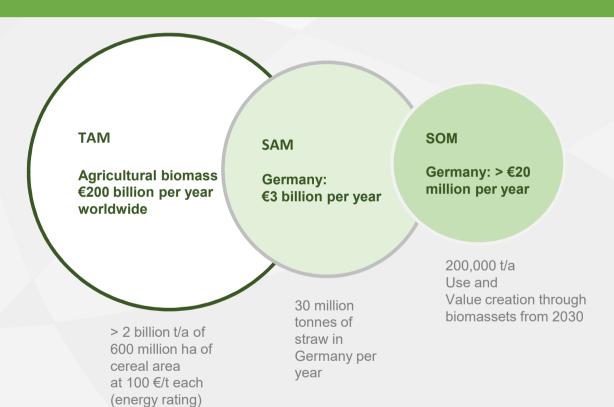


**Short-term revenues, long-term orientation** 

## Market – Supply & Demand



### E.g. straw availability and heat demand



#### Rapidly growing heat demand

 BEE expects grid heat from biomass to double by 2045



 UFZ Helmholtz/DBFZ assume that straw alone can supply up to 4.5 million households with heat

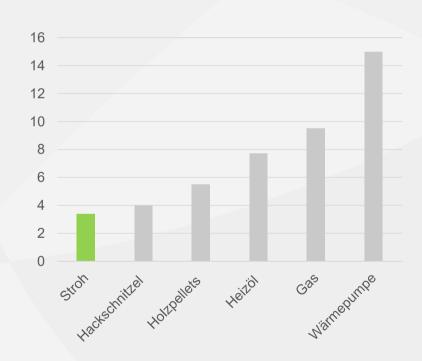


## **Competitivenes & Competition**



### **Fuel costs of energy sources**

#### ct/kWh Fuel costs



Fuel and fuel costs delivered at the plant	Properties
Heat pump > 15 ct/kWh	Powered by electricity
Gas 9,5 ct/kWh	Fossil
Fuel oil 7,7 ct/kWh	Fossil
Wood pellets 5 - 6 ct/kWh	Long-term renewable
Holzhackschnitzel 3,5 - 4,5 ct/kwh	Long-term renewable
Straw 3 - 4 ct/kWh; Grass 1,5 ct/kWh	Renewable annually

Straw & Grass: best energy sources (availability, economic and environmental efficiency)

# Financial Planning & Implementation Steps



### **Our Planned Growth & Roadmap**

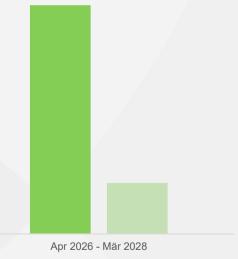
Nov 2024 Energy Decentral, Messe Hannover Vertriebsstart Anlagentechnik

Apr. 2025 Tests & Start Analysis & Sales Tool Q2 2025 Sales launch Feasibility & Analyses

Q3 2025 Harvest & Quality Parameter Validation Q2 2026 First project performance

Q3 2026 Monitoring Operation





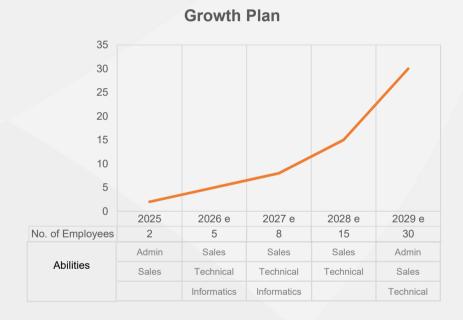
## Our Needs & Team Planning



### For Sales & Analytics Tool Development, Marketing, Data Processing, Sales

### **Startup-BW Pre-Seed**

- √ 40.000 € Co-Invest
- + 160.000 € from L-Bank
- ✓ As a subordinated loan with a convertible option
- ✓ We offer interest and share option
- ✓ <u>www.biomassets.com</u>



We will be happy to show you the financial planning and leave the break-even point behind us!

## **Focus on Circularity**



### **Relevant Issues of our Approach**

Bioeconomy

Value Chain Approach: from cropping, to harvesting, to use Carbon Dynamics

CO2 from Straw: 8 months capture time, rotting lasts several months

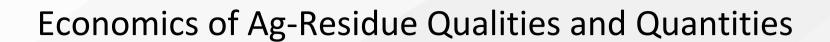
CO2 from Wood: 30-100 y. capture time, rotting lasts centuries Soil Carbon

Straw is rotting fast. Rotting produces CO2 (= burning)

Above-ground (straw carbon) vs below-ground biomass (roots of living crops) Soil Nutrients

Nutrients are taken from field, but are brought back as ashes

Removing straw leads to less N need for straw rotting, boosting N-efficiency





### **Matter not just for Energy!**



Fiber qualities and chemical composition of residues matter for bioeconomy



Optimization starts on the field (as required from processors) – the elimination of uneven qualities is essential and reduces costs



Feed and bedding material quality improvement leads to healthier animals and higher resource efficiency

## In the Pipeline



### Intelligent Grain Harvesting: Projects and Patents

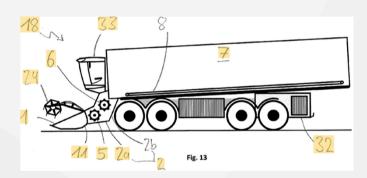
#### **I-Geek**

Harvesting specific needed qualities: straw fibers, fine straw, chaff or dust for higher value per hectare

Combination of harvesting and intercrop-seeding for soil health, weeds elimination, less need of tillage and chemicals

Harvesting higher Product-Output per area, intercrop seeding for less needed inputs lead to higher margin for farmers and lower prices for processors

#### **Patents**



For harvesting main crops like wheat and residues like chaff and straw.

Electrified fraction separation on defined parameters for high residue yield.

# Partnerships, Supporters, Successes



REGAWATT

### **Our Network**

#### Junge Innovatoren bis 7/2024





#### ESA BIC Förderung seit 7/2024

Accelerators, start-up support, consulting



BUSINESS INCUBATION CENTRE

Baden-Württemberg

#### **Technology Partners**



























## **Team & Contact**



### We look forward to hearing from you



Dr. Jörg Ortmaier – Founder and CEO Technologie, Sales

Management methods, economics of new harvesting methods for residues such as straw, agriculture and agribusiness, biomass processing

Dr. Daniela Horna – Founder and CEO Marketing, Finances

International Management, Sustainability
Management, Transformation of Orchards into a
Source of Raw Materials





jo@biomassets.com daniela.horna@biomassets.com

0162 6659005

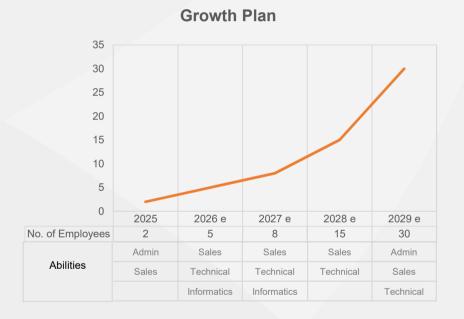
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