



# Unlocking Biomass Potential

IBTC – WBA Webinar

Agroresidues

September 2021

# Yilkins – Proposition

- Yilkins has developed integrated solutions with an “enabling” strategy for biomass residues valorization
- Our knowledge base:
  - Biomass pretreatment
  - Drying
  - Torrefaction / Pyrolysis
  - Combustion
  - Pelleting
- Our features:
  - Very energy efficient – contribution to climate change objectives
  - Lowest carbon footprint
  - Lowest Total Cost of Ownership
  - Reliability and safe operation
- Scope of supply:
  - Skid based; modular approach up to 4,5 m width – assembly friendly
  - Most installation items included, full concept approach



# Core Technology – Swirling Fluidized bed

Yilkins patented design based on fluidized bed principles:

## Mechanical

- Static reactor, no moving parts
- Compact design, small footprint
- Safe and flexible design

## Process

- Very fast heat transfer between gas and solids
- Uniform product quality
- No hot-spots possible during operation
- Feedstock flexible

## Commercial

- Technology Readiness Level 8 – System complete and qualified
- Due Diligence report by DNV-GL: bankable technology
- Guarantees according to Orgalime SI14
- Warranty Backstop performance guarantee can be insured by New Energy Risk if required





## Feedstock flexibility - Herbaceous Biomass



**Wheat Straw**

- Low bulk density
- Increased mineral content



**Miscanthus, Banagrass, Arundo**

- Low bulk density
- Increased mineral content



**Roadside Grass, Hemp**

- Low bulk density
- High moisture content
- Increased mineral, nitrogen content

## Feedstock flexibility - Residual Materials



**Cocoa Shells, Olive Seeds, Orujillo, Palm Kernels**

- Low bulk density
- Increased mineral, nitrogen content



**Brewery Spent Grains**

- Low bulk density
- High moisture content
- Increased nitrogen content



**Bagasse**

- Low bulk density

# Demo plant Ruurlo, Netherlands – Reactor incl. 2 combustors (0,5 tph)

## Project characteristics

- Client: Yilkins
- Biomass: Pruning and topping  
Herbaceous (banagrass, bagasse, verge gras)  
Sludges (sewer, food process)
- Moisture: From 80% till 5%
- Technology: 2-stage drying and torrefaction
- Product: White wood pellet & Torrefied pellets
- Start-up: 2017
- Status: Operational Demo for sample production

Several hundreds of tonnes of pellets produced on client specifications.







From biomass to energy, heat and  
chemistry • From spent mushroom  
compost to soil improver • From  
digestate to phosphate-rich soil  
improver

**YILKINS** Drying Solutions

E-mail: [info@yilkins.com](mailto:info@yilkins.com)

Website: [www.yilkins.com](http://www.yilkins.com)