

Sidestream of the month

February 2018

(Examples for high potential waste, by-products and residues from primary and secondary biomass resources)

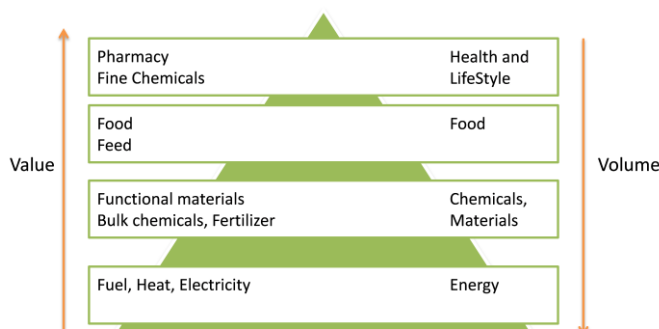
“Straw”



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 696394.

Straw

Instead of sending to landfill, composting or burning the sidestream directly after harvesting/ processing there are higher added values to be achieved applying a cascading and circular approach:



A) Highest added value

Non-food sugar

Non-food sugar as platform chemical can be produced from wheat straw applying an "enzymatic hydrolysis of autohydrolyzed straw followed by a bio refining process to produce fermentable sugars". This non-food sugar is the basis for the production of bio fuels and other chemicals.

[Link to respective examples in the Sidestream Value Tool \(please register to have a full view\):](#)

[Cinbios-Industrial-Biotech-Cluster](#)

B) Low-medium added value

Functional material

Through a preparation and then a mechanical process, straw can be converted to self-binding Micro- and Nano fibrillated Natural Fibres. With a low energy and water consumption these fibres can be applied in several areas, such as for:

- **Packaging and disposable table ware, household and office items**

[Link to respective examples in the Sidestream Value Tool \(please register to have a full view\):](#)

[BIO-LUTIONS](#)

[Tecnaro](#)

- **construction materials - fiberboards**

These are used for furniture as well as in materials for floor covering and laying in buildings

[Link to respective examples in the Sidestream Value Tool \(please register to have a full view\):](#)

[Bioflexi](#)



- **lignin –cellulose based panels**

These have a broad range of applications including fields of interior architecture, automotive interiors, and plastic industry

[Link to respective examples in the Sidestream Value Tool \(please register to have a full view\):](#)

[TRAsell](#)

[Plant-CULTURE](#)

[STRAWave](#)

[Tecnaro](#)

C) Lowest added value

Heat - power

- **Fuel**

Straw can be converted into bio fuel through a fully developed process which is already used in industrial plants

[Link to respective examples in the Sidestream Value Tool \(please register to have a full view\):](#)

[sunliquid](#)

[LignoValue](#)

- **Coal**

Innovative technologies are available to produce from biomass such as straw clean, renewable and smokeless alternative to coal.

[Link to respective examples in the Sidestream Value Tool \(please register to have a full view\):](#)

[Agro-forestry-to-Biocoal](#)

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