PROJECT

BUTANEXT

Next Generation Bio-butanol

ButaNexT aims to develop and validate a cheaper, more energy saving, social and environmentally-friendly integrated process, able to convert efficiently second generation sustainable feedstocks (lignocellulosic biomass and wastes) into biobutanol, and define optimal biobutanol blends with fossil fuels and conventional biofuels (ethanol and biodiesel).

zabala innovation consulting

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10
PARTNERS

1
PILOT INTEGRATED PROCESS (100L FERMENTATION SCALE)

50%
COST REDUCTION OF BIOBUTANOL PRODUCTION

85%
GHG EMISSIONS REDUCTION COMPARED TO FOSSIL FUELS (PETROL/GASOLINE).

IN ONE CLICK		
Coordinator	**Programme**	**Period**
GREEN BIOLOGICS (UK)	HORIZON 2020	2015-2018
Sector	**Web**	**PDF Download**
BIOFUELS	butanext.eu	**BUTANEX**

01 The Challenge

Biobutanol is an attractive **advanced biofuel with superior fuel properties.** It fits the existing fuel infrastructure; has a higher energy density (similar to petrol/gasoline) and has shown better performance properties than ethanol and biodiesel. However, it has not yet been established in the market due to some technical and economic barriers.

02 Solutions

A two-step (mechanical-micronising & chemical-enzymatic pretreatment) **versatile** (for different types of lignocellulosic feedstocks and wastes including recalcitrant materials) **and low cost** (with a reduced energy demand between 15-25%) **hydrolytic process**. A tailor-made enzyme cocktail with reduced enzyme dosage and costs (up to 25%), adapted to the Clostridium butanol fermentation process. **Improved next generation** homo-fermentative microorganisms/strains using non-GMO techniques. **High productivity fermentation** with in-situ product recovery (ISPR). Techno-economic and sustainability assessment of the integrated process.

03 Impacts

A process adapted **to use** a wide **range of lignocellulosic feedstocks and wastes** (agricultural residues, organic fraction of municipal solid waste -MSW-, regionally adapted energy crops) **will facilitate** commercial plant supply planning with subsequent improvements in economic benefits as well as overcoming sustainability concerns. **The development of rural areas is considered** as a direct consequence of the successful development and implementation and scale-up of the process using locally produced versions of the above-mentioned feedstocks.