

Beta Renewables: Sustainable Chemistry

Beta Renewables is a joint venture, created in October 2011, between Biochemtex and the American private investment firm TPG (Texas Pacific Group), with a capital of **250 million Euros**

Novozymes, Denmark-based world-class industrial enzyme company acquired **10% share** of Beta Renewables in Oct 2012

The JV is the owner of the Proesa™ technology, used to produce biofuels and chemical intermediates

It has invested in the construction of **the world's 1st commercial-scale plant in Crescentino** (Italy) that will produce 2nd generation ethanol

Beta Renewables develops **global alliances and partnerships** to license the Proesa™ technology



Supporting your 2G Project from Idea to Realization



Enable

Deploy

Empower

Development

Engineering

Construction

Start-up

Operations

Project feasibility study
and investment estimates

Qualify feedstock in **pilot plant**

Optimize **process parameters**
and enzymes for **feedstock**

Support in the **development of**
a biomass supply chain

Support in **financing**

Basic **engineering package**

Qualify EPC contractor

Permitting **support** and **procurement**
of critical equipment

Support in the **construction of the**
plant and deployment

Start-up and **training**

Support in **finding product**
off-takers

Ensure **joint performance**
guarantees hold

Provide **ongoing customer** support

Supply of **enzymes** and **yeast**



Biobased Chemicals Partnering

Feedstock Logistics

Hydrolysis
Technology

Conversion
Platform

Deployment

Offtake
Partner

GranBio

- Sugar cane bagasse and harvest residuals

MyBiomass

- Palm oil harvest residuals

BiochemtexAgro

- Energy crops such as *Arundo donax* and others
- Supply chain logistics

PROESA®

- Low cost sugars
- Technology package
- Commercial
- Process guarantees
- Includes the enzyme package from Novozymes



BETARENEWABLES

Genomatica

- BDO for polymers



Codexis

- Fatty alcohols for surfactants



Gevo

- iso-butanol for chemicals



Bio-

Chemtex

- Basic engineering
- Supply of key equipment
- Mechanical guarantees
- Training and startup support

biochemtex



various