

Contract No. 241566

Title: Biocommodity Refinery

Duration 01/03/2010 – 28/02/2014

Abstract

Today, concerns linked to climate change and Europe's excessive dependency on fossil resources are providing the necessary impetus for Society's transition towards a new economy that will use biomass as its primary source of carbon and energy. In this respect, biomass is completely unique, because it is the only naturally renewable energy source that can also supply carbon for the production of the chemicals and products that are vital for our daily life.

The European project BIOCORE will conceive and analyse the industrial feasibility of a biorefinery that will allow the conversion of a variety of non-food biomass, including cereal by-products (straws etc), forestry residues and short rotation woody crops, into 2nd generation biofuel, chemicals and polymers.

Processes that will allow maximum use of the biomass resource will be developed and optimized. Through pilot scaling testing of certain technologies, the industrial feasibility of biorefining in conditions that are close to the market will be demonstrated. Multicriteria sustainability studies of the overall concept will be implemented to demonstrate the impacts of BIOCORE to the environment and society.

BIOCORE aims to produce bioethanol at pilot scale and to produce a wide spectrum of chemicals that will allow the manufacture of many of today's key thermoplastics (e.g. polyolefins, polyurethanes, PVC etc), which together represent 70% of the global plastic market.

The role of CHIMAR will be to evaluate the use of chemicals including lignin, lignin-derived phenolic compounds and cellulose as building blocks during the production of thermosetting formaldehyde-based resins as well as pentoses as additives in the above resins. CHIMAR will also assess the bio-based resins' process economics, cost benefits and market potential.