

Biorefinery.nl

Dutch Network on Biorefinery

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A close cooperation of different participants with a broad variety of disciplines within the recently formed Dutch Network on Biorefinery – Biorefinery.nl – will enable research, development, demonstration and implementation of innovative biorefinery concepts. This whole route will certainly require a considerable effort of all parties involved (research institutes, government and industry). However, the final result will be a solid knowledge and market position of the Netherlands (and Europe) on the field of sustainable biomass chains.



Biorefinery.nl

Biorefinery.nl, a joint initiative of Wageningen UR and ECN, will inform industry, research institutes, universities, social institutes and government about research activities, new developments and projects in the field of biorefinery. With the feedback of all these groups it will also establish a biorefinery vision and formulate a roadmap for research on and development of biorefinery concepts.

More information is available on the website: www.biorefinery.nl

Wageningen University & Research Centre (WUR)

WUR has extensive experience in the research field of biobased materials and bioenergy. WUR conducts fundamental and applied research to develop sustainable alternatives and innovative applications from biomass.

The four key research themes are:

1. Sustainable Biomass Production
2. Biomass Logistics & Pretreatment
3. Bioconversion & Biofuels
4. Bioenergy Chain Aspects

The expertise enables contribution towards increase of the potentials of biobased products and bioenergy, the enhancement of the national energy security by diversification of our nation's energy resources and improvement of the environmental protection by offsetting fossil fuel use.

More info: www.wur.nl/UK
and www.biobasedproducts.nl

Energy research Centre of the Netherlands (ECN)

The ECN unit Biomass, Coal & Environmental Research performs R&D in the field of advanced use of biomass and is a consultant for policy development, technical applications and developments. The R&D activities are subdivided into:

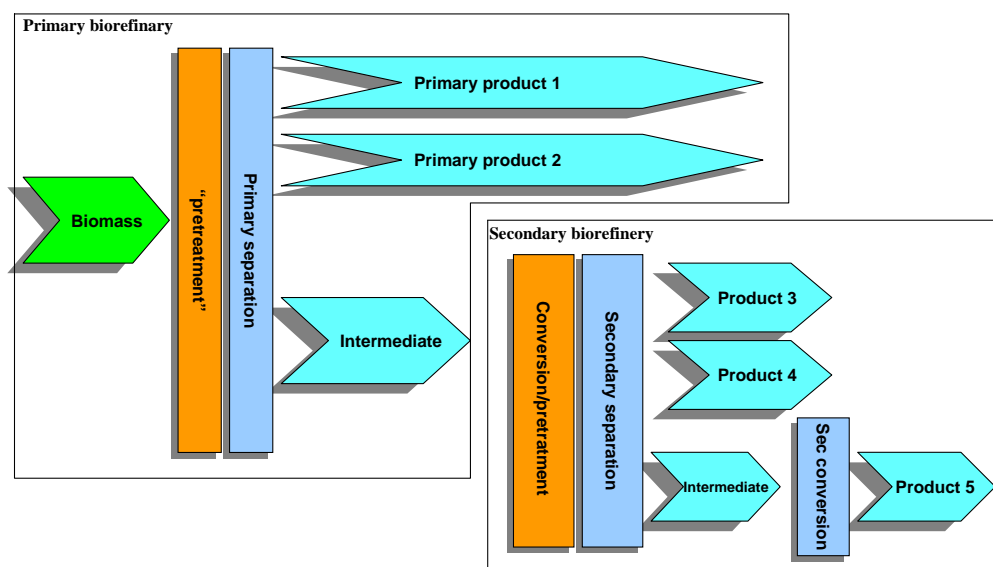
1. Heat and Power Generation
2. Gasification and Gas Conditioning
3. Biofuels and Refinery Processes
4. Air Quality and Climate Change.

The R&D department consists of experienced co-operators with a high reputation in research, development & implementation and accommodates a number of unique experimental facilities for execution of research and giving of advises on implementation.

More info: www.ecn.nl

The biorefinery concept

A biorefinery is a facility that integrates biomass conversion processes and equipment to co-produce fuels, power, and chemicals from diverse biomass sources. The biorefinery concept is analogous to today's petroleum refineries, which produce multiple fuels and products from petroleum. Industrial biorefineries have been identified as the most promising routes to the creation of a bio-based economy. Partial biorefineries already exist in some agricultural and forest products facilities (e.g. pulp mills, corn wet milling, starch and sugar beet refining). These systems can be improved through better utilization of residues and optimization of total added value creation. New biorefineries can be enhanced by applying the lessons learned from existing facilities to comparable situations.



Schematic overview general integrated biorefinery process

By producing multiple products, a biorefinery can take advantage of the natural complexity and differences in biomass components and intermediates and therefore maximize the value derived from the biomass feedstock. A biorefinery might, for example, produce one or several low-volume, but high-value, chemical products and a low-value, but high-volume, platform chemical and/or liquid transportation fuel; while generating power and heat for its own use, and likely enough for sale of electricity. The high-value products enhance profitability, the high-volume chemicals and/or transportation fuels help to meet European energy needs and CO₂ emission reduction goals; whereas the power and/or heat both reduces overall production costs and greenhouse gas emissions.

Biorefineries can play a major role in the transition to a more sustainable Dutch economy. Realization of high-efficient biorefining processes at places where biomass can be gathered, grown and/or imported and where the 'green' products can be sold to a cluster of chemical and material industries, is believed to be a key to meet the longer term policy goals.

The chemical and material industries are founded upon innovation. Due to the emerging interaction between chemistry, biology and process engineering the industries of 2020 will be significantly different from the industry of today.

Bio2Value



Wageningen UR (WUR) and the Energy research Centre of the Netherlands (ECN), two prominent players in both the national and European biomass research field, have started a programmatic cooperation, Bio2Value, to support the substitution process of fossil fuels by biomass. This will be achieved by developing and utilising biorefinery and overall chain knowledge on conversion of biomass into biomaterials, biochemicals, biofuels and bioenergy.

WUR has a broad expertise regarding 'upstream' biomass processing, whereas ECN focuses more on 'downstream' processing

More info: www.bio2value.nl

More Information

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