



www.nova-institute.eu



Small and medium sized enterprise (SME)

Bio-based Economy – Bio-based Chemistry and Materials

- Raw Material Supply
- Techno-Economic Evaluation
- Market Research
- Environmental Evaluation
- Dissemination
- Political Framework & Strategy



nova-Institut GmbH - SME

Institute

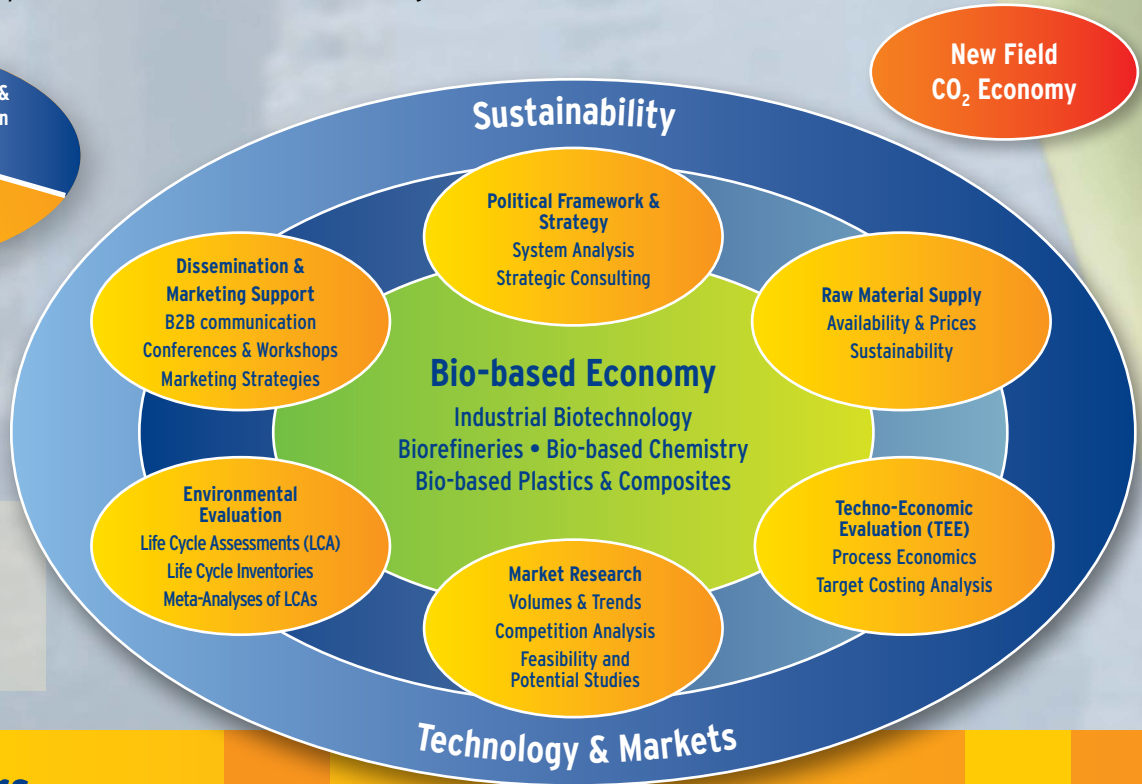
The nova-Institute was founded as a private and independent institute in 1994. It is located in the Chemical Park Knapsack in Huerth, which lies at the heart of the chemical industry around Cologne (Germany).



For the last two decades, nova-Institute has been globally active in feedstock supply, techno-economic and environmental evaluation, market research, dissemination, project management and policy for a sustainable bio-based economy.

Key questions regarding nova activities

What are the most promising concepts and applications for Industrial biotechnology, biorefineries and bio-based products? What are the challenges for a post petroleum age - the Third Industrial Revolution?



Selected customers

Automotive Industry: Brose, BMW, Mercedes/Daimler, Dräxlmaier, Faurecia, Ford, Johnson Controls, Quadrant

Chemistry, plastics and biomaterials: Arizona Chemical, BASF, Corbion (formerly: PURAC), ESE Expert, Evonik, FKuR, GreenFuture, Honeywell, IKEA, InfraServ, KOSCHE, LEIFHEIT, LOGOCOS, Teijin

Engineering: Coperion, FERROSTAAL, Reifenhäuser, Uhde-Inventa Fischer

Consulting: AFC Consulting (DE), BLEZAT CONSULTING (FR), Clever Consult (BE), Ernst & Young (FR/DE), KPMG (Malaysia), meo Consulting (DE)

Associations / Clusters / NGOs: AVK, CEFIC, CLIB2021, European Bioplastics, EIHA, IAR, VHI, WWF (USA)

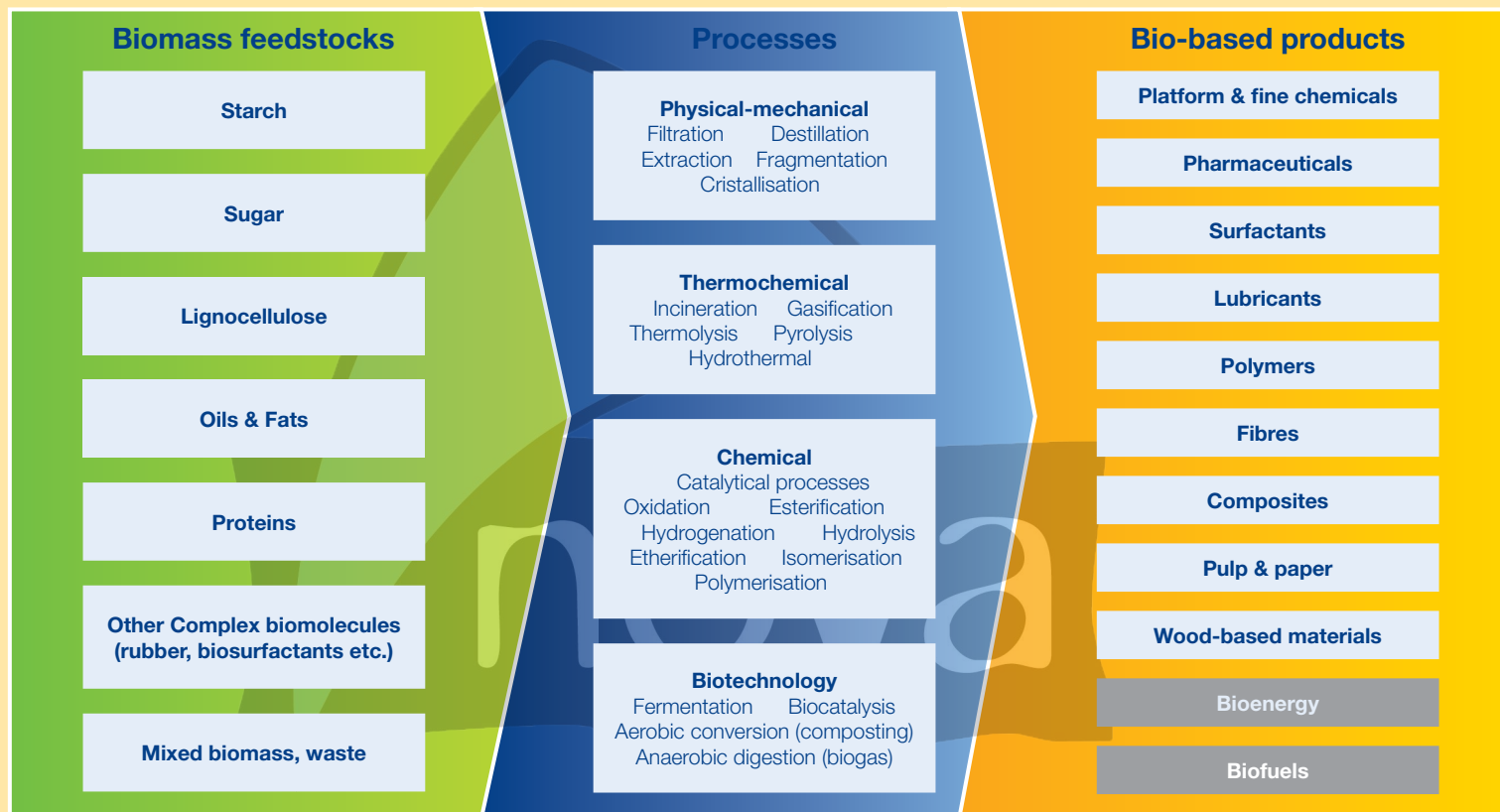
Ministries & Institutions: BfN (DE), BMELV (DE), DBU (DE), DEFRA (UK), DECC (UK), European Commission, FAO, FNR (DE),

GIZ (DE), KfW (DE), NIA (TH), UBA (DE), Netherlands Enterprise Agency (NL), Ministry of Economic Affairs (NL)

Research Institutes: Fraunhofer UMSICHT (DE), HS Bremen (DE), IFEU (DE), INRA (FR), INNVENTIA (SE), Joint Research Centre (EU), London Imperial College (UK), Öko-Institut (DE), RAPRA (UK), VTT (FI), Wageningen UR (NL), Wuppertal Institut (DE)

Bio-based economy

Feedstocks, processes and products (without food & feed)



Fields of activity

nova-Institute offers research, consultancy and dissemination with a focus on bio-based and CO₂-based economy in the fields of feedstock, techno-economic evaluation, markets, LCA, dissemination, B2B communication and policy. Today, nova-Institute has more than 20 employees and a yearly turnover of more than 2 Mio. €.



All services of the nova-Institute

You may find all information on conferences and have access to our bio-based news, along with papers on bio-based policy, studies on LCA and Meta-Analysis of LCAs, market studies and more on www.bio-based.eu

Regular nova-conferences

- International Conference on Bio-based Materials
- Conference on Carbon Dioxide as Feedstock for Chemistry & Polymers
- German WPC-Conference
- International Conference of the European Industrial Hemp Association

Your partner for research and consultancy

We are ready to join ambitious research and industrial consultancy projects with our comprehensive expertise:

Raw Material Supply

- Availability & prices
- Competing uses
- Sustainability certifications
- Technical feasibility assessment and alternatives
- Characterisation and evaluation of chemical composition

Environmental Evaluation

- Life cycle assessments (LCA)
- Life cycle inventories
- Meta-analyses of LCAs
- Environmental process optimization
- Support of sustainability certification - labelling, auditing

Techno-Economic Evaluation

- Process Economics
- Technology assessment
- Investment appraisals
- Business development
- Target and life cycle costing
- Uncertainty, risk and sensitivity analyses

Dissemination & Marketing Support

- B2B communication
- Events for experts: Conferences & workshops
- Project communication & dissemination
- Different channels: conferences, websites, press releases, newsletters, leaflets
- Strong stakeholders network

Market Research

- Competition Analysis
- Feasibility and potential studies
- Marketing strategies, application assessment
- Data collection, surveys and interviews
- Evaluation of product identities incl. GreenPremium

Political Framework & Strategy

- System Analysis
- Science-based strategic consulting for political bodies and companies
- Strategic Consulting
- Data collection and analysis
- Unique selling points, application assessment and GreenPremium prices
- Standardisation, certification and labelling
- Strong political network and member in different national and international committees

Associations and bodies

The nova-Institute is a member of various international associations and committees. We are founding member of the Cluster Industrial Biotechnology CLIB2021, member of the Federation of Reinforced Plastics (AVK), member of the Biobased Industries Consortium BIC, the subgroup "Natural Fibres Reinforced Plastics", member of kunststoffland NRW e.V. - Plastics Manufacturers Association in the German State of North Rhine-Westphalia and of IBB - Industrielle Biotechnologie Bayern.

nova-Institute is the executive office of the European Industrial Hemp Association (EIHA), which is member of the Technical Committee, CEN/TC 411 "Bio-based products", member of the "Expert Group

on Bio-based Products" of the European Commission, member of the biomass supply Thematic Working Group of the "Bioeconomy Panel" of the European Commission, as well as member of the Standing Committee on Agricultural Research (SCAR), working group "Sustainable Bioresources for a Growing Bioeconomy".



Running projects

The nova-Institute is a partner in various research projects within the fields of bio-based chemistry, materials and biotechnology. nova-Institute surrounds, strengthens and completes scientific and engineering work by linking it to feedstock, markets, economy and policy. Furthermore, nova is committed to do dissemination and marketing support.

Projects funded by the European Commission

Projects within the FP7 funding programme

- **BIO-TIC** - The Industrial Biotech Research and Innovation Platforms Centre - towards Technological Innovation and solid foundations for a growing industrial biotech sector in Europe: Roadmapping for a bio-based economy, identification of hurdles and network management. (08/2012 - 07/2015)
- **KBBPPS** - Knowledge Based Bio-based Products' Pre-Standardization: Development of a standardization of bio-based products, network management and dissemination. (08/2012 - 07/2015)
- **FIBRA** - EU-China Partnering on fibre crops: Network management, socio-economic and ecological assessment for the development of the natural fibre industry in China. (09/2012 - 11/2015)
- **MultiHemp** - Multipurpose Hemp: Techno-economic evaluation, life-cycle assessment (LCA) and dissemination for the development of a multipurpose hemp. (09/2012 - 02/2017)
- **SPLASH** - Sustainable Polymers from Algae Sugars and Hydrocarbons: Dissemination for a multinational project on algae biotechnology and product development. (09/2012-08/2016)
- **MIRACLES** - Multi-product Integrated bioRefinery of Algae: from Carbon dioxide and Light Energy to high-value Specialties. (11/2013 - 10/2017)
- **Open-Bio** - Opening bio-based markets via standards, labelling and procurement. (2013 - 10/2016)
- **IB2Market** - Bringing innovative industrial biotechnology research to the market. (12/2013 - 11/2015)

nova papers on bio-based economy

nova paper #1: Level Playing Field for Bio-based Chemistry and Materials. 2011-07.

nova paper #2: Food or non-food: Which agricultural feedstocks are best for industrial uses? 2013-07.

- **BIO-QED** - Quod Erat Demonstrandum: Large scale demonstration for the bio-based bulk chemicals BDO and IA aiming at cost reduction and improved sustainability. (01/2014 - 12/2017)

Projects within the WoodWisdom-Net Research Programme and ERA-NET Bioenergy

- **BioFoamBark** - Bark Valorization into insulating Foams and Bioenergy: Techno-economic evaluation, market penetration strategy and dissemination. (02/2012 - 02/2015)
- **HEMICELL** - Wood based chemicals, in particular chemical modified hemicellulose, used as functional additives to enhance the material properties of cellulose esters. (04/2014 - 03/2017)

National projects

- **Material use of lignocellulose-containing fermentation residues from biogas production for the wood panel industry:** Project management, techno-economic and ecological assessment for the use of fermentation residues. (Funded by the Deutsche Bundesstiftung Umwelt DBU 04/2012 - 10/2014)
- **Sustainable biomass potential for biofuels in competition to food, feed, bioenergy and industrial material use in Germany, Europe and worldwide.** (Funded by the Federal Ministry of Food and Agriculture (BMEL), 04/2013 - 09/2014)
- **More resource efficiency through cascading use of biomass - from theory to practice:** Best practice analysis of existing cascades and development of recommendations for political and industrial stakeholders. (Funded by the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB), 07/2013 - 10/2016)

nova paper #3: GreenPremium prices along the value chain of bio-based products. 2014-04.

nova-paper #4: Proposals for a Reform of the Renewable Energy Directive (RED) to a Renewable Energy and Materials Directive (REMD). 2014-05.

Download at: www.bio-based.eu/nova-papers

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Conferences & Dissemination

Conferences, B2B Communication, iBIB



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