TKI Biobased Economy (TKI BBE)

What does TKI BBE do and where can you find more information?

The Topconsortium voor Kennis en Innovatie (TKI) (top consortium for knowledge and innovation) Biobased Economy (BBE) is one of seven TKIs within Top Sector Chemicals Industry (Topsector Chemie). These sectors are two of the nine top sectors in which the Netherlands holds a strong position, globally.

The TKI is directed at the production of biobased innovation across the entire biomass value chain, from field to end product, including the recycling of industrial and domestic streams. TKI BBE is organised around six programme outlines: high-quality energy carriers, high percentages of additional and auxiliary firing, biorefinement, chemical and biotechnological conversion technology, Aquatic Biomass (including BioSolar) and Economy, Policy and Sustainability (EBD).

The TKI has a network of approximately 100 companies, research institutes and non-government organisations surrounding it.

TKI BBE in 2013

In 2012, Top Sector Energy (Topsector Energie) allocated an innovation budget of 42 million Euros, which will be appropriated within 11 projects that will start in 2013. The budget is supplemented with approx. 150 million Euros in individual contributions. For 2013, TKI BBE expects a budget of approximately 25 million Euros. Mid-May two tenders will be opened for projects in the field of research, development and demonstration. Furthermore, a joint tender is planned with TKI Gas, for projects that combine biorefinement and green gas production.

1. High-quality energy carriers
   This programme outline is directed at the pre-treatment of biomass, to make it suitable for further refinement and / or the production of electricity, heat and / or green gas. Already started:
   − the Empyro project: the construction of a plant for the production of pyrolysis oil from ligneous streams;
   − pre-treatment: torrefaction research, where biomass is converted to biocoal through heating.

2. High percentages of additional and auxiliary firing
   The goal of this programme outline is the development of innovative technology and logistics / infrastructure for additional firing of biomass on the scale which is necessary in order to achieve the national emission and renewable energy objectives. In 2012, budget was not available for this programme outline, but the opposite is true for 2013.

3. Biorefinement
   Biorefinement aims to unravel vegetal and animal raw materials in an efficient, ecologically responsible and economic manner, so that the full potential of the substance contents can be utilised. Already started:
   − the development of a BBE park around the Essent biomass power plant in Cuijk, where research is done on, amongst other things, alternative biofuels, innovative drying and digestion of manure, and assigning economic value to manure;
   − a project on the refinement of proteins;
   − a feasibility study on biorefinement innovation cluster in the province of Gelderland.

Within Top Sector Energy (Topsector Energie), TKI BBE is associated with TKI Gas.

TKI BBE is associated with Top Sectors Chemicals (Chemie), Agri-food, Horticulture (Tuinbouw) and Life Sciences and Health.
4. Chemical and biotechnological conversion technology
The goal of this programme outline is the development of new and advanced technologies for the conversion of processed or unprocessed biomass to green materials, chemicals and fuels. Four projects start in 2013, including YXY fuels: Development of Avantium YXY process from second generation raw materials. End products being heat and electricity, biofuels and synthetic materials. ECN researches breaking up and unlocking of raw materials (lignocellulose with Organosolv).

5. Aquatic Biomass (including BioSolar)
Micro and macro algae (seaweed) are promising raw materials: they contain high concentrations of lipids and proteins, grow in sea water, do not require fertile agricultural land, and can use residual streams as a source of nutrients. The goal of this programme outline is the refinement of aquatic biomass. The Algae Parc Biorefinery project develops concepts for the extraction and refinement of lipids, proteins and carbohydrates from algae, by a wide consortium under supervision of Wageningen University.

6. Economy, Policy and Sustainability (EBD)
The goal of this programme outline is to provide effective solutions for non-technological aspects with innovations in the production of bioenergy, biomaterials and biochemicals. This programme outline supports the other programme outlines.

More information
All applications from 2012 have not been honoured as of yet. Detailed summaries will be publicised as soon as this is the case: www.tki-bbe.nl

TKI BBE in 2012
TKI BBE was started in 2012. A great deal has happened since this time:
• Various tenders for projects that contribute to the objectives of programme outlines in the innovation contract
• Conclusion and publication of Innovation Contract for BBE (Innovatiecontract BBE) (2 April 2012)
• A network of approx. 100 companies and organisations
• Close collaboration between Top Sectors Chemicals Industry and Energy

TKI BBE
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Top Sector Energy (Topsector Energie)

Clean and efficiently generated energy which strengthens the Dutch economy. This is what Top Sector Energy works towards. Energy innovations contribute to the reduction in costs and the reduction in CO₂ emissions, the development of renewable energy sources and the smarter utilisation thereof. Energy research and innovation are the support bearers of the fundamental transition towards CO₂-free Dutch energy management. Top Sector Energy contributes to the creation of economic opportunities for Dutch companies, and in so doing, also to competitiveness, job opportunities and prosperity. The technological and social innovations give the energy sector a leading position in the new global economy.

Within Top Sector Energy, seven Topconsortia voor Kennis en Innovatie (TKI) (top consortiums for knowledge and innovation) have each devised a theme: Bioenergy, Offshore Wind, Smart Grids, Solar Energy, Energy Savings in the Built Environment, Gas and Industrial Energy Savings. In the TKIs, the government, professional associations and companies work together. For more information visit www.topsectorenergie.nl.

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