



bioenergy2020+

IEA Bioenergy Task 39 Übersicht

Dina Bacovsky, BIOENERGY 2020+

Wien, 21. Nov 2014

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- 16 member countries



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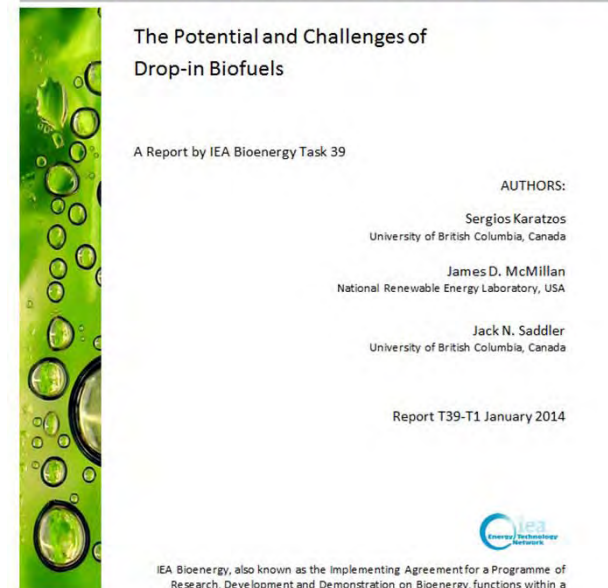
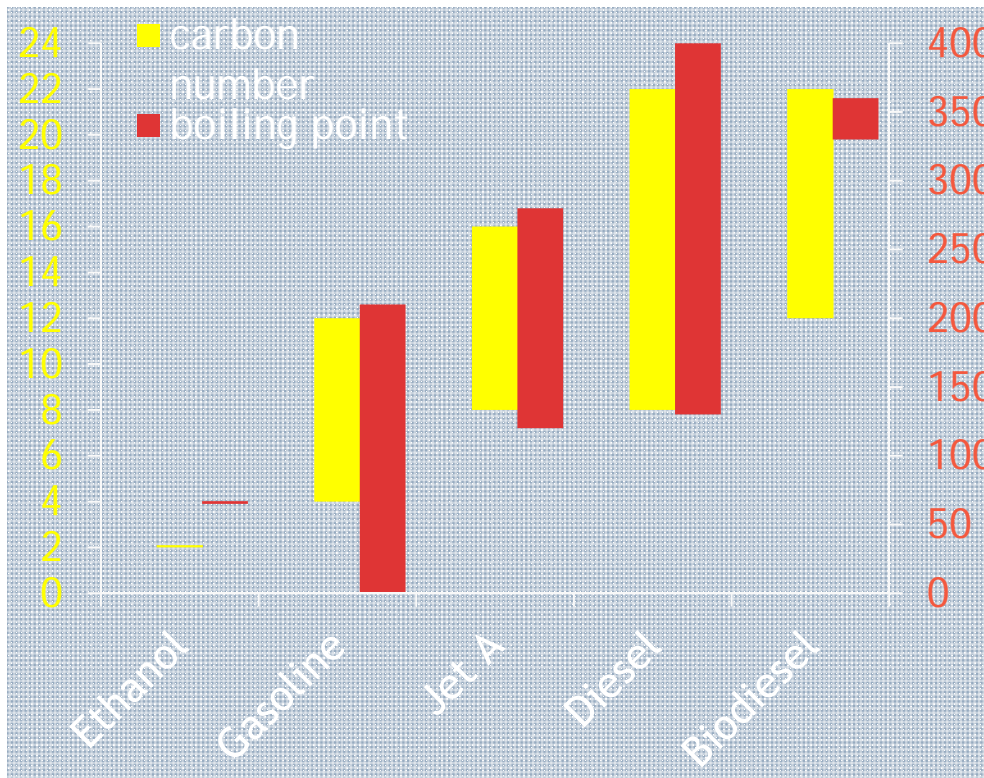
New Zealand - Ian Suckling

Australia - Les Edye



Task 39 Bericht: The Potential and Challenges of Drop-in Biofuels

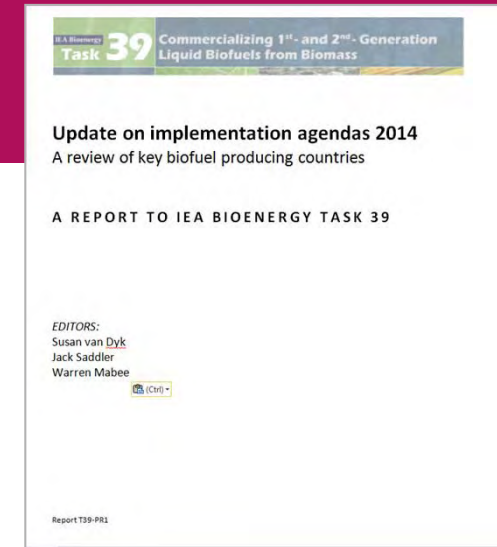
- Drop-in biofuels: are “liquid bio-hydrocarbons that are functionally equivalent to petroleum fuels and are fully compatible with existing petroleum infrastructure”



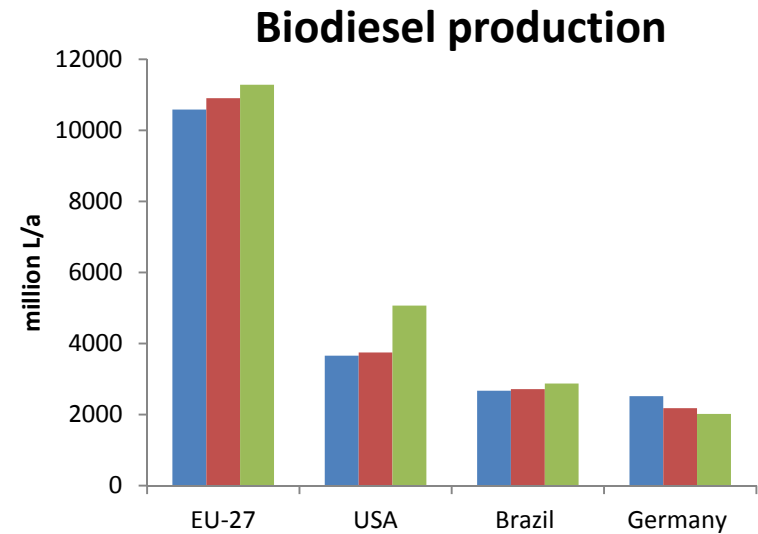
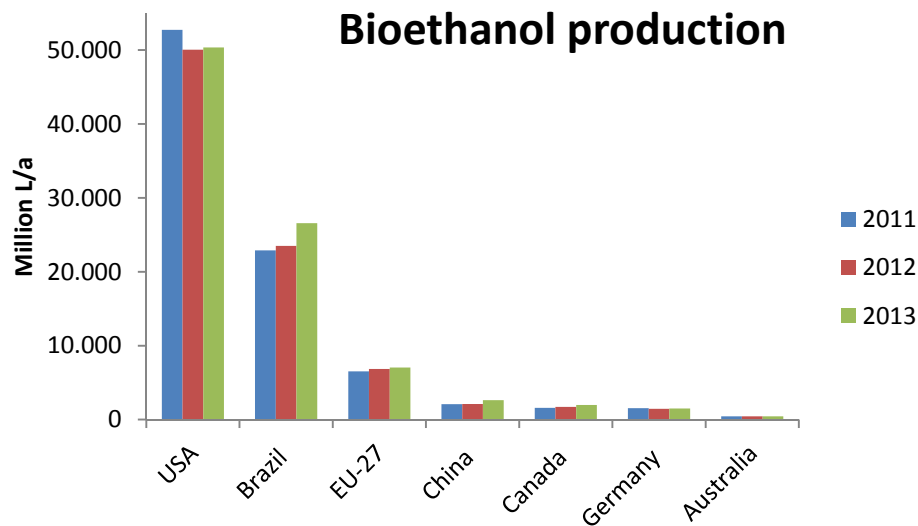
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Task 39 Bericht: Update on Implementation Agendas



- Daten zu Biotreibstoffen in 19 Ländern:
 - Politik und Treiber
 - Produktion
 - Verwendung
 - F&E





Inter-Task collaboration book project: Mobilization of forest bioenergy supply chains

- Identifikation der Elemente von erfolgreichen und nachhaltigen Bioenergie-Versorgungsketten
- Task 39 Beitrag:
 - Nutzung von LW Reststoffen (EU, Nordamerika)
 - Buchkapitel: „Challenges and Opportunities of Conversion Technologies related to Forest Biomass“





Task 39 Berichte in Vorbereitung

- Update on Status and Potential for Algal biofuels production
- Update on GHG emissions and energy balances for advanced biofuels
- Advanced Fuels in Advanced Engines
- Assessment of large-scale demonstration plants (advanced biofuels)



<http://demoplants.bioenergy2020.eu>

European Industrial Bioenergy L... Energy: SET-Plan - Europea... nk-N-4 (EA) - Demoplants

demoplants.bioenergy2020.eu/projects/map/index

IEA Bioenergy Task 39 Commercializing 1st- and 2nd- Generation Liquid Biofuels from Biomass

Last update: 2014-09-23 09:38:29

This overview has been elaborated by ABC (now Bioenergy2020+) and FJ-BLT.

Austrian Bio Energy
bioenergy2020+
F J BLT WIESELBURG

Please click here for more information

Company (Project)

- Aalborg University Copenhagen (BornBiofuels optimization)
- Abengoa Bioenergy (demo)
- Abengoa Bioenergy Biomass of Kansas, LLC (commercial)
- Abengoa Bioenergy New Technologies (pilot)
- Abengoa Bioenergy, S.A. (Abengoa Arance EC demonstration)
- Aemetis (pilot)
- AliphaJet Inc. (AlphaJet Pilot Plant)
- Amyris, Inc. (Amyris Antibioticos)
- Amyris, Inc. (Amyris Biomim)
- Amyris, Inc. (Amyris Paraiso)
- Amyris, Inc. (Amyris Pilot & Demonstration Plant)
- Amyris, Inc. (Amyris Sao Martinho)
- Amyris, Inc. (Amyris Tate & Lyle)
- Amyris, Inc. (Amyris USA)
- BBI BioVentures LLC (commercial)
- BFT Bionic Fuel Technologies AG (OFT Alyssa)
- BP Biofuels (Jennings Demonstration Facility)
- Beta Renewables (joint venture of Mossi & Ghisolfi Chemtex division with TPG) (IBP - Italian Bio Fuel)
- Beta Renewables (joint venture of Mossi & Ghisolfi Chemtex division with TPG) (pilot)
- BioGasol (BornBioFuel 1)
- BioGasol (BornBioFuel 2)
- BioMCN (BioMCN commercial)
- Biomassekraftwerk Guessing (SNG demo)
- Blue Sugars Corporation (formerly KL Energy) (Blue Sugars)
- Borregaard AS (BALI Biorefinery Demo)
- Borregaard Industries AS (ChemCell Ethanol)
- Butamax Advanced Biofuels LLC (Biobutanol demo)
- CHOREN Fuel Freiberg GmbH & Co. KG (beta plant)
- CHOREN Industries GmbH (sirma plant)

Technology	Type	Status
<input type="checkbox"/> biochemical	<input type="checkbox"/> commercial	<input type="checkbox"/> planned
<input type="checkbox"/> thermochemical	<input type="checkbox"/> demo	<input type="checkbox"/> under construction
<input type="checkbox"/> chemical	<input type="checkbox"/> pilot	<input type="checkbox"/> operational



HVO – Größte Anlagen

Company	Country	Capacity [t/y]	Start-up
Neste Oil	Singapore	800.000	2010
Neste Oil	Netherlands	800.000	2011
ENI	Italy	500.000	2014
Diamond Green Diesel	United States	412.000	2014
REG Geismar	United States	225.000	2010
Neste Oil	Finland	190.000	2007
Neste Oil	Finland	190.000	2009
UPM Biofuels (under commissioning)	Finland	100.000	2014/15



Größte biochemische Anlagen

Company	Country	Capacity [t/y]	Start-up
POET-DSM Advanced Biofuels	United States	75.000	2014
Abengoa	United States	75.000	2014
GranBio	Brazil	65.000	2014
Beta Renewables	Italy	40.000	2012
Gevo (butanol and ethanol from corn)	United States	54.000	2006
Longlive Bio-technology Co. Ltd.	China	50.000	2012
Cane Technology Center (CTC)	Brazil	40.000	2012
INEOS Bio	United States	24.000	2013
Borregaard Industries AS	Norway	15.800	1938

Du Pont will bring 87.000 t/y ethanol online in late 2014



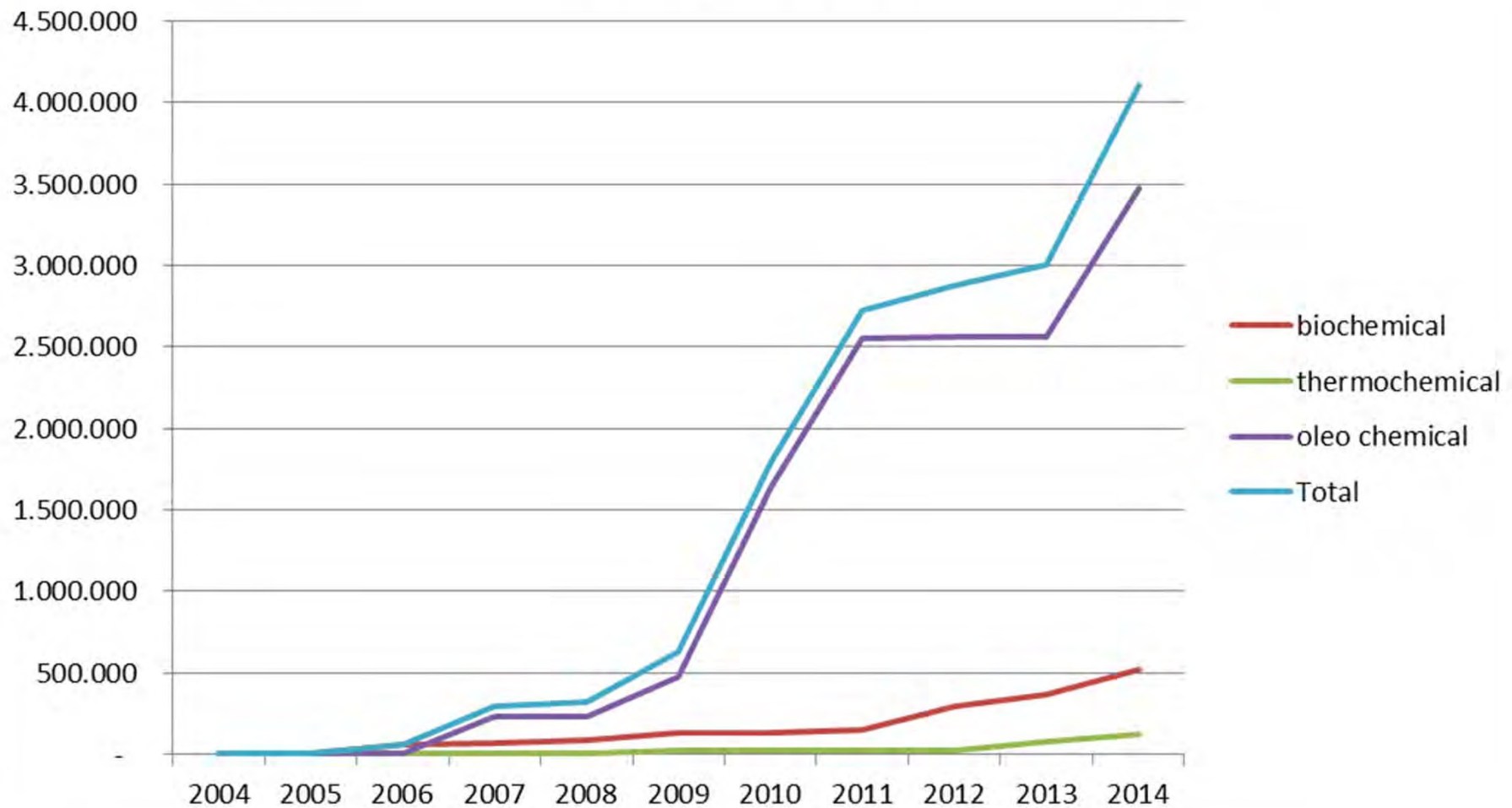
Größte thermochemische Anlagen

Company	Country	Capacity [t/y]	Start-up year
Fortum pyrolysis of wood residues	Finland	50.000	2013
Enerkem ethanol from MSW	Canada	30.000	2003
BioMCN methanol from biogas	Netherlands	20.000	2009
Goteborg Energi SNG from forest residues	Sweden	11.200	2014?

Plans announced or facilities under construction with a range of thermochemical technologies by:

BioMCN, Sundrop Biofuels, Akwawit, Gulf Coast Energy, Virent, Clearfuels, Solena, Clearfuels, CORE Biofuel, Fulcrum, Cool Planet, Vanerco (Enerkem & Greenfield Ethanol), Enerkem Mississippi Biofuels, ORG

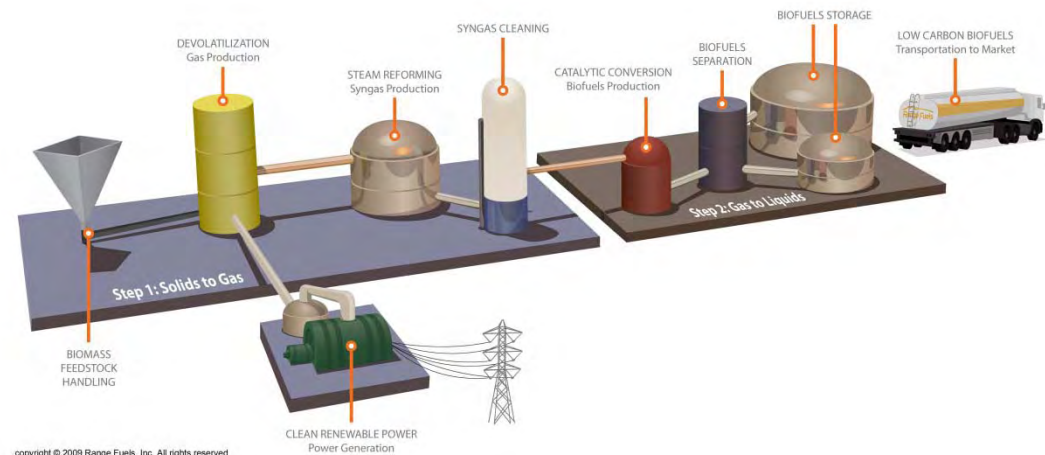
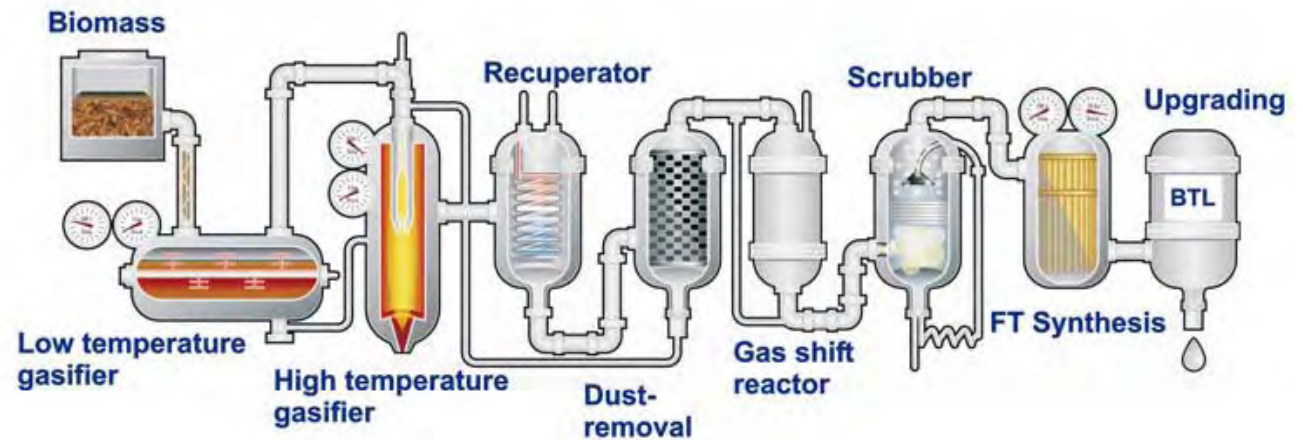
Cumulative Advanced Biofuels Production Capacities [tons per year]





What happened to...?

- Choren
- Range Fuels
- KiOR
- RenTech
- Lignol
- Pacific Ethanol
- New page
- Flambeau River
- Gevo
- Coskata
- ...



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NER 300 Projects first call announcements Dec 2012

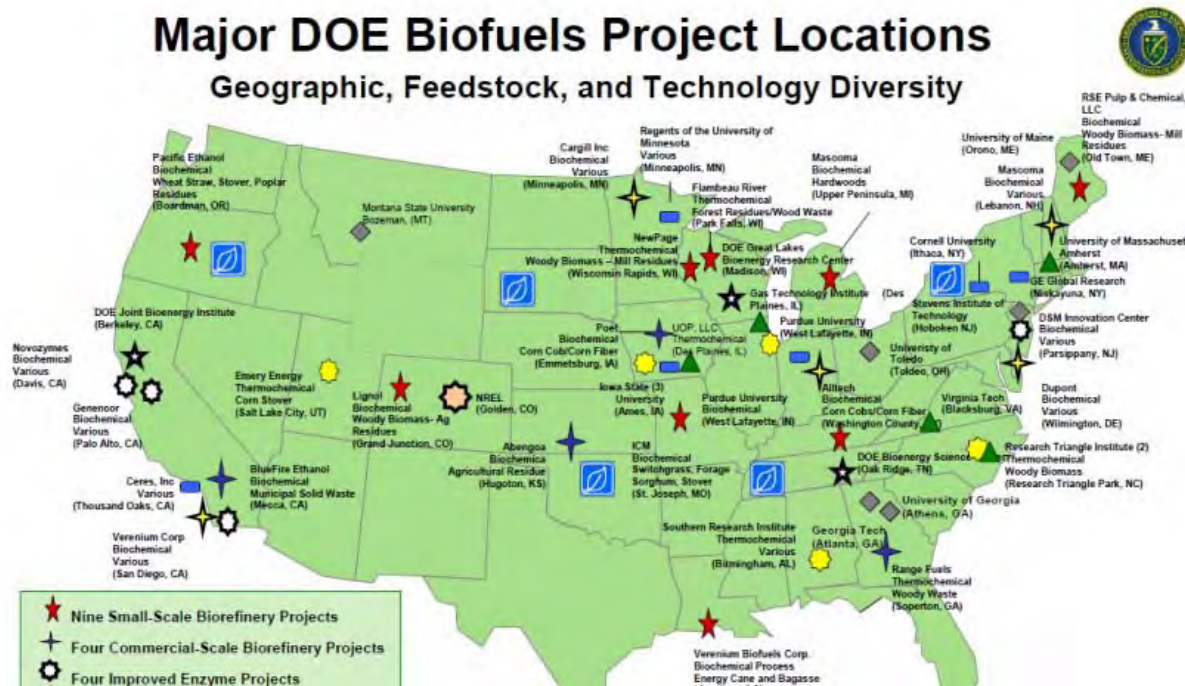
Project	Company	Country	Funding [m €]	Status
BEST	Beta Renewables	Italy	28	operational since Oct 2013
CEG Plant Goswinowice	SEKAB	Poland	31	planned
VERBIO Straw	VERBIO	Germany	22	under construction
Ajos BTL	Vapo Oy	Finland	89	freezed in Feb 2014
UPM Stracel BTL	UPM	France	170	investment decision pending
Woodspirit	BioMCN	Netherlands	199	investment decision pending
Gobigas phase 2	Goteborg Energi	Sweden	59	planned
Pyrogrot	BillerudKorsnäs	Sweden	31	cancelled in Dec 2013



USDOE Integrated Biorefinery Program

<http://www.energy.gov/eere/bioenergy/integrated-biorefineries>

Major DOE Biofuels Project Locations Geographic, Feedstock, and Technology Diversity

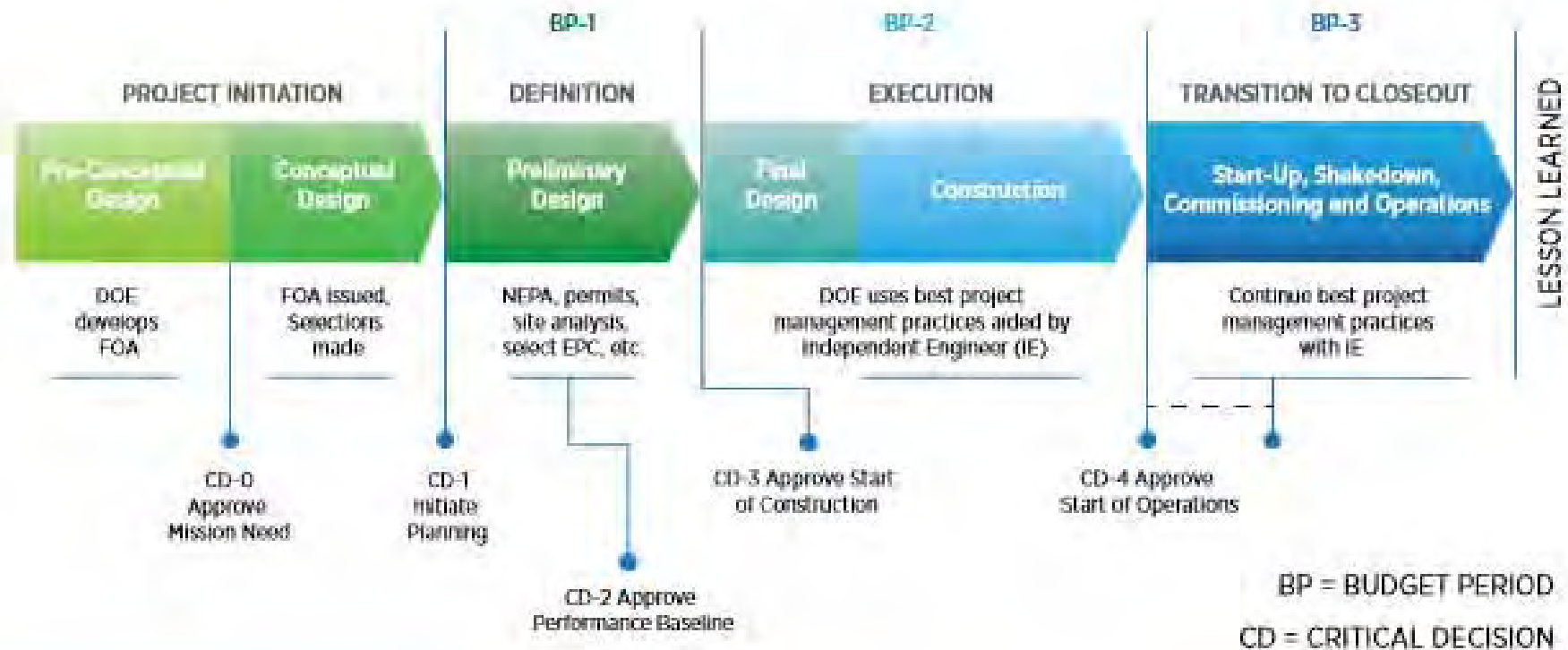


Current Status of the IBR Portfolio (as of July 2013)

A total of 33 IBR projects have been awarded to date:

- 5 Complete (two still compiling final report)
- 16 produce Cellulosic Ethanol
- 19 Active
- 12 produce Renewable Hydrocarbons
- 4 New Awards Under Negotiation
- 3 produce Algae Oil
- 5 Mutually Terminated
- 2 produce Bioproducts

DOE's Key Role: Through investment in first-of-a-kind technologies at scale, reduce the risk such that the return on investment can be demonstrated as attractive to private investment, especially related to scaling up new technology. The process of bringing an IBR online takes time and careful planning. This framework is divided into four main sections that correlate contractual Budget Periods (BP) to the Critical Decision Points identified in the DOE Order.





Lessons learned - USDOE Biorefinery program

- Proper integrated pilot testing
- Feedstock procurement
- Risk management throughout the project
- Partnership for construction rather than standard EPCM contract
- Mechanical completion \neq operational
- Secure adequate financing, incl. contingency
- Independent engineer review

<http://www.energy.gov/eere/bioenergy/downloads/response-ig-recommendation-create-formal-lessons-learned-process>

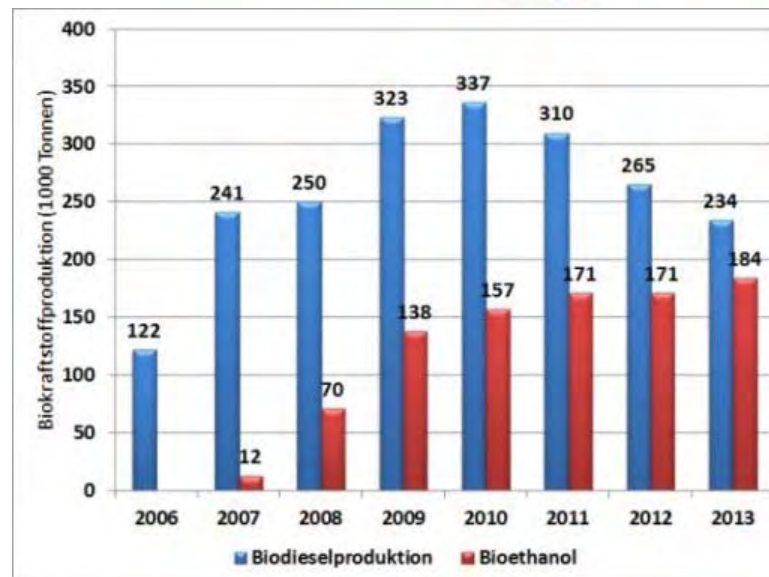


Biotreibstoffe in Österreich



Produzenten in Österreich

- Agrana Bioethanol
- ABID Biotreibstoffe
- BioDiesel Kärnten
- BIOIL
- Eco Fuels Danube
- Münzer Bioindustrie
- Münzer Paltental
- Novaol Austria
- PPM
- SEEG Mureck





Technologieanbieter in Österreich

- BDI: Biodiesel, Biogas
- Vogelbusch: Ethanol
- Andritz: Vorbehandlungsanlagen zum Aufschluss von Zellulose
- Repotec: Vergasung
- Ecoduna: Mikroalgenkultivierung



F&E in Österreich

- ACIB
- AIT
- Annikki
- BIOENERGY 2020+
- BOKU
- Energiepark Bruck/Leitha
- FJ-BLT
- FH OÖ (Wels)
- Güssing Energy Technologies
- HEI Hornbachner Energie Innovation
- Hydrogen Center Austria
- Joanneum Research
- Karl Franzens Universität Graz
- Landwirtschaftliche Fachschule Tulln
- Lignosol Technologie
- PROFACTOR
- TU Graz
- TU Wien
- Universität Innsbruck
- Universität Leoben
- Universität Linz, Energieinstitut
- ...

Strategisches Interesse: OMV



Vernetzung in Österreich

Dina Bacovsky

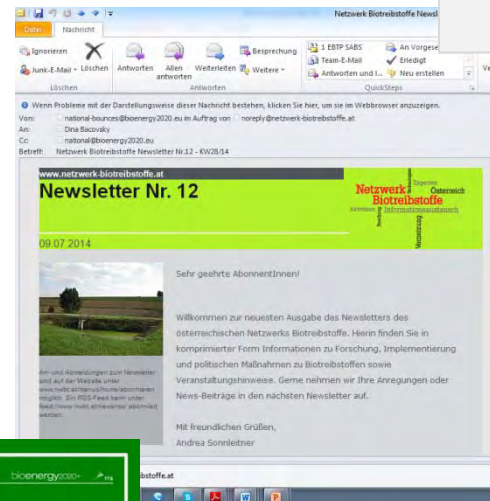
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