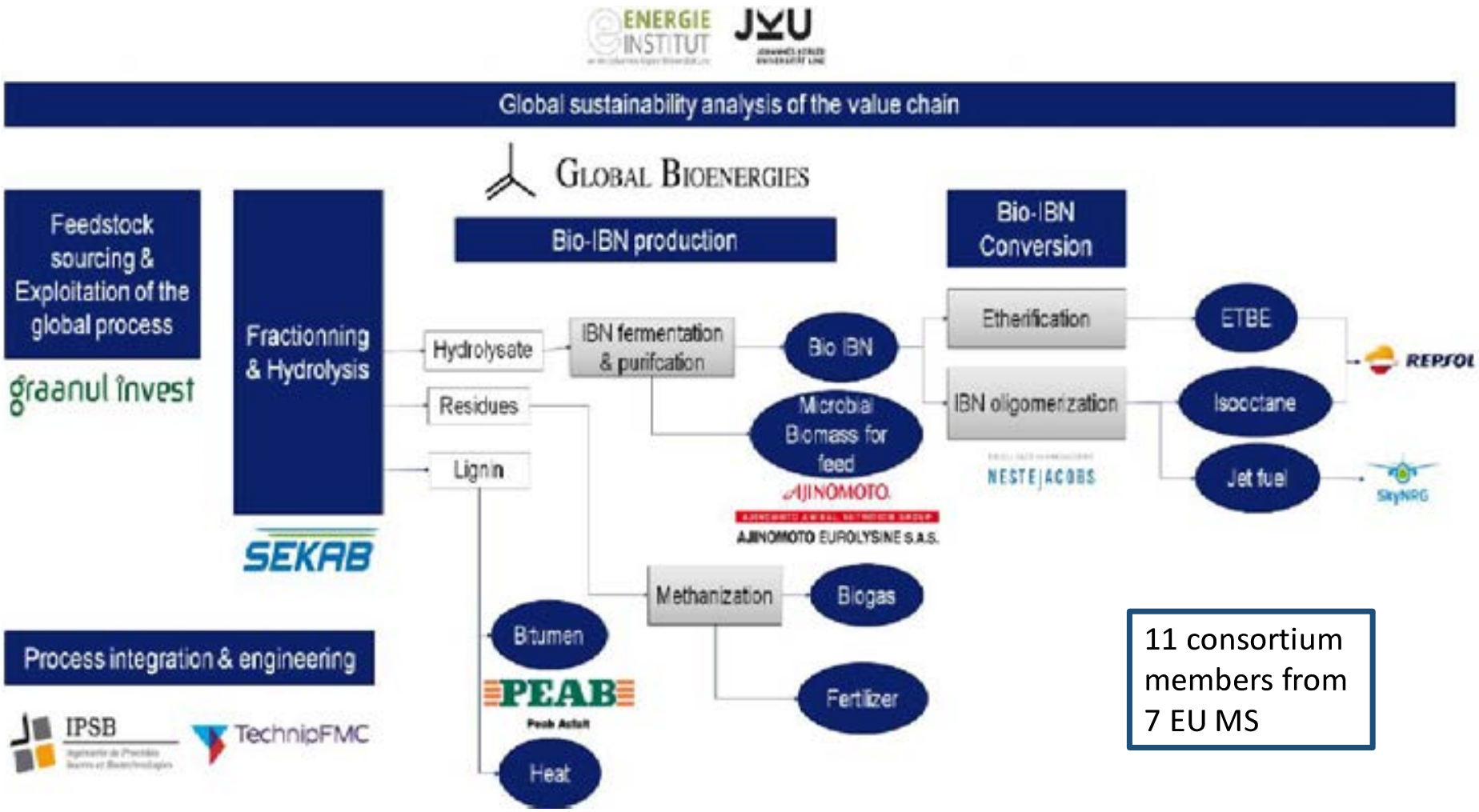
REWOFUEL

Project presentation

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 792104

REWOFUEL Value Chain : fuels and coproducts



REWOFUEL: Wood to high performances fuels

Residual Wood → Hydrolysate

Hydrolysate → Bio-Isobutene (IBN) C4H8

Bio-IBN + bio-etOH → Full bio-ETBE (gasoline component)

2 Bio-IBN + H2 → bio-isooctane (gasoline & Avgas component)

3 Bio-IBN + H2 → bio-iC12 (jet-fuel component)

High Octane, high cold flow properties, drop-in physical & chemicals properties, energy density

Wood Hydrolysate demo Plant SEKAB (SWE)

Ton Scale Demo Plant (SMEs)

Hydrolysate to IBN demo Plant Globalbioenergies (FR-DE)

Project Acronym: **REWOFUEL** Project Number: **792104** Call: LCE19
Topic: Demonstration of the most promising biofuel pathway
Project title: **REsidual Wood conversion to high performance drop-in bioFUELs**

Specific Challenge: It is essential to diversify the technology portfolio and feedstock basis to allow competitive production of advanced biofuels for use in transport

Technological approach of the Project: REWOFUEL intends to demonstrate a whole value chain consisting in: deconstructing of soft wood residues into hydrolysate and lignin, fermentative conversion of hydrolysate into isobutene, conversion of isobutene into high performance components for gasoline and jet-fuel through traditional oligomerization-hydrogenation, valorization of lignin into bitumen, recovery and valorization of co-products: microbial proteins for FEED, biogas, minerals for fertilizer.

Expected Impact: Demonstrating advanced biofuel technologies at large industrial scale reduces the technological risks and paves the way for subsequent first-of-a-kind industrial projects. For this purpose, the scale of the proposals should permit obtaining the data and experience required so that up-scaling to a first-of-a-kind, industrial project can be envisaged as a next step. Favorable energy and GHG balances are expected. The demonstrated industrial concepts should ensure the techno-economic feasibility of the entire value chain and have the potential for a significant social and economic impact, notably in terms of job creation, economic growth and safe and affordable energy supply.

Contribution of the Project: REWOFUEL holds the potential for up to 400 plants in EU, producing out of wood residues, high- performance fuel components and coproducts representing more than 10% of current EU gasoline + jet-fuel consumption.

Highlights (technological/non-technological): REWOFUEL combines innovative technologies from 2 SMEs (wood deconstruction and fermentative conversion to isobutene) with solid technologies from established industries (conversion of isobutene into high performance fuel components, bitumen application, microbial protein for FEED, biogas and minerals to fertilizers. Upgrading of existing demo-plants will allow the project to deliver products at the ton-scale.

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This project has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No *[792104]*

SECURECHAIN

Project presentation

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 646457

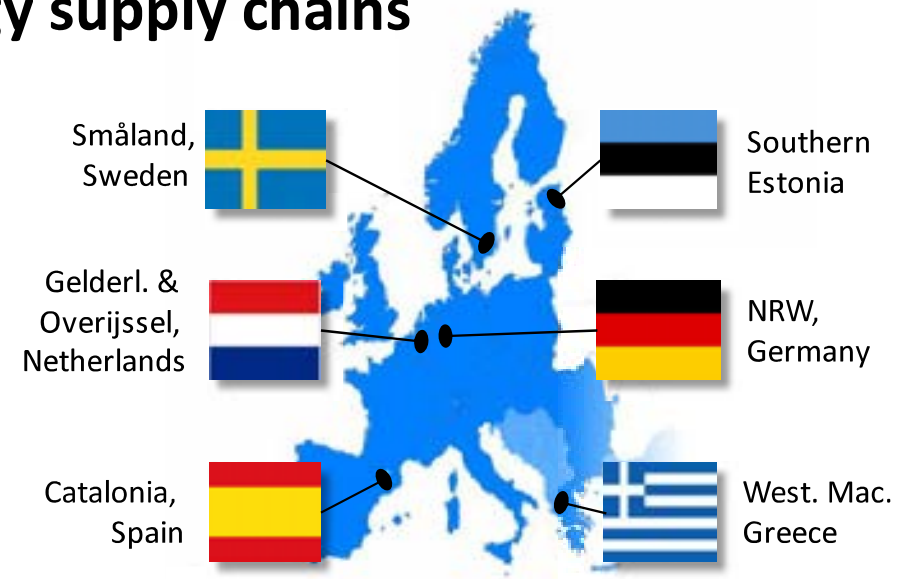
SecureChain
sustainable biomass energy

EU H2020 Nr. 646457
01/04/2015 – 31/07/2018
securechain.eu

Promotes *Sustainable Supply Chain Management* of SMEs in regional bioenergy supply chains

Key elements

- Setting up of SSCM (Sustainable Supply Chain Management) bioenergy chains in six model regions.
- Selection of SME-led pilot projects via open competition.
- Provision of support on a) setting up the bioenergy chain, b) sustainability assessment and c) financial aspects.
- Evaluation based on both 'hard' and 'soft' criteria



btg biomass technology group

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SecureChain
sustainable biomass energy

EU H2020 Nr. 646457
01/04/2015 – 31/07/2018
securechain.eu

Results

Innovation Voucher Competition accomplished in 6 regions

20 SME-led *Pilot Projects* selected & started; Status: 1 pilot stopped, 9 soon completed, 10 still running

12 *Learning Labs* with regional stakeholders, *10 LCAs* of are being conducted (BOKU)

Financial mentoring of business, *certification* assistance provided

SMART performance indicators: good first results on mobilised biomass, jobs and investment

Mentoring approach appears successful; positive responses from SMEs to hands-on advice and support

Pilot project highlights

Sweden: Municipal energy company supports 4 communities to develop joint heat supply and grid connection

Germany: Waste management company improved biowaste sorting process using LCA

Spain: Pellet factory scaled-up its production and developed new channels for industrial clients using certification

Project Acronym: **SecureChain** Project Number: **646457** Call: H2020-LCE-14-3 Topic: Market Uptake

Project title: **Securing future-proof environmentally compatible bioenergy chains**

Specific Challenge: Setting up or strengthening sustainable local bioenergy supply chains that meet highest environmental criteria and quality standards, including consideration for indirect impacts and energy balances.
Technological approach of the Project: Setting up of SSCM (Sustainable Supply Chain Management) bioenergy chains in six model regions. Selection of SME pilot projects via open Innovation Voucher competition. Provision of support on a) setting up the bioenergy chain, b) sustainability assessment and c) financial aspects.

Expected Impact: Increasing the share of sustainable bioenergy in the final energy consumption. Substantial and measurable reductions in the transaction costs for project developers as well as for the permitting authorities, whilst still fully addressing the needs for environmental impact assessments, including considerations for indirect impacts and energy balance, and public engagement. Development of better policy, market support and financial frameworks, notably at national, regional and local level.
Contribution of the Project: Share of sustainable bioenergy increased (via 20 pilot projects), development of mentoring approach, dissemination of best practices.

Highlights (technological/non-technological): Innovation Voucher competition ensured cooperation from SME's without potential conflicts of interest. Mentoring approach region-specific, within overall approach and framework. Pilot Project evaluation both regarding 'hard' (SMART) criteria and 'soft' criteria (to identify reasons behind results).

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No *646457*

SEEMLA

Project presentation

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 691874

SEEMLA - Sustainable Exploitation of Biomass Production for Bioenergy on MagL

Brussels, 10-11 April 2018
H2020 Workshop on Bioenergy, Advanced Biofuels and Renewable fuels

Christiane Volkmann, Birger Kerckow

FNR

Sustainable exploitation of biomass for bioenergy from marginal lands in Europe

Project coordinator

Partner

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 691834

Sustainable exploitation of biomass for bioenergy from marginal lands in Europe

Duration: 01/2016 – 12/2018
Partners: from Greece, Italy, Ukraine and Germany

Main objective: establish suitable innovative land-use strategies for a sustainable production of plant-based energy on marginal lands (MagL) while improving general ecosystem services. An essential part of the project is ensuring the environmental and socio-economic sustainability of the foreseen actions: impacts on biodiversity, fauna, flora, soil and water will be analysed by a life cycle assessment (LCA), as well as strategies, policy guidelines and handbooks will be elaborated.

(1) In order to achieve high yields on the MagL: development and optimizing cropping systems for special sites.
(2) Focus on existing plantations of energy crops on MagL and on the establishment of new plantations on MagLs.
(3) General guidelines and manuals shall attract and help relevant stakeholders
(4) Piloting shall prove the feasibility of SEEMLA results

Upcoming events and potential opportunities for cooperation:
- 2nd International Symposium at the EUBCE in Copenhagen on 15 May 2018
- Final conference end of 2018 in Brussels
- Further webinars…follow us on the website **www.seemla.eu**

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 691874

What is marginal land (MagL)?

According to the economic definition marginal land (MagL) is defined as a land on which cost-effective food and feed production is not possible under certain given site conditions. According to the SEEMLA approach MagL can primarily be defined as an intersection of abandoned agricultural land, degraded land, reclaimed land, and wasteland (Figure 1).

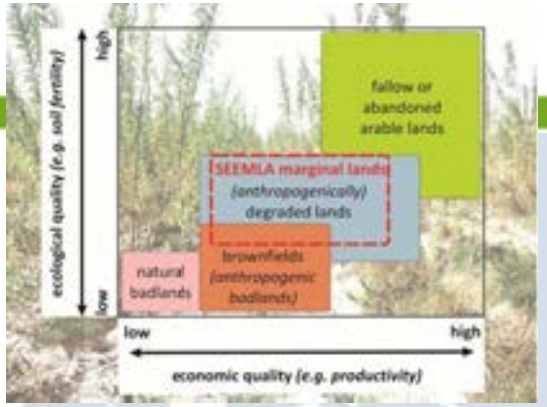


Figure 1: SEEMLA definition of marginal lands

Aims of SEEMLA:

- define the term MagL
- assess the availability and suitability of MagL as alternative production sites for renewable resources
- develop strategies and recommendations for policy and administration
- develop and indicate indicators for assessing potentials for biomass production on MagL
- disseminate project outcomes and transfer knowledge
- develop a SEEMLA GIS APPLICATION to provide assistance regarding the identification and exploitation of marginal lands for biomass production (Fig. 2)
- provide a comprehensive assessment of environmental, social and economic implications related to pilot cases and general exploitation scenarios

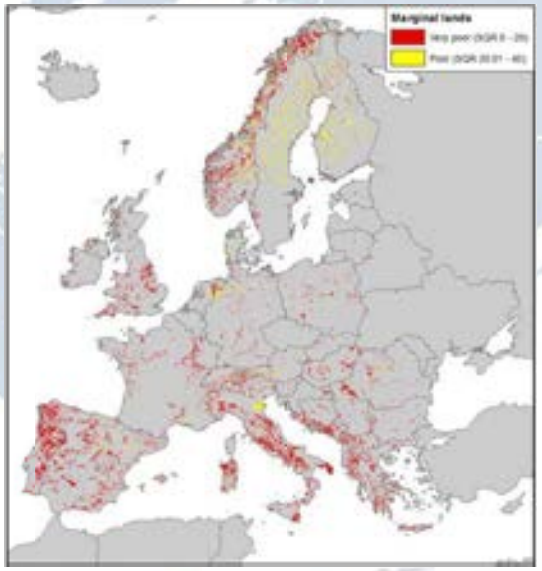


Figure 2. Identified marginal land available for biomass production for bioenergy purposes, based on the SEEMLA GIS tool

Project coordinator
Partner

Project Acronym: **SEEMLA** Project Number: **691874** Call: H2020-LCE-2015-3
Topic: LCE-14-2015 - Market uptake of existing and emerging sustainable bioenergy
Project title: **Sustainable exploitation of biomass for bioenergy from marginal lands in Europe**

Specific Challenge: Foster the development of the bioenergy sector and ensure its sustainability. One way to do it is to use more and sustainable bioenergy. The EU needs to expand the supply of bioenergy produced in the EU, by encouraging the EU farmers/foresters to produce also energy and energy intermediaries.
Technological approach of the Project: CSA- Identify the quantity and quality of MagL and to sustainably mobilise biomass feedstock production from land not competing with food production and support an appropriate conversion into bioenergy. A threefold approach is considered to be appropriate (collect information, stimulate actors to identify the potential of biomass from MagLs in case study regions, implementation of results leading to good practice models)

Expected Impact: Increasing the share of sustainable bioenergy in the final energy consumption. Substantial and measurable reductions in the transaction costs for project developers as well as for the permitting authorities, whilst still fully addressing the needs for environmental impact assessments, including considerations for indirect impacts and energy balance. Development of better policy, market support and financial frameworks, notably at national, regional and local level.
Contribution of the Project: provide recommendations for a modified policy and suitable measures; ensuring the environmental and socio-economic sustainability of the foreseen actions: impacts on biodiversity, fauna, flora, soil and water will be analysed by a life cycle assessment (LCA), as well as strategies, policy guidelines and handbooks will be elaborated.

Highlights (technological/non-technological): symposiums, webinars, LCA assessments, pilot cases, GIS-tool, website, workshops, conferences

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No *691874*

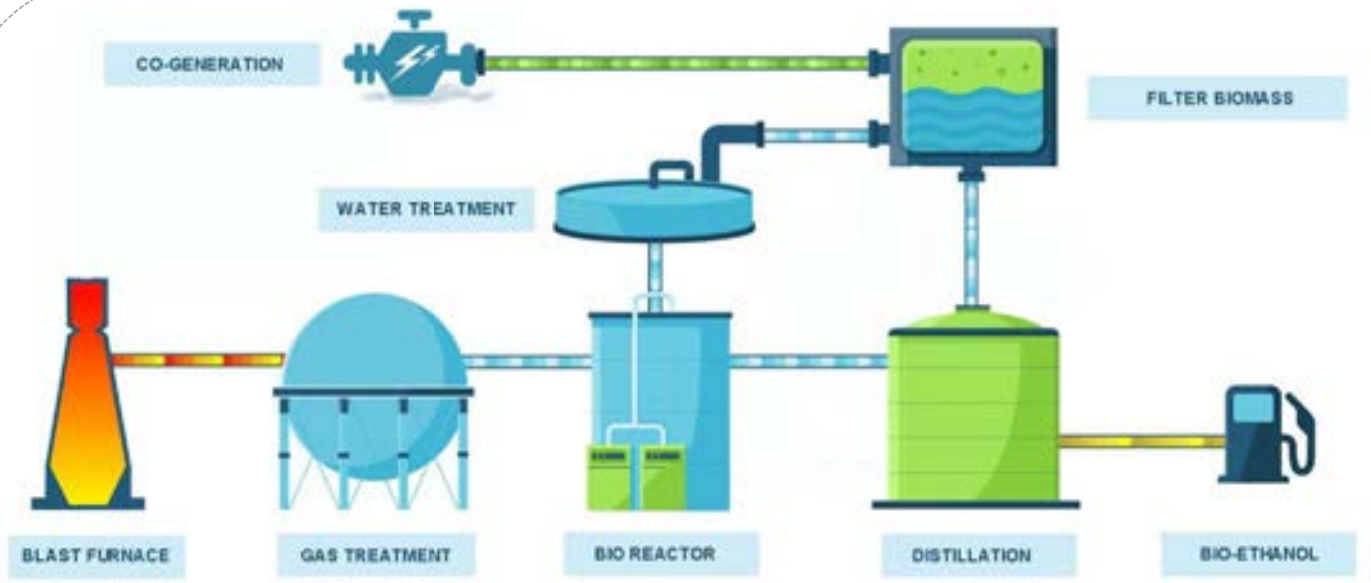
STEELANOL

Project presentation

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 656437

Making bio-ethanol from steel waste gas

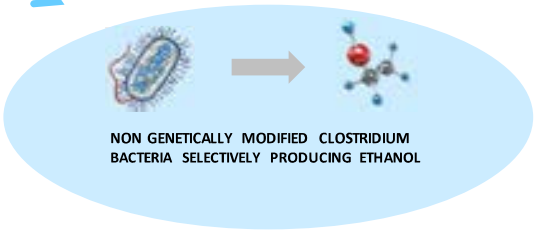
Steelanol
Fueling a sustainable future



Investment cost is 120 Meuro

100 000 Nm^3 waste gas/h from blast and basic oxygen furnace to fermentation reactor

Production of 64 000 ton/year ethanol (or 80 million liters/year)



ArcelorMittal

LanzaTech

PRIMETALS TECHNOLOGIES

E4tech

Status update

- AM Gent has concluded the engineering of the plant concept with selection of best available technology
- Early investment done at the gas pipeline during the powerplant stop of april 2016
- Mobile lab testing on real steel waste gases: positive results
- Certification as biofuel obtained
- Order of main equipment in Q2/2018

Project Acronym: **Steelanol** Project Number: **656437** Call: H2020-LCE-2014-2015 Topic: LCE-2014-2
Project title: Production of sustainable, advanced bio-ethANOL through an innovative gas-fermentation process using exhaust gases emitted in the STEEL industry

Specific Challenge: achieve the EU targets regarding renewable energy in transport and CO2 abatement (set out in the RES and Fuel Quality Directives), and address concerns regarding indirect and direct environmental impacts of biofuels, new and advanced biofuels using sustainable feedstock need to reach the market.
Technological approach of the Project: : cost-effective production of low carbon bioethanol using unavoidable steel production gases as a resource for a novel gas fermentation technology.

Expected Impact: testing advanced biofuel technologies at large industrial scale and contribute to the targets of the renewable energy directive, namely to obtain a 20% of its energy from renewable sources by 2020.
Contribution of the Project: the STEELANOL plant will be at demonstration scale (4 reactors). The ethanol specifications will be assessed and also its implementation as a biofuel in the transport sector (aviation and road sectors). A GHG emission reduction of 150 000 ton CO2/year is envisaged for the demonstration scale.

Highlights (technological/non-technological): the process design, plant engineering and business development have been finalized, confirming the viability of the project. Certification as biofuel under RED I legislations has been obtained.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No *656437*

SUN-to-LIQUID

Project presentation

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 654408

SUN-to-LIQUID: Solar-thermochemical synthesis of hydrocarbon fuels from H_2O and CO_2

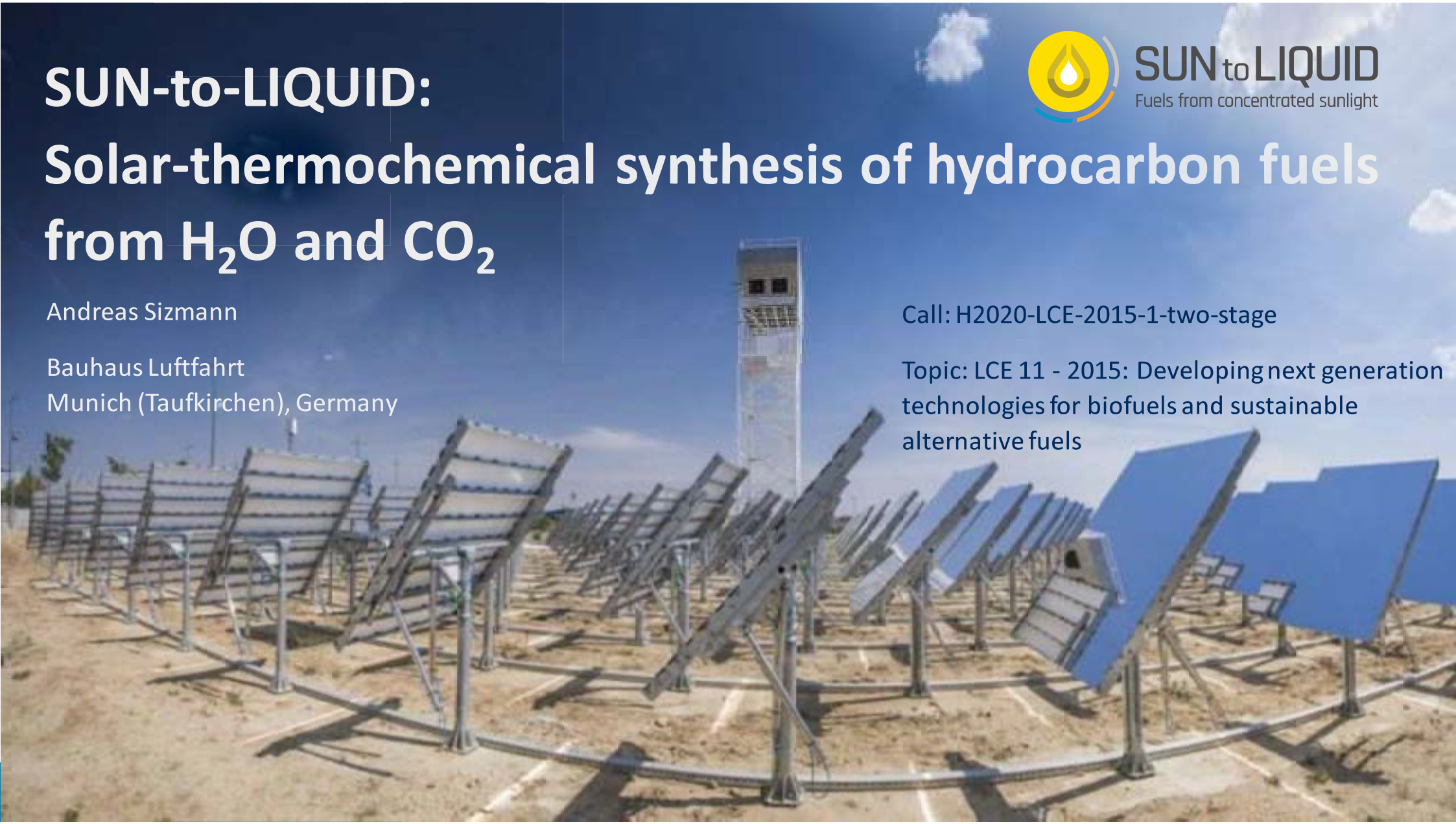
SUN to LIQUID
Fuels from concentrated sunlight

Andreas Sizmann

Bauhaus Luftfahrt
Munich (Taufkirchen), Germany

Call: H2020-LCE-2015-1-two-stage

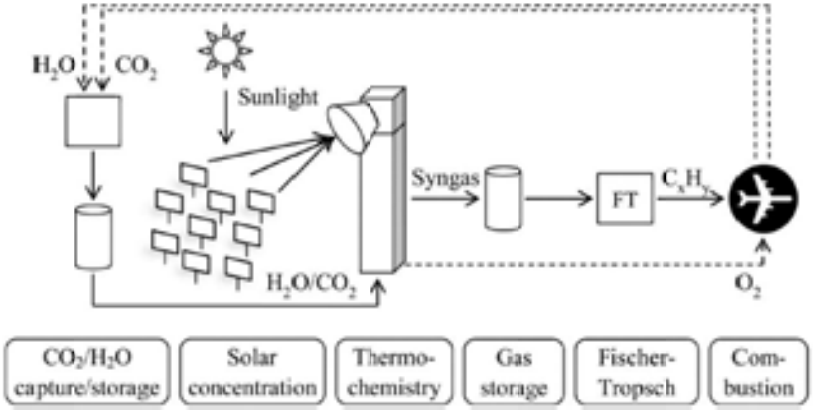
Topic: LCE 11 - 2015: Developing next generation technologies for biofuels and sustainable alternative fuels



SUN-to-LIQUID Key objectives

SUN to LIQUID
Fuels from concentrated sunlight

- **Key Objectives:** Scale-up and experimental demonstration of the complete process chain to liquid hydrocarbon fuels from H_2O, CO_2 and solar energy at a pre-commercial scale
- High flux solar concentrating system
  - 50 kW radiative power, flux of 2500 kW/m^2 over a 16-cm diameter aperture
  - Field of 169 heliostats, 3 m^2 each, with 20 – 30 m focal length



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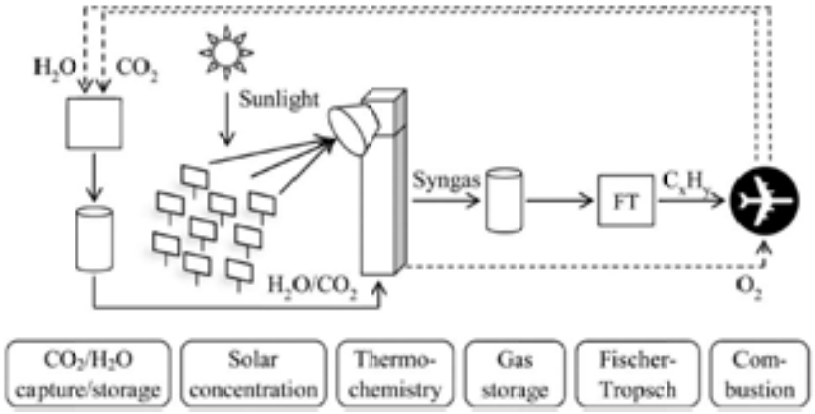
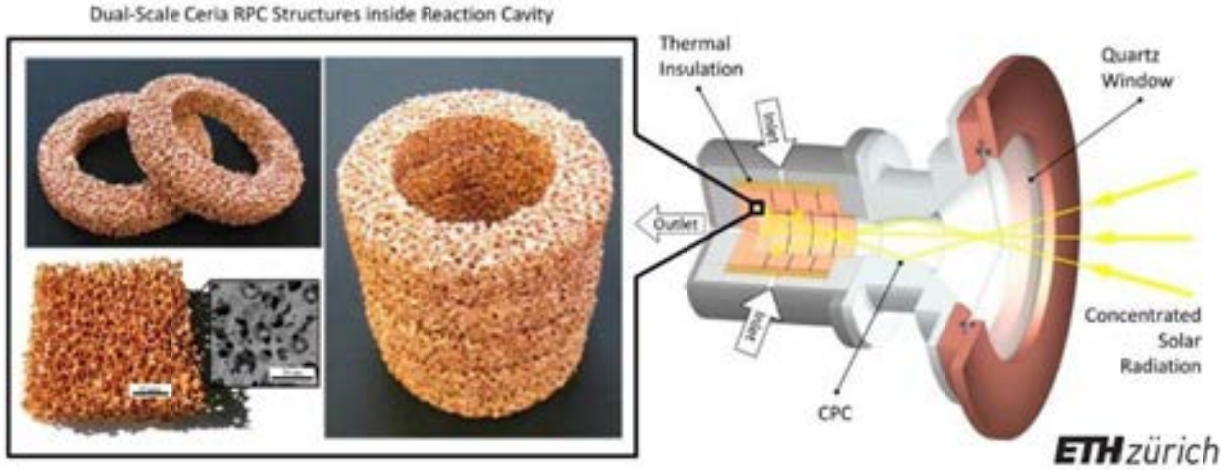
- High flux solar concentrating system
  - 50 kW radiative power, flux of 2500 kW/m^2 over a 16-cm diameter aperture
  - Field of 169 heliostats, 3 m^2 each, with 20 – 30 m focal length
- 50 kW solar thermochemical reactor
  - Producing syngas via ceria-based thermochemical redox cycle
- Gas-to-liquid system
  - Compression and storage of syngas
  - Micro Fischer-Tropsch unit converts syngas to liquid hydrocarbon fuels



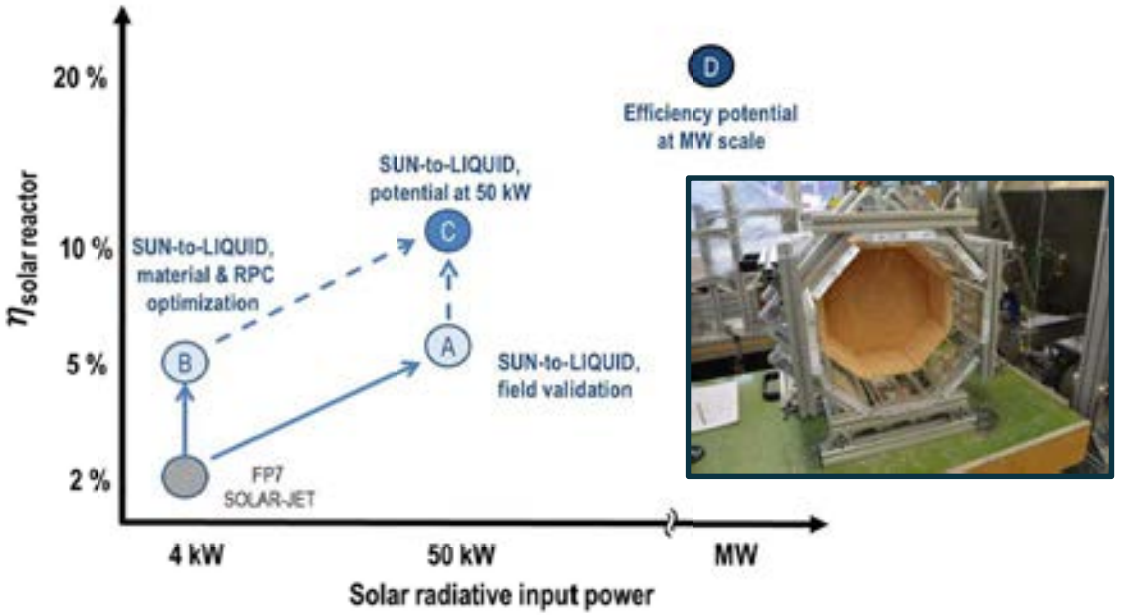


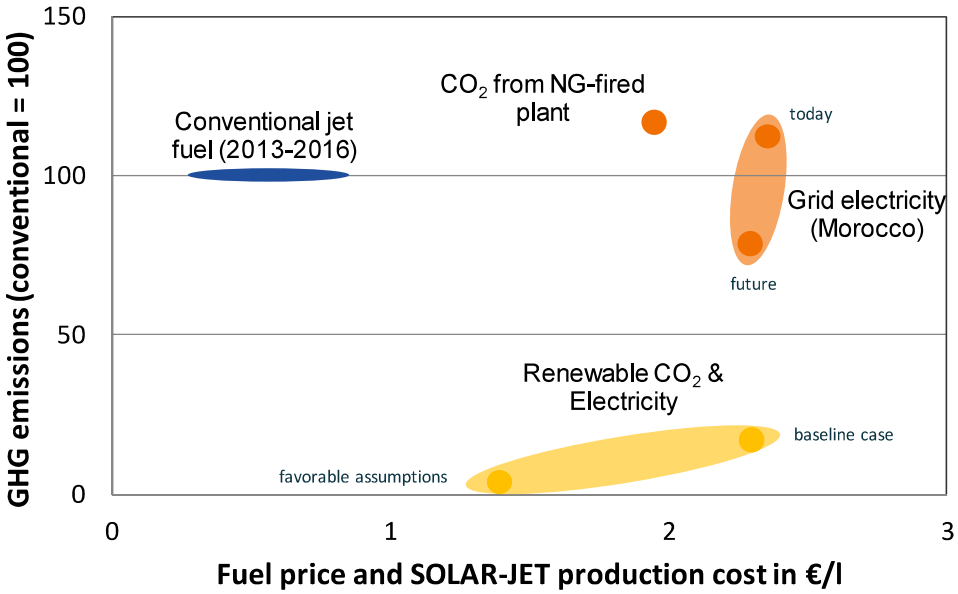
SUN-to-LIQUID Progress and Perspectives

SUN to LIQUID
Fuels from concentrated sunlight

Progress: Design and construction completed;

Long-term perspectives: more than 80% emission reduction





Source: C. Falter, V. Batteiger, A. Sizmann; *Climate Impact and Economic Feasibility of Solar Thermochemical Jet Fuel Production*, Environmental Sceince and Technology, 2016, 50 (1)

A project gathering **7 partners** from **5 European countries:**

ABENGOA RESEARCH · Bauhaus Luftfahrt Neue Wege · DLR Deutsches Zentrum für Luft- und Raumfahrt German Aerospace Center · ETH zürich · HYGEAR · idea energy · ARTTIC

Visit us at
Sun-to-liquid.eu

Project Acronym: **SUN-to-LIQUID** Project Number: **654408** Call: H2020-LCE-2015-1-two-stage
Topic: LCE-11-2015 Developing next generation technologies for biofuels and sustainable alternative fuels
Project title: **SUNlight-to-LIQUID: Integrated solar-thermochemical synthesis of liquid hydrocarbon fuels**

Specific Challenge: Developing alternative fuels through the use of new and sustainable resources from non-biomass non-fossil sources.
Technological approach of the Project: SUN-to-LIQUID establishes a radically different non-biomass non-fossil path to synthesize renewable liquid hydrocarbon fuels from abundant feedstocks of H_2O, CO_2 and solar energy. Concentrated solar radiation drives a thermochemical redox cycle, which inherently operates at high temperatures and utilizes the full solar spectrum.

Expected Impact: New feedstock sources are used that do not compete for resources with food or feed production. The new technology is beneficial in terms of GHG performance, energy balance, efficient use of natural resources, a significant potential for cost reduction, decentralised energy production, and job creation in economically challenged areas, and in terms of secure and affordable energy supply worldwide.
Contribution of the Project: Main contributions are the scale-up and demonstration of the process chain to solar liquid hydrocarbon fuels from H_2O, CO_2 and solar energy, moving from a 4 kW laboratory setup to a 50 kW plant in the field with TRL advancement of solar-thermochemical fuels from TRL 3-4 to TRL 5.

Highlights (technological/non-technological): Expected key innovations include an advanced high-flux ultra-modular solar heliostat field for the concentration of solar energy, a 50 kW solar thermochemical reactor, and optimized redox materials based on ceria to produce solar synthesis gas from H_2O and CO_2. The synthesis gas is processed on-site to liquid hydrocarbon fuels. The thermodynamically favourable path to solar fuel production has the potential of economic competitiveness and >80% GHG emission reduction.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 654408 – SUN-to-LIQUID

Torero

Project presentation

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 745810

TORrefying wood to produce Ethanol

Torero
Fueling a sustainable future

Investment cost for the torrefaction is 19 Meuro

120 000 ton waste Wood (type B) is converted to biocoal (60 000 ton/year)

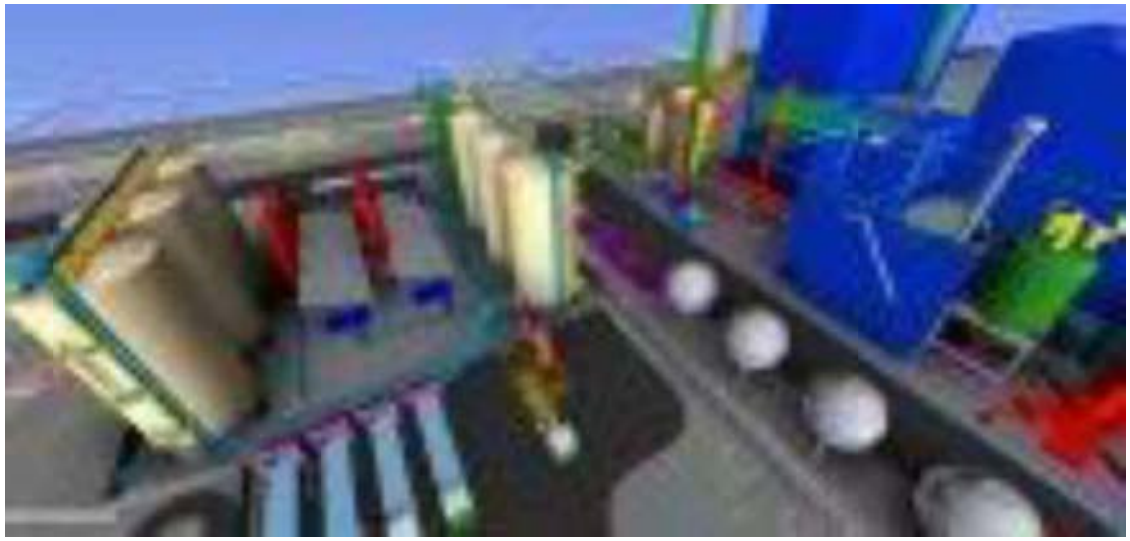
Production of 30 000 ton/year biocoal (equivalent to 40 million liters of ethanol)

Torero is eliminating the GHG emissions of 40 000 ton of coal and 40 million liter of gasoline over the total chain.

ArcelorMittal
TORR COAL
renewi
JOANNEUM RESEARCH
CHALMERS UNIVERSITY OF TECHNOLOGY

Status update

- Process design and concept engineering have been finalized: rotary drum with indirect heating
- Waste wood specifications have been determined
- Integration concept in steel plant defined
- sLCA started



Project Acronym: **Torero** Project Number: **745810** Call: H2020-LCE-2016-2017 Topic: LCE-19
Project title: TORrefying wood with Ethanol as a Renewable Output: large-scale demonstration

Specific Challenge: Diversify the technology portfolio and feedstock basis to allow competitive production of advanced biofuels for use in transport and improving the technical and economic feasibility of the production of new and advanced liquid biofuels.
Technological approach of the Project: : Torero will demonstrate a cost-, resource-, and energy-efficient technology concept (torrefaction) for producing bioethanol from a wood waste feedstock, fully integrated in a large-scale, industrially functional steel mill (PCI replacement and sinter plant integration).

Expected Impact: Reduction of CO2 emissions and alternative feedstock (cellulosic) for production of renewable fuels for transport sector
Contribution of the Project: reduction of 40 000 tons or 125 000 ton direct CO2 emissions + 150 000 CO2 reductions in transport sector (cf Steelanol)

Highlights (technological/non-technological): Process design and concept engineering have been finalized: rotary drum with indirect heating;Waste wood specifications have been determined;Integration concept in steel plant defined;sLCA started

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No *745810*

TO-SYN-FUEL

Project presentation

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 745749

Energy and fuels from Waste and waste biomass
2Synfuel, Flexjet

Brussels, Belgium
April 2018

Prof. Dr. Andreas Hornung FRSC FIChemE CEng
Chemical Engineering
University of Birmingham

UNIVERSITY OF BIRMINGHAM

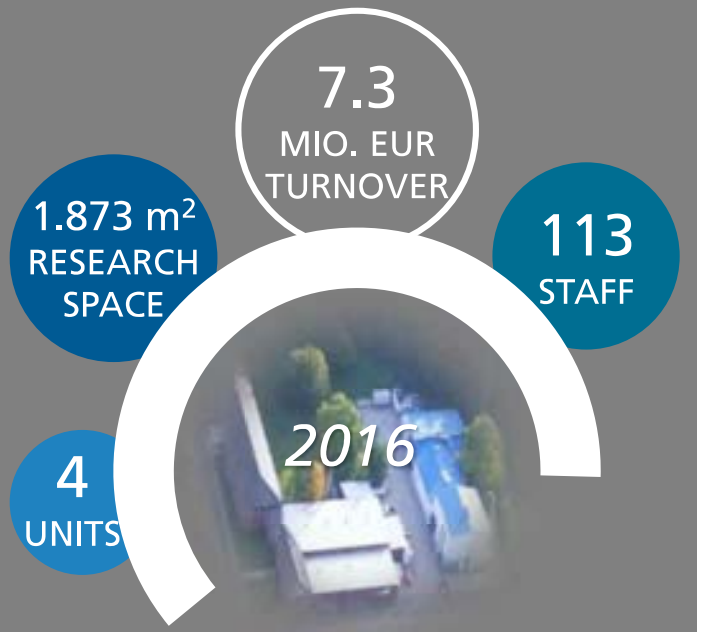
Fraunhofer UMSICHT

Pioneer of the energy transition and raw materials shift

Producing next generation fuels …

Providing industrial raw materials of tomorrow …

Protecting our biodiversity with innovative technology solutions …



Fraunhofer
UMSICHT

Recycling and Waste Management

TCR® und iCycle® – Technologies for Recycling & Energy Production

Biogenic Residues (TCR®)

Composites und Minerals (iCycle®)

Energy carrier from biomass & recycling of composites

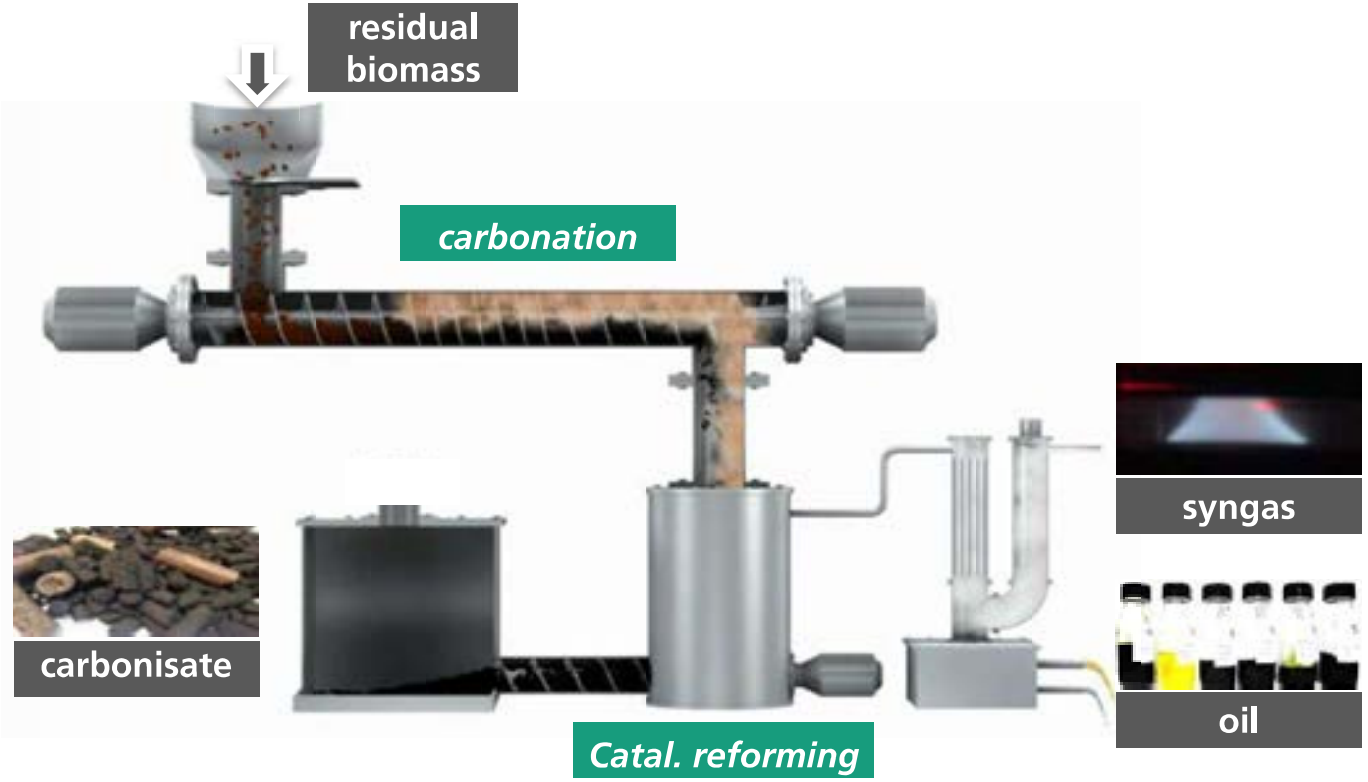
Fraunhofer UMSICHT

Thermo-Catalytic Reforming TCR®

Technology description

Susteen Technologies GmbH

commercialization of the technolgy by spin-off



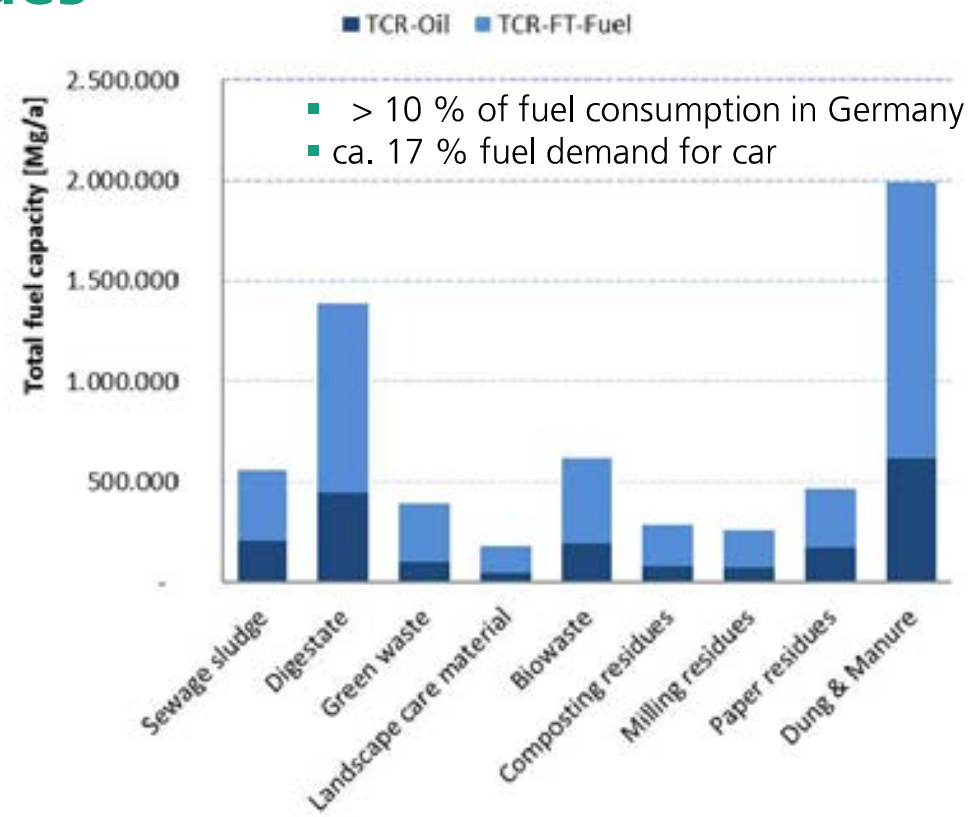
already implemented		in implementation			
TCR®2:	FHNW (Switzerland)	TCR®2:	SeMoBio (Chile)	TCR®30:	UofA (Canada)
TCR®2:	UoB (UK)	TCR®2:	UofA (Canada)	TCR®500:	2SynFuel (EU)
TCR®80:	UoB (UK)	TCR®2:	Caviro (Italy)	TCR®500:	FlexJet (EU)

Fraunhofer UMSICHT

Advantages of fuel from TCR®

High potential from residues

- utilization of residues
- high potential
- dezentralized application: 3.000…25.000 Mg*a^{-1}
- no big units necessary (see bioliq® etc.)
- short logistic ways
- nutrients available again through the utilization of coal locally



Fraunhofer UMSICHT

Conversion – To-Syn-Fuel

Demonstration of Waste Biomass to Synthetic Fuels

2synfuel

Turning sewage sludge into fuels and hydrogen

Budget: 14,5 Mio. €

Partner:

ENGIE, LEITAT Technological Center, Susteen Technologies GmbH, University of Birmingham, eni, Grant, etaflorence, VTT, HYGEAR, SNB

FlexJet:
Sustainable Jet Fuel from Flexible Waste Biomass

Start: May 2018 (Horizon 2020)
13 partners
13,4 Mio. € (10 Mio. € funding)
Content: TCR®500 for the production of **1.200 tons green jet fuel**

Fraunhofer UMSICHT

Conversion of Sewage Sludge

Analytics of educts and products

SEWAGE SLUDGE

C	26,2 m%
H	4,3 m%
N	3,7 m%
S	0,6 m%
O (Diff.)	27,3 m%
Ash	37,9 m%
H_2O	10,7 m%
LHV	12,2 MJ/kg

BIO-OIL

C	77,0 m%
H	7,08 m%
N	8,53 m%
S	1,02 m%
O (Diff.)	6,3 m%
TAN	4,45 mg KOH/g
LHV	33,8 MJ/kg

SYNGAS

H_2	39 v/v%
CO	10 v/v%
CO_2	22 v/v%
CH_4	8,7 ± 1 v/v%
C_xH_y	1,5 ± 1 v/v%
LHV	17,7 MJ/m³

CARBONISAT

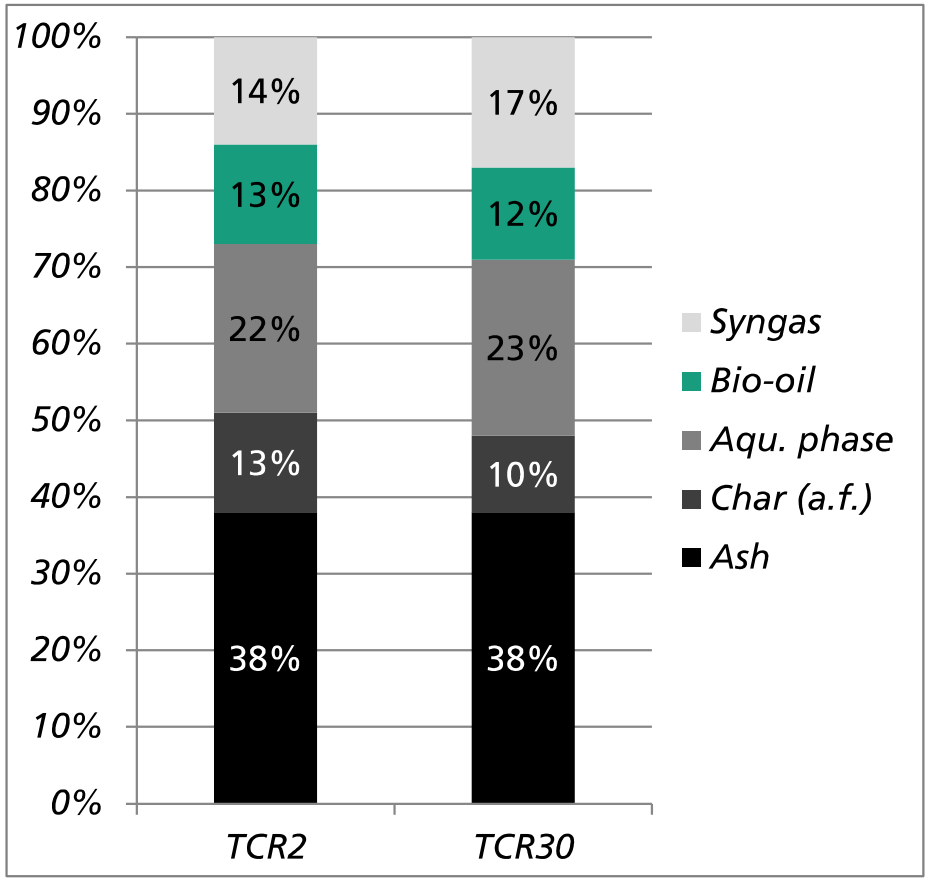
C	23,8 m%
H	0,7 m%
N	1,9 m%
S	0,7 m%
O (Diff.)	1,2 m%
Ash	74,1 m%
LHV	9,0 MJ/kg

EDUCT **PRODUCTS**

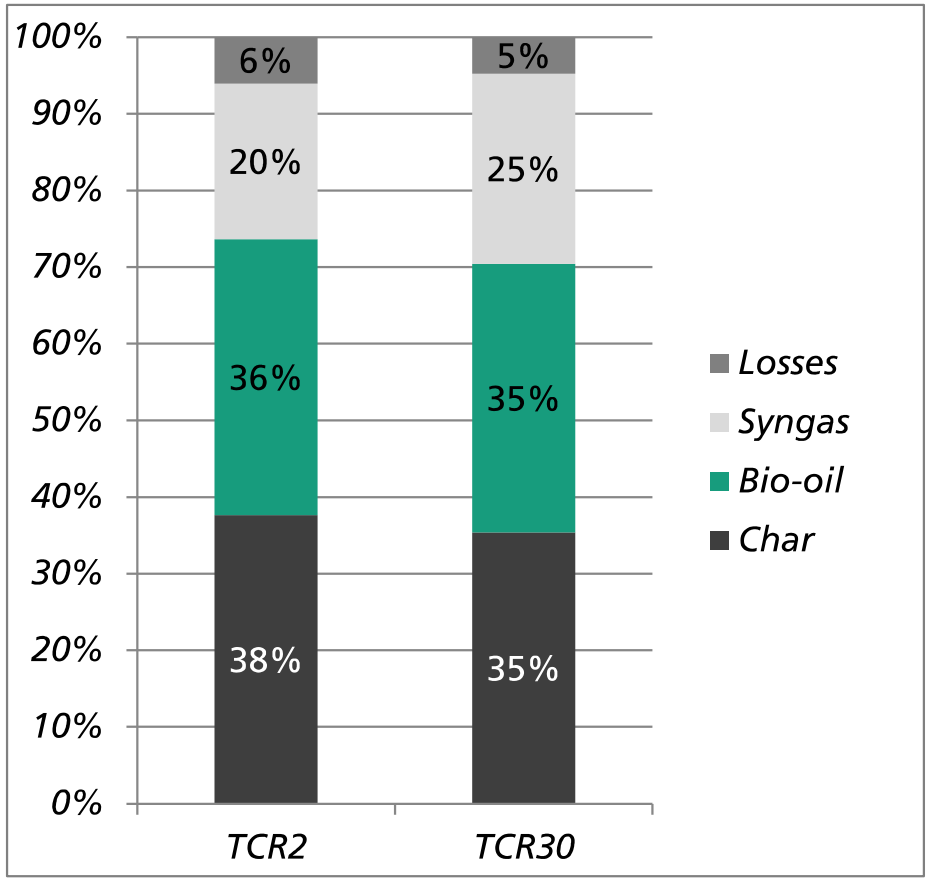
Fraunhofer UMSICHT

Conversion of Sewage Sludge
Scale up from lab- to pilot scale

MASS BALANCE



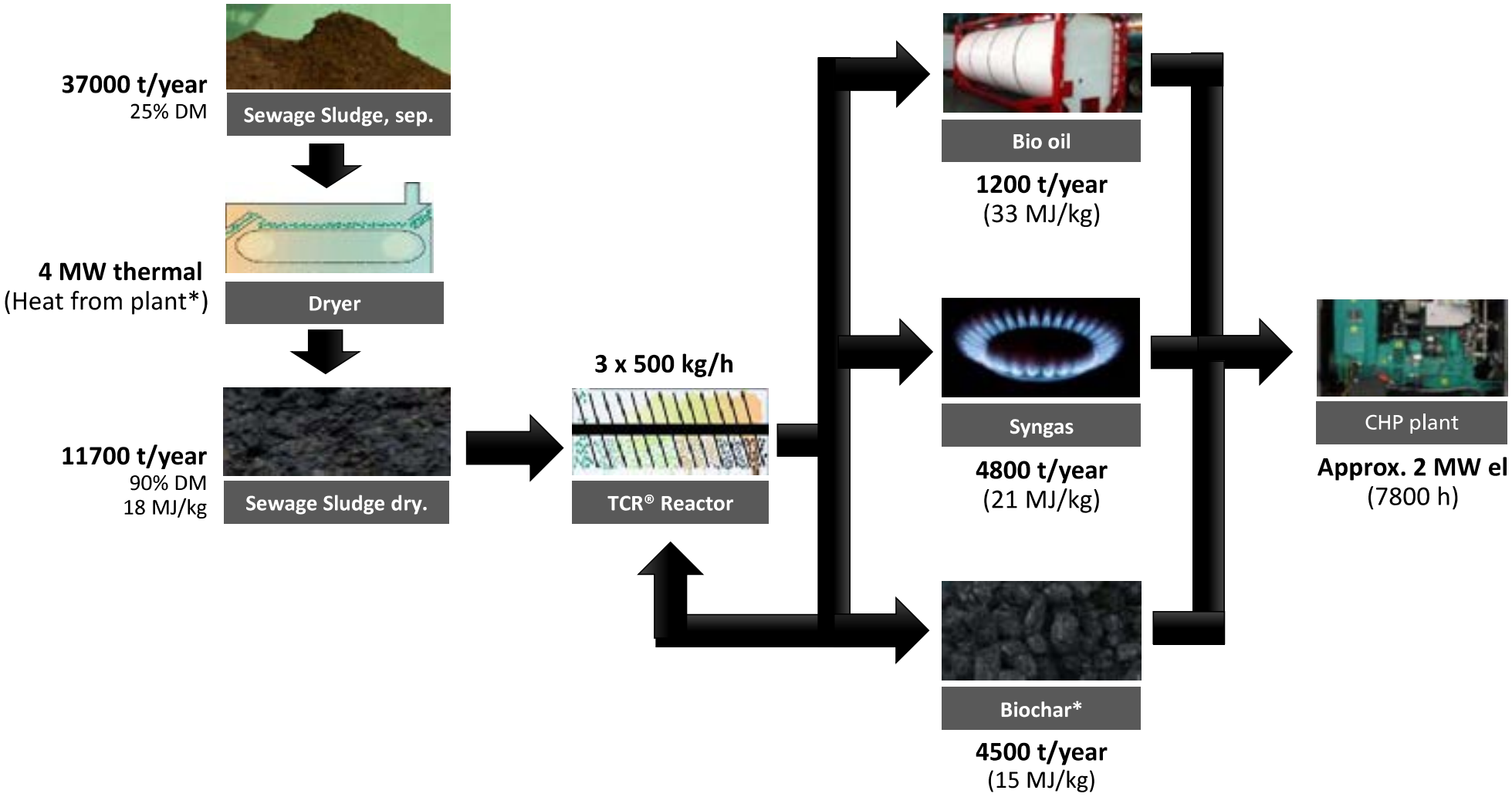
ENERGY BALANCE



Fraunhofer UMSICHT

Conversion of Sewage sludge for energetic application

Mass and Energy Ballance



* Biochar will be completly gasified and used for process heat and CHP conversion

** Additionally approx. 1300 t/year process water and approx. 2200 t/year ash for disposal

For detailed assumptions and sources please refer to Susteen Technologys GmbH.

Fraunhofer UMSICHT

Hydrogenation of TCR® Bio-oils from Sewage Sludge

TCR® BIO-OIL

C	76.6 wt%
H	9.0 wt%
N	7.3 wt%
S	1.6 wt%
O (diff.)	3.5 wt%
H_2O	2.0 wt%
Ash	< 0.005 wt%

LHV	34.8 MJ/kg
TAN	4.2 mg KOH/g
Viscosity	9,1 mm²/s
Density	960 kg/m³

HYDRIERUNG

HYDROGENATED TCR® BIO-OIL (HBO)

C	86.2 wt%
H	13.8 wt%
N	< 0.1 wt%
S	0.0015 wt%
O (diff.)	< 0.1 wt%
H_2O	0.0016 wt%
Ash	< 0.005 wt%

LHV	42.8 MJ/kg
TAN	< 0.1 mg KOH/g
Copper corr.	Grade 1
Flash point	< - 20 °C
Yield	~ 80 %

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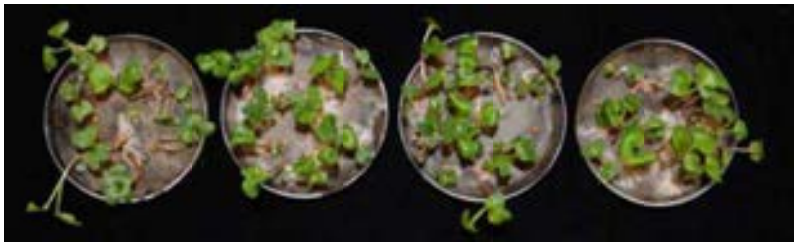
Fraunhofer
UMSICHT

TCR® - 300

Fraunhofer UMSICHT

Application – Biochar

Syngas | Primary oil | Biochar



Germination test on biochar-based planting substrate

Biochar-based planting substrate

Pot trials with lamb‘s lettuce and rocket

- Certification
- Nutrient storage
- Carbon sequestration

Fraunhofer UMSICHT

Thermochemical Gasification

Thermochemical Gasification

- Char from Sewage Sludge treated by TCR has been applied.
- No tar formation in up-draft gasification
- The phosphate rich ash stays as a poweder.
- Plants can take up 80% of this phosphate without further treatment of the ash.

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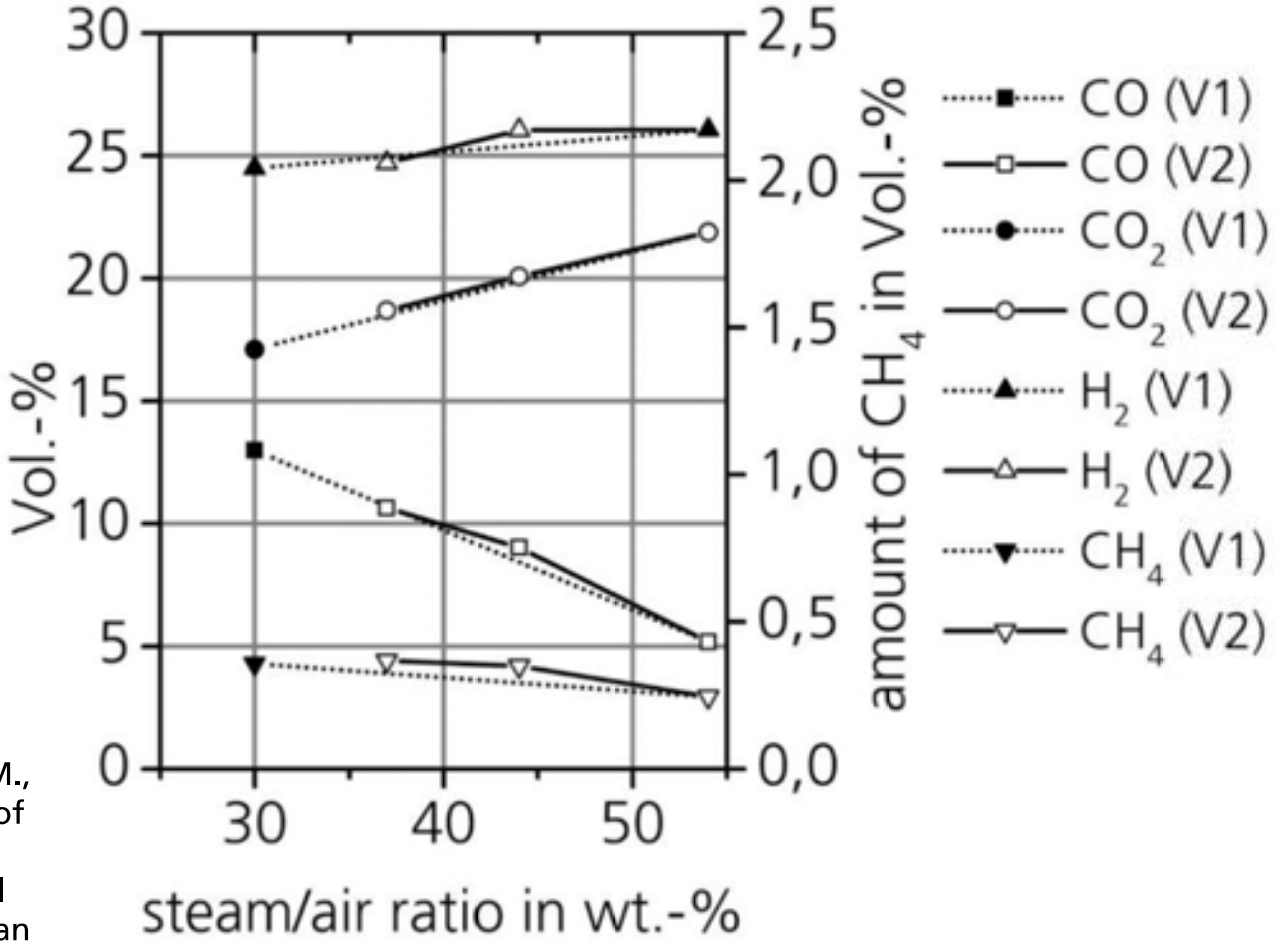
Gasifier Test Bench ALPHA-SuRo

Results: Effect of air/steam ratio in the gasifying agent on producer gas composition



Source: Reil, S.; Beer, S.; Ultsch, C.; Meiler, M., Hornung, A.: Thermochemical gasification of char from biomass with subsequent combustion for heat supply in endothermal biomass conversion processes. 24th European Biomass Conference, 06.-09.06.2016 in Amsterdam

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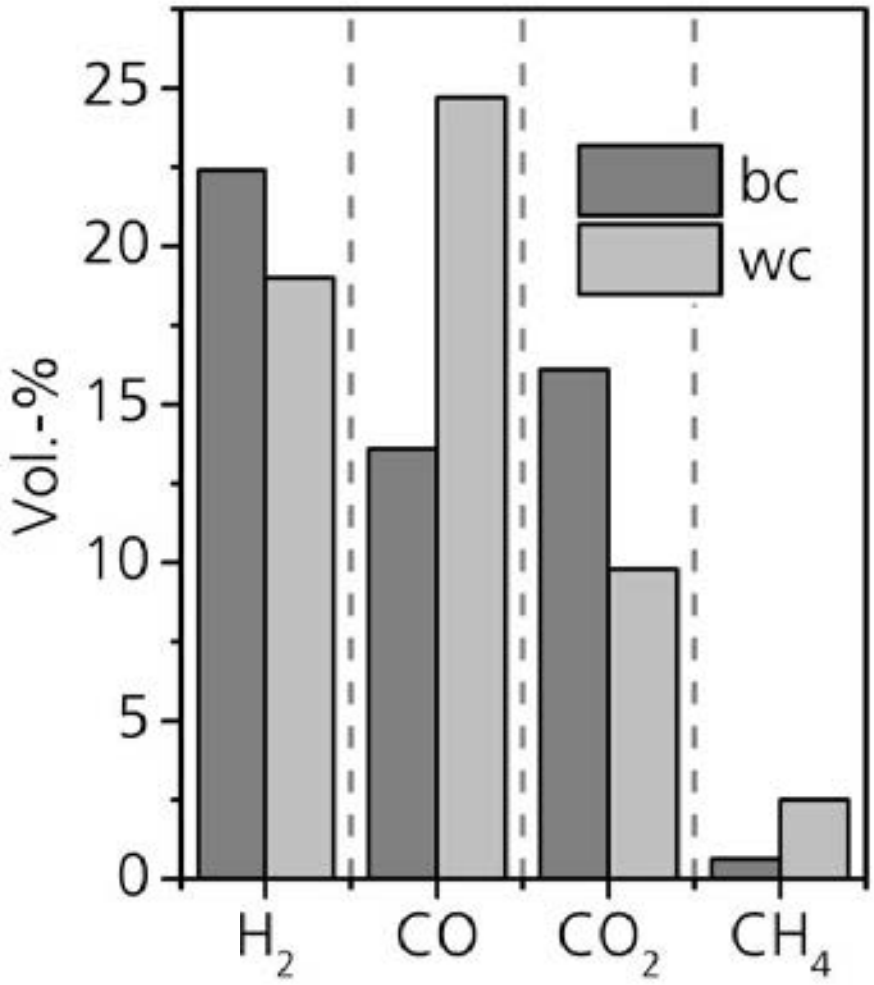
Gasifier Test Bench ALPHA-SuRo

Results: comparison of producer gas composition from steam/air gasification of biochar (bc) and air gasfication of wood chips (wc)



Source: Reil, S.; Beer, S.; Ultsch, C.; Meiler, M., Hornung, A.: Thermochemical gasification of char from biomass with subsequent combustion for heat supply in endothermal biomass conversion processes. 24th European Biomass Conference, 06.-09.06.2016 in Amsterdam

Fraunhofer UMSICHT

Thank you very much for your kind attention!

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Fraunhofer
UMSICHT

To-Syn-Fuel

The Demonstration of Waste Biomass to Synthetic Fuels and Green hydrogen

2synfuel

Turning sewage sludge into fuels and hydrogen

Partner:

Budget: total budget: 14,5 Mio. €; granted max. funding: 12,25 Mio. €

Fraunhofer UMSICHT

Project Overview

Goals

- Demonstrate technical viability and cost-competitiveness of bioenergy value chains
  TCR → PSA → HDO
- Production of **green hydrogen, diesel and gasoline** equivalent liquid fuels from sewage sludge
- Validate **logistical advantages** of the integrated small-scale hydrogen separation and purification (PSA) and HDO modules with the TCR unit vs. centralized petrochemical infrastructure.
- Contribute to the Renewable Energy Directive targets for renewable energy by validating waste feedstocks for the **production of fuels**
- Showcase for future sustainable investment and economic growth across Europe
- Development of a **business case**, LCA and dissemination of results

- **TO-SYN-FUEL: The Demonstration of Waste Biomass to Synthetic Fuels and Green hydrogen**
- Project period: 05/17 – 04/21

Project Acronym: **To-Syn-Fuel** Project Number: **745749** Call: H2020-LCE-2016-RES-IA
Topic: LCE-19-2016-2017 (Demonstration of the most promising advanced biofuel pathways)

Project title: **The Demonstration of Waste Biomass to Synthetic Fuels and Green hydrogen**

Specific Challenge:
It is essential to diversify the technology portfolio and feedstock basis to allow competitive production of advanced biofuels for use in transport. The following sub-challenges should be addressed:

Technological approach of the Project: TO-SYN-FUEL will demonstrate combining thermo-catalytic reforming (TCR), with hydrogen separation through pressure swing adsorption (PSA), and hydro-deoxygenation (HDO), to produce a fully equivalent gasoline and diesel substitute (compliant with EN228 and EN590 European standards) and green hydrogen for use in transport.

Expected Impact: reduces the technological risks and paves the way for subsequent first-of-a-kind industrial projects

Contribution of the Project: The primary ambition of this project will be to demonstrate and validate the technical and economic viability of the integrated TCR/PSA/HDO technology approaches, together with their environmental and social sustainability, as well as the cost-competitiveness, at near-commercial scale through the construction of a demonstrator that will also serve as an exemplar to facilitate rapid commercial uptake.

Highlights (technological/non-technological):
Installation of a decentralized fully integrated system for the utilization of sewage sludge.
Generation of Diesel and Gasoline on European standards at a local upgrading process.
Generation of up to 200.000 l of Green fuel within the project.

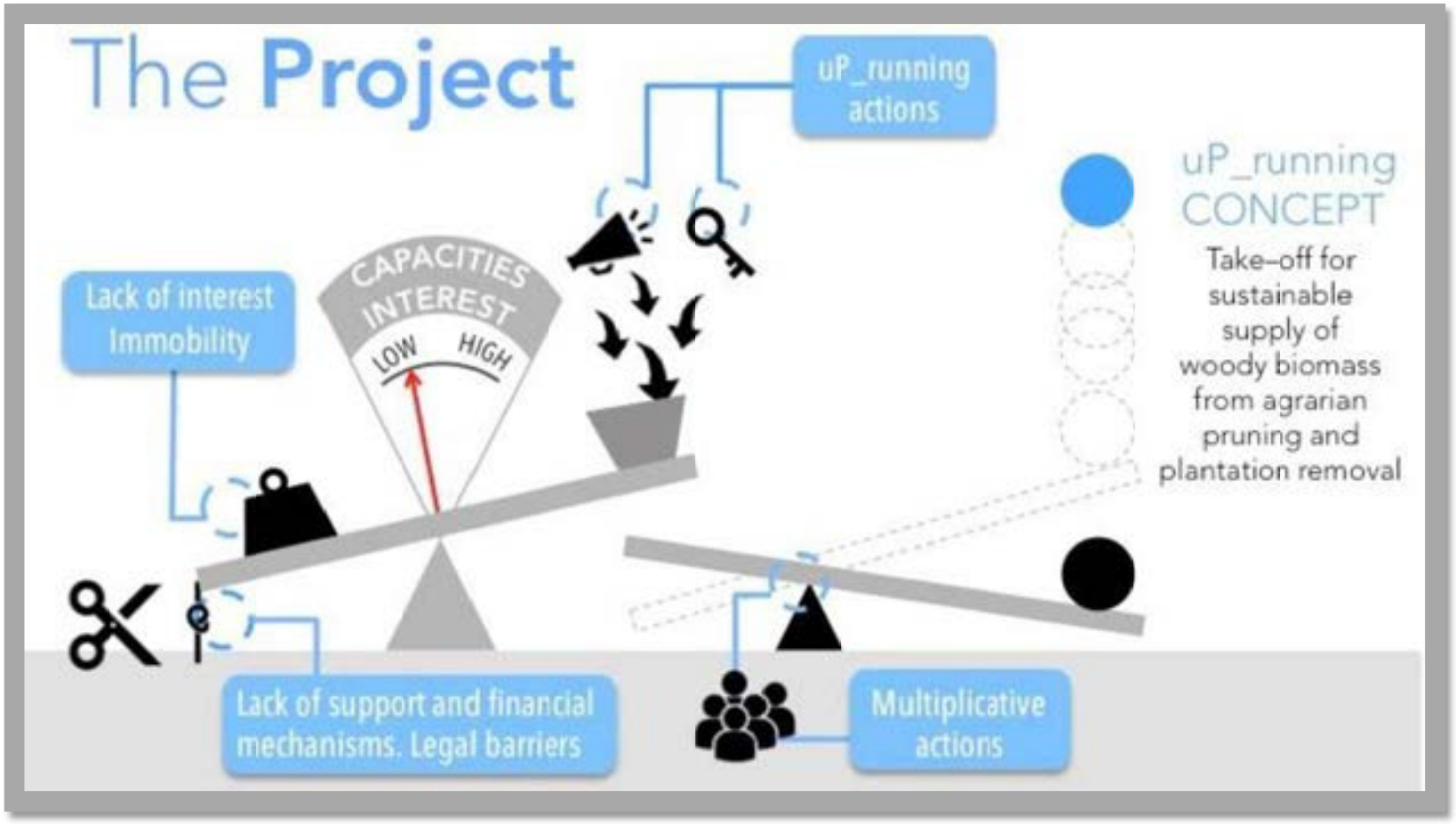
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 745749

uP_running

Project presentation

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 691748

uP_running is a tool, not only a project



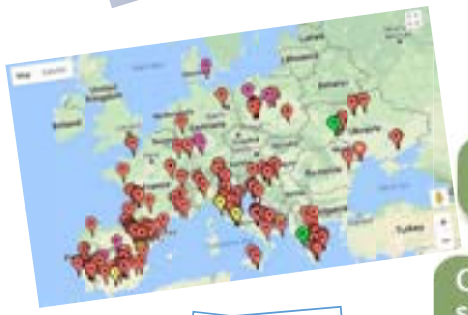
Accompanying entrepreneurs

Create capacities for new consultants

Policy reccomendations and advocacy

Overcoming barriers and strategic plans formulation

uPrunning



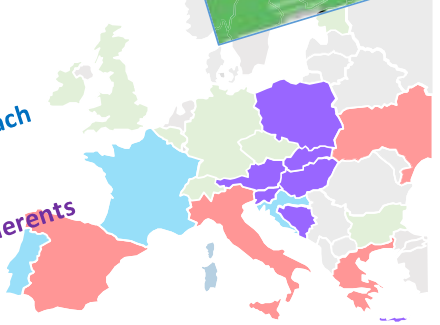
Google maps APPR observatory for Europe

Case studies, business models, success keys

Dissemination campaigns, change of the mind-set

Replication in other regions ad countries

Good practice guidelines



Project Acronym: **uP_running** Project Number: **691748** Call: H2020-LCE-2015-3 Topic: LCE-14-2015
Project title: **Take-off for sustainable supply of woody biomass from agrarian pruning and plantation removal**

Specific Challenge:

Setting up sustainable local bioenergy supply chains that meet highest environmental criteria and quality standards; Tailored financing schemes for supporting investments in innovative and established bioenergy technologies and replication; Exchange of information on best practices for bioenergy policy, regulations and support schemes to allow the most sustainable and efficient use of bio-resources

Technological approach of the Project:

Production of key items: Supporting local bioenergy chains; Demonstration and replication of new chains; Observatory
Impacts multiplication: Multiplicative actions; Capacity building; Communication and dissemination

Expected Impact:

Increasing the share of renewable energy; Reducing CO2 emissions by avoiding uncontrolled burning; Increasing competitiveness of agrarian exploitations and diversification of their economic activity

Contribution of the Project:

Mobilisation of approx. 7 Mtoe/year of biomass from APPR wood residues; By reducing un-controlled burning in fields, 7.3 Mt/year of CO2 will be avoided; Adoption of APPR value chain creation as an option for rural development projects in 10 EU countries.

Highlights (technological/non-technological):

Production of key items: 4 regional action plans, 7 national strategic plans, 20 regional workshops with more than 600 attendants, 4 memorandum towards the APPR biomass use; 20 demonstrations carried out; Observatory online tool available
Impacts multiplication: proposal non of law approved (Aragón, Spain), 7 external organisations engaged, 15 national events participated

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No *691748*

WASTE2FUELS

Project presentation

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 654623

WASTE2FUELS

Arnau Fatjó, IRIS
Antonio Marzochella, UNINA

Bioenergy, Advanced Biofuels and Renewable fuels workshop
(Brussels, Belgium, 10-11 April 2018)

www.waste2fuels.eu

H2020 – LCE-11-2015
Grant agreement no: 654623

1. Project Objectives

Waste2Fuels (W2F) aims to develop next generation biofuel technologies capable of converting unavoidable agro-food waste (AFW) streams into high quality biobutanol

- **W2F aims to**
  - Metabolically engineer microorganisms to convert AFW biomass to butanol
  - Develop methods and technologies to improve an integrated ABE fermentation process reactor system
  - Optimise and demonstrate novel integrated ethanol to butanol conversion processes
  - Valorise post-process waste streams recovering energy and added value
  - Demonstrate the feasibility of produced butanol in industrial systems

2. Major challenges and achievements

- Robust and economic pre-treatment methods of the feedstock as well as of the hydrolysis of the carbohydrates
  - High sugar efficiency coupled with low energy request
  - To preserve high-value by-products
  - The feedstocks chosen have been four, and through innovative process pre-treatments a table with sugar, sugar conversión, phenolic compounds and total inhibitors has been performed
- Integration of the butanol recovery with the bioreactor system
  - Selection of the recovery methods
  - Operation stability
  - The bioconversion and butanol recovery system are under development once defined the most suitable one
- Scale-up of the production process
  - The process simulation and the hierarchical models have been developed accordingly
- Selection of catalysts characterized by high butanol selectivity
  - The ethanol upgrade route by catalysis has presented promising results based on the simulation study
- Positive energy balance of the overall production process

Project Acronym: **WASTE2FUELS** Project Number: **654623** Call: H2020-LCE-2015-1 Topic: LCE-11-2015

Project title: **Sustainable production of next generation biofuels from waste streams**

Specific Challenge: Europe has limited biomass and land resources to cope with an increased demand for fuels and other uses. New technologies of sustainable biofuels and alternative fuels need to be developed to radically improve the state-of-art of: a) Improving conversion efficiency and/or enlargement of the biomass feedstock basis. b) Developing alternative fuels through use of new and sustainable resources. c) Improving the economic, environmental and social benefits. **Technological approach of the Project:** Development of novel pretreatment methods for converting AFW to feedstock; genetically modified microorganisms for enhancing conversion efficiencies of the fermentation; coupled recovery and biofilm reactor systems for enhancing conversion; biobutanol engine tests; valorization of the process; development of an integrated model to facilitate the scale-up, process fingerprint analysis.
Expected Impact: The new developed technology pathways should permit the use of new feedstock sources that do not compete directly or indirectly with food or feed production for resources, or a more efficient conversion of the current ones. A favorable energy balance is expected, as well as a significant potential for cost reduction. **Contribution of the Project:** WASTE2FUELS will develop novel and optimize existing technology pathways in order to permit the use of a major source of underutilised feedstock in Europe, agro-food waste (AFW). In order to guarantee the favorable energy balance of the process, additional energy valorization of the post-process waste is being considered. In relation to the potential cost, the abundance of feedstock guarantees a low input price relative to a high energy, high output fuel value.
Highlights (technological/non-technological): Major challenges: Robust and economic pre-treatment methods of the feedstock as well as of the hydrolysis of the carbohydrates; selection of appropriate low-cost nitrogen sources; integration of the butanol recovery with the bioreactor system; scale-up of the production process; selection of catalysts characterized by high butanol selectivity; positive energy balance of the overall production process.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 654623

Annex III – CORDIS projects abstracts

2G BIOPIC

Project NUMBER 657867
Project TITLE Second Generation BIoethanol sustainable production based on Organosolv Process at atmospherIc Conditions
Call IDENTIFIER H2020-LCE-2014-2
Project INSTRUMENT TYPE IA - Innovation action

Project Abstract

The purpose of the 2G BIOPIC project is to demonstrate the performance, the reliability and the sustainability, of the whole value chain of production of bioethanol from agricultural residues and wood. 2G BIOPIC aims to design, construct and optimize a second generation (2G) demonstration plant with a capacity of 1 T of biomass/h. This 2G plant is based on the scale-up and optimization of bioethanol production from an already validated pilot plan scale (50Kg/h) achieved in a previous project (FP7 BIOCORE). The innovative patented concept proposed by 2G BIOPIC consists of cleanly deconstruct lignocellulosic biomass before converting its components into high value products. Thanks to optimized process conditions, the polysaccharides fractions are free from degradation products and inhibitors, allowing a very high ethanol yield using a low amount of enzymes and yeasts. By combining this technology with advanced strains for enzymes and a production of yeast able to ferment more than 90% of C5 and C6 sugars of the biomass, the 2G BIOPIC technology will result in i) higher bioethanol yield per ton of biomass process (20% more compared to competing technologies), ii) multi-feedstocks interoperability, iii) higher profitability of the process through the production of a high value bio-based co-product: the BioligninTM . All critical steps of the value chain will be integrated to optimize bioethanol production (yield and production costs) and the high commercial value of the co-product (BioligninTM) will be demonstrated in the business case. Risk management will cover the all project, identifying potential risk and implementing mitigation plans. The data and experience generated during the project will demonstrate the technical viability, environmental, social and economical sustainability of the 2G BIOPIC technology and produce the knowledge necessary for the future scale-up to a flagship plant.

Number of Project Participants 7 participants
Project Total Cost 35.195.225,00 (euros)
Project EU Financial Contribution 19.999.544,00 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	FR	989899939	CIMV	COMPAGNIE INDUSTRIELLE DE LA MATIERE VEGETAL CIM V	COORDINATOR	No	Y	16.570.000,00
2	NL	999559005		DYADIC NEDERLAND BV	PARTICIPANT	No	Y	977.375,00
3	SE	997984307		taurus energy ab	PARTICIPANT	No	N	199.976,00
4	FR	999869405	INSA TOULOUSE	INSTITUT NATIONAL DES SCIENCES APPLIQUEES DE TOULOUSE	PARTICIPANT	No	N	630.950,00
5	FR	936986924		ROLKEM	PARTICIPANT	No	N	184.856,00
6	FR	999993274	INRA	INSTITUT NATIONAL DE LA RECHERCHE AGRONOMIQUE	PARTICIPANT	No	N	357.637,00
7	BE	986528219	BBEPP	BIO BASE EUROPE PILOT PLANT VZW	PARTICIPANT	No	Y	1.078.750,00
Total							**3**	**19.999.544,00**

4REFINERY

Project NUMBER	727531
Project TITLE	Scenarios for integration of bio-liquids in existing REFINERY processes
Call IDENTIFIER	H2020-LCE-2016-RES-CCS-RIA
Project INSTRUMENT TYPE	RIA - Research and Innovation action

Project Abstract

There is a strong need to develop new biofuels production technologies that can be integrated into existing infrastructures, leading to biofuels that are cost competitive compared to existing ones and conventional fuels, with the same level of performance and a lower carbon footprint. The 4REFINERY project will develop and demonstrate up to pilot, routes to the production of next generation biofuels from more efficient primary liquefaction processes integrated with upgraded downstream (hydro)refining processes, to achieve overall increased carbon yields of >45%. The strong consortium covering the full process value chain, will identify risk-mitigation pathways for successful implementation into existing refineries, including delivering a comprehensive toolbox for interfacing with existing refinery models. 4REFINERY will focus on optimal pathways for the transformation of bio-liquids from fast pyrolysis and hydrothermal liquefaction into advanced biofuels, through intermediate process steps (fractionation, stabilisation) combined with downstream co-processes technologies at different levels of severities (temperature, hydrogen consumption, carbon yield): co-Fluid Catalytic Cracking, co-hydrodeoxygenation and co-hydrotreating. The project will establish relations between product's properties, the quality of renewable feedstocks and the main process parameters. The study of these combinations will allow a full understanding of the influence of feedstock and treatment processes on product characteristics, describing, analysing and providing insight into synergetic effects. Tangible results include add-ons to existing flow sheeting programs/unit model, with the objectives to analyze different scenarios for further implementation into existing archetype refineries, and to be deployed in existing in-house programming tools used by the oil companies. The financial resources mobilized by the 8 partners represent a total grant of 5 965 474 € with a global effort of 549 PM.

Number of Project Participants 8 participants
Project Total Cost 5.965.473,71 (euros)
Project EU Financial Contribution 5.965.473,71 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	NO	999980761		STIFTELSEN SINTEF	COORDINATOR	No	N	1.009.857,50
2	FR	999997930	CNRS	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS	PARTICIPANT	No	N	737.375,00
3	NL	999744081	BTG	B.T.G. BIOMASS TECHNOLOGY GROUP BV	PARTICIPANT	No	Y	769.975,00
4	FI	932760440	TEKNOLOGIAN TUTKIMUSKESKUS VTT OY	Teknologian tutkimuskeskus VTT Oy	PARTICIPANT	No	N	1.163.135,00
5	ES	999768913	REPSOL	REPSOL SA	PARTICIPANT	No	N	493.812,50
6	DK	999904034	AAU	AALBORG UNIVERSITET	PARTICIPANT	No	N	929.255,00
7	UK	953983555	E4TECH	E4TECH (UK) LTD	PARTICIPANT	No	Y	210.251,21
8	HU	999504976	MOL PLC	MOL HUNGARIAN OIL AND GAS PLC	PARTICIPANT	No	N	651.812,50
Total							**2**	**5.965.473,71**

ABC-SALT

Project NUMBER	764089
Project TITLE	Advanced Biomass Catalytic Conversion to Middle Distillates in Molten Salts
Call IDENTIFIER	H2020-LCE-2017-RES-RIA-TwoStage
Project INSTRUMENT TYPE	RIA - Research and Innovation action

Project Abstract

ABC-SALT will validate at lab scale a novel route to produce sustainable liquid biofuels (middle distillates (MD)) from various lignocellulosic waste streams for the transport industry, both on roads (biodiesel) and in air (jet fuel), targeting a yield over 35 wt% in the middle distillate range, based on the biomass dry input, and a carbon yield of 55 %. ABC-SALT will solve the following technical challenges: liquefaction and subsequent catalytic hydro-pyrolysis of the biomass in a molten salt environment, followed by the catalytic hydro-deoxygenation of the vapour phase using suitable catalysts to obtain a hydrocarbon product suitable for use as a MD biofuel. ABC-SALT will then operate an integrated lab scale reactor during over 100 hours to provide lab-scale validation of the whole process, bringing this technology to TRL 4. The project includes technical aspects (such as substrate flexibility, biomass liquefaction and hydro-pyrolysis in molten salts and subsequent hydro-deoxygenation and their integration), but also a socio- and techno-economic viability study of the technology (substrate availability and supply chain, future end-users and economic sustainability of the process). This will ensure the future deployment of this new technology considering its social related issues, such as acceptance or modification of the perception of transport induced by such sustainable fuels. Such a holistic approach considering the full value chain, combined to communication with stakeholders during the course of the project, will provide valuable input for scale up and industry-oriented research after this project, maximizing the impact, amongst other in the biomass, biofuel and transport industry. To reach its objectives, the project covers the whole value chain, from feedstock supplier to end-users (knowledge users (RUG, UG, AU, NMBU, DLR), technology users (BTG, Innventia), and middle distillates users (through DLR)), as well as an entity dedicated to SSH aspects (CIRPA).

Number of Project Participants 9 participants
Project Total Cost 3.998.025,50 (euros)
Project EU Financial Contribution 3.998.025,50 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	NL	999989782		RIJKSUNIVERSITEIT GRONINGEN	COORDINATOR	No	N	1.014.018,75
2	UK	999896953	ASTON U	ASTON UNIVERSITY	PARTICIPANT	No	N	432.691,25
3	NL	999744081	BTG	B.T.G. BIOMASS TECHNOLOGY GROUP BV	PARTICIPANT	No	Y	445.000,00
4	NO	999902967	NMBU	NORGES MILJO-OG BIOVITENSKAPLIGE UNIVERSITET	PARTICIPANT	No	N	376.137,50
5	BE	999986096	UGent	UNIVERSITEIT GENT	PARTICIPANT	No	N	587.500,00
6	DE	999981731	DLR	DEUTSCHES ZENTRUM FUER LUFT - UND RAUMFAHRT EV	PARTICIPANT	No	N	476.291,25
7	SE	999447746		RISE INNVENTIA AB	PARTICIPANT	No	N	350.039,25
8	IT	999987745		UNIVERSITA DEGLI STUDI DI ROMA LA SAPIENZA	PARTICIPANT	No	N	200.097,50
9	FR	999944968	AYMING	AYMING	PARTICIPANT	No	N	116.250,00
Total							**1**	**3.998.025,50**

ADVANCEFUEL

Project NUMBER	764799
Project TITLE	Facilitating market roll-out of RESfuels in the transport sector to 2030 and beyond
Call IDENTIFIER	H2020-LCE-2017-RES-CSA
Project INSTRUMENT TYPE	CSA - Coordination and support action

Project Abstract

ADVANCEFUEL aims at enabling the commercialization of advanced and liquid renewable alternative fuels (RESfuels) to meet the renewable energy targets set at European level for 2020 and 2030. Under the coordination of FNR, 8 authoritative (yet neutral) players (ATB, ECN, Imperial College, Aalto University, Utrecht University, Chalmers University and Greenovate!Europe), with the assistance of an Advisory Board, propose a systemic approach to address RESfuel market roll-out in road, marine and aviation applications. The project objectives cover all the call challenges, viz.: 1. monitoring, within and beyond Europe, activities slowing or accelerating RESfuels commercial uses 2. detailing innovative approaches to improve biomass availability and suitability for its conversion into advanced biofuels, with a special focus on new cropping schemes; 3. assessing innovative biomass conversion technologies and their efficient integration in existing infrastructures; 4. delivering a tool to assess current and future lifecycle environmental (GHG) performances of RESfuels based upon harmonized sustainability schemes 5. recommending measures to increase market acceptance and end use of RESfuels based on detailed market segmentations accounting for the role of fuel and fuel blend properties; 6. providing stakeholders with merit analyses of critical innovations (cropping, conversion, system integration, sustainability and market development), using practical decision-making tools for a systemic assessment of RESfuels production costs based on scenarios for biomass development, fuel blending issues, etc.. 7. providing value-chain stakeholders with recommendations enhancing RESfuels market roll-out thereby emphasizing the plausibility and usefulness of RESfuels by 2030 8. maximizing the project visibility through communication and dissemination activities which promote knowledge sharing and dialogue between relevant national and EU platforms and the SET Plan activities on RES

Number of Project Participants 8 participants
Project Total Cost 2.628.246,25 (euros)
Project EU Financial Contribution 2.628.246,25 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	DE	998454078		Fachagentur Nachwachsende Rohstoffe e.V.	COORDINATOR	No	N	411.605,25
2	NL	999988715	ECN	STICHTING ENERGIEONDERZOEK CENTRUM NEDERLAND	PARTICIPANT	No	N	442.235,00
3	NL	999985805	UU	UNIVERSITEIT UTRECHT	PARTICIPANT	No	N	318.065,00
4	UK	999993468	Imperial	IMPERIAL COLLEGE OF SCIENCE TECHNOLOGY AND MEDICINE	PARTICIPANT	No	N	369.984,00
5	SE	999980373		CHALMERS TEKNISKA HOEGSKOLA AB	PARTICIPANT	No	N	301.965,00
6	BE	995542041	Greenovate! Europe	Greenovate! Europe	PARTICIPANT	No	N	282.354,00
7	DE	998401795	ATB	LEIBNIZ-INSTITUT FUER AGRARTECHNIK UND BIOOEKONOMIE EV	PARTICIPANT	No	N	272.488,00
8	FI	991256096	AALTO	AALTO-KORKEAKOULUSAATIO sr	PARTICIPANT	No	N	229.550,00
Total								**2.628.246,25**

BABET-REAL5

Project NUMBER 654365
Project TITLE New technology and strategy for a large and sustainable deployment of second generation biofuel in rural areas
Call IDENTIFIER H2020-LCE-2015-1-two-stage
Project INSTRUMENT TYPE RIA - Research and Innovation action

Project Abstract

The business model currently under development for second generation ethanol is a replication of the model used for first generation which is plants with massive annual production capacities. Such high production rates require high capital investment and huge amounts of biomasses (250-350,000 tons per year) concentrated in small radius catchment areas to afford transportation costs (50 km). Under such conditions, opportunities for installing plants in most rural areas in Europe and worldwide are scarce. The objective of the project is to develop an alternative solution for the production of 2G ethanol, competitive at smaller industrial scale and therefore applicable to a large amount of countries, rural areas and feedstocks. The target is to reach technical, environmental and economical viabilities in production units processing at least 30,000 tons equivalent dry biomass per year. This approach will definitely enlarge the scope of biomass feedstocks exploitable for the production of biofuel and create better conditions for the deployment of production sites, to the benefit of rural areas in Europe and worldwide. The main concept underpinning the project relies on a new biomass conversion process able to run all the steps from the pretreatment of the raw material to the enzymatic pre-hydrolysis in one-stage-reactor under mild operating conditions. This new process recently developed to TRL 4, offers the most integrated and compact solution for the conversion of lignocellulosic biomass for the production of ethanol developed so far, and it will lead to reduced capital and operation expenditures. The new process will be developed to TRL 5 in the project with the goal of achieving satisfactory technical, environmental and economical performances in relevant operation environment. The project will investigate and select business cases for installations of demonstration/first-of-a-kind small-scale industrial plants in different European and Latino American countries.

Number of Project Participants 16 participants
Project Total Cost 5.995.198,66 (euros)
Project EU Financial Contribution 5.573.643,51 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	FR	999836037	INPT	INSTITUT NATIONAL POLYTECHNIQUE DE TOULOUSE	COORDINATOR	No	N	1.173.343,75
2	MX	999865816	UNAM	UNIVERSIDAD NACIONAL AUTONOMA DE MEXICO	PARTICIPANT	No	N	0,00
3	ES	999614877		CENTRO DE INVESTIGACIONES ENERGETICAS, MEDIOAMBIENTALES Y TECNOLOGICAS-CIEMAT	PARTICIPANT	No	N	653.502,50
4	FR	999869405	INSA TOULOUSE	INSTITUT NATIONAL DES SCIENCES APPLIQUEES DE TOULOUSE	PARTICIPANT	No	N	608.983,66
5	PT	994187921	LNEG	Laboratorio Nacional de Energia e Geologia I.P.	PARTICIPANT	No	N	388.525,00
6	FR	999888708	URCA	UNIVERSITE DE REIMS CHAMPAGNE-ARDENNE	PARTICIPANT	No	N	366.758,75
7	FR	998239805		SOLAGRO ASSOCIATION	PARTICIPANT	No	Y	424.468,75
8	FR	998026793	MAGUIN	MAGUIN S.A.S	PARTICIPANT	No	N	370.770,00
9	MX	998037560	Centro Mario Molina	Centro Mario Molina para Estudios Estrategicos sobre Energia y Medio Ambiente AC	PARTICIPANT	No	N	0,00
10	FR	998052304	APYGEC	Adour Pyrénées Garonne Environnement Etudes et Conseil	PARTICIPANT	No	Y	160.343,75
11	DE	998852651		WIRTSCHAFT UND INFRASTRUKTUR GMBH & CO PLANUNGS KG	PARTICIPANT	No	Y	412.737,50
12	AR	999525055		INSTITUTO NACIONAL DE TECNOLOGIA AGROPECUARIA	PARTICIPANT	No	N	302.831,25
13	UY	989943977	INIA	Instituto Nacional de Investigacion Agropecuaria	PARTICIPANT	No	N	131.037,35
14	FR	932914670	OVALIE INNOVATION	OVALIE INNOVATION	PARTICIPANT	No	N	233.178,75
15	FR	933725687	ARTERRIS INNOVATION	ARTERRIS INNOVATION	PARTICIPANT	No	N	178.608,75
16	DK	999904034	AAU	AALBORG UNIVERSITET	PARTICIPANT	No	N	168.553,75
Total							**3**	**5.573.643,51**

BECOOL

Project NUMBER	744821
Project TITLE	Brazil-EU Cooperation for Development of Advanced Lignocellulosic Biofuels
Call IDENTIFIER	H2020-LCE-2016-RES-IA
Project INSTRUMENT TYPE	RIA - Research and Innovation action

Project Abstract

The main objective of the BECOOL (EU) and BioVALUE (Brazil) projects is to strengthen EU-Brazil cooperation on advanced lignocellulosic biofuels. Information alignment, knowledge synchronization, and synergistic activities on lignocellulosic biomass production logistics and conversion technologies are key targets of both projects and will bring mutual benefits. Both projects are structured in 3 main pillars covering in a balanced way the whole range of activities of the biofuels value chain (biomass production, logistics, conversion and exploitation). The BECOOL consortium is composed by 14 partners from universities, research institutes, large industries/SMEs, from 7 EU countries. Together with improved logistics, the establishment of the BECOOL innovative cropping systems will enable to increase biomass feedstock availability by at least 50% without negatively impacting food production, soil quality, and customary land uses. The improvements in gasification process efficiency of new feedstocks will allow to achieve an optimal gas quality from non-conventional sources (e.g. lignocellulosic crops and residues). The use of energy carrier in gasification will allow to overcome a major logistics barriers for low-energy density feedstock, while the valorization of lignin-rich residues will dramatically improve the energy efficiency of the overall value chain. Technological breakthroughs on pre-treatment, hydrolysis and enzymatic saccharification and fermentation steps will increase the competitiveness of biochemical advanced ethanol. The cross-project model benchmarking, carried out between EU and Brazil, will decrease present limitations on growth, logistics and process academic models, making them more reliable, opening opportunities for business, new jobs, reduced land pressure, and enhanced environmental benefits in EU and Brazil.

Number of Project Participants 13 participants
Project Total Cost 4.999.955,00 (euros)
Project EU Financial Contribution 4.999.955,00 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	IT	999993953	UNIBO	ALMA MATER STUDIORUM - UNIVERSITA DI BOLOGNA	COORDINATOR	No	N	740.040,00
2	IT	953994322	BIOCHEMTEX SPA	BIOCHEMTEX SPA	PARTICIPANT	No	N	399.625,00
3	NL	999744081	BTG	B.T.G. BIOMASS TECHNOLOGY GROUP BV	PARTICIPANT	No	Y	410.222,50
4	ES	999614877		CENTRO DE INVESTIGACIONES ENERGETICAS, MEDIOAMBIENTALES Y TECNOLOGICAS-CIEMAT	PARTICIPANT	No	N	209.960,00
5	EL	999646014	CRES	CENTRE FOR RENEWABLE ENERGY SOURCES AND SAVING FONDATION	PARTICIPANT	No	N	400.162,50
6	IT	999531360	CREA	CONSIGLIO PER LA RICERCA IN AGRICOLTURA E L'ANALISI DELL'ECONOMIA AGRARIA	PARTICIPANT	No	N	251.000,00
7	DE	998003222	DBFZ	DBFZ DEUTSCHES BIOMASSEFORSCHUNGSZENTRUM GEMEINNUETZIGE GMBH	PARTICIPANT	No	N	350.000,00
8	NL	999988715	ECN	STICHTING ENERGIEONDERZOEK CENTRUM NEDERLAND	PARTICIPANT	No	N	409.325,00
9	IT	997911072	ETA	ETA - ENERGIA, TRASPORTI, AGRICOLTURA SRL	PARTICIPANT	No	Y	239.000,00
10	AT	999452596	IIASA	INTERNATIONALES INSTITUT FUER ANGEWANDTE SYSTEMANALYSE	PARTICIPANT	No	N	310.162,50
11	IT	972854226	RE-CORD	CONSORZIO PER LA RICERCA E LA DIMOSTRAZIONE SULLE ENERGIE RINNOVABILI	PARTICIPANT	No	N	470.572,50
12	NL	999547365	WR	STICHTING WAGENINGEN RESEARCH	PARTICIPANT	No	N	420.000,00
13	FI	932760440	TEKNOLOGIAN TUTKIMUSKESKUS VTT OY	Teknologian tutkimuskeskus VTT Oy	PARTICIPANT	No	N	389.885,00
Total							**2**	**4.999.955,00**

BESTF

Project NUMBER 321477
Project TITLE BioEnergy Sustaining the Future : Joint Strategic Planning and Programming to Enable the Implementation of Bioenergy Demonstrations.
Call IDENTIFIER FP7-ERANET-2012-RTD
Project INSTRUMENT TYPE CSA-ERA-PLUS - ERANETplus

Project Abstract
BESTF will bring together a number of national and transnational initiatives in the field of bioenergy. These include; research, development, demonstration and financial instruments. They have been stimulated and driven by both public and private participants. By integrating these actions, risk will be minimised and confidence will be provided to private investors in support of bringing bioenergy closer to market and in Europe. This project aims to kick-start large scale investment in close-to-market implementation of bioenergy thereby helping to achieve the key objectives of the European Industrial Bioenergy Initiative (EIBI) Implementation Plan: “To enable commercial availability of advanced bioenergy at large scale by 2020, aiming at production costs allowing competitiveness with fossil fuels at the prevailing economic and regulatory market conditions, and advanced biofuels covering up to 4% of transportation energy needs by 2020. To strengthen EU technology leadership for renewable transport fuels, serving the fastest growing area of transport fuels in the world”. This project will closely address the requirements of Topic ENERGY.2012.10.1.1: ERA-NET_Plus – Bioenergy Demonstrations of the European Industrial Bioenergy Initiative, aligning it to the wider strategic European requirements: to increase the security of energy supply and to increase the sustainability of energy supply. BESTF will implement a single collaborative funding call that will support projects focused on the generation of bioenergy: energy generated directly or indirectly from sustainable biomass. These projects will have been based on prior high quality research undertaken at a European, national or industrial level but require a final “non-economic step to demonstrate the performance and reliability of all critical steps in a value chain so that the first commercial unit can be designed and performance guaranteed from the outcome of the demo unit”.

Number of Project Participants 10 participants
Project Total Cost 10.112.529,27 (euros)
Project EU Financial Contribution 3.337.134,63 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	UK	PDM.998592400	InnovateUK	The Technology Strategy Board	Coordinator	N		244.921,26
2	UK	PDM.998376478	BBSRC	BIOTECHNOLOGY AND BIOLOGICAL SCIENCES RESEARCH COUNCIL	Participant	N		0,00
3	DE	PDM.998454078		Fachagentur Nachwachsende Rohstoffe e.V.	Participant	N		236.882,01
4	SE	PDM.998687363	SWEA - STEM	STATENS ENERGIMYNDIGHET	Participant	N		635.596,50
5	FI	PDM.999549111		INNOVAATIORAHOITUSKESKUS TEKES	Participant	N		769.890,00
6	DK	PDM.994605603	DEA	ENERGISTYRELSEN	Participant	N		960.002,34
7	ES	PDM.990380089	COMUNIDAD FORAL DE NAVARRA	COMUNIDAD FORAL DE NAVARRA - GOBIERNO DE NAVARRA	Participant	N		0,00
8	CH	PDM.999439210		FEDERAL DEPARTMENT FOR ENVIRONMENT TRANSPORTS ENERGY AND COMMUNICATION	Participant	N		0,00
9	UK	PDM.911879929	DEPARTMENT FOR BUSINESS ENERGY AND INDUSTRIAL STRATEGY	DEPARTMENT FOR BUSINESS ENERGY AND INDUSTRIAL STRATEGY	Participant	N		489.842,52
10	PT	PDM.999543970	FCT	FUNDACAO PARA A CIENCIA E A TECNOLOGIA	Participant	N		0,00
					Total			**3.337.134,63**

BESTF2

Project NUMBER	618046
Project TITLE	Bioenergy Sustaining the Future 2
Call IDENTIFIER	FP7-ERANET-2013-RTD
Project INSTRUMENT TYPE	CSA-ERA-PLUS - ERANETplus

Project Abstract

This ERA-NET_Plus Coordination and Support Action, BESTF, will bring together a number of national and transnational initiatives in the field of bioenergy. It follows on from the first BESTF call that launched in January 2013 and, like its predecessor, aims to kick-start large scale investment in close-to-market implementation of bioenergy thereby helping to achieve the key objectives of the European Industrial Bioenergy Initiative (EIBI) Implementation Plan. This project is aligned to the wider strategic European requirement to increase the security and sustainability of energy supply. The key objectives of this second BESTF initiative are: 1.To implement a single collaborative funding call that will support projects focused on the generation of bioenergy. 2.To maintain and enhance coherence and networking between national bioenergy programmes across the EU. 3.To further the demonstration of enhanced bioenergy technologies in order to help develop robust project plans for a range of demonstrator and flagship plants, that will help Europe to make progress towards achieving its 2016 and 2020 energy targets. 4.To disseminate knowledge gained from the programme and individual projects across the EU. The BESTF programme will support bioenergy demonstration projects that: •Address one or more of the seven EIBI bioenergy value chains detailed above. •Provide an innovative process or step within the value chain (see detail below). •Are at an appropriate stage of development (see detail on TRLs below), and will move into demonstration phase within the timeframe of the programme. •Are industry-led and will enable confidence to be confirmed in commercial scale application.

Number of Project Participants 9 participants
Project Total Cost 14.553.269,00 (euros)
Project EU Financial Contribution 3.714.216,00 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	UK	PDM.998592400	InnovateUK	The Technology Strategy Board	Coordinator	N		500.000,00
2	UK	PDM.911879929	DEPARTMENT FOR BUSINESS ENERGY AND INDUSTRIAL STRATEGY	DEPARTMENT FOR BUSINESS ENERGY AND INDUSTRIAL STRATEGY	Participant	N		1.733.895,00
3	UK	PDM.998376478	BBSRC	BIOTECHNOLOGY AND BIOLOGICAL SCIENCES RESEARCH COUNCIL	Participant	N		199.122,00
4	DE	PDM.998454078		Fachagentur Nachwachsende Rohstoffe e.V.	Participant	N		25.035,00
5	SE	PDM.998687363	SWEA - STEM	STATENS ENERGIMYNDIGHET	Participant	N		430.650,00
6	NL	PDM.972778178		MINISTERIE VAN ECONOMISCHE ZAKEN	Participant	N		132.436,00
7	ES	PDM.999510020	CDTI	CENTRO PARA EL DESARROLLO TECNOLOGICO INDUSTRIAL.	Participant	N		238.846,00
8	CH	PDM.999439210		FEDERAL DEPARTMENT FOR ENVIRONMENT TRANSPORTS ENERGY AND COMMUNICATION	Participant	N		39.125,00
9	DK	PDM.994605603	DEA	ENERGISTYRELSEN	Participant	N		415.107,00
					Total			**3.714.216,00**

BESTF3

Project NUMBER	691637
Project TITLE	Bioenergy Sustaining the Future (BESTF) 3
Call IDENTIFIER	H2020-LCE-2015-3
Project INSTRUMENT TYPE	ERA-NET-Cofund - ERA-NET Cofund

Project Abstract

This ERA-NET Co-fund will bring together a number of national and transnational organisations with an interest in promoting the greater use of bioenergy. It follows on from two previous BESTF ERA-NET Plus initiatives launched in 2013 and, like its predecessors, aims to kick-start large scale investment in close-to-market implementation of bioenergy, thereby helping to achieve the key objectives of the European Industrial Bioenergy Initiative (EIBI) Implementation Plan and the Strategic Energy Technology (SET) Plan. The EIBI aims to boost the contribution of sustainable bioenergy to the 2020 climate and energy objectives. This proposal addresses the need for integrated action across Europe to promote the development of bioenergy demonstrators across a number of technologies by coordinating research and development projects and providing a financial mechanism to support projects that are close to commercialisation. The overall aim for this third BESTF ERA-NET is to implement a joint programme for bioenergy demonstration projects to demonstrate enhanced bioenergy technologies that will help Europe progress towards achieving its 2016 and 2020 targets. It will leverage public-private partnerships to manage the risks and share the financing of close to market bioenergy projects. The key objectives of BESTF3 are: 1.To implement a single collaborative funding call that will support projects focused on the generation of bioenergy. 2.To maintain and enhance coherence and networking between national bioenergy programmes across the EU. 3.To further the demonstration of enhanced bioenergy technologies in order to help develop robust project plans for a range of demonstrator and flagship plants, that will help Europe to make progress towards achieving its 2016 and 2020 energy targets. 4.To disseminate knowledge gained from the programme and individual projects across the EU.

Number of Project Participants 10 participants
Project Total Cost 6.477.368,71 (euros)
Project EU Financial Contribution 2.137.531,67 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	UK	911879929	DEPARTMENT FOR BUSINESS ENERGY AND INDUSTRIAL STRATEGY	DEPARTMENT FOR BUSINESS ENERGY AND INDUSTRIAL STRATEGY	COORDINATOR	No	N	377.368,05
2	ES	999510020	CDTI	CENTRO PARA EL DESARROLLO TECNOLOGICO INDUSTRIAL.	PARTICIPANT	No	N	163.832,46
3	SE	998687363	SWEA - STEM	STATENS ENERGIMYNDIGHET	PARTICIPANT	No	N	490.172,64
4	NL	972778178		MINISTERIE VAN ECONOMISCHE ZAKEN EN KLIMAAT	PARTICIPANT	No	N	202.618,52
5	FI	999549111		INNOVAATIORAHOITUSKESKUS BUSINESS FINLAND	PARTICIPANT	No	N	35.887,50
6	DK	994605603	DEA	ENERGISTYRELSEN	PARTICIPANT	No	N	669.240,00
7	DE	998454078		Fachagentur Nachwachsende Rohstoffe e.V.	PARTICIPANT	No	N	47.850,00
8	PL	999519720	NCBR	NARODOWE CENTRUM BADAN I ROZWOJU	PARTICIPANT	No	N	35.887,50
9	ES	954020706	MEIC	MINISTERIO DE ECONOMIA, INDUSTRIA Y COMPETITIVIDAD	PARTICIPANT	No	N	78.787,50
10	AT	999633695	BMVIT	BUNDESMINISTERIUM FUER VERKEHR, INNOVATION UND TECHNOLOGIE	PARTICIPANT	No	N	35.887,50
Total								**2.137.531,67**

Bin2Grid

Project NUMBER	646560
Project TITLE	Turning unexploited food waste into biomethane supplied through local filling stations network
Call IDENTIFIER	H2020-LCE-2014-3
Project INSTRUMENT TYPE	CSA - Coordination and support action

Project Abstract
The overall objective of Bin2Grid concept is to promote segregated collection of food waste as energy source, conversion to biogas, and its upgrading to biomethane and utilization in associated network of filling stations. To that end, accent will be given to defining strategies for establishing efficient network of food and beverage waste collection methods and practices. Also, whole range of food waste producers will be taken under consideration, i.e. manufacturing entities, catering/food services, retail stores. Since biological treatment (anaerobic digestion) is without an alternative for energy utilization of food waste and together with other raw materials creates a synergy for renewable energy production (biogas/biomethane). One of the biggest advantages of such a concept of energy production is having two issues covered at the same time: environmental protection with sustainable management of food waste and the production of renewable energy with its utilization as a biofuel. The existing technologies which are specific for this kind of raw materials will be explored. Having in mind that chemical energy of biogas is fully used when it has been upgraded to biomethane and used as a biofuel, particular attention will be given to advanced biogas to biomethane upgrading techniques for purification and technical requirements for its usage through local filling stations as a biofuel, in public transportation sector in particular (e.g. waste management trucks).

Number of Project Participants 8 participants
Project Total Cost 709.468,75 (euros)
Project EU Financial Contribution 709.468,00 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	HR	989496031	ZAGREB CITY HOLDING LTD	ZAGREBACKI HOLDING DOO	COORDINATOR	No	N	115.589,74
2	HR	996827485	UNIZAG FSB	SVEUCILISTE U ZAGREBU, FAKULTET STROJARSTVA I BRODOGRADNJE	PARTICIPANT	No	N	78.500,00
3	DE	998852651		WIRTSCHAFT UND INFRASTRUKTUR GMBH & CO PLANUNGS KG	PARTICIPANT	No	Y	106.718,00
4	AT	998494042	GUSSING ENERGY TECHNOLOGIES	GUSSING ENERGY TECHNOLOGIES GMBH	PARTICIPANT	No	Y	121.625,00
5	MK	997815624	JSP	JAVNO SOOBRAKAJNO PRETPRIJATIE SKOPJE	PARTICIPANT	No	N	15.687,50
6	MK	989434048	MUNICIPALITY OF SKOPJE	CITY OF SKOPJE	PARTICIPANT	No	N	34.625,00
7	ES	999949915		INSTITUTO ANDALUZ DE TECNOLOGIA.	PARTICIPANT	Yes	N	103.535,26
8	FR	950511731	ORDIF	OBSERVATOIRE REGIONAL DES DECHETS D'ILE DE FRANCE	PARTICIPANT	No	N	133.187,50
Total							**2**	**709.468,00**

BIO4A

Project NUMBER	789562
Project TITLE	Advanced sustainable BIOfuels for Aviation
Call IDENTIFIER	H2020-LCE-2017-RES-IA
Project INSTRUMENT TYPE	IA - Innovation action

Project Abstract
Decarbonising & reducing aviation dependence on fossil fuel requires biofuels. BIO4A will produce at least kt of sustainable biojet for its use in aviation at commercial scale for accelerating its deployment within the aviation sector, increasing their attractiveness and contributing to the achievement of the EU targets. BIO4A targets HEFA pathway from wastes, aiming to move the full value chain from TLR 6 to 7. BIO4A will demonstrate the full value chain, enabling a production capacity of 2-300 kt/y of biojet in a First Of A Kind new biorefinery in France. The fuel will be distributed using the existing infrastructures and conventional aircraft fuelling systems for commercial flights. Special attention will be directed to the supply of sustainable feedstock, focusing on waste streams (UCO). In parallel, long-term R&D work will address marginal land in EU MED (low ILUC biofuels). Relevant environmental (inc. GHG and energy balance), economic and social data (inc. health and safety issues, impacts and benefits) will be assessed against targets. Since the current main barrier to the commercial production of biojet is the price gap, BIO4A will explicitly address performance and cost targets vs. relevant key performance indicators. The final goal is to prove the business case, identifying potential issues of public acceptance, market or regulatory risks and barriers (feedstock, technological, business, process) along the entire value chain, taking advantage of previous projects and proposing potential mitigation solutions. Offtake agreements have been signed with KLM and Airfrance. Additional off-take agreements could also be signed to open the participation to more airlines. Regulatory framework is also limiting today the development of the sector and an additional goal is recommendations to policies makers. The proposal will be defined at EU/National level, involving the major sector stakeholders and opening with a profitable dialogue with Member States and the EC**.**

Number of Project Participants 7 participants
Project Total Cost 16.851.848,75 (euros)
Project EU Financial Contribution 10.002.520,13 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	IT	972854226	RE-CORD	CONSORZIO PER LA RICERCA E LA DIMOSTRAZIONE SULLE ENERGIE RINNOVABILI	COORDINATOR	No	N	1.489.750,00
1	IT	999895789	UNIFI	UNIVERSITA DEGLI STUDI DI FIRENZE	PARTICIPANT	No	N	0,00
2	FR	907947840		TOTAL RAFFINAGE FRANCE	PARTICIPANT	No	N	0,00
2	FR	950835226	TRC	TOTAL RAFFINAGE CHIMIE SA	PARTICIPANT	No	N	6.007.733,25
3	NL	958814446	SKYNRG	SKYENERGY BV	PARTICIPANT	No	Y	1.093.955,63
4	ES	999745342	CENTRO NACIONAL DE ENERGIAS RENOVABLES CENER	FUNDACION CENER-CIEMAT	PARTICIPANT	No	Y	375.975,00
5	IT	997911072	ETA	ETA - ENERGIA, TRASPORTI, AGRICOLTURA SRL	PARTICIPANT	No	Y	286.562,50
6	ES	954150492		CAMELINA COMPANY ESPANA S.L.	PARTICIPANT	No	Y	360.543,75
7	BE	999992304	JRC	JRC -JOINT RESEARCH CENTRE-EUROPEAN COMMISSION	PARTICIPANT	No	N	388.000,00
					Total		**4**	**10.002.520,13**

Bioenergy4Business

Project NUMBER 646495
Project TITLE Uptake of Solid Bioenergy in European Commercial Sectors (Industry, Trade, Agricultural and Service Sectors) – Bioenergy for Business
Call IDENTIFIER H2020-LCE-2014-3
Project INSTRUMENT TYPE CSA - Coordination and support action

Project Abstract
A consortium led by the Austrian Energy Agency (AEA) developed the project "Uptake of Solid Bioenergy in European Commercial Sectors (Industry, Trade, Agricultural and Service Sectors) – Bioenergy for Business" for the EU-Programme Horizon 2020's Call 2014 (LCE14). The project partners include a combination of energy agencies, national biomass associations and research-oriented partners with specialized knowledge on biomass from Northern, Southern, Central and Eastern Europe (Finland, Denmark, the Netherlands, European Biomass Association (AEBIOM), Germany, Austria, Slovakia, Croatia, Greece, Poland, Romania, Bulgaria and Ukraine). The goal of this project is to support and promote the (partial) substitution of fossil fuels (coal, oil, gas) used for heating, by available bioenergy sources (industrial wastes, forest biomass, straw and other agricultural biomass) in the partner countries and beyond. In this context, the project will contribute to increase much-needed security of energy supply through lower dependence on fossil fuels from politically volatile sources. Target groups are, on the one hand, owners and operators of industrial heating plants (for private or district heating). On the other hand, actors who play an important role with regard to the value chain and to framework conditions crucial for the use of bioenergy heat will also be involved. Activities will be tailored to the needs of actors relevant to promising market segments in the industrial, commercial, services and agriculture sectors. Results of the project will include information about market potentials, capacity building/training, decision-support tools and communication activities targeted at relevant stakeholder, tools to support the careful assessment, planning and implementation of such projects, and dissemination of "best-practice" business models. Additionally, information about "best practice" support measures and policies will be made available.

Number of Project Participants 13 participants
Project Total Cost 1.540.713,75 (euros)
Project EU Financial Contribution 1.540.713,75 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	AT	966800456		OSTERREICHISCHE ENERGIEAGENTUR AUSTRIAN ENERGY AGENCY	COORDINATOR	No	N	266.725,00
2	BE	988834006	AEBIOM	ASSOCIATION EUROPEENNE POUR LA BIOMASSE AISBL	PARTICIPANT	No	N	138.952,50
3	EL	999646014	CRES	CENTRE FOR RENEWABLE ENERGY SOURCES AND SAVING FONDATION	PARTICIPANT	No	N	91.671,25
4	DE	998003222	DBFZ	DBFZ DEUTSCHES BIOMASSEFORSCHUNGSZENTRUM GEMEINNUETZIGE GMBH	PARTICIPANT	No	N	192.685,00
5	PL	994565930	KAPE	KRAJOWA AGENCJA POSZANOWANIA ENERGII SPOLKA AKCYJNA	PARTICIPANT	No	N	74.396,25
6	RO	950466529	ARBIO	ROMANIAN ASSOCIATION OF BIOMASS AND BIOGAS	PARTICIPANT	No	N	71.508,75
7	SK	999760862		SLOVENSKA INOVACNA A ENERGETICKA AGENTURA	PARTICIPANT	No	N	51.665,00
8	BG	999758825	BGBIOM	NACIONALNA ASOCIACIA PO BIOMASA	PARTICIPANT	No	N	63.770,00
9	UA	999667645	SCIENTIFIC ENGINEERING CENTRE BIOMASS CO LTD	NAUKOVO-TEHNICHNII CENTAR BIOMASA LLC	PARTICIPANT	No	Y	68.186,25
10	HR	999570063	EIHP ENERGY INSTITUTE HRVOJE POZAR	ENERGETSKI INSTITUT HRVOJE POZAR	PARTICIPANT	No	N	51.027,50
11	NL	972778178		MINISTERIE VAN ECONOMISCHE ZAKEN EN KLIMAAT	PARTICIPANT	No	N	130.498,75
12	FI	950479042	MOTIVA	MOTIVA OY	PARTICIPANT	No	Y	172.511,25
13	DK	999460356	DANISH TECHNOLOGICAL INSTITUTE	TEKNOLOGISK INSTITUT	PARTICIPANT	No	N	167.116,25
Total							**2**	**1.540.713,75**

BioEnergyTrain

Project NUMBER	656760
Project TITLE	BioEnergyTrain
Call IDENTIFIER	H2020-LCE-2014-2
Project INSTRUMENT TYPE	CSA - Coordination and support action

Project Abstract

The development and adoption of renewable and sustainable energy has become a top priority in Europe, and is Horizon 2020's most prominent theme. Research into new energy methods required to reduce humanity's carbon footprint is an urgent and critical need, and is reliant upon a flow of newly qualified persons in areas as diverse as renewable energy infrastructure management, new energy materials and methods, and smart buildings and transport. Bioenergy is a particularly important field in this respect as it is at the cross-roads of several important European policies, from the Strategic Energy Technology Plan Roadmap on Education and Training (SET-Plan) to the European Bioeconomy Strategy to European Food Safety and Nutrition Policy. European development in this prioritised field is stalled due to a lack of qualified personnel, a lack of cohesion and integration among stakeholders, and poor linkage between professional training and industry needs. To address these problems, BioEnergyTrain brings together fifteen partners from six EU countries to create new post-graduate level curricula in key bioenergy disciplines, and a network of tertiary education institutions, research centres, professional associations, and industry stakeholders encompassing the whole value chain of bioenergy from field/forest to integration into the sustainable energy systems of buildings, settlements and regions. The project will foster European cooperation to provide a highly skilled and innovative workforce across the whole bioenergy value chain, closely following the recommendations of the SET-Plan Education Roadmap.

Number of Project Participants	15 participants
Project Total Cost	3.697.580,00 (euros)
Project EU Financial Contribution	3.697.578,75 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	AT	955300330	ESEIA	EUROPEAN SUSTAINABLE ENERGY INNOVATION ALLIANCE - ESEIA, VEREIN FUR FORDERUNG DER EUROPAIESCHEN INNOVATION FUR ERNEUERBARE ENERGIEN	COORDINATOR	No	N	586.250,00
2	AT	929061442	STYRIAN ENERGY AGENCY	ENERGIE AGENTUR STEIERMARK GEMEINNUTZIGE GMBH	PARTICIPANT	No	N	175.037,50
3	AT	993426083	GTC	GREEN TECH CLUSTER STYRIA GMBH	PARTICIPANT	No	N	110.000,00
4	AT	967450453	BRP-POWERTRAIN GMBH & CO KG	BRP-POWERTRAIN GMBH & CO KG	PARTICIPANT	No	N	171.172,50
5	AT	998253482	Wood K plus	KOMPETENZZENTRUM HOLZ GMBH	PARTICIPANT	No	Y	148.931,00
6	AT	999977948	TU GRAZ	TECHNISCHE UNIVERSITAET GRAZ	PARTICIPANT	No	N	401.666,00
7	DE	937201488	BAV	BERGISCHER ABFALLWIRTSCHAFTSVERBAND	PARTICIPANT	No	N	190.800,00
8	DE	999838753	TUHH	TECHNISCHE UNIVERSITAT HAMBURG-HARBURG	PARTICIPANT	No	N	148.758,75
9	NL	960652402	KIC SE	KIC INNOENERGY SE	PARTICIPANT	No	N	506.750,00
10	NL	999900833	UNIVERSITEIT TWENTE	UNIVERSITEIT TWENTE	PARTICIPANT	No	N	539.437,00
11	PT	994187921	LNEG	Laboratorio Nacional de Energia e Geologia I.P.	PARTICIPANT	No	N	175.621,00
12	RO	950587100		ASOCIATIA GREEN ENERGY	PARTICIPANT	No	N	110.000,00
13	RO	999904131	UTBV	UNIVERSITATEA TRANSILVANIA DIN BRASOV	PARTICIPANT	No	N	180.705,00
14	SI	998079755	ELECTRICITY TRANSMISSION SYSTEM OPERATER	ELES DOO SISTEMSKI OPERATER PRENOSNEGA ELEKTROENERGETSKEGA OMREZJA	PARTICIPANT	No	N	110.625,00
15	SI	999923240	UL	UNIVERZA V LJUBLJANI	PARTICIPANT	No	N	141.825,00
Total							**1**	**3.697.578,75**

Biofficiency

Project NUMBER	727616
Project TITLE	Highly-efficient biomass CHP plants by handling ash-related problems
Call IDENTIFIER	H2020-LCE-2016-RES-CCS-RIA
Project INSTRUMENT TYPE	RIA - Research and Innovation action

Project Abstract

Medium- to large-scale bioenergy utilisation for electricity and combined industrial or district heating is predicted to increase by 160% in 2020 compared to 2010, while carbon emission quotas are becoming stricter. Finding new ways to efficiently utilise cheap and currently unused feedstocks are necessary in order to meet these challenges. Within the project Biofficiency we will investigate how to handle ash-related problems in order to increase steam temperatures up to 600°C in biomass-based CHP plants, including pulverised fuel and fluidised bed systems. The major aspects are fly ash formation, the use of additives, and pre-treatment technologies for difficult fuels. This leads to highly reduced emissions, in particular CO2 and fine particulates, as well as a secure and sustainable energy production. Biofficiency gathers a unique consortium of excellent academic facilities and industrial partners, providing an exceptional platform for the development of new, highly-efficient CHP plants in order to significantly expand their potential in the fast-growing field of renewable energies. By sharing our collective experience, we will strengthen European bio-energy technologies and help solving global climate and energy challenges. The project approach addresses current bottlenecks in solid biomass combustion, namely enhanced deposit formation, corrosion and ash utilisation by a variety of new, promising technologies. Our goal is to deepen the understanding of fly ash formation, to improve current biomass pre-treatment technologies, as well as to contribute to the field of biomass ash utilisation. Through our strong collaboration with industry and academic partners, we want to pave the way for highly-efficient, low-emitting biomass CHP plants, capable of firing low-grade fuels. This benefits industry, communal partners and public authorities by providing sustainable heat and electricity at significantly decreased emissions.

Number of Project Participants 11 participants
Project Total Cost 4.603.760,00 (euros)
Project EU Financial Contribution 4.603.760,00 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	DE	999977463	TUM	TECHNISCHE UNIVERSITAET MUENCHEN	COORDINATOR	No	N	771.750,00
2	DK	952617892	DONG Energy Thermal Power A/S	DONG ENERGY THERMAL POWER AS	PARTICIPANT	No	N	293.750,00
3	DK	999990655	DTU	DANMARKS TEKNISKE UNIVERSITET	PARTICIPANT	No	N	582.250,00
4	FI	932760440	TEKNOLOGIAN TUTKIMUSKESKUS VTT OY	Teknologian tutkimuskeskus VTT Oy	PARTICIPANT	No	N	522.492,50
5	FI	936308409	VALMET TECHNOLOGIES OY	VALMET TECHNOLOGIES OY	PARTICIPANT	No	N	653.500,00
6	FI	999903355	Åbo Akademi University	ABO AKADEMI	PARTICIPANT	No	N	206.250,00
7	EL	999978142	NTUA	NATIONAL TECHNICAL UNIVERSITY OF ATHENS - NTUA	PARTICIPANT	No	N	277.500,00
8	NL	999988715	ECN	STICHTING ENERGIEONDERZOEK CENTRUM NEDERLAND	PARTICIPANT	No	N	317.977,50
9	DE	949131615	MHPS	MITSUBISHI HITACHI POWER SYSTEMS EUROPE GMBH	PARTICIPANT	No	N	609.040,00
10	BE	998728200	LABORELEC	BELGISCH LABORATORIUM VAN DE ELEKTRICITEITSINDUSTRIE	PARTICIPANT	No	N	282.750,00
11	FI	947377758	METSA FIBRE	METSA FIBRE OY	PARTICIPANT	No	N	86.500,00
Total								**4.603.760,00**

BiogasAction

Project NUMBER	691755
Project TITLE	BiogasAction: Promotion of sustainable biogas production in EU
Call IDENTIFIER	H2020-LCE-2015-3
Project INSTRUMENT TYPE	CSA - Coordination and support action

Project Abstract

BiogasAction aim to serve as vehicle for the development of the European biogas sector and thereby contribute to the EU 2020 targets by focusing on removing non-technical barriers to widespread production of biogas/biomethane from manure and other waste. Central driver is the cooperation between different policy levels at EU, national and regional level. The project will boost biogas development in the target regions in conjunction with replication efforts & promotion at broad EU scale. BiogasAction key activity & expected impact: • A web portal containing EU-wide biogas market overview, technical biogas and biomethane information and experience of EU/national biogas projects, case studies and free on-line/off-line biogas tools • Biogas and biomethane intervention strategy plans in the 9 target regions • Replication of the project in 5 EU countries/regions • A guidance document for investors about financing biogas/biomethane project and reducing investment risk. • A guidance document for policy and decision makers and for local authorities/municipalities, to enable them to improve national framework conditions for biogas and biomethane deployment • Definition and support of a total of 50 high quality, sustainable biogas projects in the 9 target regions. • 3 peer learning European workshops focusing on key competence areas (80 participants), 1 European roundtable about advanced biogas applications, organisation of at least 1 national energy info day in each target region, with more than 100 participants/event • 3-4 events/training courses per target region for public administration aimed to improve the framework, including follow-up of the recommendations • 2-4 events/training courses per target region aimed to raise the public acceptance • A local training package incl. use of training material from previous projects • Series of 6-8 trainings in each of the 9 target regions on specific topics for biogas plant operators • Final event on project achievements

Number of Project Participants 13 participants
Project Total Cost 1.999.885,00 (euros)
Project EU Financial Contribution 1.999.885,00 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	DK	997911654	ECNET	ENERGY CONSULTING NETWORK APS	COORDINATOR	No	Y	228.375,00
2	BE	964744444		EUROPEAN BIOGAS ASSOCIATION	PARTICIPANT	No	N	241.937,50
3	DK	928946400	DFFB	DANSK FAGCENTER FOR BIOGAS	PARTICIPANT	No	Y	196.020,00
4	FR	986084153	ENERGEI	AUVERGNE-RHONE-ALPES ENERGIE ENVIRONNEMENT	PARTICIPANT	No	N	195.327,50
5	NL	950790412	CCS ENERGIE-ADVIES	CORNELISSEN CONSULTING SERVICES BV	PARTICIPANT	No	N	163.250,00
6	DE	963072455	IBBK	IBBK FACHGRUPPE BIOGAS GMBH	PARTICIPANT	No	Y	70.875,00
7	BE	998945868	FEDARENE	FEDERATION EUROPEENNE DES AGENCES ET DES REGIONS POUR L'ENERGIE ET L'ENVIRONNEMENT	PARTICIPANT	No	N	46.875,00
8	LV	999688403		EKODOMA	PARTICIPANT	No	Y	135.350,00
9	CZ	994152031	CZBA	CESKA BIOPLYNOVA ASOCIACE ZS	PARTICIPANT	No	N	108.125,00
10	HR	999570063	EIHP ENERGY INSTITUTE HRVOJE POZAR	ENERGETSKI INSTITUT HRVOJE POZAR	PARTICIPANT	No	N	121.500,00
11	UK	994476011	SWEA	SEVERN WYE ENERGY AGENCY LTD	PARTICIPANT	No	N	152.000,00
12	FR	994754013	AILE	AGENCE INNOVATION ET INITIATIVES LOCALES ASSOCIATION	PARTICIPANT	No	Y	150.187,50
13	SE	965838119	ESS	ENERGIKONTOR SYDOST AB	PARTICIPANT	No	Y	190.062,50
Total							**6**	**1.999.885,00**

Bio-HyPP

Project NUMBER	641073
Project TITLE	Biogas-fired Combined Hybrid Heat and Power Plant
Call IDENTIFIER	H2020-LCE-2014-1
Project INSTRUMENT TYPE	RIA - Research and Innovation action

Project Abstract
To reach the goals of improving the efficiency of CHP systems while simultaneously widening the biomass feedstock base as well as increasing operational flexibility, the project aims to develop a full scale technology demonstrator of a hybrid power plant using biogas as main fuel in lab environment. A combined hybrid heat and power plant combines a micro gas turbine (MGT) and a solid oxide fuel cell (SOFC). The focus of the technology demonstration plant is to prove the functional capability of the plant concept, followed by detailed characterization and optimization of the integration of both subsystems. The main objective is to move the technology beyond the state of the art to TRL 4. Electrical efficiencies of more than 60% and total thermal efficiencies of more than 90% are intended to reach at base load conditions. An operational flexibility ranging from 25% to 100% electric power should be achieved. The emission levels should not exceed 10 ppm NOx and 20 ppm CO (at 15% vol. residual oxygen). The system should allow the use of biogas with methane contents varying from 40-75%, thus covering the biogas qualities from the fermentation of the entire biomass feedstock range. To achieve the objectives the subsystems MGT and SOFC including their subcomponents have to be adjusted and optimized by a multidisciplinary design approach using numerical and experimental measures to ensure a proper balance of plant. In addition an integrated control system has to be developed and implemented to achieve a reliable operation of the coupled subsystems. A detailed analysis of different European markets, economic and technical constraints in terms of biogas production potentials will clarify the regional suitable sizes and attractive performance conditions of the power plant system. To identify cost reduction potentials a thermo-economic analysis will be performed. Here, an internal rate of return (IRR) of the system of higher than 15% should be achieved over a 20 years.

Number of Project Participants 8 participants
Project Total Cost 5.775.868,75 (euros)
Project EU Financial Contribution 5.775.868,50 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	DE	999981731	DLR	DEUTSCHES ZENTRUM FUER LUFT - UND RAUMFAHRT EV	COORDINATOR	No	N	2.432.017,50
2	NL	968929509	MTT	MICRO TURBINE TECHNOLOGY BV	PARTICIPANT	No	N	1.296.406,25
3	DE	954033801		SUNFIRE GMBH	PARTICIPANT	No	Y	89.611,00
4	IT	999976687	UNIGE	UNIVERSITA DEGLI STUDI DI GENOVA	PARTICIPANT	No	N	623.125,00
5	UK	941951384	HIFLUX	HIFLUX LTD	PARTICIPANT	No	Y	417.500,00
6	NL	999977269	TU/e	TECHNISCHE UNIVERSITEIT EINDHOVEN	PARTICIPANT	No	N	448.458,75
7	IT	999951467	RINA-C	RINA CONSULTING SPA	PARTICIPANT	No	N	377.500,00
8	NL	936162812	GASTERRA BV	GASTERRA BV	PARTICIPANT	No	N	91.250,00
Total							**2**	**5.775.868,50**

Biomasud Plus

Project NUMBER	691763
Project TITLE	Developing the sustainable market of residential Mediterranean solid biofuels.
Call IDENTIFIER	H2020-LCE-2015-3
Project INSTRUMENT TYPE	CSA - Coordination and support action

Project Abstract

The Biomasud certification system of the quality and sustainability of solid biofuels (http://biomasud.eu/), was created within the BIOMASUD interreg IV project in 2013 with the aim of covering all typical Mediterranean biomass resources used as solid biofuels in small and medium heating installations: domestic, commercial, institutional etc. The label is owned by several partners established in Spain, Portugal and France.Presently, the label includes wood chips and pellets, olive stones and some types of nut shells. Also within Biomasud project, a GIS tool that provides information about sustainable biomass resources and costs available in different Mediterranean countries was updated and upgraded with new information about agroindustrial residues and pellets production and producers Presently, some solid biofuel companies are already producing under the Biomasud quality label in Spain, and others have also shown the interest to adopt it in Spain and Italy, but there is a strong need for development of the label along the whole Mediterranean area where the biomasses and solid biofuels under the label are widely produced and used in the domestic sector market out of any standards. Moreover, there is also a need to extend the label to new biomasses that are used in the Mediterranean area and which are not covered by the label, this making therefore more difficult their appropriate combustion in stoves or small-medium size boilers. Finally, it is also important to mention that, in order to improve the label, a research is needed to develop new and/or review the existing Biomasud label analytical limits and sustainability tools along the value chain, including, the GHG calculation procedure. In the described context, the overall goal of the project is the improvement, dissemination and market development of the Biomasud label in order to promote the sustainable use of the Mediterranean autochthonous solid biofuels in the domestic sector.

Number of Project Participants 11 participants
Project Total Cost 1.971.610,00 (euros)
Project EU Financial Contribution 1.971.610,00 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	ES	952055971	AVEBIOM	ASOCIACION ESPANOLA DE LA VALORIZACION ENERGETICA DE LA BIOMASA	COORDINATOR	No	N	284.100,00
2	ES	999614877		CENTRO DE INVESTIGACIONES ENERGETICAS, MEDIOAMBIENTALES Y TECNOLOGICAS-CIEMAT	PARTICIPANT	No	N	302.825,00
3	IT	952613042		AIEL ASSOCIAZIONE ITALIANA ENERGIE AGROFORESTALI	PARTICIPANT	No	N	175.342,50
4	TR	999587135	TUBITAK	TURKIYE BILIMSEL VE TEKNOLOJIK ARASTIRMA KURUMU	PARTICIPANT	No	N	117.562,50
5	ES	929326252	TERCERA FASE SOFTWARE	TERCERA FASE SOFTWARE SL	PARTICIPANT	No	Y	68.618,75
6	PT	994162022	BIOMASS CENTRE FOR ENERGY	CENTRO DA BIOMASSA PARA A ENERGIA	PARTICIPANT	No	Y	139.562,50
7	EL	998802502	CENTRE FOR RESEARCH AND TECHNOLOGY HELLAS CERTH	ETHNIKO KENTRO EREVNAS KAI TECHNOLOGIKIS ANAPTYXIS	PARTICIPANT	No	N	276.092,50
8	SI	997626765	GIS	GOZDARSKI INSTITUT SLOVENIJE	PARTICIPANT	No	N	122.875,00
9	AT	997914564	BIOS	BIOS BIOENERGIESYSTEME GMBH	PARTICIPANT	No	Y	316.506,25
10	ES	933663413	PEFC	ASOCIACION PARA LA CERTIFICACIÓN ESPAÑOLA FORESTAL - PEFC ESPAÑA	PARTICIPANT	No	N	84.562,50
11	HR	941290717	Zelena energetska zadruga	ZELENA ENERGETSKA ZADRUGA ZA USLUGE	PARTICIPANT	No	N	83.562,50
Total							**3**	**1.971.610,00**

BioMates

Project NUMBER	727463
Project TITLE	Reliable Bio-based Refinery Intermediates
Call IDENTIFIER	H2020-LCE-2016-RES-CCS-RIA
Project INSTRUMENT TYPE	RIA - Research and Innovation action

Project Abstract
The EU targets at replacing 10% of all transport fossil fuels with biofuels by 2020 to reduce the dependence on petroleum through the use of nationally, regionally or locally produced biofuels, while simultaneously reducing greenhouse gas emissions. However, the EU is concerned with the questionable sustainability of the conventional biofuels and the unattractive production costs of second and third generation biofuels. The BioMates project aspires to contribute to the drastic increase of non-food/feed biomass utilisation for the production of greener transportation fuels via an effective and sustainable new production pathway. The project will validate the proposed innovative technology which has the potential of over 49 million tons CO2-eq savings, at least 7% crude oil imports reduction which corresponds to over 7 billion € savings for EU, while indicating its socio-economic, environmental and health expected benefits. The main premise of the BioMates project is the cost-effective and decentralized valorization of residual (straw) and nonfood (Miscanthus) biomass for the production of bio-based products of over 99% bioenergy content. The bio-based products' targeted market is the EU refining sector, utilizing them as a bio-based co-feed of reliable, standardizable properties for underlying conversion units, yielding high bio-content hybrid fuels which are compatible with conventional combustion systems. The BioMates approach is based on innovative non-food/feed biomass conversion technologies, including ablative fast pyrolysis and mild catalytic hydrotreating, while incorporating state-of-the-art renewable H2-production technology as well as optimal energy integration. The proposed pathway for decarbonizing the transportation fuels will be demonstrated via TRL5 units, allowing the development of an integrated, sustainability-driven business case encompassing commercial and social exploitation strategy.

Number of Project Participants 8 participants
Project Total Cost 5.923.316,25 (euros)
Project EU Financial Contribution 5.923.316,25 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	DE	999984059	Fraunhofer	FRAUNHOFER GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V.	COORDINATOR	No	N	1.873.931,25
2	EL	998802502	CENTRE FOR RESEARCH AND TECHNOLOGY HELLAS CERTH	ETHNIKO KENTRO EREVNAS KAI TECHNOLOGIKIS ANAPTYXIS	PARTICIPANT	No	N	1.031.275,00
3	CZ	999867853	VSCHT	VYSOKA SKOLA CHEMICKO-TECHNOLOGICKA V PRAZE	PARTICIPANT	No	N	645.625,00
4	UK	999993468	Imperial	IMPERIAL COLLEGE OF SCIENCE TECHNOLOGY AND MEDICINE	PARTICIPANT	No	N	450.001,25
5	DE	999703826	IFEU	IFEU - INSTITUT FUR ENERGIE UND UMWELTFORSCHUNG HEIDELBERG GMBH	PARTICIPANT	No	Y	374.310,00
6	NL	962322451	HYET	HYDROGEN EFFICIENCY TECHNOLOGIES (HYET) BV	PARTICIPANT	No	Y	940.673,75
7	CZ	948784355	RANIDO	RANIDO, S.R.O.	PARTICIPANT	No	Y	340.000,00
8	DE	921327050	BP EUROPA SE	BP EUROPA SE	PARTICIPANT	No	N	267.500,00
Total							**3**	**5.923.316,25**

BioRES

Project NUMBER	645994
Project TITLE	Sustainable Regional Supply Chains for Woody Bioenergy
Call IDENTIFIER	H2020-LCE-2014-3
Project INSTRUMENT TYPE	CSA - Coordination and support action

Project Abstract

BioRES is proposed by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) in cooperation with the European Biomass Association, the Agricultural Chamber of Styria/Austria, C.A.R.M.E.N marketing network for renewable resources (Germany), the Finish Forest Technology Centre METLA, regional energy agencies in Croatia and Slovenia, and the national biomass associations in Bulgaria and Serbia. BioRES aims at introducing an innovative concept of Biomass Logistic and Trade Centres (BLTCs) in Serbia, Croatia, and Bulgaria on the basis of cooperation with technology leaders from Austria, Slovenia, Germany, and Finland. This will help increasing the demand for woody bioenergy products (processed fire wood, wood chips, wood pellets, and wood briquettes) in these countries and contribute to the achievement of EU targets set out in the RES Directive (2009/28/EC). BioRES identifies priority locations for new BLTCs, assesses regional potentials for the production and use of woody bioenergy products, and initiates local stakeholder dialogues involving both producers and potential users of woody bioenergy products (WP3). BioRES initiates the establishment of community-based investor groups, conducts feasibility studies and provides support for BLTC business plans as well as for sale agreements on supply and demand side, and helps for the start of operations of new BLTCs (WP4) on the basis of EU best practices (WP2). BioRES promotes local consumer information and awareness building (WP7) as well as the development (WP6) of local capacities at all stages along the regional supply chains for quality-controlled woody bioenergy products from sustainable forestry (WP5). Outcomes of BioRES will be exchanged with stakeholders in all EU28 Member States (WP8). The innovative concept for new BLTCs builds upon the results of numerous previous and on-going European programs, in particular BIOMASS TRADE CENTER II, FOROPA, SolidStandards and BIOREGIONS.

Number of Project Participants 9 participants
Project Total Cost 1.865.411,25 (euros)
Project EU Financial Contribution 1.865.411,25 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	DE	999933037	GIZ	DEUTSCHE GESELLSCHAFT FUR INTERNATIONALE ZUSAMMENARBEIT (GIZ) GMBH	COORDINATOR	No	N	434.156,25
2	BE	988834006	AEBIOM	ASSOCIATION EUROPEENNE POUR LA BIOMASSE AISBL	PARTICIPANT	No	N	241.437,50
3	AT	995390042	LWK Steiermark	LANDESKAMMER FUER LAND UND FORTWIRTSCHAFT IN STEIERMARK	PARTICIPANT	No	N	232.687,50
4	DE	941155111	C.A.R.M.E.N. e.V.	CENTRALES AGRAR-ROHSTOFF-MARKETING-UND ENERGIE-NETZWERK E.V.	PARTICIPANT	No	N	51.187,50
5	FI	934887262	LUKE - NATURAL RESOURCES INSTITUTE FINLAND	LUONNONVARAKESKUS	PARTICIPANT	No	N	200.875,00
6	SI	983986431	KSSENA	ZAVOD ENERGETSKA AGENCIJA ZA SAVINJSKO SALESKO IN KOROSKO	PARTICIPANT	No	N	213.380,00
7	HR	984364246	REGEA NORTH-WEST CROATIA REGIONAL ENERGY AGENCY	REGIONALNA ENERGETSKA AGENCIJA SJEVEROZAPADNE HRVATSKE	PARTICIPANT	No	N	193.125,00
8	RS	942603903	SERBIO	NATIONAL BIOMASS ASSOCIATION SERBIO	PARTICIPANT	No	N	130.875,00
9	BG	999758825	BGBIOM	NACIONALNA ASOCIACIA PO BIOMASA	PARTICIPANT	No	N	167.687,50
Total								**1.865.411,25**

BIOSURF

Project NUMBER	646533
Project TITLE	BIOmethane as SUstainable and Renewable Fuel
Call IDENTIFIER	H2020-LCE-2014-3
Project INSTRUMENT TYPE	CSA - Coordination and support action

Project Abstract

The objective of BIOSURF (BIOmethane as SUstainable and Renewable Fuel) is to increase the production and use of biomethane (from animal waste, other waste materials and sustainable biomass), for grid injection and as transport fuel, by removing non-technical barriers and by paving the way towards a European biomethane market. This objective will be achieved through the following founding pillars: - National biomethane registries - Cooperation among the national biomethane registries - European mass-balancing system for biomethane - Free Market Biomethane Trade - Sustainable raw material supply - Methodology for entitlement to CO2 certificates - Regional specificities - Networking and Cooperation - Transferability of results beyond the project's countries. BIOSURF relates, within the Work Program 2014-2015 on Secure, clean and efficient energy, to the Call COMPETITIVE LOW-CARBON ENERGY, namely the topic LCE 14 – 2014/2015: Market uptake of existing and emerging sustainable bioenergy. The qualifying ideas of BIOSURF are: • To develop a value chain analysis from production to use depending on the territorial, physical and economic features (specified for different areas, i.e., biofuel for transport, electricity generation, heating & cooling); • To analyse, compare and promote biomethane registering, labelling, certification and trade practices in Europe, in order to favour cooperation among the different countries and cross border markets on the basis of the partner countries involved; • To address traceability, environmental criteria and quality standards, so aiming to reduce GHG emissions and indirect land-use change (ILUC), to preserve biodiversity and to assess the energy and CO2 balance; to identify the most prominent drivers for CO2-emissions along the value chain as an input for future optimization approaches; • To exchange information and best practices all along Europe concerning biomethane policy, regulations, support schemes and technical standards.

Number of Project Participants 12 participants
Project Total Cost 1.872.912,13 (euros)
Project EU Financial Contribution 1.872.912,13 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	IT	999745439	ISINNOVA	ISTITUTO DI STUDI PER L'INTEGRAZIONE DEI SISTEMI (I.S.I.S) - SOCIETA'COOPERATIVA	COORDINATOR	No	Y	220.700,00
2	BE	964744444		EUROPEAN BIOGAS ASSOCIATION	PARTICIPANT	No	N	457.758,75
3	AT	956632431	AKBOE	ARGE KOMPOST UND BIOGAS OSTERREICH VEREIN	PARTICIPANT	No	Y	199.918,75
4	AT	941041039	AGCS	AGCS GAS CLEARING AND SETTLEMENT AG	PARTICIPANT	No	Y	152.240,00
5	IT	950408620	CIB	CIB-CONSORZIO ITALIANO BIOGAS E GASSIFICAZIONE	PARTICIPANT	No	N	133.668,75
6	DE	998454078		Fachagentur Nachwachsende Rohstoffe e.V.	PARTICIPANT	No	N	143.114,38
7	HU	950573617	HUNGARIAN BIOGAS ASSOCIATION	MAGYAR BIOGAZ EGYESULET	PARTICIPANT	No	N	79.793,75
8	DE	998003222	DBFZ	DBFZ DEUTSCHES BIOMASSEFORSCHUNGSZENTRUM GEMEINNUETZIGE GMBH	PARTICIPANT	No	N	138.237,50
9	FR	939098323		GROUPEMENT REGIONAL DES CENTRES D ETUDES TECHNIQUES AGRICOLES DE L ILE DE FRANCE GRCETA	PARTICIPANT	Yes	N	0,00
10	UK	953532117	REA	RENEWABLE ENERGY ASSOCIATION LBG	PARTICIPANT	No	Y	129.793,75
11	DE	950614939		FACHVERBAND BIOGAS EV	PARTICIPANT	No	N	125.993,75
12	FR	922980900		ASSOCIAT TECHNIQUE ENERGIE ENVIRONNEMENT	PARTICIPANT	No	N	91.692,75
Total							**4**	**1.872.912,13**

BioVill

Project NUMBER	691661
Project TITLE	Bioenergy Villages (BioVill) - Increasing the Market Uptake of Sustainable Bioenergy
Call IDENTIFIER	H2020-LCE-2015-3
Project INSTRUMENT TYPE	CSA - Coordination and support action

Project Abstract

The overall objective of BioVill is to develop regional bioenergy concepts in Slovenia, Serbia, Croatia, Macedonia and Romania up to the investment stage in order to become “bioenergy villages”. This will increase the market uptake of bioenergy on the basis of cooperation with partners from countries with established bioenergy markets (Austria, Germany). The following specific objectives and activities will contribute to the overall objective: (1) 5 villages have developed the institutional set-up and energy management concept for becoming a bioenergy village up to investment stage for physical infrastructure with at least one bioenergy village in Serbia, Croatia, Slovenia, Romania and Macedonia. The local market uptake of bioenergy value chains are to be proven by signing of letters of commitment. (2) Mobilization of 62 GWh/y heat and power based on solid biomass in at least 5 target villages. The individual biomass value chains will include the production and distribution of heat and electricity. The concepts include technical and non-technical aspects for each target village. (3) Increase public acceptance of sustainable bioenergy and raise public awareness on commercial opportunities for farmers, foresters and the bioenergy value chain as a whole by means of public participation. This will be realized by ensuring the public participation of the inhabitants (5,000 households) in the target regions for setting up at least 5 villages across the 5 implementing countries. (4) Capacity Building of users and key actors in business and legislation to manage the bioenergy villages in a sustainable way and be able to either enact the EU based national legislation or make full use of the opportunities that these new markets create for them. In the set-up of bioenergy villages along the bioenergy value chains it will involve at least 500 participants in order to have a critical mass of key actors.

Number of Project Participants 9 participants
Project Total Cost 1.998.917,50 (euros)
Project EU Financial Contribution 1.998.917,50 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	DE	999933037	GIZ	DEUTSCHE GESELLSCHAFT FUR INTERNATIONALE ZUSAMMENARBEIT (GIZ) GMBH	COORDINATOR	No	N	359.125,00
2	DE	998852651		WIRTSCHAFT UND INFRASTRUKTUR GMBH & CO PLANUNGS KG	PARTICIPANT	No	Y	232.812,50
3	DE	964500489	KEA	KEA KLIMASCHUTZ- UND ENERGIEAGENTUR BADEN-WUERTTEMBERG GMBH	PARTICIPANT	No	N	236.562,50
4	AT	966800456		OSTERREICHISCHE ENERGIEAGENTUR AUSTRIAN ENERGY AGENCY	PARTICIPANT	No	N	203.621,25
5	HR	984364246	REGEA NORTH-WEST CROATIA REGIONAL ENERGY AGENCY	REGIONALNA ENERGETSKA AGENCIJA SJEVEROZAPADNE HRVATSKE	PARTICIPANT	No	N	211.125,00
6	HR	971378468	SDEWES Centre	MEDUNARODNI CENTAR ZA ODRZIVI RAZVOJ ENERGETIKE VODA I OKOLISA	PARTICIPANT	No	N	186.446,25
7	RO	950587100		ASOCIATIA GREEN ENERGY	PARTICIPANT	No	N	167.850,00
8	SI	997626765	GIS	GOZDARSKI INSTITUT SLOVENIJE	PARTICIPANT	No	N	225.812,50
9	RS	939098517	STANDING CONFERENCE OF TOWNS AND MUNICIPALITIES	STALNA KONFERENCIJA GRADOVA I OPSTINA	PARTICIPANT	No	N	175.562,50
Total							**1**	**1.998.917,50**

ButaNexT

Project NUMBER	640462
Project TITLE	NEXT GENERATION BIO-BUTANOL
Call IDENTIFIER	H2020-LCE-2014-1
Project INSTRUMENT TYPE	RIA - RESEARCH AND INNOVATION ACTION

Project Abstract
Biobutanol is an attractive commodity chemical and advanced biofuel with superior properties but the 1st gen process suffers from technical and economical constraints. ButaNexT project aims to overcome some of those technical barriers through a novel combination of innovations. Individual stages of the process supply chain will be developed, validated and optimized at lab-scale and then integrated and demonstrated at pilot scale. A holistic approach is proposed to produce cost-competitive biobutanol from 3 types of lignocellulosic biomass and waste in a sustainable way being flexible to accommodate regionally specific feedstocks. Project exploitable outputs include: (1)novel low CAPEX two-step pretreatment process that releases hemicellulose and cellulose from recalcitrant feedstocks for further enzymatic and/or fermentation processing, (2)new tailored enzyme cocktail yielding highly fermentable sugars at low enzyme dosages and lower cost, (3)superior clostridial strains with enhanced production characteristics i.e. butanol and inhibitor tolerance, (4)high productivity fermentation process including a novel in-situ product recovery step. Technology advances allow sustainable feedstock diversification, improve conversion yields and efficiency, reduce energy requirements, and water usage. We expect significant reductions in cost (target $800/T which equates to 50% of current 1st gen solvent production in China) as well as enhanced energy balances and reduced GHG emissions vs 1st gen biofuel production (target a 85% reduction). The project output (a technically and economically-validated process) will provide the EU with a tremendous opportunity to build an advanced biofuel business from sustainable feedstocks. This is strategically important to contribute to the European 10% target for renewable transportation fuels for 2020. The proposed project fits into the topic ”Developing next generation technologies for biofuels and sustainable alternative fuels” (LCE-11-2014)

Number of Project Participants 10 participants
Project Total Cost 4,599,414.00 (euros)
Project EU Financial Contribution 4,599,414.00 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	UK	944208477	GBL	Green Biologics Ltd.	COORDINATOR	No	Y	731.000,00
2	ES	996847176	TRSA	TECNICAS REUNIDAS SA	PARTICIPANT	No	N	920.687,50
3	ES	999745342	CENTRO NACIONAL DE ENERGIAS RENOVABLES CENER	FUNDACION CENER-CIEMAT	PARTICIPANT	No	Y	681.011,50
4	NL	999559005		DYADIC NEDERLAND BV	PARTICIPANT	Yes	Y	137.747,74
5	UK	999746021		C-TECH INNOVATION LIMITED	PARTICIPANT	No	Y	132.500,00
6	ES	999840208	UCLM	UNIVERSIDAD DE CASTILLA - LA MANCHA	PARTICIPANT	No	N	493.375,00
7	BE	999645238	VITO	VLAAMSE INSTELLING VOOR TECHNOLOGISCH ONDERZOEK N.V.	PARTICIPANT	No	N	619.935,00
8	UK	953983555	E4TECH	E4TECH (UK) LTD	PARTICIPANT	No	N	210.405,00
9	ES	996410094		ZABALA INNOVATION CONSULTING, S.A.	PARTICIPANT	No	Y	309.875,00
10	FI	942543666	METGEN	METGEN OY	PARTICIPANT	No	Y	362.877,26
Total							**6**	**4.599.414,00**

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THIS IS A FIRST OF A KIND PROJECT
THAT RECEIVED A LOAN FROM INNOV'FIN FUNDING SCHEME
UNDER THE HORIZON 2020 FRAMEWORK PROGRAM

THERE IS NO ABSTRACT

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THERE IS NO ABSTRACT

COMSYN

Project NUMBER	727476
Project TITLE	Compact Gasification and Synthesis process for Transport Fuels
Call IDENTIFIER	H2020-LCE-2016-RES-CCS-RIA
Project INSTRUMENT TYPE	RIA - Research and Innovation action

Project Abstract

The aim of the COMSYN project is to develop a new BTL production concept that will reduce biofuel production cost up to 35 % compared to alternative routes. This means < 0,80 €/l production cost for diesel. The production concept is based on distributed primary conversion of various kinds of biomass residues to intermediate liquid products with small-to-medium scale (10-50 kt/a FT products) units located close to biomass resources. The primary conversion will be integrated to local heat and power production resulting in 80 % energy efficiency in biomass utilization. The FT products will be refined to high quality drop-in liquid transport fuels at existing oil refineries. The novel gasification technology will enable the use of wider feedstock basis than the current gasification processes. In addition to woody residues, the process is able to utilize straw and other agricultural residues, and various waste-derived materials which create new job opportunities and stimulate economy also close to the production sites. The produced FT-wax will be transported to existing large scale oil refinery, which will be gradually converted into biofuel refinery as the number of primary conversion plants increases. The new technology enables decentralized production of FT-wax. All the LCE-08-2016 call objectives with respect to increased conversion efficiency, significant biofuel cost reduction, diversification of raw material base, reduction of emissions, creation of job opportunities and the flexibility and productivity of industrial processes are met. COMSYN brings together Participants representing all competences that are needed to fulfil the project objectives. The project consortium uniquely combines top-level European SME and large industrial companies and research institutes. The expertise of all of the partners includes strong engineering, equipment and component manufacturing as well as techno-econom

Number of Project Participants 7 participants
Project Total Cost 5.096.660,00 (euros)
Project EU Financial Contribution 5.096.660,00 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	FI	932760440	TEKNOLOGIAN TUTKIMUSKESKUS VTT OY	Teknologian tutkimuskeskus VTT Oy	COORDINATOR	No	N	1.469.255,00
2	DE	928469548		INERATEC GMBH	PARTICIPANT	No	Y	1.421.950,00
3	DE	965350112	GKN Sinter Metals Filters	GKN SINTER METALS FILTERS GMBH RADEVORMWALD	PARTICIPANT	No	N	293.730,00
4	CZ	963050436	UniCRE	UNIPETROL VYZKUMNE VZDELAVACI CENTRUM AS	PARTICIPANT	No	N	965.000,00
5	DE	999981731	DLR	DEUTSCHES ZENTRUM FUER LUFT - UND RAUMFAHRT EV	PARTICIPANT	No	N	419.600,00
6	IT	983426062		AMEC FOSTER WHEELER ITALIANA SRL	PARTICIPANT	No	N	286.500,00
7	FI	923512460		AF-CONSULT OY	PARTICIPANT	No	N	240.625,00
Total							**1**	**5.096.660,00**

ECRIA1 (Ambition)

Project NUMBER	731263
Project TITLE	Advanced biofuel production with energy system integration
Call IDENTIFIER	H2020-LCE-2016-ERA
Project INSTRUMENT TYPE	RIA - Research and Innovation action

Project Abstract

The ECRIA project AMBITION aims to develop a long-term joint European Community Research and Innovation Agenda on the integration of biofuels production and surplus grid electricity valorisation. AMBITION brings together eight partners from eight different countries into a European wide lasting research partnership, which is closely linked to EERA Bioenergy. The current fragmentation in energy systems and an increasing share of intermittent energy ask for solutions providing integration and flexibility in the system. AMBITION targets the challenge of system flexibility by integrating (i.e. creating a bridge between) two forms of energy carriers, e.g. grid electricity and biofuels. Further, CO2 from current energy systems and industrial production can to be utilized as an alternative carbon source as an alternative to sequestration. The project targets a limited set of specific aspects (topics) of the integration challenge, which are in line with the priority areas identified in the SET plan Integrated Roadmap. Based on a short-term RIA, several key bottlenecks in biomass conversion technologies such as energy-efficient, low-temperature biomass pre-treatment, gasification and gas cleaning/conditioning to valorize lignin-rich biorefinery residue feedstock and syngas fermentation for the sustainable production of biofuels and chemicals are eliminated through transnational and integrated multidisciplinary research. AMBITION improves the overall material and energy efficiency of the conversion processes and simultaneously reduces capital and operation costs to facilitate implementation in an innovative and integrated European Energy system.

Number of Project Participants 8 participants
Project Total Cost 2.494.986,25 (euros)
Project EU Financial Contribution 2.494.986,25 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	NO	999980761		STIFTELSEN SINTEF	COORDINATOR	No	N	442.400,00
2	PT	994187921	LNEG	Laboratorio Nacional de Energia e Geologia I.P.	PARTICIPANT	No	N	483.610,00
3	NL	999988715	ECN	STICHTING ENERGIEONDERZOEK CENTRUM NEDERLAND	PARTICIPANT	No	N	423.251,25
4	DK	999990655	DTU	DANMARKS TEKNISKE UNIVERSITET	PARTICIPANT	No	N	294.176,25
5	DE	990797674	KIT	KARLSRUHER INSTITUT FUER TECHNOLOGIE	PARTICIPANT	No	N	164.970,00
6	UK	999896953	ASTON U	ASTON UNIVERSITY	PARTICIPANT	No	N	153.750,00
7	ES	999745342	CENTRO NACIONAL DE ENERGIAS RENOVABLES CENER	FUNDACION CENER-CIEMAT	PARTICIPANT	No	Y	211.303,75
8	IT	999988521	ITALIAN NATIONALAGENCY NEW TECHNOLOGIES ENERGY SUS	AGENZIA NAZIONALE PER LE NUOVE TECNOLOGIE, L'ENERGIA E LO SVILUPPO ECONOMICO SOSTENIBILE	PARTICIPANT	No	N	321.525,00
Total							**1**	**2.494.986,25**

ECRIA2 (BALANCE)

Project NUMBER 731224
Project TITLE Increasing penetration of renewable power, alternative fuels and grid flexibility by cross-vector electrochemical processes
Call IDENTIFIER H2020-LCE-2016-ERA
Project INSTRUMENT TYPE RIA - Research and Innovation action

Project Abstract

The main goal of the BALANCE proposal is to gather leading research centres in Europe in the domain of Solid Oxide Electrolysis (SOE) and Solid Oxide Fuel Cells (SOFC) to collaborate and accelerate the development of European Reversible Solid Oxide Cell (ReSOC) technology. ReSOC is an electrochemical device that converts electrical energy into hydrogen (electrolysis mode) or alternatively fuel gas to electrical energy (fuel cell mode). It is characterised by its very high efficiency compared to competing technologies. ReSOC enables to store renewable electricity when it is produced in excess or to convert it into a CO2-free transport fuel. Therefore, it is considered as a key technology to allow the broad penetration of renewable electricity into the European energy system. Fragmented national research efforts are currently impeding quicker development and deployment of next-generation fuel cell and hydrogen technologies. Therefore, BALANCE will identify, quantify and analyse national activities dealing with the diverse aspects of ReSOC technology. This analysis will result in an integrated European research agenda for ReSOC technology to gain synergies and to generate breakthroughs in this highly promising but currently low-TRL technology. Close communication with the advisory board will enable alignment of the proposed agenda with the roadmaps and activities of EERA, IEC and IEA on the topic of hydrogen technologies. Technical development will cover the development of the next generation of ReSOC cells, their integration in the optimised stack assembly, and investigation of the constraints from reversible operation at system level and integration with the grid. Cost will be addressed by using low-cost materials and improving manufacturability. The experimental work will be supported by modelling and simulation at all scales and by the techno-economic analysis of different integration of the ReSOC technology in industrial applications.

Number of Project Participants 8 participants
Project Total Cost 2.856.096,25 (euros)
Project EU Financial Contribution 2.500.596,25 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	FI	932760440	TEKNOLOGIAN TUTKIMUSKESKUS VTT OY	Teknologian tutkimuskeskus VTT Oy	COORDINATOR	No	N	690.763,75
2	FR	999992401	CEA	COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES	PARTICIPANT	No	N	502.426,25
3	DK	999990655	DTU	DANMARKS TEKNISKE UNIVERSITET	PARTICIPANT	No	N	500.000,00
4	IT	999988521	ITALIAN NATIONALAGENCY NEW TECHNOLOGIES ENERGY SUS	AGENZIA NAZIONALE PER LE NUOVE TECNOLOGIE, L'ENERGIA E LO SVILUPPO ECONOMICO SOSTENIBILE	PARTICIPANT	No	N	301.000,00
5	UK	999907526	UoB	THE UNIVERSITY OF BIRMINGHAM	PARTICIPANT	No	N	160.000,00
6	NL	999977366	TU Delft	TECHNISCHE UNIVERSITEIT DELFT	PARTICIPANT	No	N	246.406,25
7	CH	999973971	EPFL	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE	PARTICIPANT	No	N	0,00
8	PL	999543873	IEn	INSTYTUT ENERGETYKI	PARTICIPANT	No	N	100.000,00
Total								**2.500.596,25**

eForFuel

Project NUMBER 763911
Project TITLE Fuels from electricity: de novo metabolic conversion of electrochemically produced formate into hydrocarbons
Call IDENTIFIER H2020-LCE-2017-RES-RIA-TwoStage
Project INSTRUMENT TYPE RIA - Research and Innovation action

Project Abstract

For biorefined fuels to fully replace fossil carbons, we must identify feedstock sources which are essentially unlimited in capacity and scalability and are independent of agriculture and forestry land use. Here, we propose to use electricity – preferably produced from renewable sources and at off pick hours – as the sole energy source for microbial growth and the conversion of CO2 into fuels. We aim to tackle the shortcoming of previous technologies by using completely soluble formate as a mediator between electrical current and living cells. Within an integrated electrobioreactor, CO2 will be reduced to formate at a very high rate, and the formate will be consumed by an engineered E. coli to produce propane and isobutene, gaseous hydrocarbons that are easy to separate from the liquid broth. Both propane and isobutene can be further converted into a range of products, including excellent fuel substitutes (e.g., isooctane), using conventional chemical engineering methodologies. Our approach comprises a truly interdisciplinary effort. Material scientists will design novel electrode compositions and structures, which will be used by electrochemists to optimize electrochemical formate production at high efficiency and current density. Metabolic engineers will adapt E. coli for growth on formate via two synthetic formate assimilation pathways, specifically designed to fit the metabolism of this model bacterium. Synthetic pathways for propane and isobutene biosynthesis will be implemented in the formatotrophic strains. Process engineers will construct a unique electrobioreactor to support simultaneous formate production and consumption. Experts in environmental assessment will analyze the benefits of the suggested technology, and the project vision and results will be disseminated to the scientific community and general public. The technology put forward in this proposal could have a transformative effect on the way we produce our chemicals and fuels.

Number of Project Participants 14 participants
Project Total Cost 4.117.207,50 (euros)
Project EU Financial Contribution 4.117.207,50 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	DE	999990267	MPG	MAX-PLANCK-GESELLSCHAFT ZUR FORDERUNG DER WISSENSCHAFTEN EV	COORDINATOR	No	N	572.425,00
2	DE	999974747	USTUTT	UNIVERSITAET STUTTGART	PARTICIPANT	No	N	346.843,75
3	ES	999895886	UNIVERSIDAD DE ALICANTE	UNIVERSIDAD DE ALICANTE	PARTICIPANT	No	N	299.298,75
4	NO	910945140	SINTEF	SINTEF AS	PARTICIPANT	No	N	350.000,00
5	FR	999992401	CEA	COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES	PARTICIPANT	No	N	349.785,00
6	IL	999979306	WEIZMANN	WEIZMANN INSTITUTE OF SCIENCE	PARTICIPANT	No	N	149.537,50
7	UK	999993468	Imperial	IMPERIAL COLLEGE OF SCIENCE TECHNOLOGY AND MEDICINE	PARTICIPANT	No	N	351.293,75
8	FR	909773865	ALTAR	ALTAR	PARTICIPANT	No	Y	496.125,00
9	FR	951440215	GLOBAL BIOENERGIES	GLOBAL BIOENERGIES	PARTICIPANT	No	Y	159.493,75
10	UK	911494742		C3 BIO-TECHNOLOGIES LIMITED	PARTICIPANT	No	Y	149.875,00
11	BE	961556442		ARCELORMITTAL BELGIUM NV	PARTICIPANT	No	N	156.875,00
12	DE	999703826	IFEU	IFEU - INSTITUT FUR ENERGIE UND UMWELTFORSCHUNG HEIDELBERG GMBH	PARTICIPANT	No	Y	200.000,00
13	AT	968837747	BIOFACTION KG	BIOFACTION KG	PARTICIPANT	No	Y	309.280,00
14	IT	983078414		IN SRL	PARTICIPANT	No	Y	226.375,00
Total							**6**	**4.117.207,50**

ETIP Bioenergy-SABS

Project NUMBER 727509
Project TITLE European Technology and Innovation Platform Bioenergy – Support of Advanced Bioenergy Stakeholders 2016 - 17
Call IDENTIFIER H2020-LCE-2016-ETP
Project INSTRUMENT TYPE CSA - Coordination and support action

Project Abstract

The overarching aim of the Energy Union by 2030 and 2050 is a secure, affordable, competitive, efficient and decarbonised European energy system. Bioenergy is flexible and storable has a key role in providing all forms of energy in such a system. This project aims to support the contributions of biofuel and bioenergy stakeholders to the Energy Union and, more specifically, the Strategic Energy Technology (SET)-Plan. The project will assist the European Biofuels Technology Platform (EBTP), which, following decisions taken in the frame of the new SET-Plan governance in 2015, is currently preparing for the transition to a European Technology and Innovation Platform Bioenergy (ETIP Bioenergy), in providing these contributions. Key elements are to facilitate • contributions to the SET-Plan activities and strategy, e.g. on renewable energy integration, technology cost reduction and upscaling • defining priorities, strategies, R&I investment decisions and programmes; • collaboration between stakeholders in addressing energy system integration challenges; • identification of technical and non-technical barriers to the delivery of innovation to the energy market; • assistance to the European Commission and Member States in defining the research programmes, financial instruments, and addressing the mentioned barriers for the areas of advanced biofuels and bioenergy. Building on a 10 year track of support to EBTP, the ETIP Bioenergy-SABS project will aim at an increased cohesion of bioenergy stakeholders by motivating discussion and interaction on hot topics related to advanced and innovative bioenergy. Key instruments to achieve this aim will be the ETIP Bioenergy website, factsheets, reports, newsletters and networking events at different scales. The project will compile scientifically sound, fact based information on technical and non-technical bioenergy issues.

Number of Project Participants 4 participants
Project Total Cost 599.105,00 (euros)
Project EU Financial Contribution 599.105,00 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	DE	998454078		Fachagentur Nachwachsende Rohstoffe e.V.	COORDINATOR	No	N	257.557,50
2	AT	997261366	BIOENERGY 2020+	BIOENERGY 2020+ GMBH	PARTICIPANT	No	Y	130.266,25
3	IT	998472023	INCE	INCE INIZIATIVA CENTRO EUROPEA - SEGRETARIATO ESECUTIVO	PARTICIPANT	No	N	95.062,50
4	IT	997911072	ETA	ETA - ENERGIA, TRASPORTI, AGRICOLTURA SRL	PARTICIPANT	No	Y	116.218,75
Total							**2**	**599.105,00**

FLEDGED

Project NUMBER 727600
Project TITLE FLExible Dimethyl ether production from biomass Gasification with sorption-enhancED processes
Call IDENTIFIER H2020-LCE-2016-RES-CCS-RIA
Project INSTRUMENT TYPE RIA - Research and Innovation action

Project Abstract

The FLEDGED project will deliver a process for Bio-based dimethyl Ether (DME) production from biomass. The FLEDGED project will combine a flexible sorption enhanced gasification (SEG) process and a novel sorption enhanced DME synthesis (SEDMES) process to produce DME from biomass with an efficient and low cost process. The primary aim of FLEDGED project is to develop a highly intensified and flexible process for DME production from biomass and validate it in industrially relevant environments. This objective will be accomplished by: - Experimental validation of the flexible SEG process at TRL5; - Experimental validation of the flexible SEDMES process at TRL5; - Evaluation of the full biofuel production chain from energy, environmental, economic, socio-economic and risk point of view; - Preparation of the ground for future exploitation of the results of the project beyond FLEDGED, by including in the consortium industrial partners along the whole biofuel production chain. By combining the SEG and the SEDMES processes, the FLEDGED project will validate a plant concept that: - is characterized by a tremendous process intensification: sorption of CO2 in the gasifier and of water in the DME reactor allows designing an overall process for DME production with only two fundamental steps and with reduced units for syngas conditioning - allows operating with a wide range of biomass feedstocks - will be more efficient than competitive processes and expected to have a lower cost, thanks to the reduced number of components, the avoidance or significant reduction of recycles and the avoidance of energy consuming and costly air separation and CO2 separation units - is capable of producing syngas with tailored composition by adapting the SEG process parameters, which allows coupling with an electrolysis system for converting excess intermittent renewable electricity into a high value liquid fuel

Number of Project Participants 10 participants
Project Total Cost 5.555.830,00 (euros)
Project EU Financial Contribution 5.306.455,00 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	IT	999879881	POLIMI	POLITECNICO DI MILANO	COORDINATOR	No	N	757.125,00
2	NL	999988715	ECN	STICHTING ENERGIEONDERZOEK CENTRUM NEDERLAND	PARTICIPANT	No	N	1.426.626,25
3	ES	999991722	CSIC	AGENCIA ESTATAL CONSEJO SUPERIOR DEINVESTIGACIONES CIENTIFICAS	PARTICIPANT	No	N	889.452,50
4	DE	999974747	USTUTT	UNIVERSITAET STUTTGART	PARTICIPANT	No	N	814.295,00
5	FI	999591209	LUT	LAPPEENRANNAN TEKNILLINEN YLIOPISTO	PARTICIPANT	No	N	454.456,25
6	CH	994416065		QUANTIS	PARTICIPANT	No	Y	0,00
7	FR	999958063		INSTITUT NATIONAL DE L ENVIRONNEMENT ET DES RISQUES INERIS	PARTICIPANT	No	N	359.437,50
8	FI	996572569		SUMITOMO SHI FW ENERGIA OY	PARTICIPANT	No	N	219.437,50
9	ES	920217564	ECOHISPANICA	ECOHISPANICA I MAS D MEDIOAMBIENTAL SL	PARTICIPANT	No	Y	73.750,00
10	NL	921169134		FRAMES RENEWABLE ENERGY SOLUTIONS B.V.	PARTICIPANT	No	N	311.875,00
Total							**2**	**5.306.455,00**

FLEXCHX

Project NUMBER 763919
Project TITLE FLEXIBLE COMBINED PRODUCTION OF POWER, HEAT AND TRANSPORT FUELS FROM RENEWABLE ENERGY SOURCES
Call IDENTIFIER H2020-LCE-2017-RES-RIA-TwoStage
Project INSTRUMENT TYPE RIA - Research and Innovation action

Project Abstract

Seasonal solar energy potential and the need for heat and power do not match in Northern and Central European conditions. Consequently, large investments are needed for storing solar energy from summer season to dark winter time. The widely available combined heat and power plants and heating networks should be utilized effectively also in the future energy system. In addition to these challenges, decarbonisation of the transport sector requires massive production of renewable fuels especially for the heavy duty sector: air traffic, ships, heavy duty road vehicles. FLEXCHX project is aiming to present a cost-effective solution to tackle these challenges of the new European energy mix. Principal ideas of the proposal are: - A hybrid process that integrates electrolysis to biomass gasification and synthesis is developed and the key enabling technologies of this process are validated to reach TRL5. - In summer season renewable fuel intermediate (FT-wax) is produced from biomass carbon boosted with solar energy driven electrolysis. A small amount of by-product heat is also produced to cover the summer-time demand for district heating. Biomass consumption is halved compared to the winter time operation and 50 % of the input energy comes from low-cost excess electricity. - In winter season the plant is operated without the electrolyzer in a way that biomass conversion to liquid fuel intermediate, heat and electricity is maximized. - Most of the invested plant components are in full use throughout the year, only the electrolysis unit is operated seasonally Behind FLEXCHX there is a multi-national consortium composed of RTD organizations, industry and SMEs representing the entire value chain. The RTD partners have excellent synergistic competences, while the industrial partners represent lead industries covering the complete value chain from biomass gasification, gas cleaning and fuel synthesis component and plant manufacturers to service providers and end-users.

Number of Project Participants 10 participants
Project Total Cost 4.489.545,00 (euros)
Project EU Financial Contribution 4.489.545,00 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	FI	932760440	TEKNOLOGIAN TUTKIMUSKESKUS VTT OY	Teknologian tutkimuskeskus VTT Oy	COORDINATOR	No	N	1.493.322,50
2	LT	916779787	ENERSTENA	UAB ENERSTENA	PARTICIPANT	No	N	230.937,50
3	DE	928469548		INERATEC GMBH	PARTICIPANT	No	Y	999.350,00
4	DE	999981731	DLR	DEUTSCHES ZENTRUM FUER LUFT - UND RAUMFAHRT EV	PARTICIPANT	No	N	457.420,00
5	FI	929013233	HELEN LTD	HELEN OY	PARTICIPANT	No	N	111.250,00
6	LT	999517683	LEI	LIETUVOS ENERGETIKOS INSTITUTAS	PARTICIPANT	No	N	225.552,50
7	LT	956406324	AB "Kauno energija"	KAUNO ENERGIJA AB	PARTICIPANT	No	N	93.125,00
8	FI	936675554		NESTE ENGINEERING SOLUTIONS OY	PARTICIPANT	No	N	153.750,00
9	UK	999947102		JOHNSON MATTHEY PLC	PARTICIPANT	No	N	564.837,50
10	FI	916275387		OY BRYNOLF GRONMARK AB	PARTICIPANT	No	Y	160.000,00
Total							**2**	**4.489.545,00**

FlexiFuel-CHX

Project NUMBER 654446
Project TITLE Development of a fuel flexible and highly efficient ultra low emission residential-scale boiler with coupled heat recuperation based on flue gas condensation
Call IDENTIFIER H2020-LCE-2015-1-two-stage
Project INSTRUMENT TYPE RIA - Research and Innovation action

Project Abstract
The project aims at the development of a new fuel flexible and highly efficient residential biomass heating technology (20 - 130 kW). It is based on the successful UleWIN wood chip and pellet boiler concept consisting of a fixed-bed updraft gasifier directly coupled with a Low-NOx gas burner and a hot water boiler, which shall be further developed for fuel flexible operation (utilisation of forest residues, SRF, miscanthus, olive stones, nut shells and agro-pellets). Moreover, a compact flue gas condensation system with integrated condensate neutralisation, also capable to operate with highly acidic flue gases from agricultural fuel combustion, shall be developed to increase the efficiency of the whole system up to 110% (related to the fuel NCV). An advanced control system as well as measures for improved system integration shall additionally increase the annual utilisation rate up to 95%. It is expected to achieve at the end of the project a TRL of 5. These objectives are very relevant to the work programme since they focus on highly efficient and fuel flexible residential heat production at almost zero CO and OGC emissions, by 50% reduced NOx emissions (compared with conventional boilers) as well as ultra-low PM emissions below 13 mg/MJ (even when utilising K-rich fuels). Since this shall be reached by primary measures only, fuel flexible heat generation will be possible at reduced heat generation costs in comparison to present heating systems. To fulfil these goals an overall methodology shall be applied which is divided into a technology development part (based on process simulations, computer aided design of the single units, test plant construction, performance and evaluation of test runs) as well as a technology assessment part covering risk, techno-economic, environmental and overall impact assessments, market studies regarding the possible potentials for application of the new technology as well as dissemination activities.

Number of Project Participants 7 participants
Project Total Cost 4.309.610,00 (euros)
Project EU Financial Contribution 3.514.397,50 (euros)

Project participants

Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)			
1	AT	985920417		WINDHAGER ZENTRALHEIZUNG TECHNIK GMBH	COORDINATOR	No	N	1.064.687,50
2	AT	997914564	BIOS	BIOS BIOENERGIESYSTEME GMBH	PARTICIPANT	No	Y	961.462,50
3	DE	999977463	TUM	TECHNISCHE UNIVERSITAET MUENCHEN	PARTICIPANT	No	N	477.158,75
4	CH	924836607	EVOPLAN AG	EVOPLAN AG	PARTICIPANT	No	Y	0,00
5	ES	999614877		CENTRO DE INVESTIGACIONES ENERGETICAS, MEDIOAMBIENTALES Y TECNOLOGICAS-CIEMAT	PARTICIPANT	No	N	479.303,75
6	DE	999929642		WUPPERTAL INSTITUT FUR KLIMA, UMWELT, ENERGIE GMBH	PARTICIPANT	No	Y	322.910,00
7	NL	999985805	UU	UNIVERSITEIT UTRECHT	PARTICIPANT	No	N	208.875,00
Total							**3**	**3.514.397,50**

FlexiFuel-SOFC

Project NUMBER 641229
Project TITLE Development of a new and highly efficient micro-scale CHP system based on fuel-flexible gasification and a SOFC
Call IDENTIFIER H2020-LCE-2014-1
Project INSTRUMENT TYPE RIA - Research and Innovation action

Project Abstract
The project aims at the development of a new innovative highly efficient and fuel flexible micro-scale biomass CHP technology consisting of a small-scale fixed-bed updraft gasifier, a compact gas cleaning system and a solid oxide fuel cell (SOFC). The technology shall be developed for a capacity range of 25 to 150 kW (fuel power) and shall be characterised by a wide fuel spectrum applicable (wood pellets and wood chips of various sizes and moisture contents, SCR, selected agricultural fuels), high gross electric (40%) and overall (85-90%) efficiencies as well as almost zero gaseous and PM emissions. This aim shall be reached by the combination of a fuel-flexible updraft gasification technology with ultra-low particulate matter and condensed alkaline compound concentrations in the product gas, which reduces the efforts for gas cleaning, an integrated gas cleaning approach for dust and HCl removal, desulphurisation and tar cracking as well as a SOFC system which tolerates certain amounts of tars as fuel. It is expected to achieve at the end of the project a TRL of 5. The objectives of the project are highly relevant to the work programme since they focus on the development of a micro-scale CHP technology with extended fuel flexibility which shall be cost efficient and robust and shall distinguish itself by high electric and overall efficiencies as well as almost zero emissions. To fulfil these goals an overall methodology shall be applied which is divided into a technology development part (based on process simulations, computer aided design of the single units and the overall system, test plant construction, performance and evaluation of test runs, risk and safety analysis) as well as a technology assessment part covering risk, techno-economic, environmental and overall impact assessments, market studies regarding the possible potentials for application of the new technology as well as dissemination activities.

Number of Project Participants 8 participants
Project Total Cost 5.988.163,75 (euros)
Project EU Financial Contribution 5.982.101,25 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	AT	985920417		WINDHAGER ZENTRALHEIZUNG TECHNIK GMBH	COORDINATOR	No	N	1.010.375,00
2	AT	997914564	BIOS	BIOS BIOENERGIESYSTEME GMBH	PARTICIPANT	No	Y	1.004.737,50
3	NL	999977366	TU Delft	TECHNISCHE UNIVERSITEIT DELFT	PARTICIPANT	No	N	589.030,00
4	NL	997863445	HyGear B.V.	HYGEAR BV	PARTICIPANT	No	Y	611.663,75
5	DE	999984059	Fraunhofer	FRAUNHOFER GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V.	PARTICIPANT	No	N	903.553,75
6	AT	999952243	AVL	AVL LIST GMBH	PARTICIPANT	No	N	1.420.588,75
7	DE	999929642		WUPPERTAL INSTITUT FUR KLIMA, UMWELT, ENERGIE GMBH	PARTICIPANT	No	Y	246.212,50
8	NL	999985805	UU	UNIVERSITEIT UTRECHT	PARTICIPANT	No	N	195.940,00
Total							**3**	**5.982.101,25**

FlexJET

Project NUMBER	792216
Project TITLE	Sustainable Jet Fuel from Flexible Waste Biomass
Call IDENTIFIER	H2020-LCE-2017-RES-IA
Project INSTRUMENT TYPE	IA - Innovation action

Project Abstract
FlexJet will build a pre-commercial demonstration plant for the production of advanced aviation biofuel (jet fuel) from waste vegetable oil and organic solid waste biomass (food waste), successfully demonstrating the SABR-TCR technology (traditional transesterification (TRANS) and Thermo-Catalytic Reforming (TCR) combined with hydrogen separation through pressure swing adsorption (PSA), and hydro deoxygenation (HDO) and hydro cracking/ isomerisation (HC)) to produce a fully equivalent jet fuel (compliant with ASTM D7566 Standards). This project will deliver respective environmental and social sustainability mapping and it will validate a comprehensive exploitation business plan, building on already established end user interest with existing offtake agreements already in place with British Airways. The project plant installed at the source of where the waste arises in BIGA Energie at Hohenstein (Germany) will produce 1,200 ton of jet fuel from 3,482 tonnes of dried organic waste and 1,153 tonnes of waste vegetable oil per year. A subsequent scale-up first commercial plant would be constructed immediately after the project end to produce 25,000 tonnes per year of aviation fuel. The FlexJet project consortium has undoubtedly bought together the leading researchers, industrial technology providers including airline off takers and renewable energy experts from across Europe, in a combined, committed and dedicated research effort to deliver the overarching ambition. Building and extending from previous framework funding this project is designed to set the benchmark for future sustainable aviation fuel development and growth within Europe and will provide a real example to the rest of the world of how sustainable aviation biofuels can be produced at both large and decentralised scales economically whilst simultaneously addressing social and environmental needs.

Number of Project Participants 15 participants
Project Total Cost 13.408.205,00 (euros)
Project EU Financial Contribution 9.999.732,51 (euros)

Project Applicants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	UK	999907526	UoB	THE UNIVERSITY OF BIRMINGHAM	COORDINATOR	No	N	1.096.845,00
2	DE	999984059	Fraunhofer	FRAUNHOFER GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V.	PARTICIPANT	No	N	119.875,00
3	IT	999993953	UNIBO	ALMA MATER STUDIORUM - UNIVERSITA DI BOLOGNA	PARTICIPANT	No	N	364.125,00
4	UK	918215484		SUSTEEN TECHNOLOGIES UK LTD	PARTICIPANT	No	Y	179.491,38
5	UK	972954233		WRG EUROPE LTD	PARTICIPANT	No	Y	269.500,00
6	UK	941438545		GREEN FUELS RESEARCH LTD	PARTICIPANT	No	Y	2.569.743,75
7	NL	997863445	HyGear B.V.	HYGEAR BV	PARTICIPANT	No	Y	505.467,38
7	NL	937175104		HYGEAR TECHNOLOGY AND SERVICES BV	PARTICIPANT	No	Y	0,00
7	NL	997484854	HyGear Fuel Cell Systems B.V.	HyGear Fuel Cell Systems B.V.	PARTICIPANT	No	Y	0,00
8	DE	911256025	BIGA ENERGIE GMBH & CO KG	BIGA ENERGIE GMBH & CO KG	PARTICIPANT	No	N	2.036.387,50
9	IT	997911072	ETA	ETA - ENERGIA, TRASPORTI, AGRICOLTURA SRL	PARTICIPANT	No	Y	198.625,00
10	NL	958814446	SKYNRG	SKYENERGY BV	PARTICIPANT	No	Y	310.887,50
11	ES	998886116	LEITAT	ACONDICIONAMIENTO TARRASENSE ASSOCIACION	PARTICIPANT	No	N	189.375,00
12	DE	929547121		SUSTEEN TECHNOLOGIES GMBH	PARTICIPANT	No	Y	1.883.000,00
13	UK	999976881	USFD	THE UNIVERSITY OF SHEFFIELD	PARTICIPANT	No	N	276.410,00
					Total		**9**	**9.999.732,51**

FORBIO

Project NUMBER	691846
Project TITLE	Fostering Sustainable Feedstock Production for Advanced Biofuels on underutilised land in Europe
Call IDENTIFIER	H2020-LCE-2015-3
Project INSTRUMENT TYPE	CSA - Coordination and support action

Project Abstract

Sustainable bioenergy production and use in the EU should be further developed in order to support Member States (MS) achieving 20-20-20 targets and foster rural development as set out in EIP AGRI. FORBIO will demonstrate the viability of using land in MSs for non-food bioenergy feedstock production without interfering with the production of food or feed, nor with land currently used for recreational and/or conservational purposes. Competition with other uses of the land is only one component of the sustainability of bioenergy and a number of cross-cutting environmental, social and economic aspects may present challenges to the extended deployment of these value chains, while assuring that biofuel sustainability standards are met. FORBIO will develop a methodology to assess bioenergy production potential on available “underutilised lands” in Europe (contaminated, abandoned, fallow land, etc.) at national and local level. In addition, in this context the project will provide multiple feasibility studies in selected case study locations in three countries that that aim to set the basis for building up local bioenergy value chains that meet the highest sustainability standards and improve efficiency and sustainability of those already available in the case study sites through the provision of roadmaps for bioenergy development.

Number of Project Participants 12 participants
Project Total Cost 1.941.581,25 (euros)
Project EU Financial Contribution 1.941.581,25 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	DE	998852651		WIRTSCHAFT UND INFRASTRUKTUR GMBH & CO PLANUNGS KG	COORDINATOR	No	Y	302.718,75
2	IT	999608281		FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS FAO	PARTICIPANT	No	N	406.250,00
3	HU	999745536	GEONARDO LTD	GEONARDO ENVIRONMENTAL TECHNOLOGIES LTD	PARTICIPANT	No	Y	221.875,00
4	IT	999531360	CREA	CONSIGLIO PER LA RICERCA IN AGRICOLTURA E L'ANALISI DELL'ECONOMIA AGRARIA	PARTICIPANT	No	N	148.875,00
5	IT	953994322	BIOCHEMTEX SPA	BIOCHEMTEX SPA	PARTICIPANT	No	N	182.750,00
6	UK	952644179	BI UK	BLACKSMITH INITIATIVE (UK)	PARTICIPANT	No	N	60.437,50
7	UA	999667645	SCIENTIFIC ENGINEERING CENTRE BIOMASS CO LTD	NAUKOVO-TEHNICHNII CENTAR BIOMASA LLC	PARTICIPANT	No	Y	86.812,50
8	RO	999788410		CENTRUL PENTRU PROMOVAREA ENERGIEI CURATE SI EFICIENTA IN ROMANIA ENERO ASOCIATIEI	PARTICIPANT	No	N	63.625,00
9	DE	928464407	FIB	FORSHUNGSINSTITUTE FUR BERGBAUFOLGELANDSCAFTEN E.V.	PARTICIPANT	No	N	197.200,00
10	PL	986332085	POLBIOM	POLSKIE TOWARZYSTWO BIOMASY POLBIOM	PARTICIPANT	No	N	82.600,00
11	BE	958612201	ELO ASBL	EUROPEAN LANDOWNERS ORGANIZATION	PARTICIPANT	No	N	117.500,00
12	IE	999809071	UNIVERSITY OF LIMERICK	UNIVERSITY OF LIMERICK	PARTICIPANT	No	N	70.937,50
Total							**3**	**1.941.581,25**

greenGain

Project NUMBER 646443
Project TITLE Supporting Sustainable Energy Production from Biomass from Landscape Conservation and Maintenance Work
Call IDENTIFIER H2020-LCE-2014-3
Project INSTRUMENT TYPE CSA - Coordination and support action

Project Abstract

The aim of greenGain is to strengthen the energy use of regional and local biomass from the maintenance of areas and landscape elements, which is performed in the public interest. The scope of the biomass used, will be any material predominantly produced from nature conservation and landscape management, but not from energy-crops. The main target groups are regional and local players, who are responsible for maintenance and conservation work and for the biomass residue management in their regions. Moreover, the focus will be on service providers - including farmers and forest owners, their associations, NGOs and energy providers and consumers. The project will show strategies to build up reliable knowledge on local availability of these feedstocks and know-how on issues from logistics to storage and sustainable conversion pathways for the transformation of these feedstocks to renewable energy (heat and energy products). Furthermore political, legal and environmental aspects will be addressed in model regions. Awareness raising, governance and public acceptance actions will be focussed on. General guidelines will be prepared to guarantee a wide dissemination to other regions in the EU. The regional partners will be actively supported by Technical Partners for the project measures' development and implementation. As a CSA, the project focal point will be the exchange between the model regions and other similar relevant players in the EU, by good practice exchange, a topic-specific website, several workshops and educational site visits in different regions as well as other standard public relations activities. The project team is carefully balanced between technical and scientific organisations and local demand side oriented players. Regions in northern Europe with a wide knowledge in this field are cooperating with European (south-west, middle, east) regions, having an untapped potential, that can be accessed through efficient knowledge transfer.

Number of Project Participants 8 participants
Project Total Cost 1.829.390,50 (euros)
Project EU Financial Contribution 1.829.390,50 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	DE	998454078		Fachagentur Nachwachsende Rohstoffe e.V.	COORDINATOR	No	N	354.101,25
2	DE	950934360	LWK NIEDERSACHSEN	LANDWIRTSCHAFTSKAMMER NIEDERSACHSEN	PARTICIPANT	No	N	238.458,75
3	DE	997541793	SYNCOM	SYNCOM FORSCHUNGS- UND ENTWICKLUNGSBERATUNG GMBH	PARTICIPANT	No	Y	276.313,00
4	ES	999516907	CIRCE	FUNDACION CIRCE CENTRO DE INVESTIGACION DE RECURSOS Y CONSUMOS ENERGETICOS	PARTICIPANT	No	N	198.728,75
5	ES	940724431	OMEZYMA	GRUPO DE ACCION LOCAL BAJO ARAGON-MATARRANA	PARTICIPANT	No	N	110.682,50
6	CZ	992679959	CZ Biom	CZ BIOM - CESKE SDRUZENI PRO BIOMASU	PARTICIPANT	No	Y	289.187,50
7	IT	984301778	SOGESCA s.r.l.	SOGESCA s.r.l.	PARTICIPANT	No	Y	201.355,00
8	IT	951398214		COMUNITA MONTANA-ASSOCIAZIONE DEI COMUNI TRASIMENO-MEDIO TEVERE	PARTICIPANT	No	N	160.563,75
Total							**3**	**1.829.390,50**

Heat-To-Fuel

Project NUMBER 764675
Project TITLE Biorefinery combining HTL and FT to convert wet and solid organic, industrial wastes into 2nd generation biofuels with highest efficiency
Call IDENTIFIER H2020-LCE-2017-RES-CCS-RIA
Project INSTRUMENT TYPE RIA - Research and Innovation action

Project Abstract

Heat-to-Fuel will deliver the next generation of biofuel production technologies towards the de-carbonisation of the transportation sector. Heat-to-fuel will achieve competitive prices for biofuel technologies (<1€/l) while delivering higher fuel qualities and significantly reduced life-cycle GHG reductions. Heat-to-fuel will result in increased Energy production savings (>20%) and enhanced EU's energy security by the use of local feedstocks which in turn ensured local jobs are preserved and increased. The benefit of combining technologies like in Heat-to-Fuel is, that the drawbacks of the single technologies are balanced. FT and APR are promising technologies for the efficient production of 2nd generation fuels. But currently the economic border conditions don't allow the implementation, similar to many other biofuel technologies. The radical innovation of combining an APR with a FT reactor is the basis to overcome this barrier. The large organic wastes (from HTL or other streams) can be conveniently treated with APR to produce H2. Both dry and wet organic wastes can be integrated, with mutual advantages, i.e. steam production for gasification, HTL and APR preheating; FT heat cooling without external utilities. Using the synergies between these technologies maximizes the total process efficiency. Heat-to-fuel aims will be met thanks to the diversification of the feedstock for biofuels production, reducing the supply costs and upgrading the efficiencies of promising and flexible conversion.

Number of Project Participants 14 participants
Project Total Cost 5.896.987,50 (euros)
Project EU Financial Contribution 5.896.987,50 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	AT	998494042	GUSSING ENERGY TECHNOLOGIES	GUSSING ENERGY TECHNOLOGIES GMBH	COORDINATOR	No	Y	401.046,25
2	ES	996435993	IREC	FUNDACIO INSTITUT DE RECERCA DE L'ENERGIA DE CATALUNYA	PARTICIPANT	No	N	361.347,50
3	IT	972854226	RE-CORD	CONSORZIO PER LA RICERCA E LA DIMOSTRAZIONE SULLE ENERGIE RINNOVABILI	PARTICIPANT	No	N	819.031,25
4	FR	999992401	CEA	COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES	PARTICIPANT	No	N	791.442,50
5	UK	999947102		JOHNSON MATTHEY PLC	PARTICIPANT	No	N	238.425,00
6	SI	950542771	SKUPINA FABRIKA DOO	SKUPINA FABRIKA RAZISKAVE IN RAZVOJ DOO	PARTICIPANT	No	Y	259.598,75
7	IT	999977754	POLITO	POLITECNICO DI TORINO	PARTICIPANT	No	N	664.855,00
8	AT	999979888	TU WIEN	TECHNISCHE UNIVERSITAET WIEN	PARTICIPANT	No	N	495.867,50
9	AT	997261366	BIOENERGY 2020+	BIOENERGY 2020+ GMBH	PARTICIPANT	No	Y	515.398,75
10	PL	996488761	INSTITUTE FOR CHEMICAL PROCESSING OF COAL ICHPW	INSTYTUT CHEMICZNEJ PRZEROBKI WEGLA	PARTICIPANT	No	N	330.537,50
11	IT	922448564		BETA RENEWABLES SPA	PARTICIPANT	No	N	250.930,00
12	FR	997657126		ATMOSTAT	PARTICIPANT	No	N	409.651,25
13	IT	999992886	CENTRO RICERCHE FIAT	CENTRO RICERCHE FIAT SCPA	PARTICIPANT	No	N	158.151,25
14	ES	926493949		R2M SOLUTION SPAIN SL	PARTICIPANT	No	Y	200.705,00
Total							**4**	**5.896.987,50**

HiEff-BioPower

Project NUMBER 727330
Project TITLE Development of a new highly efficient and fuel flexible CHP technology based on fixed-bed updraft biomass gasification and a SOFC
Call IDENTIFIER H2020-LCE-2016-RES-CCS-RIA
Project INSTRUMENT TYPE RIA - Research and Innovation action

Project Abstract

Within the project a new highly efficient biomass CHP technology consisting of a fuel-flexible fixed-bed updraft gasifier, a novel compact gas cleaning system and a solid oxide fuel cell (SOFC) shall be developed for a capacity range of 1to 10 MW (total energy output). The technology shall distinguish itself by a wide fuel spectrum applicable (wood pellets, wood chips, SRC, selected agricultural fuels like agro-pellets, fruit stones/shells), high gross electric (40%) and overall (90%) efficiencies as well as equal-zero gaseous and PM emissions. The system shall consist of a fuel-flexible updraft gasification technology with ultra-low particulate matter and alkali metal concentrations in the product gas (which reduces the efforts for gas cleaning), an integrated high temperature gas cleaning approach for dust, HCl and S removal and tar cracking within one process step as well as a SOFC system which tolerates certain amounts of tars as fuel. It is expected to achieve at the end of the project a TRL of 5 and a MRL of at least 5. To fulfill these goals a methodology shall be applied which is divided into a technology development part (process simulations, computer aided design of the single units and the overall system, test plant construction, performance and evaluation of test runs, risk and safety analysis) as well as a technology assessment part covering techno-economic, environmental and overall impact assessments and market studies regarding the potentials for application. Moreover, a clear dissemination, exploitation and communication plan is available. The novel technology shall define a new milestone in terms of CHP efficiency and equal-zero emission technology in the medium-scale capacity range and shall contribute to a stronger and future-oriented EU energy supply based on renewables. Its fuel flexibility shall ensure high attractiveness and market application potential and thus strengthen the industrial base in the EU as well as the technological leadership.

Number of Project Participants 9 participants
Project Total Cost 4.997.371,25 (euros)
Project EU Financial Contribution 4.997.371,25 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	AT	997914564	BIOS	BIOS BIOENERGIESYSTEME GMBH	COORDINATOR	No	Y	851.075,00
2	AT	936527629		VIESSMANN HOLZFEUERUNGSANLAGEN GMBH	PARTICIPANT	No	N	809.475,00
3	DE	990797674	KIT	KARLSRUHER INSTITUT FUER TECHNOLOGIE	PARTICIPANT	No	N	715.900,00
4	DE	962158424		CALIDA CLEANTECH GMBH	PARTICIPANT	No	Y	426.225,00
5	DE	999984059	Fraunhofer	FRAUNHOFER GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V.	PARTICIPANT	No	N	727.503,75
6	AT	999952243	AVL	AVL LIST GMBH	PARTICIPANT	No	N	838.486,25
7	DE	999929642		WUPPERTAL INSTITUT FUR KLIMA, UMWELT, ENERGIE GMBH	PARTICIPANT	No	Y	225.872,50
8	NL	999985805	UU	UNIVERSITEIT UTRECHT	PARTICIPANT	No	N	191.596,25
9	BE	991660004		BOSAL EMISSION CONTROL SYSTEMS NV	PARTICIPANT	No	N	211.237,50
Total							**3**	**4.997.371,25**

HyFlexFuel

Project NUMBER	764734
Project TITLE	Hydrothermal liquefaction: Enhanced performance and feedstock flexibility for efficient biofuel production
Call IDENTIFIER	H2020-LCE-2017-RES-CCS-RIA
Project INSTRUMENT TYPE	RIA - Research and Innovation action

Project Abstract

Hydrothermal liquefaction (HTL) is emerging as innovative technology to produce renewable transportation fuels. The advantages of HTL are reflected in its high feedstock versatility, its ability to convert wet materials and its advantageous environmental and economic performance. Bio-crude, the primary HTL product, can be upgraded to high-quality fuels. The objectives of HyFlexFuel include: 1) Demonstrating HTL conversion compatibility with diverse advanced biomass feedstocks. 2) Maturing HTL-based fuel production from TRL 2-4 to TRL 5. 3) Increasing heat integration and product recovery at TRL 5. 4) Understanding of relation between feedstock and process conditions vs. product yield and quality. 5) Efficient valorisation of residual process streams. 6) Quantification of techno-economic and environmental performance potentials, risks and benefits. 7) Demonstrating drop-in capability of HyFlexFuel products from diverse feedstocks. 8) Quantification of potential technology gaps of a full-scale production plant. HyFlexFuel will assess the potential availability of feedstocks specifically suitable for HTL at European, national and local scale. Local feedstock supply chains will be analysed. HTL conversion will be optimised utilizing diverse feedstocks in a relevant environment at TRL 5. The currently less mature process step of catalytic hydrotreatment of bio-crude will be further developed through a parametric study of process conditions, targeted catalyst development and demonstrated on a continuous system. The energetic valorisation of the remaining soluble organics in the HTL water phase will be achieved through catalytic hydrothermal gasification (cHTG). Inorganic salts will be recovered from residual process streams to produce marketable fertilisers. Finally, the techno-economic and environmental performance of the entire HyFlexFuel production chain will be evaluated, focusing on social, technological, economic and environmental risks and potential benefits.

Number of Project Participants 10 participants
Project Total Cost 5.038.343,75 (euros)
Project EU Financial Contribution 5.038.343,75 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	DE	999551827		BAUHAUS LUFTFAHRT EV	COORDINATOR	No	N	941.582,50
2	DK	999997736	AU	AARHUS UNIVERSITET	PARTICIPANT	No	N	929.787,50
3	DK	999904034	AAU	AALBORG UNIVERSITET	PARTICIPANT	No	N	674.373,75
4	CH	999994923	PSI	PAUL SCHERRER INSTITUT	PARTICIPANT	No	N	750.393,75
5	DE	998003222	DBFZ	DBFZ DEUTSCHES BIOMASSEFORSCHUNGSZENTRUM GEMEINNUETZIGE GMBH	PARTICIPANT	No	N	342.781,25
6	DE	999901900		UNIVERSITAET HOHENHEIM	PARTICIPANT	No	N	431.033,75
7	BE	999743790	OWS NV	ORGANIC WASTE SYSTEMS NV	PARTICIPANT	No	Y	216.750,00
8	IT	997904961	ENI	ENI S.p.A.	PARTICIPANT	No	N	272.082,50
9	DK	999432226		HALDOR TOPSOE AS	PARTICIPANT	No	N	163.000,00
10	FR	999792484	ARTTIC	ARTTIC	PARTICIPANT	No	Y	316.558,75
Total							**2**	**5.038.343,75**

ISAAC

Project NUMBER	691875
Project TITLE	Increasing Social Awarness and ACceptance of biogas and biomethane
Call IDENTIFIER	H2020-LCE-2015-3
Project INSTRUMENT TYPE	CSA - Coordination and support action

Project Abstract

Although Italy has a great potential for biogas production, many non-technical barriers are still present in the current framework. Some of the limiting factors involve public acceptance of the biogas facilities diffusion, as well as lack of a reliable coordination between different stakeholders. Furthermore, normative and legislative inadequacies and deficiencies haven't facilitated the implementation of these technologies within the national context. The main project objective consists on the construction of a communicative model oriented to spread balanced information, based on environmental and economic benefits, between all the actors potentially involved in biogas/biomethane implementation. At the same time, actions will be focused on reducing the fragmentation between farmers, foresters and other stakeholders in order to reach the minimal facility dimension needed, increased biogas and biomethane penetration and reduce cost management. A participatory process model will be developed as the main project's approach to reduce social conflict and to include all actors in important common decision making process; starting from the experience, a normative proposal on the participatory process will be recommended. The effectiveness of the proposal will be maximized applying the actions on specific and restricted areas: the study of the energetic unhatched potential deriving from anaerobic digestion of residual biomass or organic waste will constitute the starting point for communication and information campaigns toward the territory and its stakeholders. The attention will be focused on some high energetic potential regions where the diffusion of these technologies struggles to be realized and the effects of project actions on awareness and acceptance will be evaluated. In particular, a specific decisional participative model will be implemented and applied in one of the selected districts, as case study, involving in an active way all the stakeholders.

Number of Project Participants 5 participants
Project Total Cost 1.480.535,00 (euros)
Project EU Financial Contribution 1.480.535,00 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	IT	943752092	AzzeroCO2	AZZERO CO2 SRL	COORDINATOR	No	Y	417.625,00
2	IT	986523951		LEGAMBIENTE ASSOCIAZIONE ONLUS	PARTICIPANT	No	N	279.585,00
3	IT	999979500	CNR	CONSIGLIO NAZIONALE DELLE RICERCHE	PARTICIPANT	No	N	397.500,00
4	IT	939730957	Associazione Chimica Verde Bionet	CHIMICA VERDE BIONET	PARTICIPANT	No	N	185.825,00
5	IT	950408620	CIB	CIB-CONSORZIO ITALIANO BIOGAS E GASSIFICAZIONE	PARTICIPANT	No	N	200.000,00
Total							**1**	**1.480.535,00**

ISABEL

Project NUMBER	691752
Project TITLE	Triggering Sustainable Biogas Energy Communities through Social Innovation
Call IDENTIFIER	H2020-LCE-2015-3
Project INSTRUMENT TYPE	CSA - Coordination and support action

Project Abstract

Community energy sits high in the energy policy agenda as an inseparable part of the strategy towards a low-carbon EU economy. Sustainable biogas technologies have been extremely slow in catching up with community energy developments, failing to benefit from their undeniable potential. ISABEL aims to remove the obstacles and to promote community biogas in the EU by bringing out its societal relevance and by joining forces with a major revolutionary movement – Social Innovation. To achieve and sustain this transition, ISABEL employs modern marketing research to understand the needs and cultural diversities of the communities, fuses Social Innovation to reposition Biogas from an economic bio-fuel carrier to a social good, to come up with new community concepts and to build a stronger and wider community engagement in support of biogas. We zoom in on specific areas with diverse interest and we support communities on the ground to realize community biogas plans in coordination with all the stakeholders, slashing transaction overheads. We bring communities together to exchange and inspire each other as we carefully steer them towards quality sustainability and impact assessment principles. We zoom out to inform the policy world about what works and what does not, what should change and how we can scale-up, replicate and innovate in order to make investments more attractive. We envision a more innovative, better connected, less sensitive to policy and more transparent community biogas movement which will serve as a spring of ideas for other renewable energy technologies. But we start simple – we want more ideas, more and deeper public involvement, more responsible community biogas plans and more bold and fair policies; and we bring along a highly complementary team of practical minded people to do it.

Number of Project Participants 8 participants
Project Total Cost 1.897.437,50 (euros)
Project EU Financial Contribution 1.897.437,50 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	EL	999568608	Q-PLAN INTERNATIONAL	Q-PLAN INTERNATIONAL ADVISORS PC	COORDINATOR	No	Y	307.250,00
2	FR	998264540	INSEAD	INSTITUT EUROPEEN D ADMINISTRATION DES AFFAIRES	PARTICIPANT	No	N	202.500,00
3	DE	998454078		Fachagentur Nachwachsende Rohstoffe e.V.	PARTICIPANT	No	N	250.000,00
4	UK	999985223	SURREY	UNIVERSITY OF SURREY	PARTICIPANT	No	N	324.750,00
5	UK	932044483	GLOBAL BIOTECHNOLOGY TRANSFER FOUNDATION LIMITED	GLOBAL BIOTECHNOLOGY TRANSFER FOUNDATION LIMITED	PARTICIPANT	No	Y	203.437,50
6	EL	928095225	EUROENERGY BIOGAS S.A.	EUROENERGY BIOGAS WEST SOCIETE ANONYME PRODUCTION AND TRADING OF ELECTRICAL ENERGY	PARTICIPANT	No	N	171.250,00
7	BE	953382543		WHITE RESEARCH SPRL	PARTICIPANT	No	Y	266.375,00
8	DE	932674207		BODENSEE STIFTUNG	PARTICIPANT	No	N	171.875,00
Total							**3**	**1.897.437,50**

KEROGREEN

Project NUMBER 763909
Project TITLE Production of Sustainable aircraft grade Kerosene from water and air powered by Renewable Electricity, through the splitting of CO2, syngas formation and Fischer-Tropsch synthesis
Call IDENTIFIER H2020-LCE-2017-RES-RIA-TwoStage
Project INSTRUMENT TYPE RIA - Research and Innovation action

Project Abstract
KEROGREEN offers a novel conversion route to sustainable aviation fuel synthesised from H2O and CO2 powered by renewable electricity. Because the sustainable kerosene emits less soot and no sulphur, it meets future aviation air pollution standards. The conversion is based on plasma driven CO2 dissociation, solid oxide membranes and Fischer-Tropsch (F-T) synthesis of kerosene. Synergy between plasma activated species and novel perovskite electrodes of the oxygen separator are expected to raise CO productivity and energy efficiency. CO2 emitted upon fuel usage is recirculated as feedstock to the process by direct air capture. The technology is modular, scalable and relies on inexpensive existing infrastructure for storage, transport and distribution. In this project the technology readiness level is raised from TRL 3 to 4 by novel system integration into a container sized unit producing 1kg/hr kerosene. Projected cost at this stage of development are estimated at +50% of fossil kerosene. Market entrance will be facilitated by ETS, airline CO2 compensation fund and ICAO regulation. The intermediate CO product is a valuable gas by itself. On-site production offers inherent safety. Safety issues and sustainability of KEROGREEN, including environmental impact, cost and acceptability will be analysed. By dynamically converting surplus renewable electricity in carbon neutral liquid fuel, vast energy storage capacity opens up to the electricity system, providing flexibility and allowing increased penetration of renewable electricity. The KEROGREEN Power-to-X technology is generic as it couples the electricity sector to the oil, gas and chemical sector, with the powerful potential to reduce the overall EU CO2 emission budget, increase energy security and conserve fossil fuel. Compact sized KEROGREEN equipment close coupled to an off-shore wind turbine or a remote solar array produces carbon neutral liquid fuel on site, with no need for expensive electricity infrastructure.

Number of Project Participants 6 participants
Project Total Cost 4.951.958,75 (euros)
Project EU Financial Contribution 4.951.958,75 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	NL	999624092	NWO-I	STICHTING NEDERLANDSE WETENSCHAPPELIJK ONDERZOEK INSTITUTEN	COORDINATOR	No	N	1.481.340,00
2	DE	990797674	KIT	KARLSRUHER INSTITUT FUER TECHNOLOGIE	PARTICIPANT	No	N	1.092.010,00
3	BE	999645238	VITO	VLAAMSE INSTELLING VOOR TECHNOLOGISCH ONDERZOEK N.V.	PARTICIPANT	No	N	484.715,00
4	NO	997950260	CERPOTECH	Ceramic Powder Technology AS	PARTICIPANT	No	Y	350.381,25
5	NL	997863445	HyGear B.V.	HYGEAR BV	PARTICIPANT	No	Y	644.262,50
6	DE	928469548		INERATEC GMBH	PARTICIPANT	No	Y	899.250,00
Total							**3**	**4.951.958,75**

KeepWarm

Project NUMBER 784966
Project TITLE Improving the performance of district heating systems in Central and East Europe
Call IDENTIFIER H2020-EE-2017-CSA-PPI
Project INSTRUMENT TYPE CSA - Coordination and support action

Project Abstract
The Project “Improving the performance of district heating systems in East Europe” – or KeepWarm for short – targets the largest energy user in the EU: Energy demand for heating and cooling (49%). Relying on district heating systems for heat generation is the most effective solution in densely populated areas. However, many district heating systems (DHS) are highly energy inefficient and need to be modernized. Considering that the predominant energy sources used are still fossil fuels (oil, gas or coal) makes interventions ever more urgent. Both statements hold especially for East European countries where old, inefficient district heating systems, mostly fueled by fossil sources, urgently need to be modernized. The unique feature of KeepWarm is its combination of concrete work at pilot systems and its close alignment with national and European multipliers to disseminate this experience broadly. The latter incudes close interaction with potential investors and fund managers to increase the likelihood that KeepWarm business plans receive the necessary funding. The project promotes EU goals of improved and environmental friendly heating and cooling but adapts its exploitation strategy to distinct national windows of opportunities. KeepWarm will work intensively with DHS in seven countries (i) to increase the energy efficiency of these systems; and (ii) to reduce greenhouse gas emissions by promoting a switch from fossil to renewable fuels. This is most urgently needed in the case of large-scale DH systems that are mostly found in Eastern Europe, the focus of this project. Likewise, it is important to ensure that existing DHS that run on renewables do not switch back to fossil fuels.

Number of Project Participants 11 participants
Project Total Cost 2.098.497,50 (euros)
Project EU Financial Contribution 2.098.488,50 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	DE	999933037	GIZ	DEUTSCHE GESELLSCHAFT FUR INTERNATIONALE ZUSAMMENARBEIT (GIZ) GMBH	COORDINATOR	No	N	362.583,75
2	HR	996827485	UNIZAG FSB	SVEUCILISTE U ZAGREBU, FAKULTET STROJARSTVA I BRODOGRADNJE	PARTICIPANT	No	N	104.785,00
3	AT	995390042	LWK Steiermark	LANDESKAMMER FUER LAND UND FORTWIRTSCHAFT IN STEIERMARK	PARTICIPANT	No	N	285.089,75
4	HR	984364246	REGEA NORTH-WEST CROATIA REGIONAL ENERGY AGENCY	REGIONALNA ENERGETSKA AGENCIJA SJEVEROZAPADNE HRVATSKE	PARTICIPANT	No	N	148.312,50
5	SI	999971837	JSI	INSTITUT JOZEF STEFAN	PARTICIPANT	No	N	123.250,00
6	DE	998341364	ICLEI EURO	ICLEI EUROPEAN SECRETARIAT GMBH (ICLEI EUROPASEKRETARIAT GMBH)*	PARTICIPANT	No	Y	301.000,00
7	CZ	950599516	ADH CR	TEPLARENSKE SDRUZENI CESKE REPUBLIKY	PARTICIPANT	No	N	201.505,00
8	LV	951008274	ZEMGALE REGIONAL ENERGY AGENCY ZREA	BIEDRIBA ZEMGALES REGIONALA ENERGETIKAS AGENTURA	PARTICIPANT	No	N	137.281,25
9	SI	983986431	KSSENA	ZAVOD ENERGETSKA AGENCIJA ZA SAVINJSKO SALESKO IN KOROSKO	PARTICIPANT	No	N	132.462,50
10	UA	927646600		LLC KT-ENERGY	PARTICIPANT	No	Y	197.750,00
11	RS	999703729	VINCA	INSTITUT ZA NUKLEARNE NAUKE VINCA	PARTICIPANT	No	N	104.468,75
Total							**2**	**2.098.488,50**

Macrofuels

Project NUMBER 654010
Project TITLE Developing the next generation Macro-Algae based biofuels for transportation via advanced bio-refinery processes
Call IDENTIFIER H2020-LCE-2015-1-two-stage
Project INSTRUMENT TYPE RIA - Research and Innovation action

Project Abstract

MacroFuels aims to produce advanced biofuels from seaweed or macro-algae. The targeted biofuels are ethanol, butanol, furanics and biogas. The project will achieve a breakthrough in biofuel production from macroalgae by: • Increasing the biomass supply by developing a rotating crop scheme for cultivation of seaweed, using native, highly productive brown, red and green seaweeds. Combined with the use of advanced textile substrates these breakthroughs will result in a year round biomass yield of 25 kg seaweeds (wet weight) per m2 per year harvested at 1000m2/hr; • Improving the pre-treatment and storage of seaweed and to yield fermentable and convertible sugars at economically relevant concentrations (10-30%); • Increasing the bio-ethanol production to economically viable concentrations of > 4%/l and; • Increasing the bio-butanol yield to 15 g./l by developing novel fermenting organisms which metabolize all sugars at 90% efficiency for ethanol and butanol; • Increasing the biogas yield to convert 90% of the available carbon in the residues by adapting the organisms to seaweed; • Developing the thermochemical conversion of sugars to fuels from the mg. scale to the kg. scale; • Performing an integral techno-economic, sustainability and risk assessment of the entire seaweed to biofuel chain. MacroFuels will develop technology for the production of fuels which are suitable as liquid fuels or precursor thereof for the heavy transport sector as well as potentially for the aviation sector. The technology will be taken from TRL3 to TRL 4/5. MacroFuels will expand the biomass available for the production of advanced biofuels. Seaweed does not need fresh water, arable land or fertilizers to grow, which provides environmental benefits, and in addition has a high carbon dioxide reduction potential as well as reduces the demand for natural resources on land. The technology offers many novel opportunities for employment along the entire value chain.

Number of Project Participants 11 participants
Project Total Cost 5.999.892,50 (euros)
Project EU Financial Contribution 5.999.892,50 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	DK	999460356	DANISH TECHNOLOGICAL INSTITUTE	TEKNOLOGISK INSTITUT	COORDINATOR	No	N	587.481,25
2	NL	999988715	ECN	STICHTING ENERGIEONDERZOEK CENTRUM NEDERLAND	PARTICIPANT	No	N	1.018.596,25
3	NL	999547365	WR	STICHTING WAGENINGEN RESEARCH	PARTICIPANT	No	N	994.702,50
4	NL	969594444	AVT	AVANTIUM CHEMICALS BV	PARTICIPANT	No	Y	550.000,00
5	UK	999738843	SAMS	THE SCOTTISH ASSOCIATION FOR MARINESCIENCE LBG	PARTICIPANT	No	Y	727.943,75
6	BE	985990257	Sioen	SIOEN INDUSTRIES NV	PARTICIPANT	No	N	443.012,50
7	UK	950924854	ERM	ENVIRONMENTAL RESOURCES MANAGEMENT LIMITED	PARTICIPANT	No	N	167.653,75
8	DK	999997736	AU	AARHUS UNIVERSITET	PARTICIPANT	No	N	464.977,50
9	DE	951130203	EURIDA	CLANCY HAUSSLER RITA	PARTICIPANT	No	Y	204.650,00
10	IS	999766100		MATIS OHF	PARTICIPANT	No	N	605.250,00
11	DK	973452134		Fermentationexperts AS	PARTICIPANT	No	Y	235.625,00
Total							**4**	**5.999.892,50**

Photofuel

Project NUMBER	640720
Project TITLE	Biocatalytic solar fuels for sustainable mobility in Europe
Call IDENTIFIER	H2020-LCE-2014-1
Project INSTRUMENT TYPE	RIA - Research and Innovation action

Project Abstract

Photofuel studies and advances the biocatalytic production of alternative liquid transportation fuels, which require only sunlight, CO2 and water. Microbial cells directly excrete hydrocarbon and long chain alcohol fuel compounds to the medium from which they are separated, without the need to harvest biomass. This significantly improves the costs and energy balances as only a minimum of nutrients is required for self-replication of the biocatalyst, whilst cell harvesting, drying and lipid extraction is omitted. Such minimum-input systems are compatible with operation on degraded or desert land which avoids the pitfalls of most of the currently available biofuel technologies. The products are drop-in fuels that fully or partially replace their fossil counterparts without the need for new infrastructure. To set a benchmark for alternative solar fuels, three research groups will collaborate in the advancement of the biocatalysts from TRL 3. The best biocatalytic system(s) will be up-scaled and operated outdoors in photobioreactors modified for direct fuel separation at a scale of several cubic meters (TRL 4-5). The identification of optimal future fuel blends with a fossil fuel base and Photofuel biofuels as additives, as well as the analysis of performance and emissions in car or truck engines, will be evaluated by the oil- and automotive-industry partners. The entire pathway will be assessed for environmental and economic performance as well as social acceptance of large scale production in rural communities and by the consumer. All results will be combined to a business development plan, which clearly identifies the opportunities but also the challenges prior to an economic fuel production in compliance to the EC Fuel Quality Directive.

Number of Project Participants 12 participants
Project Total Cost 5.998.251,50 (euros)
Project EU Financial Contribution 5.998.251,50 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	DE	999939924	VW	VOLKSWAGEN AG	COORDINATOR	No	N	469.416,00
2	SE	999985029	UU	UPPSALA UNIVERSITET	PARTICIPANT	No	N	651.250,00
3	DE	999854370	UNIBI	UNIVERSITAET BIELEFELD	PARTICIPANT	No	N	631.500,00
4	UK	999993468	Imperial	IMPERIAL COLLEGE OF SCIENCE TECHNOLOGY AND MEDICINE	PARTICIPANT	No	N	1.166.363,75
5	IT	999895789	UNIFI	UNIVERSITA DEGLI STUDI DI FIRENZE	PARTICIPANT	No	N	432.355,00
6	PT	995514008	ALGAFUEL	A4F ALGAFUEL SA	PARTICIPANT	No	Y	205.036,00
7	FR	999993371	IFPEN	IFP Energies nouvelles	PARTICIPANT	No	N	553.235,00
8	FI	996493902		NESTE OYJ	PARTICIPANT	No	N	300.350,00
9	DE	990797674	KIT	KARLSRUHER INSTITUT FUER TECHNOLOGIE	PARTICIPANT	No	N	521.327,50
10	IT	999992886	CENTRO RICERCHE FIAT	CENTRO RICERCHE FIAT SCPA	PARTICIPANT	No	N	307.375,00
11	SE	999984544		VOLVO TECHNOLOGY AB	PARTICIPANT	No	N	319.167,75
12	DE	997541793	SYNCOM	SYNCOM FORSCHUNGS- UND ENTWICKLUNGSBERATUNG GMBH	PARTICIPANT	No	Y	440.875,00
Total							**2**	**5.998.251,00**

Record Biomap

Project NUMBER 691911
Project TITLE Research Coordination for a Low-Cost Biomethane Production at Small and Medium Scale Applications
Call IDENTIFIER H2020-LCE-2015-2
Project INSTRUMENT TYPE CSA - Coordination and support action

Project Abstract

The objective of the project "Research Coordination for a Low-Cost Biomethane Production at Small and Medium Scale Applications", short Record Biomap, is to establish the most promising innovative process and technology solutions along the biomethane supply chain, from raw material/residues, substrate pre-treatment, digestion, gas conditioning/digestate further utilisation and digestate/fertilizer deployment for a cost and energy sufficient biomethane production and to support their development up to market uptake. To bridge the gap between research and market, a biomethane platform will be established to support the dissemination and exploitation of the knowledge ascertained in the project to the industry sector, the end users and other important stakeholders, and therefore to foster the use of research outcomes. An R&D strategy will lead the way forward into new project concepts. Answering to the scope of LCE 19-2014/2015 of the call of Competitive Low-Carbon Energy in the Horizon2020 work program, the wider goal of Record Biomap will be to accelerate innovation in small to medium scale biomethane production and therefore shorten the time to market of technology solutions which currently have the technical readiness level (TRL) of 3 to 5. The objectives of Record Biomap can be summarised as following: - Accelerate innovation and creation of an European market for small to medium scale biomethane supply through innovative technology and process solutions - Continuous R&D monitoring to bridge the gap between independent technology developers - Continuous knowledge transfer from science to market and policy decision makers and vice verca through building up a biomethane platform for intensive networking - Identification of different sources of private and public financing and bringing together of relevant stakeholders for a continuative development of a more cost and and energy efficient biomethane production at small to medium scale applications.

Number of Project Participants 4 participants
Project Total Cost 499.922,00 (euros)
Project EU Financial Contribution **499.921,00 (euros)**

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	DE	998003222	DBFZ	DBFZ DEUTSCHES BIOMASSEFORSCHUNGSZENTRUM GEMEINNUETZIGE GMBH	COORDINATOR	No	N	293.904,00
2	PL	999853109	UWM	UNIWERSYTET WARMINSKO MAZURSKI W OLSZTYNIE	PARTICIPANT	No	N	67.937,00
3	SE	959894444	JTI	JTI - Institutet för jordbruks- och miljöteknik AB	PARTICIPANT	Yes	N	16.343,75
4	SE	999613422	RISE	RISE RESEARCH INSTITUTES OF SWEDEN AB	PARTICIPANT	No	N	121.736,25
Total								**499.921,00**

Residue2Heat

Project NUMBER	527925
Project TITLE	Renewable residential heating with fast pyrolysis bio-oil
Call IDENTIFIER	H2020-LCE-2015-1-two-stage
Project INSTRUMENT TYPE	RIA - Research and Innovation action

Project Abstract

The overall objective of Residue2Heat is to enable the utilization of sustainable, ash rich biomass and residues in residential heating applications (20-200 kWth) to provide sustainable heat at a competitive price. In this concept, various 2nd generation agricultural, and forestry residue streams are converted into a liquid energy carrier near the biomass origin at an economic viable scale of 15-30 MWth using the fast pyrolysis process. Subsequently, the fast pyrolysis bio-oil (FPBO) is distributed to a large number of residential end-users. The FPBO should fulfill at least the draft CEN-specification for replacement of domestic heating oil and comply with REACH regulation. Additional quality control aspects for this application include the removal of extractives and solids from the FPBO. Ash is recovered from the fast pyrolysis process as a separate stream, and recycling and/or re-use will be evaluated in detail. Existing high efficient, condensing boilers are used as starting point in the project, as well as a proven, low emission blue-flame type burner. Within Residue2Heat technical development work is performed on the modification of such systems to enable FPBO as fuel. The emission control and energy efficiency of the heating systems are optimized by dedicated modeling of FPBO atomization and combustion kinetics, supported by single droplet combustion tests and spray characterization. This route benefits from the flexible nature of the fast pyrolysis process, allowing the use of various lignocellulosic biomass streams, but also by using modified residential heating systems for which manufacturing capabilities, market development and product distribution are already in place. Dedicated tasks are included to assess the environmental and social impacts, risks analysis and public acceptance. Additionally, business and market assessment activities are performed including specific issues on health and safety relevant to FPBO-fuelled residential boilers.

Number of Project Participants 9 participants
Project Total Cost 5.466.478,75 (euros)
Project EU Financial Contribution 5.465.728,00 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	DE	999983962	RWTH AACHEN	RHEINISCH-WESTFAELISCHE TECHNISCHE HOCHSCHULE AACHEN	COORDINATOR	No	N	192.250,00
2	NL	999744081	BTG	B.T.G. BIOMASS TECHNOLOGY GROUP BV	PARTICIPANT	No	Y	902.123,00
3	FI	932760440	TEKNOLOGIAN TUTKIMUSKESKUS VTT OY	Teknologian tutkimuskeskus VTT Oy	PARTICIPANT	No	N	768.902,50
4	DE	928737850	MEKU ENERGIE SYSTEME GMBH & CO. KG	MEKU ENERGIE SYSTEME GMBH & CO. KG	PARTICIPANT	No	Y	611.750,00
5	IT	999979500	CNR	CONSIGLIO NAZIONALE DELLE RICERCHE	PARTICIPANT	No	N	750.000,00
6	IT	999879881	POLIMI	POLITECNICO DI MILANO	PARTICIPANT	No	N	330.455,00
7	NL	995413613	BTG-BTL	BTG BIOLIQUIDS B.V.	PARTICIPANT	No	Y	299.062,50
8	AT	999869114	UIBK	UNIVERSITAET INNSBRUCK	PARTICIPANT	No	N	364.250,00
9	DE	953976668		OWI Oel-Waerme Institut GmbH	PARTICIPANT	No	N	1.246.935,00
Total							**3**	**5.465.728,00**

REWOFUEL

Proposal NUMBER	792104
Proposal TITLE	REsidual soft WOod conversion to high characteristics drop-in bioFUELs
Call IDENTIFIER	H2020-LCE-2017-RES-IA
Project INSTRUMENT TYPE	IA - Innovation action

Proposal Abstract
REWOFUEL goal is to demonstrate the performances, reliability, environmental and socio-economic sustainability of the entire value chain, for the transformation of residual soft-wood into hydrolysate (RWH), conversion of RWH into bio-Isobutene (bio-IBN) by fermentation and further conversion to biofuels. To achieve these goals a team of 11 partners, leaders in their field, originating from 7 EU-member states, will join efforts. REWOFUEL consists in showcasing the value chain, from residual wood to 3 high performance drop-in biofuels derived from bio-IBN. These biofuels are full-bio-ETBE, bio-isooctane and bio-isododecane rich biofuels. This large market is today supplied entirely by products derived from fossil-based IBN. Products derived from bio-based IBN, using the same process as fossil-based IBN, would provide a true renewable alternative. REWOFUEL includes the development & up-scaling of this process and the valorization of coproducts: lignin, microbial biomass, biogas and fertilizers. To this end, four ambitious objectives were defined: -Demonstrate the production of residual wood hydrolysate (RWH) and establish a quality standard to feed the IBN fermentation unit, -Demonstrate the production of bio-IBN-based biofuels from RWH at pre-commercial scale, Demonstrate the valorization of lignin and other coproducts resulting from the RWH process, -Determine and validate the targeted technical, safety, economic as well as environmental/social sustainability performances to be achieved for a commercial plant. This project aligns with the core innovation strategies of 2 SMEs which are: deconstructing of wood (SEKAB, SWE) and conversion of sugars/hydrolysates into bio-IBN (GBE, FR). These 2 SMEs are already operating a demo plant that they intend to further upgrade within the project. Related Work packages, tasks, milestones and risks are considered in order to achieve these objectives. REWOFUEL project is fully aligned with the call topic.

Number of Proposal Participants 11 applicants
Proposal Total Cost 19.699.706,25 (euros)
Proposal EU Requested Financial Contribution **13.862.006,63 (euros)**

Proposal Applicants

No	Country	PIC	Applicants Short Name	Applicants Legal Name	Applicants Role	Applicants SME Status	EU Requested Financial Contribution (euro)
1	FR	951440215	GLOBAL BIOENERGIES	GLOBAL BIOENERGIES	Coordinator	Y	5.718.010,38
2	EE	972222950	GRAANUL INVEST	AS GRAANUL INVEST	Partner		237.825,00
3	SE	999559102		SEKAB E-TECHNOLOGY AB	Partner		4.196.325,00
4	FI	936675554		NESTE ENGINEERING SOLUTIONS OY	Partner	N	509.425,00
5	AT	983246321	EI	ENERGIEINSTITUT AN DER JOHANNES KEPLER UNIVERSITAT LINZ VEREIN	Partner	Y	240.707,50
6	FR	918063873	IPSB	IPSB	Partner	Y	512.688,75
7	FR	996378084	TECHNIP FRANCE	TECHNIP FRANCE SAS	Partner	N	400.312,50
8	FR	911448085		AJINOMOTO EUROLYSINE SAS	Partner		1.072.312,50
9	NL	958814446	SKYNRG	SKYENERGY BV	Partner	Y	730.625,00
10	SE	998723447	PEAB	Peab Asfalt AB	Partner	N	137.200,00
11	ES	999768913	REPSOL	REPSOL SA	Partner	N	106.575,00
Total						**4**	**13.862.006,63**

SECURECHAIN

Project NUMBER	646457
Project TITLE	Securing future-proof environmentally compatible bioenergy chains
Call IDENTIFIER	H2020-LCE-2014-3
Project INSTRUMENT TYPE	CSA - Coordination and support action

Project Abstract

SecureChain promotes a Sustainable Supply Chain Management (SSCM) that meets highest environmental quality standards and targets local biomass suppliers, energy producers and financial sector players to mobilise more biomass, maximise the share of sustainable bioenergy in the final energy consumption, and reduce the transaction costs for further market uptake of most efficient systems in six European model regions. An open call for SSCM pilot projects is launched encouraging market actors to mobilise and secure additional supplies of biomass from regional sources. Following a merit-based, objective competition, selected SMEs are awarded 15-20 Innovation Vouchers for the realisation of proposed SSCM pilot projects with the support of specialised advisors. Learning Labs for SME clusters support the implementation of most sustainable and energy efficient solutions in each model region. Tested quality assurance tools are readily installed in the pilots and SMEs receive proper training. A complete LCA of pilot supply chains evaluates their broader environmental and socio-economic impacts, ensuring that QA protocols meet eligible international sustainability standards for high efficiency and low carbon footprint. Suppliers are prepared for and ultimately acquire sustainability certification via independent audits. To facilitate critical financial proofs for market actors and financiers, a risk assessment of supply chains in line with a close mentoring of pilot teams by financial advisors is carried out. Roadshows promoting the pilots showcase that future-proof investment proposals can attract local to international capital for secured implementation and upscaling of efficient solutions. SecureChain exploits and disseminates a broadly transferable SSCM model for local bioenergy chains that fosters sustainable, environmentally compatible mobilisation of biomass sources and a proactive promotion of the market through conscious investments into the bioenergy sector.

Number of Project Participants 11 participants
Project Total Cost 1.809.586,25 (euros)
Project EU Financial Contribution 1.809.586,25 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	NL	999744081	BTG	B.T.G. BIOMASS TECHNOLOGY GROUP BV	COORDINATOR	No	Y	543.561,25
2	DE	994701827	IIWH WALD ZENTRUM	INTERNATIONALES INSTITUT FUR WALD UND HOLZ NRW EV	PARTICIPANT	Yes	N	208.350,00
3	ES	999976202	UPC	UNIVERSITAT POLITECNICA DE CATALUNYA	PARTICIPANT	No	N	157.375,00
4	SE	965838119	ESS	ENERGIKONTOR SYDOST AB	PARTICIPANT	No	Y	249.250,00
5	AT	999987357	BOKU	UNIVERSITAET FUER BODENKULTUR WIEN	PARTICIPANT	No	N	112.500,00
6	EL	939128878	CLUSTER OF BIOENERGY AND ENVIRONMENT OF WESTERN MACEDONIA	CLUSTER VIOENERGEIAS KAI PERIVALLONTOS DYTIKIS MAKEDONIAS	PARTICIPANT	No	N	146.375,00
7	EE	965054262	TARTU REGIONAL ENERGY AGENCY	MITTETULUNDUSUHING TARTU REGIOONI ENERGIAAGENTUUR	PARTICIPANT	No	N	92.800,00
8	DE	939149539	DIN CERTCO GmbH	DIN CERTCO GESELLSCHAFT FUER KONFORMITAETSBEWERTUNG MBH	PARTICIPANT	No	Y	87.500,00
9	UK	950575945	CBI	CLIMATE BONDS INITIATIVE	PARTICIPANT	No	N	81.250,00
10	EL	998802502	CENTRE FOR RESEARCH AND TECHNOLOGY HELLAS CERTH	ETHNIKO KENTRO EREVNAS KAI TECHNOLOGIKIS ANAPTYXIS	PARTICIPANT	No	N	46.875,00
11	ES	998519165	CTFC	CONSORCI CENTRE DE CIENCIA I TECNOLOGIA FORESTAL DE CATALUNYA	PARTICIPANT	No	N	83.750,00
Total							**3**	**1.809.586,25**

SEEMLA

Project NUMBER	691874
Project TITLE	Sustainable exploitation of biomass for bioenergy from marginal lands in Europe
Call IDENTIFIER	H2020-LCE-2015-3
Project INSTRUMENT TYPE	CSA - Coordination and support action

Project Abstract

The aim of the SEEMLA project is the reliable and sustainable exploitation of biomass from marginal lands (MagL), which are used neither for food nor feed production and are not posing an environmental threat. The main target groups are regional authorities and public or private owners of MagLs, who can provide knowledge on land availability and are responsible for managing these. Furthermore foresters, farmers and the civil society affected by transformation of MagL into energy crop plantations are important cooperation partners for the project's success. The initial challenge of the project is to define MagL. In order to achieve high yields on the MagL the goal is to develop and optimize cropping systems for special sites. The project focuses both on existing plantations of energy crops on MagL and on the establishment of new plantations on MagLs. General guidelines and manuals shall attract and help relevant stakeholders as well as piloting shall prove the feasibility of SEEMLA results. The first scenario will enable the assessment of good practice and the refinement of current practices, making them more sustainable (environmental, economic, social). The second approach will transfer good practices to underused MagL. The project will focus on three main objectives: the promotion of re-conversion of MagLs for the production of bioenergy through the direct involvement of farmers and foresters, the strengthening of local small scale supply chains and the promotion of plantations of bioenergy plants on MagLs. Moreover the expected impacts are: Increasing the production of bioenergy, farmers' incomes, investments in new technologies and the design of new policy measures. The project team is balanced between scientific and technical partners as well as national and regional organisations. By including partners from South-East, Eastern and Central Europe the knowledge transfer between regions of different climatic and political backgrounds can be established.

Number of Project Participants 8 participants
Project Total Cost 1.629.883,75 (euros)
Project EU Financial Contribution 1.629.883,75 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	DE	998454078		Fachagentur Nachwachsende Rohstoffe e.V.	COORDINATOR	No	N	301.775,00
2	DE	999703826	IFEU	IFEU - INSTITUT FUR ENERGIE UND UMWELTFORSCHUNG HEIDELBERG GMBH	PARTICIPANT	No	Y	300.978,75
3	DE	937759529	BTU CS	BRANDENBURGISCHE TECHNISCHE UNIVERSITAT COTTBUS-SENFTENBERG	PARTICIPANT	No	N	302.171,25
4	IT	986523951		LEGAMBIENTE ASSOCIAZIONE ONLUS	PARTICIPANT	No	N	181.275,00
5	EL	999659109	DUTH	DEMOCRITUS UNIVERSITY OF THRACE	PARTICIPANT	No	N	167.525,00
6	EL	938707025	DAMT-GDDAY	DECENTRALISED ADMINISTRATION OF MACEDONIA&THRACE	PARTICIPANT	No	N	164.975,00
7	UA	932607762	IBCSB NAASU	INSTITUTE OF BIOENERGY CROPS AND SUGAR BEET NATIONAL ACADEMY OF AGRARIAN SCIENCES OF UKRAINE	PARTICIPANT	No	N	77.097,50
8	UA	929087341	SALIX ENERGY LTD	LIMITED LIABILITY COMPANY SALIX ENERGY	PARTICIPANT	No	N	134.086,25
Total							**1**	**1.629.883,75**

STEELANOL

Project NUMBER 656437
Project TITLE Production of sustainable, advanced bio-ethANOL through an innovative gas-fermentation process using exhaust gases emitted in the STEEL industry
Call IDENTIFIER H2020-LCE-2014-2
Project INSTRUMENT TYPE IA - Innovation action

Project Abstract
The proposed STEELANOL project is based on producing bioethanol via an innovative gas fermentation process using exhaust gases emitted by the steel industry. The proposal addresses the specific topic "Demonstrating advanced biofuel technologies" (LCE-12– 2014), under the call for competitive low-carbon energy in Horizon2020. The BF/BOF gaseous emissions are an unavoidable residue from the steelmaking process and are currently used for electricity production or being flared. Nevertheless, they can be advantageously used to produce bioethanol, thereby reducing the usage of fossil fuel molecules and thus significantly reducing GHG emissions. The bio-ethanol production would have a GHG impact that is over 65% lower compared to oil derived fuels STEELANOL's main objective is to demonstrate the cost-effective production of sustainable bioethanol, with the purpose of assessing the valorisation of this ethanol biofuel as a fuel derivative for the transport sector. A demonstration plant of approximately 25,000 tons/ethanol per year will be built; the first of its kind in Europe, and the largest facility built to date utilizing this technology globally. ArcelorMittal is the lead partner of this project and proposal. The gas fermentation technology will be supplied by LanzaTech, the engineering work will be performed by Primetals, and E4Tech will develop the Life Cycle Assessment of the produced fuels. Several key players in the transport sector, Boeing, Virgin Atlantic, Mitsui, have expressed their strong interest and support for the project.

Number of Project Participants 5 participants
Project Total Cost 14.560.736,75 (euros)
Project EU Financial Contribution 10.192.515,73 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	BE	961556442		ARCELORMITTAL BELGIUM NV	COORDINATOR	No	N	6.615.000,00
2	FR	998756912	AMMR	ARCELORMITTAL MAIZIERES RESEARCH SA	PARTICIPANT	No	N	198.590,00
3	AT	932123732		PRIMETALS TECHNOLOGIES AUSTRIA GMBH	PARTICIPANT	No	N	2.170.962,50
4	UK	951152804	LANZATECH	LANZATECH UK LTD	PARTICIPANT	No	N	1.129.258,73
5	UK	953983555	E4TECH	E4TECH (UK) LTD	PARTICIPANT	No	N	78.704,50
Total								**10.192.515,73**

SUN-to-LIQUID

Project NUMBER	654408
Project TITLE	SUNlight-to-LIQUID: Integrated solar-thermochemical synthesis of liquid hydrocarbon fuels
Call IDENTIFIER	H2020-LCE-2015-1-two-stage
Project INSTRUMENT TYPE	RIA - Research and Innovation action

Project Abstract
Liquid hydrocarbon fuels are ideal energy carriers for the transportation sector due to their exceptionally high energy density and most convenient handling, without requiring changes in the existing global infrastructure. Currently, virtually all renewable hydrocarbon fuels originate from biomass. Their feasibility to meet the global fuel demand and their environmental impact are controversial. In contrast, SUN-to-LIQUID has the potential to cover future fuel consumption as it establishes a radically different non-biomass non-fossil path to synthesize renewable liquid hydrocarbon fuels from abundant feedstocks of H2O, CO2 and solar energy. Concentrated solar radiation drives a thermochemical redox cycle, which inherently operates at high temperatures and utilizes the full solar spectrum. Thereby, it provides a thermodynamically favourable path to solar fuel production with high energy conversion efficiency and, consequently, economic competitiveness. Recently, the first-ever production of solar jet fuel has been experimentally demonstrated at laboratory scale using a solar reactor containing a ceria-based reticulated porous structure undergoing the redox cyclic process. SUN-to-LIQUID aims at advancing this solar fuel technology from the laboratory to the next field phase: expected key innovations include an advanced high-flux ultra-modular solar heliostat field, a 50 kW solar reactor, and optimized redox materials to produce synthesis gas that is subsequently processed to liquid hydrocarbon fuels. The complete integrated fuel production chain will be experimentally validated at a pre-commercial scale and with record high energy conversion efficiency. The ambition of SUN-to-LIQUID is to advance solar fuels well beyond the state of the art and to guide the further scale-up towards a reliable basis for competitive industrial exploitation. Large-scale solar fuel production is expected to have a major impact on a sustainable future transportation sector.

Number of Project Participants 7 participants
Project Total Cost 6.150.031,25 (euros)
Project EU Financial Contribution 4.450.618,00 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	DE	999551827		BAUHAUS LUFTFAHRT EV	COORDINATOR	No	Y	1.014.060,00
2	CH	999979015	ETH Zürich	EIDGENOESSISCHE TECHNISCHE HOCHSCHULE ZUERICH	PARTICIPANT	No	N	0,00
3	DE	999981731	DLR	DEUTSCHES ZENTRUM FUER LUFT - UND RAUMFAHRT EV	PARTICIPANT	No	N	897.550,00
4	ES	998683192	IMDEA Energia	Fundacion IMDEA Energia	PARTICIPANT	No	N	936.525,00
5	NL	937175104		HYGEAR TECHNOLOGY AND SERVICES BV	PARTICIPANT	No	Y	961.433,00
6	ES	955100316	AR	ABENGOA RESEARCH SL	PARTICIPANT	No	N	352.500,00
7	FR	999792484	ARTTIC	ARTTIC	PARTICIPANT	No	Y	288.550,00
Total							**3**	**4.450.618,00**

Torero

Project NUMBER 745810
Project TITLE TORrefying wood with Ethanol as a Renewable Output: large-scale demonstration
Call IDENTIFIER H2020-LCE-2016-RES-IA
Project INSTRUMENT TYPE IA - Innovation action

Project Abstract

Torero will demonstrate a cost-, resource-, and energy-efficient technology concept for producing bioethanol from a wood waste feedstock, fully integrated in a large-scale, industrially functional steel mill: - Wood waste is converted to biocoal by torrefaction - Biocoal replaces fossil powdered coal in a steel mill blast furnace - Carbon monoxide in blast furnace exhaust fumes is microbially fermented to bioethanol - Material and energy loops of the process are closed to a very large degree Every steel mill that implements this concept will be able to produce at least 80 million litres of bioethanol per year. This project creates a value chain for wood waste, which currently has no attractive applications. The technology concept is open ended: in the future, stakeholders may replicate the concept with other feedstocks and for producing other types of fuels. The business case the Torero project will produce a competitive process for non-food feedstock bioethanol production. Compared with the current first generation production based cellulosic bio-ethanol solution the Torero innovation the OPEX of Torero is 1/3 lower with a same CAPEX. This will allow scale up of torrefaction technology when successfully demonstrated. Most importantly, together with sister project Steelanol, Torero will be the only H2020 project to demonstrate a biofuel production process that is integrated in an existing, fully functional large-scale industrial facility. All other H2020 solutions will need to be newly built if they ever reach full industrial scale. Torero is add-on technology that can be used to upgrade existing facilities of the steel sector, an industry that is actively scouting for technological solutions to make its production processes more sustainable. The consortium consist of full value chain, industry ArcelorMittal and Van Gansewinkel, two expert research organisations Joanneum Research and Chalmers Technical University and torrefaction technology supplier Torr-Coal.

Number of Project Participants 5 participants
Project Total Cost 15.849.490,00 (euros)
Project EU Financial Contribution 11.472.915,63 (euros)

Project participants

Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)			
1	BE	961556442		ARCELORMITTAL BELGIUM NV	COORDINATOR	No	N	7.778.850,63
2	SE	999980373		CHALMERS TEKNISKA HOEGSKOLA AB	PARTICIPANT	No	N	537.943,75
3	BE	917711860		VAN GANSEWINKEL NV	PARTICIPANT	No	N	1.798.125,00
4	AT	999981537	JOANNEUM RESEARCH	JOANNEUM RESEARCH FORSCHUNGSGESELLSCHAFT MBH	PARTICIPANT	No	N	722.965,00
5	NL	952827315		TORR-COAL INTERNATIONAL BV	PARTICIPANT	No	Y	635.031,25
Total							**1**	**11.472.915,63**

TO-SYN-FUEL

Project NUMBER	745749
Project TITLE	The Demonstration of Waste Biomass to Synthetic Fuels and Green Hydrogen
Call IDENTIFIER	H2020-LCE-2016-RES-IA
Project INSTRUMENT TYPE	IA - Innovation action

Project Abstract

TO-SYN-FUEL will demonstrate the conversion of organic waste biomass (Sewage Sludge) into biofuels. The project implements a new integrated process combining Thermo-Catalytic Reforming (TCR©), with hydrogen separation through pressure swing adsorption (PSA), and hydro deoxygenation (HDO), to produce a fully equivalent gasoline and diesel substitute (compliant with EN228 and EN590 European Standards) and green hydrogen for use in transport . The TO-SYN-FUEL project consortium has undoubtedly bought together the leading researchers, industrial technology providers and renewable energy experts from across Europe, in a combined, committed and dedicated research effort to deliver the overarching ambition. Building and extending from previous framework funding this project is designed to set the benchmark for future sustainable development and growth within Europe and will provide a real example to the rest of the world of how sustainable energy, economic, social and environmental needs can successfully be addressed. This project will be the platform for deployment of a subsequent commercial scale facility. This will be the first of its kind to be built anywhere in the world, processing organic industrial wastes directly into transportation grade biofuels fuels which will be a demonstration showcase for future sustainable investment and economic growth across Europe. This project will mark the first pre-commercial scale deployment of the technology processing up to 2100 tonnes per year of dried sewage sludge into 210,000 litres per year of liquid biofuels and up to 30,000 kg of green hydrogen. The scale up of 100 of such plants installed throughout Europe would be sufficient to convert up to 32 million tonnes per year of organic wastes into sustainable biofuels, contributing towards 35 million tonnes of GHG savings and diversion of organic wastes from landfill. This proposal is responding to the European Innovation Call LCE-19.

Number of Project Participants 12 participants
Project Total Cost 14.511.922,50 (euros)
Project EU Financial Contribution 12.250.528,13 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	DE	999984059	Fraunhofer	FRAUNHOFER GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V.	COORDINATOR	No	N	5.334.250,00
2	NL	937356979	ENGIE Services Nederland N.V.	ENGIE SERVICES NEDERLAND NV	PARTICIPANT	No	N	1.022.875,00
3	IT	999993953	UNIBO	ALMA MATER STUDIORUM - UNIVERSITA DI BOLOGNA	PARTICIPANT	No	N	464.375,00
4	IT	997904961	ENI	ENI S.p.A.	PARTICIPANT	No	N	321.125,00
5	UK	999907526	UoB	THE UNIVERSITY OF BIRMINGHAM	PARTICIPANT	No	N	789.003,75
6	IT	997911072	ETA	ETA - ENERGIA, TRASPORTI, AGRICOLTURA SRL	PARTICIPANT	No	Y	219.454,38
7	ES	998886116	LEITAT	ACONDICIONAMIENTO TARRASENSE ASSOCIACION	PARTICIPANT	No	N	202.562,50
8	DE	929547121		SUSTEEN TECHNOLOGIES GMBH	PARTICIPANT	No	Y	874.475,00
9	UK	972954233		WRG EUROPE LTD	PARTICIPANT	No	Y	398.833,75
10	DE	924008906		VERFAHRENSTECHNIK SCHWEDT GMBH (VTS-GMBH)	PARTICIPANT	No	N	1.929.550,00
11	NL	937175104		HYGEAR TECHNOLOGY AND SERVICES BV	PARTICIPANT	No	Y	510.273,75
12	NL	955086057		SLIBVERWERKING NOORD-BRABANT NV	PARTICIPANT	No	N	183.750,00
Total							**4**	**12.250.528,13**

uP_running

Project NUMBER	691748
Project TITLE	Take-off for sustainable supply of woody biomass from agrarian pruning and plantation removal
Call IDENTIFIER	H2020-LCE-2015-3
Project INSTRUMENT TYPE	CSA - Coordination and support action

Project Abstract

uP_running project aims to set the path for the development of the bioenergy utilisation of agrarian pruning and plantation removal (APPR) wood obtained from vineyards, olive groves and fruit tree plantations. uP_running vocation is the abatement of the current immobilism of the value chain actors for the utilization of APPR woody biomass. For that purpose uP_running incorporates a set of straight actions aimed to reshape the sectors perception, to provide evidences of real success and replicable models to follow, as well as to promote the take-off for the utilisation of APPR biomass residues. An intense communication campaign will address the varied target audience with tailored messages and materials to raise the awareness. An impact on policy barriers and on the legal framework currently setting limits for the utilisation of APPR wood will be carried out through direct advocacy and lobbying work at national and EU level. Once the awareness is raised and the sector is released of hindering barriers, a snowball effect will be triggered through multiplicative and dissemination actions. First part of uP_running multiplicative strategy is to create a permanent capacity in Europe, by empowering national and regional agrarian associations, extension services and/or private consultants with capacities to give support for decision making to farmers, cooperatives and agro-industries owing the APPR residues. A call for entrepreneurship will put into operation the newly created capacities in 7 EU countries to promote the decision making of pioneer entrepreneurs. Setting up and running new APPR biomass value chains is the key for a self-replication and to further contribute to the development of the bio-economy in Europe. The actions will be initiated in a set of 4 “demo” countries (that together account for 50% of EU potential), replicated in 3 relevant EU countries, and extended through precursor actions to 7 additional EU countries.

Number of Project Participants 12 participants
Project Total Cost 1.992.920,00 (euros)
Project EU Financial Contribution 1.992.920,00 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	ES	999516907	CIRCE	FUNDACION CIRCE CENTRO DE INVESTIGACION DE RECURSOS Y CONSUMOS ENERGETICOS	COORDINATOR	No	N	316.788,75
2	ES	928922732	ASAJA HUESCA	ASOCIACION AGRARIA DE JOVENES AGRICULTORES ALTO ARAGON	PARTICIPANT	No	N	134.816,25
3	EL	998802502	CENTRE FOR RESEARCH AND TECHNOLOGY HELLAS CERTH	ETHNIKO KENTRO EREVNAS KAI TECHNOLOGIKIS ANAPTYXIS	PARTICIPANT	No	N	255.523,75
4	EL	998757009	PASEGES	PANHELLENIC CONFEDERATION OF UNIONS OF AGRICULTURAL COOPERATIVES SOMATEIO	PARTICIPANT	Yes	Y	18.066,51
5	IT	999888514	UNIFG	UNIVERSITA DEGLI STUDI DI FOGGIA	PARTICIPANT	No	N	196.411,25
6	IT	999717794		DISTRETTO AGROALIMENTARE REGIONALE SCRL	PARTICIPANT	No	Y	313.173,75
7	UA	999667645	SCIENTIFIC ENGINEERING CENTRE BIOMASS CO LTD	NAUKOVO-TEHNICHNII CENTAR BIOMASA LLC	PARTICIPANT	No	Y	106.950,00
8	UA	947776428	UCAB	ASSOCIATION UKRAINIAN AGRIBUSINESSCLUB	PARTICIPANT	No	N	140.633,75
9	PT	950429281	CONFAGRI	CONFEDERACAO NACIONAL DAS COOPERATIVAS AGRICOLAS E DO CREDITO AGRICOLA DE PORTUGAL CCRL	PARTICIPANT	No	Y	75.345,00
10	FR	950487675		SERVICES COOP DE FRANCE, UNION DES COOPERATIVES AGRICOLES	PARTICIPANT	No	Y	109.038,75
11	HR	932963364	CROATIAN CHAMBER OF AGRICULTURE	HRVATSKA POLJOPRIVREDNA KOMORA	PARTICIPANT	No	N	78.573,75
12	EL	918080557	INASO PASEGES	INSTITOUTO AGROTIKIS KAI SYNETAIRISTIKIS OIKONOMIAS INASO PASEGES	PARTICIPANT	No	N	247.598,49
Total							**5**	**1.992.920,00**

WASTE2FUELS

Project NUMBER	654623
Project TITLE	Sustainable production of next generation biofuels from waste streams
Call IDENTIFIER	H2020-LCE-2015-1-two-stage
Project INSTRUMENT TYPE	RIA - Research and Innovation action

Project Abstract

WASTE2FUELS aims to develop next generation biofuel technologies capable of converting agrofood waste (AFW) streams into high quality biobutanol. Butanol is one of the most promising biofuels due to its superior fuel properties compared to current main biofuels, bioethanol and biodiesel. In addition to its ability to reduce carbon emissions, its higher energy content (almost 30% more than ethanol), its ability to blend with both gasoline and diesel, its lower risk of separation and corrosion, its resistance to water absorption, allowing it to be transported in pipes and carriers used by gasoline, it offers a very exciting advantage for adoption as engines require almost no modifications to use it. The main WASTE2FUELS innovations include: • Development of novel pretreatment methods for converting AFW to an appropriate feedstock for biobutanol production thus dramatically enlarging current available biomass for biofuels production • Genetically modified microorganisms for enhancing conversion efficiencies of the biobutanol fermentation process • Coupled recovery and biofilm reactor systems for enhancing conversion efficiencies of Acetone-Butanol-Ethanol fermentation • Development of new routes for biobutanol production via ethanol catalytic conversion • Biobutanol engine tests and ecotoxicological assessment of the produced biobutanol • Valorisation of the process by-products • Development of an integrated model to optimise the waste-to-biofuel conversion and facilitate the industrial scale-up • Process fingerprint analysis by environmental and techno-economic assessment • Biomass supply chain study and design of a waste management strategy for rural development By valorising 50% of the unavoidable and undervalorised AFW as feedstock for biobutanol production, WASTE2FUELS could divert up to 45 M tonnes of food waste from EU landfills, preventing 18 M tonnes of GHG and saving almost 0.5 billion litres of fossil fuels.

Number of Project Participants 21 participants
Project Total Cost 5.989.743,75 (euros)
Project EU Financial Contribution 5.989.742,50 (euros)

Project participants

No	Country	PIC	Participant Short Name	Participant Legal Name	Participant Role	Participant Terminated	Participant SME Status	EU Financial Contribution (euro)
1	ES	998993786	IRIS	INNOVACIO I RECERCA INDUSTRIAL I SOSTENIBLE SL	COORDINATOR	No	Y	516.375,00
2	IT	999976590		UNIVERSITA DEGLI STUDI DI NAPOLI FEDERICO II.	PARTICIPANT	No	N	525.625,00
3	ES	999541254	ITACyL	INSTITUTO TECNOLOGICO AGRARIO DE CASTILLA Y LEON	PARTICIPANT	No	N	350.748,75
4	AT	999979888	TU WIEN	TECHNISCHE UNIVERSITAET WIEN	PARTICIPANT	No	N	335.070,00
5	IE	999466952		TEAGASC - AGRICULTURE AND FOOD DEVELOPMENT AUTHORITY	PARTICIPANT	No	N	341.202,50
6	UK	999975620		UNIVERSITY COLLEGE LONDON	PARTICIPANT	No	N	277.198,75
7	DE	968706312	BEUTH UNIVERSITY OF APPLIED SCIENCE	BEUTH-HOCHSCHULE FUER TECHNIK BERLIN	PARTICIPANT	No	N	210.500,00
8	IL	999846222	BGU	BEN-GURION UNIVERSITY OF THE NEGEV	PARTICIPANT	No	N	521.756,00
9	IT	999979500	CNR	CONSIGLIO NAZIONALE DELLE RICERCHE	PARTICIPANT	No	N	299.656,00
10	ES	999974844	UPM	UNIVERSIDAD POLITECNICA DE MADRID	PARTICIPANT	No	N	343.818,75
11	ES	999898214	UNIVERSIDAD DE ZARAGOZA	UNIVERSIDAD DE ZARAGOZA	PARTICIPANT	No	N	155.016,25
12	IL	999979306	WEIZMANN	WEIZMANN INSTITUTE OF SCIENCE	PARTICIPANT	No	N	249.616,00
13	UK	958260479	EXERGY	EXERGY LTD	PARTICIPANT	No	Y	295.951,00
14	IT	957566250	BIOPOX	BIOPOX SRL	PARTICIPANT	No	Y	167.050,00
15	ES	931144032	TOMSA DESTIL SL	TOMSA DESTIL SL	PARTICIPANT	No	N	263.125,00
16	IT	986251284	ENCO SRL	ENCO SRL	PARTICIPANT	No	Y	139.062,50
17	DE	996622912	ARGUS	ARGUS Umweltbiotechnologie GmbH	PARTICIPANT	No	Y	184.995,00
18	EL	973139988	HELBIO	ELVIO ANONYMI ETAIREIA SYSTIMATON PARAGOGIS YDROGONOU KAI ENERGEIAS	PARTICIPANT	No	Y	181.976,00
19	IT	938164892		SOLARIS BIOTECHNOLOGY SRL	PARTICIPANT	No	Y	270.000,00
20	ES	955100316	AR	ABENGOA RESEARCH SL	PARTICIPANT	Yes	N	0,00
21	FR	999869405	INSA TOULOUSE	INSTITUT NATIONAL DES SCIENCES APPLIQUEES DE TOULOUSE	PARTICIPANT	No	N	361.000,00
Total							**7**	**5.989.742,50**

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