



*BioEnergy Sustaining The Future*



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ERA-NET Bioenergy | Pulling bioenergy research together | [www.eranetbioenergy.net](http://www.eranetbioenergy.net)

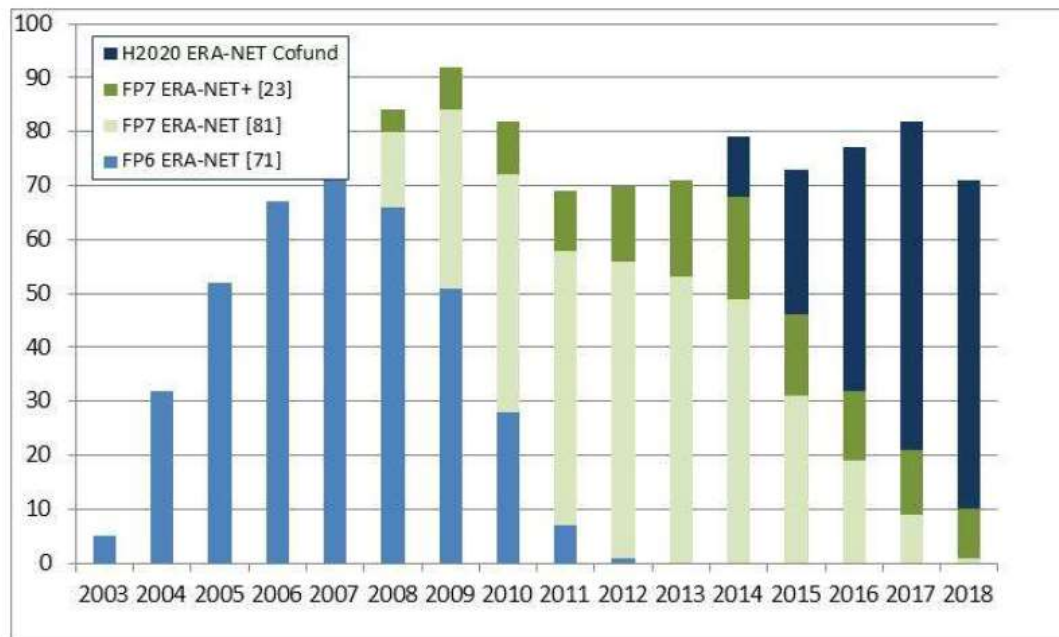
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2. Objectives of BESTF and ERA-NET
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# ERA-NET CO-FUND



## Number of running ERA-NET actions



[www.era-learn.eu](http://www.era-learn.eu)



***FP6: ERANET:  
ERA-NET  
Bioenergy***

(FP6: 2004 – 2010,  
Selffunded: 2010 - ... )

***FP7: ERA-NET +  
BESTF 1 and  
BESTF 2***  
(2012, 2013)

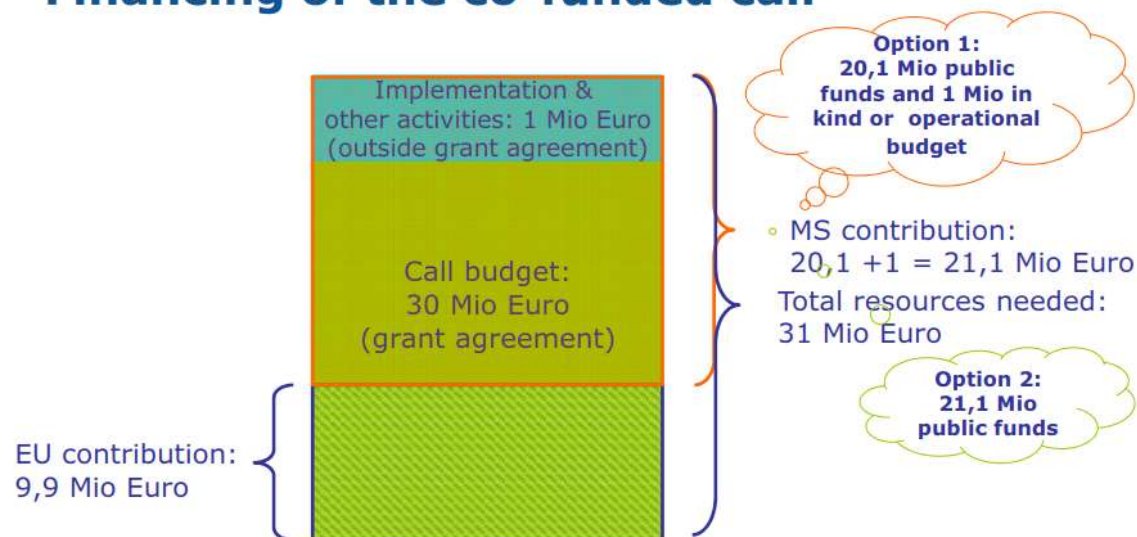
***H2020: Co-fund  
BESTF 3***  
(2016 -



# ERA-NET Co-fund Support



## Financing of the co-funded call



EU contribution is  
33%  
Of the total funding  
+  
Additional activities

[www.era-learn.eu](http://www.era-learn.eu)



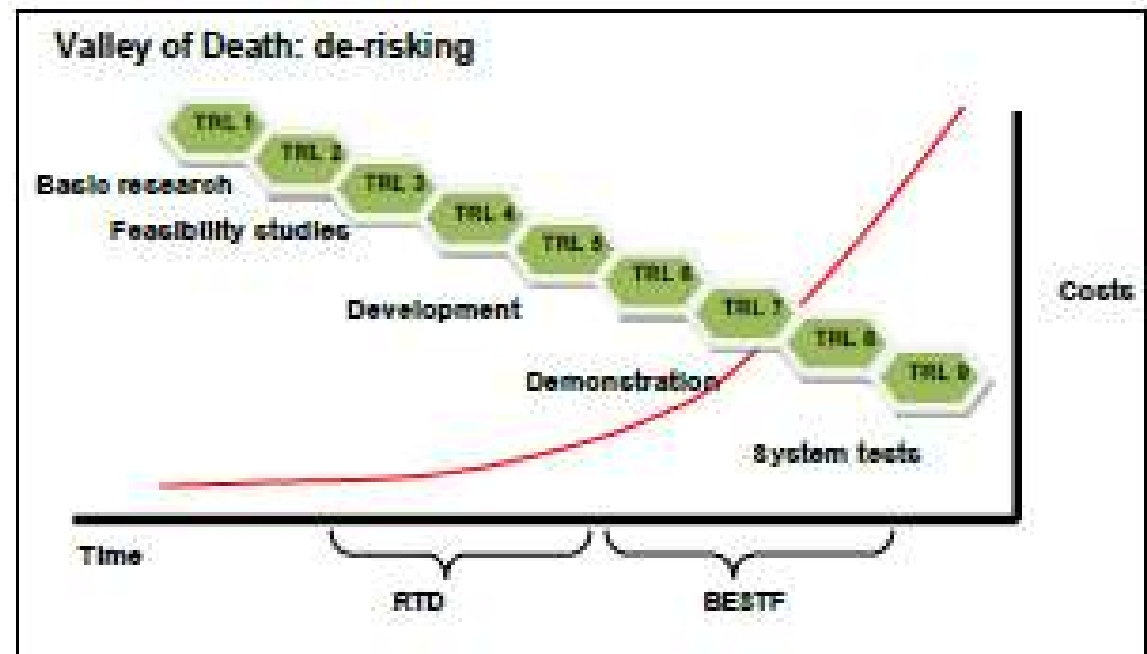
## 2.The Key Objectives of ERA-NET Bioenergy and BESTF3

- to launch and implement a single joint co-funded transnational call for proposals that will support demonstration projects focused on the generation of bioenergy;
- to maintain and enhance coherence and networking between national bioenergy programmes across the EU;
- Alignment with ERA-NET Bioenergy for lower TRLs



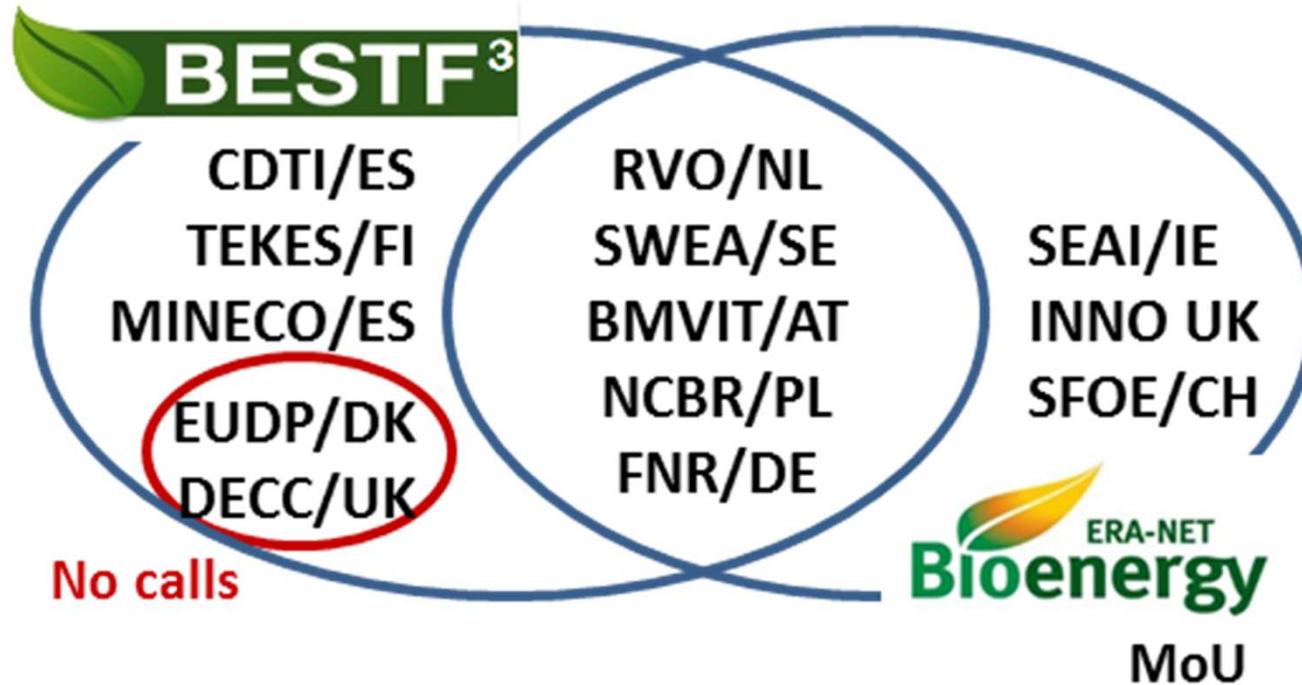
## ERA-NET Bioenergy

- BESTF3 supports projects in the higher TRLs (6-8): between proof of concept and generation of income (valley of death)
- ERA-NET Bioenergy supports projects in the lower TRLs (3-5): RTD and development phase



## Partners in BESTF3 & ERA-NET Bioenergy

Grant Agreement  
Consortium Agreement





# Consortium



- 🍃 NL: RVO Netherlands Enterprise Agency (formerly NL Agency)
- 🍃 DE: Agency for Renewable Resources (FNR)
- 🍃 SE: The Swedish Energy Agency (STEM)
- 🍃 AT: Federal Ministry of Transport, Innovation & Technology (BMVIT)
- 🍃 PL: National Centre for Research and Development (NCBR)
- 🍃 IE: Sustainable Energy Authority of Ireland (SEAI)
- 🍃 UK: Innovate UK (formerly TSB)
- 🍃 CH: Swiss Federal Office of Energy (SFOE)

## **Plus observers and call partners, e.g.**

- 🍃 FR: ADEME
- 🍃 DK: Energinet.dk
- 🍃 FI: TEKES
- 🍃 UK: BBSRC (from 01/2015), BEIS
- 🍃 BR: FAPESP



## 3. ERA-NET Bioenergy

### Network of National Ministries and Funding Organisations

**Mission :** *“Enhance the quality and cost-effectiveness of European bioenergy research programmes through coordination and cooperation between Member States”*

### Goals

- Strengthen national bioenergy research programmes;
- Promote European collaboration in bioenergy research;
- Produce higher-quality results;
- Avoid duplication.

### Funding

- FP6 from October 2004 to December 2010
- Since January 2011: self-funded



# Budgets for Joint Calls

Joint Call	Year	Total funding available M€	Number of participating countries	Number of projects funded
1. Small Scale Combustion	2006	1,7	5	5
2. Gasification Gas Cleaning	2007	3,7	6	6
3. Short Rotation Coppice	2008	2,8	5	3
4. Clean Combustion	2009	7	8	4
5. Sustainable Forest Management & opt. use of lignocellulosic resources	2010	18,3	13	13
6. Biogas & energy crops	2011	12	5	4
7. Small-scale heat and power production from solid biomass	2013	3,6	4	2
8. Integrated Biorefinery concepts	2014	6,7	4	3
9. Innovative Bioenergy concepts	2015	8,1	6	6 (5)
10. Biobased Economy	2016	5	5	2
11. Bioenergy in flexible system	2017	6,6	6	6
12. Bioenergy in Circular Economy	2018	3.5	5	?
<b>TOTAL</b>		<b>75,5</b>	<b>and</b>	<b>38.3 M€ granted</b>

# Example: CHEMBEET

(8th call, ERANET Bioenergy)

**CHEMBEET:**

production of bioethanol & other green chemicals

By fermentation and process optimisation

Process optimisation by improved vacuum extrusion

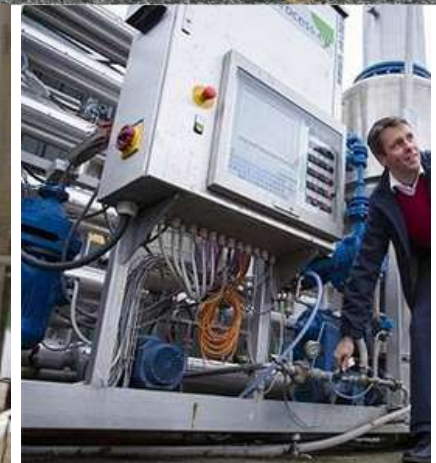
<http://www.betaprocess.eu>

Partners:

NL: DSD, ACRRES, Van Antwerpen Milieu, Poland: Universiteit van Warmia and Mazury

Result: Pilot plant at Accress

Looking to start a demo plant





## 4. BESTF3


# Bioenergy Sustaining the Future

- 🍃 to launch and implement a single joint co-funded transnational call for proposals that will support demonstration projects focused on the generation of bioenergy;
- 🍃 to maintain and enhance coherence and networking between national bioenergy programmes across the EU.





# BESTF 1

- Call in 2012
- 3 selected Projects

Project	Project Budget M€	Participant Countries	Company
<b>BioSNG</b>		develop an innovative process to convert waste and biomass into bio substitute natural gas (BioSNG) by plasma gasification (10 kton -> 22 GWh)	
	<b>4.9</b>	Germany	Schmack Carbotech
		United Kingdom	Advanced Plasma Power
		United Kingdom	Progressive Energy Ltd
<b>BioProG ReSS</b>		<b>Biomass Production Gas Reforming Solutions;</b> demonstrate a novel technology to simplify gas clean-up following biomass gasification. Chemical looping reforming will be used to reform the tars and the olefins directly after the gasifier	
	<b>5.3</b>	Germany	TU Berlin
		Sweden	Goteborg Energi
		Sweden	Chalmers University of Technology
		Sweden	Renewtec
<b>CoRyFee</b>		<b>Cost Reduction in Yeast Fermentation for Commercial Production of Cellulosic Ethanol;</b> by improved hydrolysis and fermentation,	
	<b>6.0</b>	Denmark	Terranol A/S
		Sweden	SEKAB E-technology
		Sweden	SP Technical Research Institute

## BESTF2

- Call: 2013
- 2 projects

Project	Project Budget M€	Participant Countries	Company
MSWBH	<b>Municipal Solid Waste to Butanol and Hydrogen;</b> demonstrate viability of the production of butanol, hydrogen fuels and other chemicals from autoclave-pretreated municipal solid waste (MSW), Grape		
	6.0	UK	University of York
			University of Nottingham
		The Netherlands	Wageningen Food & Biobased Research
		Norway	Artech Automation
BIOWAT MET	<b>BIO-Methane Production from Urban Organic Matter ;</b> in anaerobic membrane bioreactor (AnMBR),		
	2.1	Spain	Aqualia
		The Netherlands	Delft University of Technology
		UK	University of Southampton

# BESTF3

- Call: 2016
- 3 projects
- 8,4 M€

<b>Segrabio</b>	4,4	production of bioethanol and biogas from low cost biomass	
		Denmark	TK Energy ApS, Lemvig
		Sweden	Lund University
<b>Waste2Bio</b>	1,4	recovery of ethanol and biogas from MSW	
		Spain	Ciemat, Imecal, Imdea
		UK	Exergy Ltd
<b>Phoenix</b>	2,6	Enabling syngas utilisation for gas engines (5000 hr test)	
		UK	Mace Ltd, Sol Env Ltc
		Netherlands	Dordtech Engineering
		Sweden	Protech

# 5. Results and Evaluation

## Position of ERA-NET joint calls



### **National Programmes**

Partners from one country  
No expertise from other countries

### **ERA-NET Calls**

Typically, partners from two or three countries  
Medium-sized projects; transnational knowledge exchange

### **European Programmes**

Partners from several countries necessary (at least three, typically 7-15)  
Only large projects with sufficiently high costs (several million Euros)



## 6. Conclusions

- Leverage of national research through European collaboration
- Fill the gap for SME's
- Create Valuable demonstrations
- Not an easy scheme for funding agencies

# BESTF added value according to Project Coordinators

- Valuable funding which **significantly leveraged partner** and other resources to deliver the project.
- The possibility to **involve different entities** from EU countries
- International collaboration which would not otherwise have been possible.
- To work with process development and pre-commercial demonstration of **new innovative technology in a long term and fundamental way** in cooperation with highly skilled researchers and engineers from different universities and companies in Europe.
- An opportunity to **demonstrate the potential** of combining their respective technologies within 2G bioethanol production demo plant.
- Allowing **evaluation at an industrially relevant scale** of the conversion of waste stream into a range of chemical products.
- The design of full scale operations and has already led to interest from a broad range of **potential investors**.