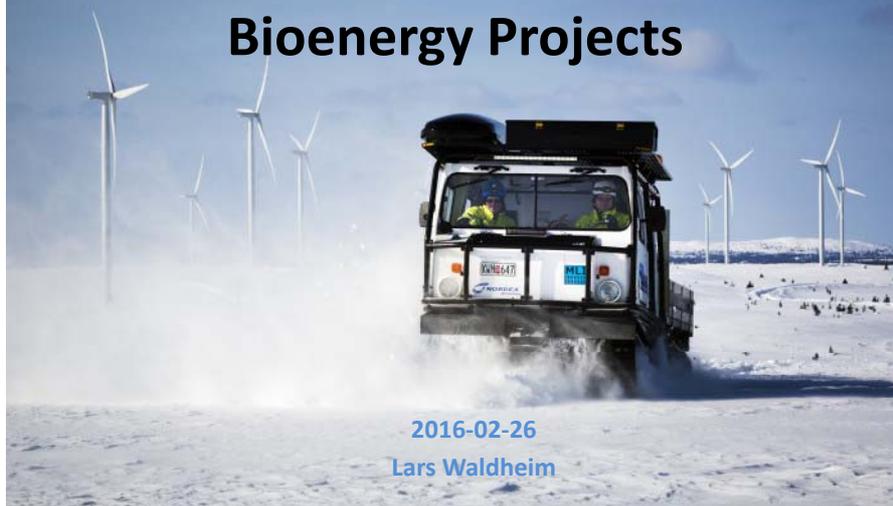


## NER 300 Initiative and Status of Bioenergy Projects



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Lars Waldheim

Picture: Blaiken Wind Park, Patrick Degerman Source:<http://www.mynewsdesk.com/se/blaikenvind/images/blaiken-vindkraftpark-189332>

### NER 300 Basics (1)

- An instrument offering grants to installations of innovative renewable energy projects, grid integration projects and up to 12 CCS projects.
- Created by The Council and European Parliament as part of the revision of the Emissions Trading Directive in 2008.
- The funds (EUR 2.15 billion =1.65+0.55) were obtained by selling up to 300 million carbon allowances (rights to emit 1 ton of CO<sub>2</sub>) from the set-aside for the New Entrants' Reserve (NER).
- The money from 2/3 of the allowances was allocated to finance projects selected from a 1<sup>st</sup> call for proposals in 2011, with the remainder disbursed in a 2<sup>nd</sup> call in 2012. First funding in 2014
- NER300 funding is not state-aid, i.e. other sources of public funding and support can be complementing a grant
- Minimum 1, maximum 3 projects per MS.

## NER 300 Basics (2)

- The funding awarded to a project is capped at 50 % of extra costs (investment and operating) arising from the application of an innovative renewable energy technology, relative to a “conventional comparator”.
- Funding is received during the initial 5 years of operation based on a pro rata basis of production, i.e. 100 % funding received at 75 % of nominal output over 5 years.
- To use NER300 to cover a project’s investment costs, it requires that a bank or similar would lend to the project against the security of the future income from NER300.
- A project host Member State could make all the NER300 grant available at the investment stage as a guarantor to the EIB providing that it agrees to refund the EIB if the project underperforms excessively.

## NER 300 Basics (3)

- The EC appointed the European Investment Bank (EIB) as an implementing agent for the NER 300 initiative

	Projects Submitted	Projects Awarded
1st Call	79	23
2nd Call	33	19
Total	112	<u>42</u>

- EIB negotiates with successful applicants, contracts

## Bioenergy Categories

### Lignocellulose

- to solid, liquid or slurry bioenergy carriers via **pyrolysis**, capacity 40 kt/y of product.
- to solid, liquid or slurry bioenergy carriers via **torrefaction**, capacity 40 kt/y of product.
- to Synthetic Natural Gas or synthesis gas and/or to power via **gasification**, capacity 40 MNm<sup>3</sup>/y of product or 100 GWh/y of electricity.
- to biofuels, bioliquids and/or to power include. via directly heated **gasification**, capacity 15 million MI/y of product or 100 GWh/y of electricity.
- to electricity with 48 % efficiency based on LHV @ 50 % moisture, capacity > 40 MWe.
- to ethanol and higher alcohols via **chemical and biological processes**, capacity 40 MI/y of product.

## Bioenergy Categories

### Lignocellulose

- to electricity with 48 % efficiency based on LHV @ 50 % moisture, capacity > 40 MWe.

### Lignocellulose and/or household waste

- to biogas, biofuels or bioliquids via **chemical and biological processes**, 6 MNm<sup>3</sup>/y of Methane or 10 MI/y final product.

### Lignocellulosic raw material

(e.g. black liquor and/or products from pyrolysis or torrefaction)

- to any biofuels via **entrained flow gasification**, capacity 40 MI/y of the final product

### Algae and/or micro-organisms

- to biofuels or bioliquids via **biological and/or chemical processes**, capacity 40 MI/y product.

## Other Categories

Concentrated solar power

Geothermal power

Photovoltaic power

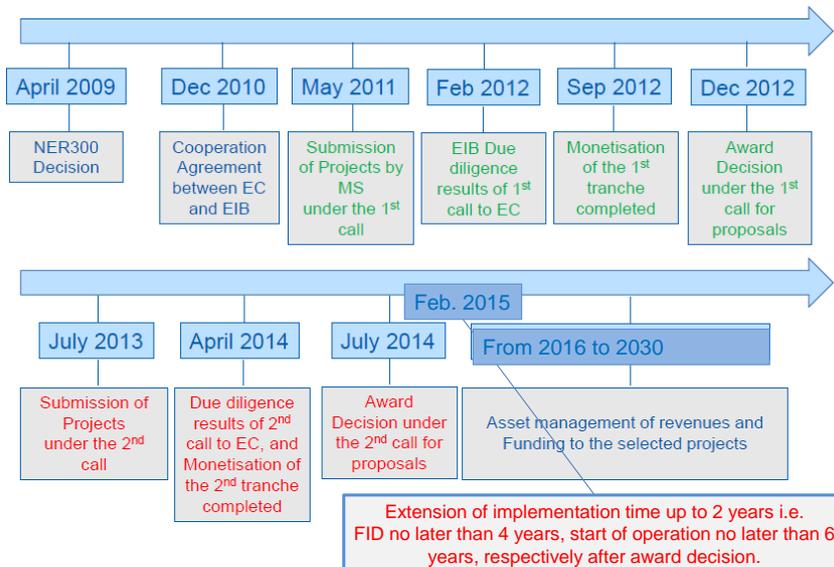
Wind energy

Ocean energy

Smart grids

Carbon capture and storage (up to 12 projects)

## NER300 Timeline



## Bioenergy 1<sup>st</sup> Call

Project.	Product	MS	Funding (MEUR)	Op. date	Status
Ajos BTL	FT liquids	FI	88.5	12.2016	Cancelled
BEST	Ethanol	IT	28.4		Operating
CEG Plant Goswinowice	Ethanol	PL	30.9	12.2016	
UPM Stracel BTL	FT liquids	FR	170.0	12.2018	Cancelled
Woodspirit	Methanol	NL	199.0	11.2016	Pre-funding 3*39.8 M€
Gobigas phase 2.	Bio-methane	SE	58.8	12.2020	Cancelled
Pyrogrot.	Pyrolysis oil	SE	31.4	12.2018	Cancelled
Verbiostraw.	Biogas	DE	22.3		Operating
<b>8 projects</b>	<b>Total funding</b>		<b>629.3</b>	52 % of total funding decision. Cancelled projects 45 % of bioenergy budget. Including Woodspirit 77 % of bioenergy budget	

## Other Categories 1<sup>st</sup> Call (1)

RES Category	Project.	MS	Funding (MEUR)	Op. date	Status
CSP	HeliosPower	CY	46.6	12.2018	Pre-funding 2*14 M€
CSP	Maximus	GR	44.6	12.2018	
CSP	Minos	GR	42.1	12.2018	
CSP	PTC50-Alvarado	ES	70.0		Cancelled
Smart grids	SLim	BE	8.2	12.2015	
Geothermal	S. Hungarian EGS	HU	39.3	12.2018	Pre-funding 16+ 7.6 M€
Ocean	Stroma (fka Kyle Rhea) Tidal Turbine Array	UK	18.4	12.2017	Pre-funding 10 M€

## Other categories 1<sup>st</sup> Call (2)

RES Category	Project.	MS	Funding (MEUR)	Op. date	Status
Ocean	Sound of Islay	UK	20.7	12.2018	Pre-funding 2*6.2 M€
Ocean	Westwave	IE	19.8		<b>Cancelled</b>
Wind	Nordesee One (fka Innogy)	DE	70.0	12.2017	
Wind	Veja Mate	DE	112.6	07.2017	
Wind	Vertimed	FR	34.3	12.2018	
Wind	Windfloat	PT	30.0	12.2018	Pre-funding 2*9 M€
Wind	Blaiken	SE	15.0		<b>Operating</b>
Wind	Handalm	AT	11.3	12.2018	
<b>15 projects</b>	<b>Total funding</b>		<b>582.9</b>		<b>48 % of total funding decision. Cancelled projects 15 % of other RES budget.</b>

## Bioenergy 2<sup>nd</sup> Call

Project. n	Product	MS	Funding (MEUR)	Op. date	Status
MET	Ethanol	DK	39.3	07.2017	
Fast pyrolysis	Pyrolysis oil	EE	6.9	11.2017	
TORR	Torrefied fuel	EE	25.0	12.2016	
CHP Biomass pyrolysis	Pyrolysis oil	LV	3.9	04.2017	
W2B	Ethanol	ES	29.2	06.2020	
Bio2G	Biomethane	SE	203.7	06.2018	
<b>5 projects</b>	<b>Total funding</b>		<b>308.0</b>		<b>43 % of total funding decision.</b>

## Other categories 2<sup>nd</sup> Call (1)

RES Category	Project.	MS	Funding (MEUR)	Op. date	Status
CCS	White Rose	UK	300.0	06.2018	Withdrawal of Drax from investment phase UK support policy change in 2015 future uncertain.
CSP	EOS GREEN ENERGY	CY	60.2	06.2020	pre-funding 2*18.1 M€
CSP	Mazara Solar	IT	40.0	10.2016	
Geothermal power	Geothermae	CR	14.7	01.2017	pre-funding 8.8 M€
Geothermal power	GEOSTRAS	FR	16.8	06.2020	
Ocean	NEMO	FR	72.1	06.2020	

## Other categories 2<sup>nd</sup> Call (2)

RES Category	Project.	MS	Funding (MEUR)	Op. date	Status
Ocean	WestWave	IE	23.3	06.2018	Project cancelled in 1 <sup>st</sup> call, resubmitted in 2 <sup>nd</sup> call. Requesting extension
Ocean	SWELL	PT	9.1	01.2020	pre-funding 5.4 M€
PV	Santa Luzia Solar Farm	PT	8.0	07.2019	pre-funding 2*2.4 M€
Smart grids	Green+	CY	11.1	06.2020	
Smart grids	Puglia Active Network	IT	85.0	06.2018	pre-funding 3*14.2 M€
Wind power	BALEA	ES	33.4	06.2020	
Wind power	FloCan5	ES	34.0	06.2020	
<b>13 projects</b>	<b>Total funding</b>		<b>407.7</b>		<b>57 % of total funding decision.</b>

## Summary

Bioenergy	1 <sup>st</sup> call	Funding M€	2 <sup>nd</sup> call	Funding	Percent of funding 1 <sup>st</sup> , 2 <sup>nd</sup> , total
Projects awarded	8	629,3	6	308	52 %, 43 %, 48 %
Projects Cancelled	4	348,7	-		29 %, -, 18 %
Projects in op.	2	50,7	-		4 %, -, 3 %
Other categories	1 <sup>st</sup> call	Funding M€	2 <sup>nd</sup> call	Funding	Percent of funding 1 <sup>st</sup> , 2 <sup>nd</sup> , total
Projects awarded	15	582,9	13	407,7	48 %, 57 %, comb. 52 %
Projects Cancelled	2	89,8	-	-	8 %, -, 5 %
Projects in op.	1	15	-	-	1 %,-, 1 %

- Only 3 projects in operation, 4 % of budget. 2 FID expected 2016
- 6 projects cancelled, substantial share of budget 23 % (+ 10 % ?)
- Next to CCS, the bioenergy category seems most difficult
- Many projects appear to have a “hold” status

## Why So Low Impact (Personal View)?

<b>Evaluation</b>	Lowest CO <sub>2</sub> -reduction price appears to have been guiding. Rational selection, but less well-developed applications pushed out some better founded (technical, estimation) projects, i.e. difficulties in financial closure later
<b>“Pie in the Sky”</b>	Funding received based on operational results, i.e. does not assist in financing or in cash flow for development, procurement and commissioning
<b>Procedurals</b>	Long time for evaluating proposals etc. Low flexibility Difficulties in making adjustments after project award. Strict milestone deadlines e.g. EIA & permit, FID, start-up
<b>Knowledge sharing</b>	Concerns regarding requirement for knowledge sharing relative to industrial IP and know-how generated from project
<b>External</b>	Lack of MS support for biofuels over long period Reduction in/changes to (or just the discussion of) support to RE power (ES, DE). Investment climate (GR, CY, ES) Reduced energy prices, both power, coal, gas and oil