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Biowaste and Algae Knowledge for the Production of 2nd Generation Biofuels

Fact Sheet

Project Information

BIOWALK4BIOFUELS

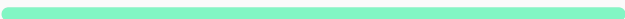
Grant agreement ID: 241383

[Project website](#) 

Project closed

Start date
1 April 2010

End date
31 March 2015



Funded under
Specific Programme "Cooperation": Energy

Total cost
€ 4 077 440,52

EU contribution
€ 2 902 000,20

Coordinated by
UNIVERSITA DEGLI STUDI DI
ROMA LA SAPIENZA
 Italy

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From the forest to the lab, what science can learn from nature

Objective

The Biowalk4Biofuels Project aims to develop an alternative and innovative system for biowaste energy recovery and use of GHG emissions to produce biofuels, using macroalgae as a catalyser, in a multidisciplinary approach. The objectives of the project are: production of a cost-efficient biogas without using cereal crops; optimise the production of biogas per amount of biowaste and CO₂ used, with low land use for plant facilities; and increase and optimize the types of biowastes that can be utilised for biogas production. To achieve the underlined objectives, research activities are to be carried out on the selection of adequate macroalgae species that can reach high output biomass yields and high carbohydrate content. Pre-cultivation of protoplasts will allow to obtain easily available biomass for feeding the cultivation open floating ponds within shorter periods, thanks to the rapid proliferation of germplasm, diminishing the life-cycle of macroalgae.

In addition, the relationship between growth and energy potential of selected species with the amounts/characteristic of GHG emissions and biowaste introduced in the cultivation medium is to be studied. . After fermenting the algal biomass and other biowastes, the cycle is closed by producing biogas to be used for electricity and heat generation and as a transport fuel. A high quality biogas is expected, hence a purification step will proceed the final product. Furthermore, organic residues output from the methanation biodigester are to be used as fertilizer after solid/liquid separation. The liquid fraction of the digestate will be treated in a biological oxidation system .A portion of the unseparated outlet effluent from the oxidation system (solids + liquid) will be fed to the macroalgae cultivation (instead of the enrichment with chemical N-P-K fertilizers). Meanwhile, the other portion will be reused as feeding for the AD plant section. This process solution will permit to feed with several critical biowastes the biodigester, transforming them into a resource. The expected impact is to produce a cost-efficient, low energy-intensive, purified biogas, to reduce negative environmental impacts from industry (GHG emissions) and biowaste. The multidisciplinary approach solution to reduce GHG emission and process biowaste, while producing energy, seeking for the future replications in other locations.

Fields of science (EuroSciVoc)

[natural sciences](#) > [chemical sciences](#) > [electrochemistry](#) > **[electrolysis](#)**

[engineering and technology](#) > [environmental engineering](#) > **[energy and fuels](#)**

[engineering and technology](#) > [industrial biotechnology](#) > [biomaterials](#) > **[biofuels](#)**

[agricultural sciences](#) > [agricultural biotechnology](#) > **[biomass](#)**

[agricultural sciences](#) > [agriculture, forestry, and fisheries](#) > [agriculture](#) > [grains and oilseeds](#) > **[cereals](#)**



Programme(s)

[FP7-ENERGY - Specific Programme "Cooperation": Energy](#)

Topic(s)

[ENERGY.2009.3.2.2 - Biowaste as feedstock for 2nd generation](#)

Call for proposal

FP7-ENERGY-2009-1

[See other projects for this call](#)

Funding Scheme

[CP - Collaborative project \(generic\)](#)

Coordinator



UNIVERSITA DEGLI STUDI DI ROMA LA SAPIENZA

EU contribution

€ 1 044 037,20

Total cost

No data

Address

Piazzale Aldo Moro 5
00185 Roma
 Italy 

Region
Centro (IT) > Lazio > Roma

Activity type
Higher or Secondary Education Establishments

Links
[Contact the organisation](#)  [Website](#) 
[Participation in EU R&I programmes](#) 
[HORIZON collaboration network](#) 

Participants (11)



CONSORZIO NAZIONALE INTERUNIVERSITARIO PER LE SCIENZE DEL MARE ASSOCIAZIONE

 Italy
EU contribution
€ 369 138,00

Address
PIAZZALE FLAMINIO 9
00196 Roma 

Region
Centro (IT) > Lazio > Roma

Activity type
Research Organisations

Links
[Contact the organisation](#)  [Website](#) 
[Participation in EU R&I programmes](#) 
[HORIZON collaboration network](#) 

Total cost
No data



ECOIL SRL



Italy

EU contribution

€ 271 964,40

Address

VIA NICOLO TARTAGLIA 15

00197 ROMA 

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



AARHUS UNIVERSITET

 Denmark

EU contribution

€ 236 514,75

Address

NORDRE RINGGADE 1

8000 Aarhus C 

Region

Danmark > Midtjylland > Østjylland

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



TEKNOLOGISK INSTITUT

 Denmark
EU contribution
€ 191 709,00

Address
GREGERSENSVEJ 1
2630 Taastrup 

Region
Danmark > Hovedstaden > Københavns omegn

Activity type
Research Organisations

Links
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[Participation in EU R&I programmes](#) 
[HORIZON collaboration network](#) 

Total cost
No data



COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH

 India
EU contribution
€ 124 095,60

Address
RAFI MARG 2
110001 NEW DELHI 

Activity type
Research Organisations

Links
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[Participation in EU R&I programmes](#) 
[HORIZON collaboration network](#) 

Total cost
No data



ASOCIACION NGVA EUROPE

 Spain

EU contribution

€ 104 006,40

Address

AVENIDA DE ARAGON 402

28022 Madrid 

Activity type

Other

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



Scandinavian GtS AB 

 Sweden

EU contribution

€ 4 800,00

Address

Torsgatan 30

113 21 Stockholm 

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

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[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



HASHEMITE UNIVERSITY

 Jordan

EU contribution

€ 35 021,00

Address

PO BOX 150459

13115 Zarqa 

Activity type

Research Organisations

Links

[Contact the organisation](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



RIGAS TEHNISKA UNIVERSITATE

 Latvia

EU contribution

€ 102 911,40

Address

KIPSALAS IELA 6A

1048 Riga 

Activity type

Higher or Secondary Education Establishments

Links

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[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



AQUAGRI PROCESSING PRIVATE LIMITED

 India

EU contribution

€ 113 517,25

Address

Anand Lok 18
110049 New Delhi 

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

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[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

No data



Power Ventures 

 Italy

EU contribution

€ 304 285,20

Address

VIA TAMBURINI 6

20123 Milano 

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

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[Participation in EU R&I programmes](#) 

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Total cost

No data

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European Union, 2025