



Clean biofuel production and phytoremediation solutions from contaminated lands worldwide

We are pleased to share the fourth issue of Phy2Climate newsletter, keeping you up to date with all the latest news and developments from the project. Phy2Climate is a project funded by Horizon 2020 EU's Research and Innovation programme. The overall objective of the Phy2Climate project is to build the bridge between the phytoremediation of contaminated sites with the production of clean drop-in biofuels and bio-coke.

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Report on plant growth and phytoremediation capacity optimization

Pot test experiments have been carried out by each Pilot Site Leader with the global aim of determining the best phytoremediation strategy to be applied in the demo contaminated site. For this purpose, the pilot site leaders have defined a harmonized experimental plan for the sake of comparability and reproducibility of results.

The harmonized experimental plan includes both a sampling and a monitoring plan and defines a common framework in which pot tests have been conducted.

Accordingly, although each pilot site has its own characteristics (type of soil, type of contaminant, plant species, amendments, climatic conditions, etc.), the 4 pilot sites of Spain, Serbia, Lithuania and Argentina have assessed the progress of the phytoremediation strategy throughout pot tests, employing a common set of soil remediation and plant growth indicators.

Apart from stating the main parameters of the experimental design such as controls, number of replicates and the duration of the experiments, the most relevant parameters for the soil and energy crop characterisation have been agreed upon.

Moreover, to give answer to the specific characteristics of each pilot site, a specific phytoremediation strategy has been defined for each of them. The phytoremediation strategies applied to each Pilot Sites are described. They include a brief description of the contaminated site to recollect and summarize the information about the specific contamination of each Pilot

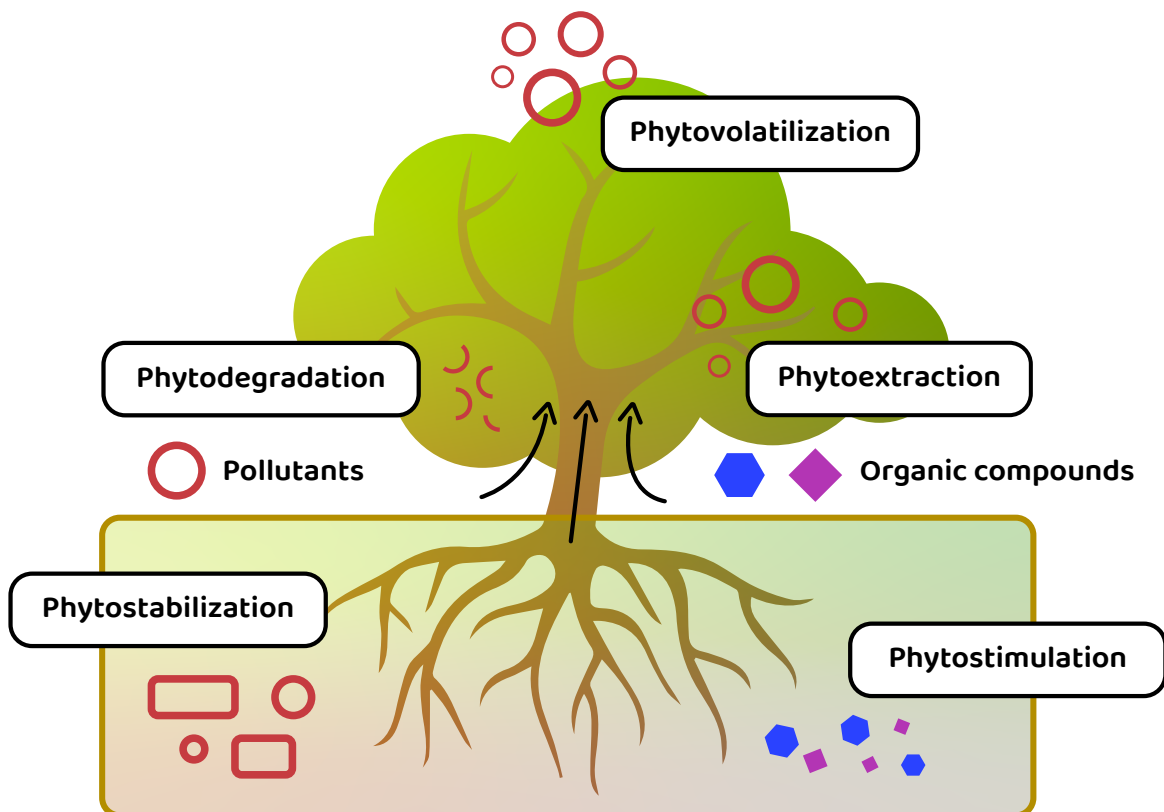


Site, the description of the experimental design followed to perform the pot tests and the specific sampling and monitoring campaign carried out to evaluate phytoremediation capacity of the tested treatments as well as biomass production potential. Apart from phytoremediation efficiency of the tested treatments, the estimation of biomass production is also presented since it is an important factor to be considered to meet the production of >40 kg energy crop per site (and growing season must be reached) as one of the Specific Objectives of Phy2Climate project.

In addition, after each harvest, the collected plant materials (at least 40 kg per season) will be pre-treated prior to sending them to the specific WP "Energy crop conversion to drop-in biofuel and bio-coke". The pre-treatment of the biomass will consist on the processes of drying and pelletizing. Finally, pellets will be used to evaluate the production of biofuels and metal recovery.

Finally, it is worth noticing that experimental essays at different scale results will allow to define the final harmonized strategy to follow along the site phytoremediation period (3.5 years). This report is the project Deliverable D2.2 and it can be downloaded as pdf file here:

[DOWNLOAD REPORT](#)



Schematic representation of phytoremediation strategies: the method of phytoremediation consists of the use of plants and their associated microbes to stabilize, degrade, volatilize and extract soil pollutants. Credit: Phy2Climate project.



Webinar: phytoremediation with energy crops for biofuel production

GOLD, Phy2Climate, and CERESiS - Horizon 2020 Projects invite you to participate in a free international webinar entitled - Phytoremediation with energy crops for biofuel production – 15th March 2023, 10:00 – 12:00 CET

Join us for this free webinar in which three EU H2020 projects - GOLD, Phy2Climate, CERESiS - will present real research data from phytoremediation field trials. These three H2020 projects have identified the same global problems, climate change and land scarcity, as the centre of their research objectives, and are aiming to find a solution by bridging the gap between remediation of contaminated land and the production of clean energy.

The first step in bridging the gap is by determining the best energy crops to grow on contaminated soil, that will not only facilitate the remediation of the soils but will also provide the highest yield of feedstock for producing liquid biofuels. All three projects have now completed at least one year of field trials, on low iLUC lands, all around the world. In this webinar we will hear how successful the phytoremediation part of the research has been.

WEBINAR



Phy2Climate



Phytoremediation with energy crops for biofuel production

Wednesday 15 March 2023
10:00 -12:00 CET



GOLD
Eleni G. Papazoglou,
Agricultural University of
Athens



CERESiS
Richard Lord,
University of Strathclyde



Phy2Climate
Alfreda Kasiulienė,
Biovala



Round Table Chair
Markus
Puschenreiter,
Institute for Soil Research
(IBF)



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Chair and speakers of "Phytoremediation with energy crops for biofuel production" webinar.
Credit: Phy2Climate/GOLD/CERESiS projects.

The agenda of the webinar is as follows:

- **Research overview**
- **Presentations of phytoremediation data:**
 - GOLD: 7 sites – Greece, France, Poland, China, Italy
Eleni G. Papazoglou, Agricultural University of Athens
 - Phy2Climate: 4 sites - Spain, Serbia, Lithuania, Argentina
Alfreda Kasiuliene, Biovala
 - CERESiS: 8 sites – Brazil, UK, Ukraine, Italy
Richard Lord, University of Strathclyde
- **Round table discussion**
chaired by: Markus Puschenreiter, Institute for Soil Research (IBF, University of Natural Resources and Life Sciences, Vienna).

To participate as an attendee, receive email reminders and calendar invitations, please register online here:

PARTECIPATE

Please consult the instructions for information on how to connect for the live webinar.

You will need a computer with stable internet access. If you do not have access to the internet, please contact us so we can provide you with the presentation file to follow along. The webinar will be delivered through the Zoom web conferencing software. The webinar platform may prompt you to download a free add-in. Follow the instructions on-screen to install.

PHY2CLIMATE AT EUBCE 2023

Each year, EUBCE brings together the greatest minds and latest advancements in biomass, with the aim of accelerating research and market uptake across the globe.

During the conference, hundreds of experts from both academia and industry share and discuss ground-breaking ideas, technologies, applications, and solutions for the sourcing, production, and utility of biomass.

The scientific programme is coordinated by the Joint Research Centre of the European Commission.

“The implementation of the transition towards a low carbon economy requires transforming the energy and transport system. Renewable energies are critical for achieving the climate goals, complemented by a rapid phasing-out of fossil fuels. We are currently facing challenges related to high energy prices and the high risk of supply shortages across the EU. These reveal the need to accelerate the green transition and to ensure a cleaner, more secure and resilient energy system.

I invite you to join the EUBCE 2023 this June in Bologna, Italy, to present and discuss your latest scientific achievements and developments of industrial biomass applications on these areas, in scientific and industry sessions, in plenary, oral and poster sessions and in several side events.”, says Nicolae Scarlat, European Commission, Joint Research Centre, and EUBCE Technical Programme Chair.

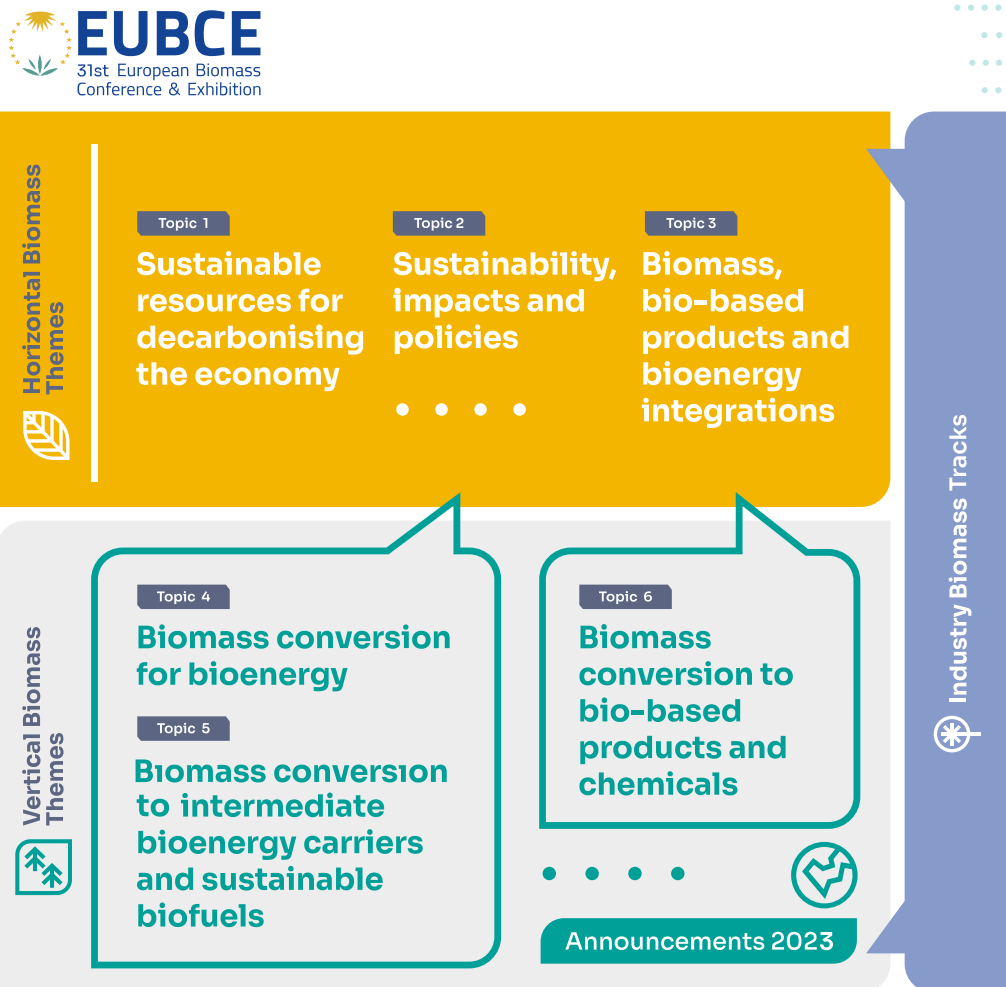
The EUBCE has long become a leading event for the biomass and bioenergy sectors based on a global forum for exchanging knowledge, debating policy options and addressing innovation in an open forum. Against this background, the EUBCE aims to highlight the role of the industry across all sessions and topics of the bioeconomy, from biomass production, including phytoremediation solutions for contaminated lands, to processes and technologies for conversion to biofuels and bio-based products.

EUBCE also offers a number of opportunities for publication of articles related to biomass research and utilisation based on presentations given at the annual EUBCE conferences. These articles can be based on scientific research, industrial application, political policy developments and many other aspects of biomass utilisation in the continually expanding field of technology developments and applications designed to mitigate climate change and reduce the environmental impact.

The EU Projects Area at EUBCE has been implemented since 2022 to showcase the results and findings of research projects in Europe focusing on the green energy transition.

In particular this initiative provides an opportunity to bring the much deserved attention to projects focused on advancing technologies, applications, and solutions for the sourcing, production, and utility of biomass, bioenergy and bioeconomy.

Being part of this EU Projects Area will give Phy2Climate project the highest visibility within the EUBCE community, promoting a high-profile presence not only in the Exhibition & Networking area but also through participation in the Conference Programme.



EUBCE 2023 topics from biomass production, including phytoremediation solutions for contaminated lands, to processes and technologies for conversion to biofuels and bio-based products. Credit: EUBCE 2023.



Phy2Climate



info@phy2climate.eu



@phy2climate



Phy2climate

www.phy2climate.eu

The project consortium has put together 16 partners from 9 countries with long-term expertise in soil remediation, phytoremediation, biofuel technologies and energy processes, environmental and social sustainability, legislative analysis, communication and dissemination as well as business development for innovative technologies.



Phy2Climate is a H2020 project with title "A global approach for recovery of arable land through improved phytoremediation coupled with advanced liquid biofuel production and climate friendly copper smelting process



info@phy2climate.eu



@phy2climate



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