

A global approach for recovery of arable land through improved phytoremediation coupled with advanced liquid biofuel production and climate friendly copper smelting process

Deliverable D7.3:

Preliminary Communication & Dissemination Plan & periodic updates No.3

presented by Phy2Climate project consortium

N°	Short	Beneficiary	Role
1	ITS	ITS Foerderberatung GmbH	CO
2	Fraunhofer	Fraunhofer Gesellschaft	BEN
3	AUR	Aurubis AG	BEN
4	LEITAT	LEITAT Technological Center	BEN
	CUJ	Central University of Jharkand	IL3P
5	IFVCNS	Institute of Field and Vegetable Crops	BEN
6	SUT	Silesian University of Technology	BEN
7	ETA	ETA Florence Renewable Energies	BEN
8	UHA	University Hasselt	BEN
9	INTA	National Institute of Agricultural Technology Argentina	BEN
10	UNSPMF	University of Novi Sad - Faculty of Sciences	BEN
11	BVA	Biovala	BEN
12	PWMCVV	Public Water Management Company Vode Vojvodine	BEN
13	LTC	Litoclean SL	BEN
14	CLH	Compania Logistica de Hidrocarburos S.A.	BEN
15	PUW	Pro Umwelt	BEN
16	UCB	Umwelttechnologie Cluster Bayern	BEN

CO: Coordinator, BEN: Beneficiary, IL3P: International linked 3rd party under article 14a

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<i>DEL</i>	Technical reports identified as deliverables in the Description of Work	X
<i>MoM</i>	Minutes of Meeting	
<i>MAN</i>	Procedures and user manuals	
<i>WOR</i>	Working document, issued as preparatory documents to a Technical report	
<i>INF</i>	Information and Notes	

Dissemination Level		
PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	
CON	Confidential, only for members of the Consortium	

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1 EXECUTIVE SUMMARY

The D7.3 Preliminary Communication & Dissemination Plan & periodic updates is a document for setting the impact pathway of Phy2Climate from the start of the project. This document is based on first and second versions of the project Communication and Dissemination strategy (as reported in D7.1 and D7.2), describing which will be the most efficient measures to be implemented with reference to specific targeted audiences and main project results. In relation to Exploitation, this document will refer to Phy2Climate business pathways and valuable inputs, at consortium level, for public authorities and standardization bodies. In relation to relevant target groups of stakeholders and general public, this document will refer, where appropriate, to Phy2Climate socioeconomic and environmental impacts evaluation.

As the title of this document implies that it is the preliminary version, the project consortium considers the Communication and Dissemination Plan to be a living document that will be periodically reviewed and updated at least at the end of each reporting period to ensure continued relevance and impact.



2 INTRODUCTION

This report contains the Preliminary Communication and Dissemination Plan (D7.2), which has been designed as a practical guideline for efficiently implementing communication, dissemination and outreach activities at project level. The goal of the document is threefold:

- 1) supporting the achievement of the project objectives;
- 2) defining the activities for outreach and engagement with key stakeholders and the general public to maximise awareness and impact of the project;
- 3) facilitating and supporting the measures for the future exploitation of project results.

The primary aim of this document is to ensure the detailed planning to facilitate the widest possible impact of the project in terms of activities delivering results which can support and engender further R&D opportunities for these process and technology in the near term.

The plan is the result of a coordinated effort among partners, considering stakeholder categories and needs as well as partners' communication channels and tools. In this sense, it is a supporting tool for each partner to maximize the impact of their own communication and dissemination actions while providing a means to ensure high visibility of activities and outcomes of the project as a whole.

The active involvement of stakeholders and target groups is one of the key success factors for Phy2Climate project. The plan is based on a list of suitable dissemination tools and activities for engaging the target groups identified by the consortium. Then a multi-channel dissemination strategy is proposed in order to maximize the impact of the project results and paving the way towards successful Phy2Climate results both in terms of sharing knowledge and business opportunities, according to the target audience.

The consortium considers it as a living document, with the chance to incorporate updates of an open dialogue with potential users and institutions.

Actions carried out and performed within the project activities will be fully described in deliverable D7.12 Final report on all C&D activities, that will be prepared at the end of the project.



Success indicators of the planned actions are set out and a detailed action and time plan with relevant responsibilities of the partners was elaborated and presented at the end of the first year of the project. The same was done for the next project years.

This report is strictly related and linked to four other deliverables:

- D7.1: Preliminary Communication & Dissemination Plan & periodic updates No.1 (First plan for communication, outreach and dissemination of the project results to different networks, stakeholders from public and private organisations and the scientific community);
- D7.2: Preliminary Communication & Dissemination Plan & periodic updates No.2 (Updated plan for communication, outreach and dissemination of the project results to different networks, stakeholders from public and private organisations and the scientific community);
- D7.4: Project Visual Identity and templates (Creation of a project logo and its incorporation into a standardized set of templates for project reporting and public dissemination);
- D7.5: Website and social media feeds online (Design and set-up of the project website and social media channels – establishment of project presence at digital level);
- D7.6: 1st project workshop at the EUBCE (Organisation of a workshop, open to public and private stakeholders (policy and market experts, researchers) for the dissemination of the project results, held at the EUBCE);
- D7.7: 2nd project workshop at the EUBCE (Organisation of a workshop, open to public and private stakeholders (policy and market experts, researchers) for the dissemination of the project results, held at the EUBCE);
- D7.9: Video series available online No.1 (First tranche of project videos available online).



3 IMPACT SCOPES AND OBJECTIVES

These four interrelated stages inform the dissemination and exploitation activities of the project:

1. during first months of project implementation (M1-M6): establishment of communication activities based on setting targets, audience and messages before deciding on the media. At this stage, means will be mainly “one-way exchange” style with respect to project audiences: a Visual Identity for clearly identify the project among others, an iconic project logo set and an effective project website will be conceived. In addition, a first project leaflet and messages tailored to stakeholders’ categories will be developed and spread through social media (on X, former Twitter, and LinkedIn mainly). The objective is to raise awareness and interest about the project and start paving the way for their future involvement in “two-way exchange” activities promoted at EU and non-EU level;
2. gradual integration of dissemination activities among project communication ones (M1-M18), to starting support exploitation of project’s foreground while maintaining knowledge transfer. At this stage, means will be “two-way exchange” style. In addition to regular information coverage by short news, longer articles of analysis or events’ follow-up, videos, interviews and story-telling, there will be technical workshops, participation in selected conferences, large fairs and other events;
3. once ready and available, scientific and market-potential results will be promoted according to the Exploitation strategy, coherently with what foreseen under the CA and the IPR decisions agreed upon by partners;
4. in the last 12 months of project duration (mainly on M44-M54), all former activities will be integrated by specific measures to promote further project development beyond its end. The consortium will provide information (in terms of thought pieces tailored to policy makers and regulatory officers), guiding on what is needed – in term of RTD and market exploitation - to further develop the process beyond TRL6-7 after the 54M. Measures will be mainly scientific (e.g. scientific and technical publications, high level RTD repository on project website, etc.) and open to transdisciplinary connections (e.g. participation in shared initiatives and platforms with other RTD projects and EU and non-EU funded initiatives, capitalization of project results and cross-fertilization activities for future projects, etc.). All tools and materials set up at the project outset will be kept updated during the second and third phases. Additional materials will be



foreseen as well (e.g., technical factsheets for promoting the project at scientific conferences, workshops, and market events across Europe; new videos with focus on specific processes).

This is important to support technical and market stages of the project, underlining project results and implemented capabilities, with the most feasible tools (both digital and material ones).

3.1 Tasks and responsibilities

Indications on partners' roles and processes for guaranteeing a smooth communication flow at consortium level have been internally provided. In addition, the following principles on external communication and dissemination were agreed:

1. Partners engagement will be ensured via project meetings and online collaboration;
2. All partners shall ensure dissemination and communication activities/actions in accordance with the related deliverables and results as foreseen by the Phy2Climate Grant Agreement;
3. All partners shall set up and implement dissemination and communication activities/actions in line with the present Plan in order to ensure effective dissemination and a common approach to communication;
4. Partners shall monitor dissemination and communication activities, both the ones foreseen by the project and those made independently by each partner.

3.2 Monitoring

Periodic monitoring and actions necessary to deal with any changes to project dissemination requirements are the responsibility of ETA. At each technical management and/or project meeting, input will be taken from the consortium on actions/changes necessary for guaranteeing the highest possible impact and outreach of the project.

In addition, the **updated version** of D7.12 Final report on all C&D activities in M54 will cover all the activities on communication, dissemination, and outreach activities made by the consortium.



3.3 The C&D strategy

The Communication and Dissemination strategy of Phy2Climate starts with focusing on the objectives identified by the consortium for guaranteeing a successful project impact.

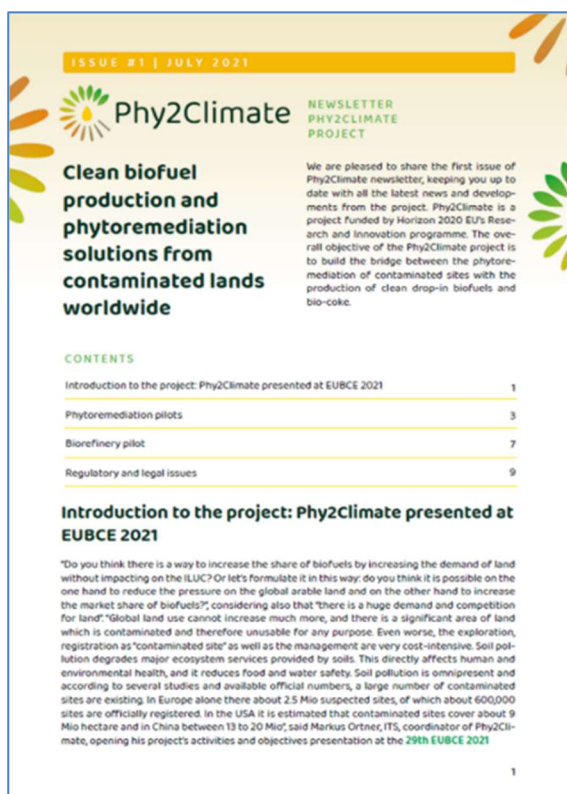
The geographic coverage of Phy2Climate is engaging primary target groups and multipliers at national/regional level of **10 countries** (thanks to leveraging on current networks of the consortium members), as well as **at European and (possibly) global level**. This is foreseen by the liaising with **other relevant European/global network and stakeholders at the policy level** on the areas addressed by the project, thus contributing to further debate and scientific evidence allowing scaling-up similar processes of energy (advanced, sustainable energy carriers) production into the current and future policy agenda, specifically the EU Renewable fuels and Bioenergy strategies.

4 TOOLS AND EVENTS

4.1 Press releases and digital newsletters

During the project, a series of **digital newsletters** will be prepared and distributed. Subscription to the newsletter is voluntary, via a subscription form on the website. Mass mailing system software is used for management and distribution of the digital newsletters, ensuring the accurate monitoring of the impact of the newsletters. Each newsletter will cover periodic news, events and information; content will be based upon posts on website, as well as contributions by partners, key updates on the project development, presentations at workshops, reports and publications. The planned timetable for sharing the newsletters (**1 every 6 months**) will provide a consistent coverage of the activities implemented within the project.

Five project newsletters have been published (July 2021, January 2022, October 2022, March and November 2023) and distributed to an international mailing list including all of the contacts in the stakeholders' database. Furthermore, they are hosted within the "Resources" and "News (Updates)" sections of project website www.phy2climate.eu (those people interested in the project can download related files from the project website), where an email subscription form is also available in the Home page. They were also promoted through the project social media channels.



First and fifth project newsletters.

In addition, **press releases** are foreseen to be prepared during the project implementation:

- the 1st one at the launch of the project (**M2**, February 2021), disseminated also on BE-Sustainable magazine (edited by ETA) beyond other online media. This press release can be downloaded from the “Resources” section of project website;
- other press releases will be published after related events of the project and/or in coincidence with relevant milestone/s; in particular, the last one will be highlighting the project’s most salient results and benefits in occasion of its closure.

ETA will prepare a **final press review**, to keep track of the media coverage of all published press releases. It will be integrated in the final report, together with all communication and dissemination materials (D7.12 Final report on all C&D activities).

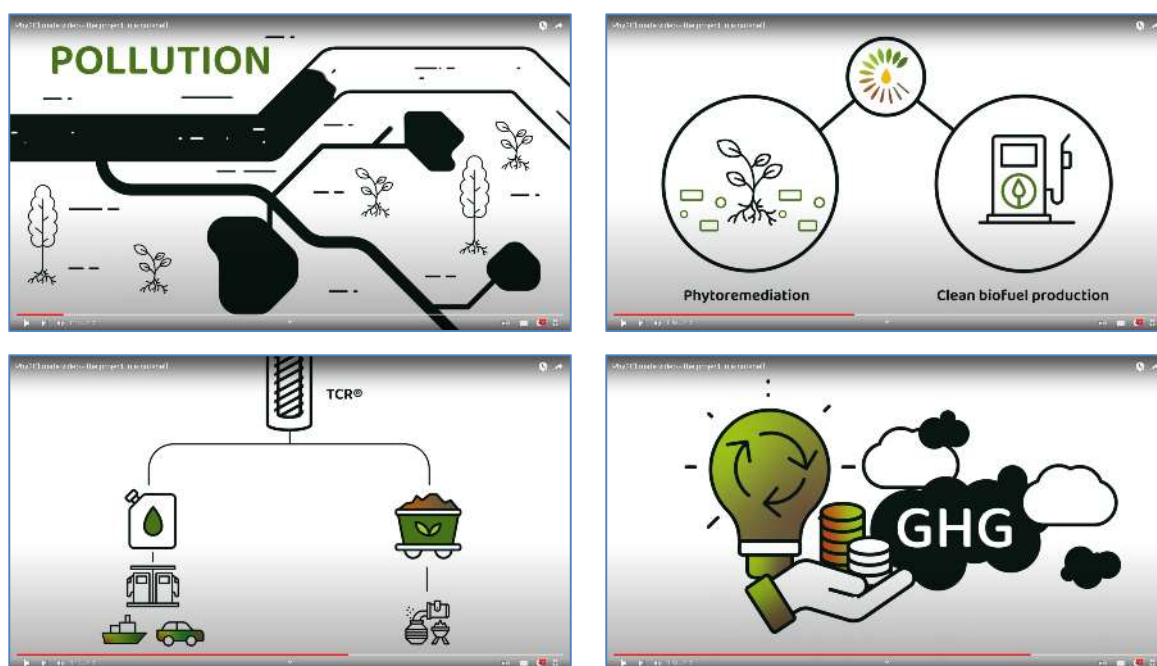
One factsheet has been published in English to summarise and present activities and results from the Deliverable 6.1 – Catalogue of Regulatory Issues and Opportunities in May 2023.



4.2 Videos

A suite of short informational videos will be prepared and shared via social media and will be available on the Phy2Climate website and YouTube channel. Animated videos and interviews are rich communication channels for delivering information on the Phy2Climate processes.

A video “the project in a nutshell” explaining the background and the approach of the project was finalized and published in May 2022:



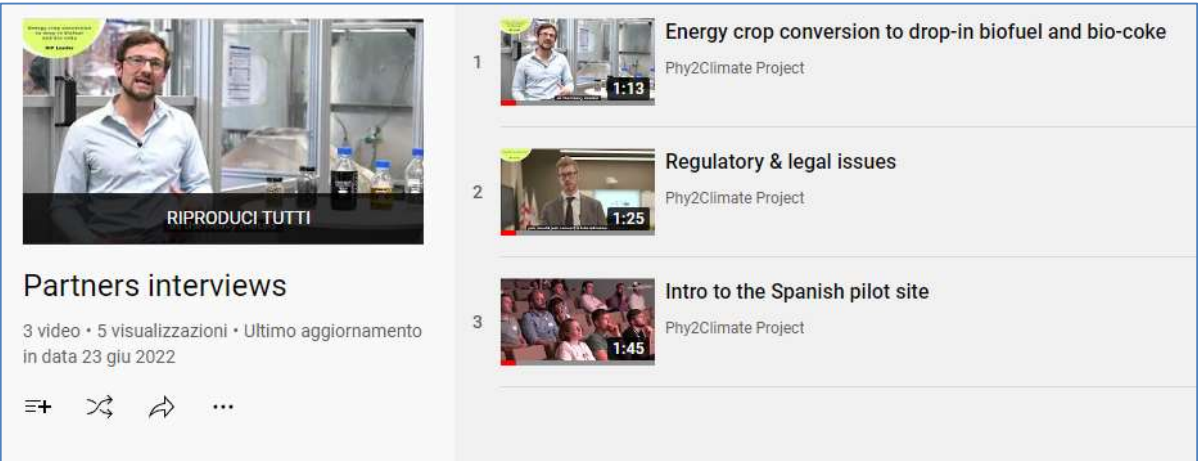
Some parts of the video “the project in a nutshell”.

This video is on the “Resources” section of project website and on the project Youtube channel www.youtube.com/channel/UCFDX-M2WpLLNOeICFSvKZ7A/featured, and it will be added also to the related Zenodo section (Phy2Climate Community).

The consortium agreed on preparing a series of videos, in order to easing the engagement with the wider public outside of conventional stakeholder groups. For such reason, ETA will put together a series of videos pitched towards a more general audience. These will focus on the rationale for the project, the project concept, the plant validation phase and the project results (with recordings taken on the Phy2Climate trial areas and pilot plant). Inputs from all partners, in addition to external experts and stakeholders, will be duly valorised. In addition, short interviews to partners and guests



from relevant national/ international organizations will be collected during the project meetings, workshops, a selection of Open Days, etc. All the videos will be available on a dedicated Phy2Climate YouTube channel as well as being displayed on the project website and promoted through social media.



Video interviews to project partners.

Two videos show activities related to phytoremediation in project pilot sites: experimental planning, site preparation, implementation of the phytoremediation studies, monitoring, energy crop harvesting and pre-treatment and finally decommissioning of the pilot site.

Some pictures from the video “Intro to the Spanish pilot site”:



“Intro to the Spanish pilot site” video interview pictures.

Some pictures from the video “Intro to the Lithuanian pilot site”:



“Intro to the Lithuanian pilot site” video pictures.

Also, webinars are available on the project Youtube channel.

Serbian partners released a video on the Serbian pilot site, available on Youtube https://www.youtube.com/watch?v=Yn_rQb3d_xo (in Serbian language).

4.3 Social media

Phy2Climate will exploit the full potential of social media with the following goals:

1. sharing clear information for raising awareness about technologies and processes dealing with feedstocks from energy crops in order to produce added value products;
2. providing latest news, trends and related events (for both expert and non-specialized audiences);
3. disseminating the project outputs and events, as well as other events in the same sector;
4. attracting attention from an increasing number of media and citizens to the project community.

Social media engagement will be sought also through the launch of initiatives such as hashtags to engage with the general public, surveys and spontaneous public consultations among social media users.

Phy2Climate consortium agreed on creating profiles and pages on the following **3 social media platforms**:



X (former Twitter). The account is used as one of the primary tools in spreading the project news and announcements to the wide public. Project tweets are uploaded on a regular basis, referring to activities, results (as soon as available and publicly shareable)



and news about the project and the sector. The X account **@phy2climate** is a very useful channel to immediately disseminate news to a wide audience (both primary target groups and multipliers), as well as raising awareness on latest trend topics related to Phy2Climate processes and technology and market potential sectors.

Specific hashtags will be chosen when sharing Phy2Climate project news, some of them could be as follows:

#phytoremediation

#TCR

#renewable

#transport

#fuels

#biofuels

#biocrude

#coal

#biochar

#energycrops

#bioeconomy

#soilcontamination

#environment

#GHG

#sustainable

The Phy2Climate account is already following partners' social media profiles, those from the EC, thematic networks, and scientific and industrial key players at a worldwide level, in addition to main corporate and institutional players from academia, industry and national and EC. Partners' social media will also echo the project posts and the other way around, further increasing the combined impact and outreach of the project.



X (Twitter) on the project.



LinkedIn. An official Phy2Climate page is operative for exchanging information and opinions between Phy2Climate partners and professionals.



LinkedIn on the project.



YouTube. A specific Phy2Climate project channel has been created YouTube to share videos on project, interviews and testimonials at national/EU events from project members and experts, etc. Short and long videos will be shown also in conjunction with project booths at events and during demonstration sessions for attracting stakeholders of primary target groups and increase their curiosity on state-of-the-art of project activities, therefore their impact.

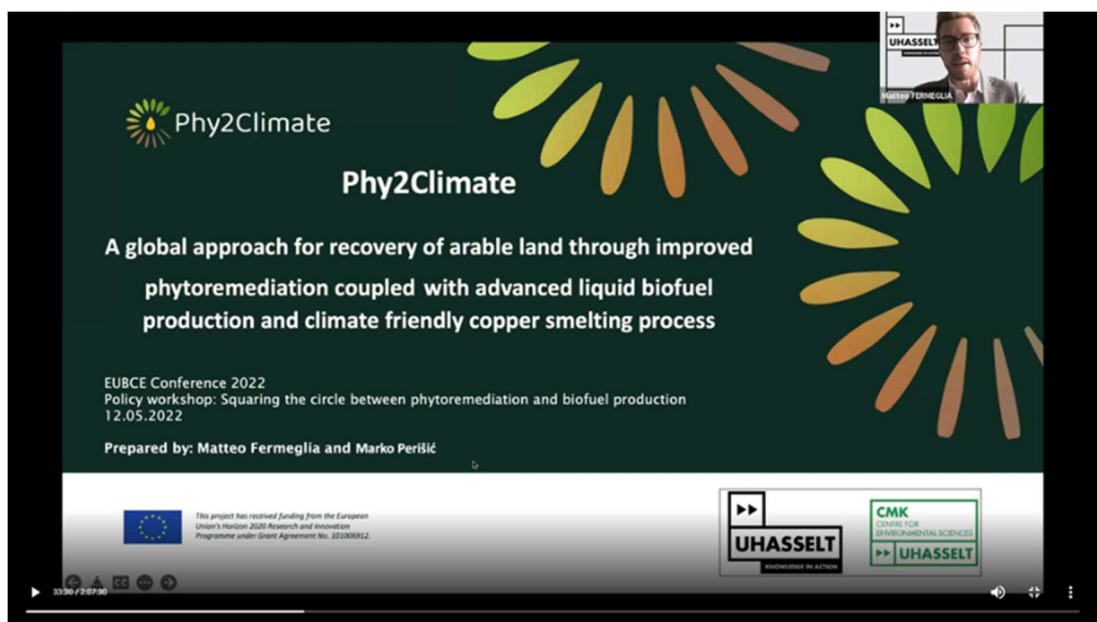


Youtube channel with video on the project.

4.4 Events

Within Phy2Climate, there is a calendar of events and initiatives, as, for example, **2 half-day workshops**, as a side event of the European Biomass Conference and Exhibition (EUBCE, <http://www.eubce.com/>), that gathers biomass experts of academia and companies and is organized annually by ETA. They represent the occasion to engage with the international community of experts at research and industrial level on technologies and processes for energy crops and renewable fuels production. Project partners are called to participate as speakers for covering all the aspects of Phy2Climate where results can be publicly presented and discussed with the EUBCE audience.

On Thursday 12th May 2022, at EUBCE 2022, three similar Horizon 2020 projects: GOLD, Phy2Climate and CERESiS, held a two-hour online workshop "Squaring the circle between phytoremediation and biofuel production" in which the three projects were presented, as well as hearing from European Commission experts on the subjects of renewable energy, soil protection and policy:



Slides presenting and introducing the workshop.

The second project workshop was organized at EUBCE 2023, in Bologna, on the base of preliminary and consolidated findings from three H2020 projects: CERESiS, GOLD and Phy2Climate.

The idea for a joint event, titled “Clean advanced biofuels production from contaminated land”, with these three projects was originally thought of after project award, as it was realised that the projects have similar, if not the same, objectives. Therefore, through a series of online meetings involving at least one representative from each project, the agenda was formulated to include short presentations from each project, and to conclude with a panel discussion. During the first half of the Phy2Climate project, a TCR® pilot plant was built at Fraunhofer UMSICHT in Sulzbach-Rosenberg,



Germany, to process biomass feedstock (selected energy crops) from contaminated soils (project pilot sites).

Markus Ortner, ITS, introduced the project activities and Christopher Kick, Fraunhofer UMSICHT, presented the biomass conversion process and the project's pilot plant including the related TCR® technology.

This workshop was promoted through the EUBCE website and newsletter, and also through the Phy2Climate social media and website.



Phy2Climate Presenters: Markus Ortner and Christopher Kick.

The EUBCE (www.eubce.com) combines one of the world's leading R&D conferences with an international exhibition, and represents the leading platform for the collection, exchange and dissemination of scientific know-how in the field of biomass.

In addition to the workshop, Phy2Climate project was presented at EUBCE 2023 as follows:

- "Phytoremediation of Contaminated Sites to Produce Feedstock for Sustainable Biofuels",
Markus Ortner, ITS, Austria, project coordinator,
Poster with session reference 1BV.3.7, 6th June.
- "Expectations and Reality of Upscaled Phytoremediation Field-Trials",



Alfreda Kasiuliene, MB Biovala, Lithuania, project partner,
Oral with session reference 1BO.7.1, 6th June.

- "Development and Commissioning of an Innovative Biorefinery for the Conversion of Contaminated Biomass Into High-quality Energy Carriers",
Christopher Kick, Fraunhofer UMSICHT, Advanced Carbon Cycle Technologies,
Germany, project partner,
Oral with session reference 5CO.7.4, 7th June.
- "Phy2Climate: Life Cycle Assessment of Phytoremediation and Biofuel Production",
Tomasz Simla, Silesian University of Technology, Department of Thermal
Technology, Poland, project partner,
Poster with session reference 3CV.8.13, 7th June.

All these related presentation papers are included in the full open access EUBCE conference proceedings database: all submitted full scientific papers of plenary, oral and visual presentations are published on-line in the EUBCE Conference Proceedings and are fully searchable and citable online.

Phy2Climate project was also presented at EUBCE 2023 through a project stand (Visibility point) and the Live Stage in the Exhibition area.



Phy2Climate project stand (Visibility point) and Phy2Climate project presented in the Live Stage, EUBCE 2023, Bologna, Italy.

Furthermore, other conferences, fairs and joint cross-cutting workshops (i.e. by the EC, CINEA and synergies with other EU-funded projects on RDT in biofuels, transport sector and circular economy, etc.) are identified on a periodic basis by ETA and all partners and proposed for discussion at consortium level. For example, the consortium



should take part to annual EU-level conferences such as: the EU Sustainable Energy Week – EUSEW (<https://www.eusew.eu/>), evaluating cooperation with other H2020-funded projects; relevant conferences such as for instance the International Renewable and Sustainable Energy Conference, the Annual Mediterranean Bunker Fuel Conference, the European Summit of Industrial Biotechnology (ESIB), the International Conference on Wetland Systems for Water Pollution Control or the European Environmental Law Forum (EELF).

The consortium has also ensured the participation of partners as speakers to leading events at both international and national level in order to address different audiences, listed as follows:

- ITS virtually presented the project within an oral speech “Recovery of arable land through improved phytoremediation coupled with advanced liquid biofuel production” during the 29th European Biomass Conference & Exhibition (EUBCE) at the end of April 2021. A dedicated e-stand on Phy2Climate project was present into the EU projects area of EUBCEs 2021 and 2022 online event platform to share project material and interact with visitors.
- The EUBCE (www.eubce.com) combines one of the world’s leading R&D conferences with an international exhibition, and represents the leading platform for the collection, exchange and dissemination of scientific know-how in the field of biomass.
- ITS presented the project within a poster presentation and speech during the 30th European Biomass Conference & Exhibition (EUBCE), held online in May 2022. The related presentation paper “Clean Biofuel Production and Phytoremediation Solutions from Contaminated Lands Worldwide” is included in the full open access EUBCE conference proceedings database: all submitted full papers of plenary, oral and visual presentations are published on-line in the EUBCE Conference Proceedings and are fully searchable and citable online.
- Leitat virtually presented the pilot sites project activities within a poster presentation and speech during the 30th EUBCE.
- Another workshop, titled “Verifying a functional business model based on the Phy2Climate approach: Pitfalls, opportunities and strategies in place”, referring to WP5, was hosted by EUBCE 2022, on Thursday 12th May 2022.



- INTA participated in the virtual meeting organised by Bavarian Research Alliance (BayFOR), Germany on June 16, 2021. Next Destination: Horizon Europe "Circularity & Bioeconomy – How to match your R&I proposal with EU and regional strategies". His talk was titled "Phytoremediation of mining waste and conversion to biofuels: An Argentine case study".
- Three abstracts were submitted by INTA to SETAC Latin America 2021, 14th Biennial Meeting. They were accepted by the scientific committee and included in the event program. The Abstract Book of SETAC Latin America was published and the three contributions by INTA were included outlining some of the project activities carried out in the pilot site of La Planta, San Juan, Argentina.
- University of Hasselt presented Phy2Climate project and their related activities focused on developing top legal expertise for a smooth project realization and European environmental law, on Friday 10th September 2021 at 8th EELF Annual Conference 2021.
- The project has been presented by the project coordinator during the sessions of the CINEA workshops on H2020 energy projects working on biofuels, virtually, in October 2021.
- University of Hasselt successfully presented the project at the Georgian National University SEU in Tbilisi on Thursday 10th February 2022 and at the VII Tarragona International Environmental Law Colloquium, 26-27 May 2022.
- UNSPMF and IFVCNS submitted an abstract, related to the WP2 activities of Phy2Climate project and titled "Potential of Brassica Napus for Phytoextraction of Heavy Metals from Soil and Sediment", to the 2nd European Sample Preparation e-Conference (EuSP2022) and the 1st Green and Sustainable Analytical Chemistry e-Conference, in February 2022. This abstract was accepted and presented as poster on Wednesday 16th March 2022.
- UNSPMF and IFVCNS submitted an abstract and presented the poster, related to the WP2 activities of Phy2Climate project and titled "Phytoremediation of sediment polluted with organic pollutants" to "The CORFU 2022 9th International Conference on Sustainable Solid Waste Management", 15-18 June 2022, and for the national conference "Wastewater, Municipal Solid Waste and Hazardous Waste", 14-16 June 2022.



- The Biovala team, Lithuania, presented the project in webinar “A soil deal for Europe - mission possible in the Baltic Sea Region”. The event was held on June 29th and focused on the engagement of citizens and business for the EU Soil Mission.
- Matteo Fermeglia and Marko Perišić Marko, University of Hasselt, gave at the IUCN Academy of Environmental Law Colloquium 2022, 13 July 2022, online: **Legal issues for the uptake of phytoremediation as nature-based solutions for contaminated sites in the European Union.**
- Matteo Fermeglia and Marko Perišić Marko, University of Hasselt, gave at the 2022 Oslo International Environmental Law Conference, Oslo University, 4th October 2022:
Two bright sides of the same coin: Squaring the circle between phytoremediation of contaminated soils and production of advanced biofuels.

UNSPMF and IFVCNS (related to the WP2 activities of Phy2Climate project) submitted abstracts to:

- COST conference Metals, Plants and People - CA19116 PLANTMETALS symposium 2022, organized in Ankara Turkey from 30th August to 2nd September 2022.

The Potential of Brassica napus for Phytoremediation of Multielement Contaminated Soils – A Field Test

A scientific abstract is about translocation of selected metals pollutants from contaminated sediment in above ground plant parts, results obtained at the pilot site conducted within the WP2 activities.

- The Remtech Expo 2022, Italy, 21st to 23rd September 2022

The influence of phytoremediation on increasing the bioavailability of heavy metals

A scientific abstract about **phytoremediation of bioavailability of heavy metals from contaminated sediment and soil in the pot test** conducted within the WP2 activities.

- 4th International Conference on Plant Biology (23rd SPSS Meeting), Belgrade – Serbia, 6th to 8th October 2022

The possibility of energy plants for phytoremediation of heavy metal contaminated sediment



A scientific abstract is about biomass production and translocation of selected metals pollutants from contaminated sediment in above ground plant parts, results obtained in the pot test conducted within the WP2 activities.

Also LITOCLEAN and LEITAT submitted an abstract for an oral presentation at the conference Remtech Expo 2022 (<https://remtechexpo.com/index.php/en/>), regarding **the investigation activities carried out by at the Spanish pilot site**, in the framework of WP2. An abstract on pot test study to determine the best phytoremediation treatment for TPH contaminated soils using plant species with potential for biofuel production was submitted by partner LITOCLEAN and presented by Natàlia Blázquez-Pallí, LITOCLEAN, with authors: Francesca Audino, Natàlia Blázquez-Pallí, Alba Catalán Merlos, Carlos Herrarte-Marrón, David Garriga, Sergio Aguado, Sonia Sanchis, Marçal Bosch.

LEITAT presented the main activities performed at Spanish pilot site at the 1-day conference on “Management of Contaminated Soils at the Port Area” organized by the Grup de Treball de Medi Ambient de la Comunitat Portuària Barcelona Port (Environment Working Group of the Port Community Barcelona Port), held on September 29th 2022 at the World Trade Center of Barcelona.

Karolina Petela, SUT Department of Thermal Technology, and the WP4 team presented a poster during the CPOTE2022 conference <https://www.s-conferences.eu/cpote2022>, 7th International Conference on Contemporary Problems of Thermal Engineering, Towards sustainable & decarbonized energy system, at the Centre for Innovation and Technology Transfer Management of the Warsaw University of Technology (CZliTT), Poland, 20th to 23rd September 2022, titled **Phy2Climate - sustainability aspects of phytoremediation combined with drop-in biofuels production**.

Phy2climate project had a stand both onsite and online at EUSEW (European Sustainable Energy Week) 2022, in Brussels on Monday 26th September 2022, from 8:30 to 18:30 CEST, and online stand during the whole EUSEW 2022 (Monday 26th to Friday 30th September). University of Hasselt, ETA and ITS presented the project and distributed informational material.

The project and its pilot sites were presented during the phytoremediation webinar, 15th March 2023, 10:00 - 12:00 CET, organised by EU projects GOLD, Phy2Climate and CERESiS, titled **Phytoremediation with energy crops for biofuel production**. The agenda of the webinar was 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 Kasiulienė, 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)

In this webinar speakers presented how successful the phytoremediation part of the research has been.

Markus Ortner, ITS, Austria, presented **Clean biofuel production and phytoremediation solutions from contaminated lands worldwide: The Phy2Climate project**, and Zygimantas Kidikas SME Biovala, Lithuania presented **Phytoremediation –different contamination, different approach?** at the workshop: Production of low ILUC Risk biomass feedstock (BIKE project) in Thessaloniki, Greece, 30th March 2023. This workshop aimed at gathering views and results from a series of ongoing and recent Horizon 2020 and Horizon Europe projects, developing solutions to sustainably produce low ILUC risk biomass feedstock for industrial uses.

Natàlia Blázquez-Pallí, LITOCLEAN, presented **Clean biofuel production and phytoremediation solutions from contaminated lands worldwide** at the workshop of GREENER H2020 project in LEITAT, April 2023, in collaboration with these authors: Natàlia Blázquez-Pallí, David Garriga, Marçal Bosch, Carlos Herrarte-Marrón.

At the end of the Phy2Climate project meeting hosted by Fraunhofer UMSICHT, consortium partners visited the biorefinery pilot site in Sulzbach-Rosenberg in Germany and the TCR 500 plant in Hohenburg, Germany, at the end of June 2023. During these three inspiring days with a lot of discussions on activities and goals, they also met here Advisory Board members of the project last.

A visit to Exolum facilities (where the Spanish pilot site is located) was on 11th July 2023. It was a joint visit of the waste administrations (ARC, Luïsa Nadal, a member of a group of experts who is following the project), and the water agency (ACA). The visit was divided into the follow-up of the entire installation and the work carried out on the



Phy2Climate project site to share the work done with an on-site presentation. Firstly, with a presentation in a meeting room, and then the field visit.

LITOCLEAN and LEITAT submitted an abstract to AquaConSoil 2023 in Prague, 11th to 15th September 2023, **Laboratory pot tests and field pilot study to determine the best approach to combine the phytoremediation of TPH contaminated land with the production of clean biofuels**, with authors: Natàlia Blázquez-Pallí, Francesca Audino, Alba Catalán Merlos, Nora Matanzas, David Garriga, Sonia Sanchis, Carlos Herrarte-Marrón, Marçal Bosch.

INTA team presented Phy2Climate project at the SETAC meetings held in Montevideo (Uruguay) and Louisville (USA), as follows:

- Díaz P, Young BJ, Hruby S, Rizzo P, Roqueiro G, Heredia B, 2023.
Acute toxicity of mining environmental waste on *Bulnesia retama* and *Plectrocarpa tetraacantha* seedlings.

SETAC Latin America 15th Biennial Meeting. Montevideo, Uruguay. September 17th to 20th;

- Young BJ, Hruby S, Heredia B, Rizzo P, Pacheco P, Villavicencio A, Escudero E, Martínez L, Roqueiro G, 2023.

Soil contaminated with mining waste abandoned 50 years ago in La Planta (San Juan, Argentina): From socio-environmental assessment to in situ phytoremediation.

SETAC North America 44th Annual Meeting. Louisville, KY, USA. November 12th to 16th.

In addition, Brian Jonathan Young spoke about the project during the Science Summit, 78th United Nations General Assembly (UNGA78). New York, USA. September 12th to 29th.

And also at:

- National Institute of Agricultural Technology (INTA), Argentina
22nd September 2023

XII CONGRESO ARGENTINO DE QUÍMICA ANALÍTICA

Argentine Meeting of Analytical Chemistry 2023

12th to 15th September 2023 – San Juan, Argentina

Aplicación de enmiendas y plantas nativas de zonas áridas para la remediación de pasivos ambientales mineros (In Spanish).



(Application of amendments and native plants from arid areas for the remediation of mining environmental liabilities).

B. Heredia, B.J. Young, S. Hruby, P. Rizzo, P. Pacheco, G. Roqueiro.

- Argentine symposium of agricultural and agroindustrial waste. Mendoza, Argentina.

November 2023

S. Hruby, R.E. Ontivero, P. Rizzo, B.J. Young, L. Martínez, G. Roqueiro, B. Heredia. **Bioremediation strategies applied to soil contaminated with mining liabilities in La Planta town, San Juan** (In Spanish).

Also, the INTA team has participated in an event for schools and broad public as part of the project communication activities. There, they explained to students, teachers and neighbours the phytoremediation activities carried out in P2C.

ETA distributed project leaflet at Ecomondo 2023, 9th November, Rimini Fiera, Italy.

Markus Ortner, ITS, attended the European Mission Soil Week, organised by the European Commission, Directorate-General for Agriculture and Rural Development (DG AGRI) in the context of the Mission Soil together with the EU funded project PREPSOIL and the Joint Research Centre - EU Soil Observatory (EUSO), held from 21st to 23rd November 2023 in Madrid. The European Mission Soil Week is an annual event aimed at promoting the Horizon Europe Mission 'A Soil Deal for Europe' (Mission Soil) raising awareness about the importance of soil health, and driving action to protect and restore our soils.

Marçal Bosch Cartoixà, Executive Manager of LITOCLEAN, presented the Spanish pilot site at the “IV JORNADES SOBRE LA CONTAMINACIÓ DEL SÒL” (Fourth congress about soil contamination) promoted by the Catalan waste agency, 20th to 21st November 2023,

https://residus.gencat.cat/ca/actualitat/agenda_dactivitats/detall/Jornades_contaminacio_sol

Biovala team received an invitation to participate in the international conference organized by NJF (<https://nordicagriculture.eu/>) and to present its activities in the Phy2climate project: **Remediation of soil polluted with petroleum hydrocarbons**, during the 4th section “The Effect and Control of Environmental Pollution”. Conference Details: titled “International Scientific Conference on Environmental Sustainability”, and organized by the Lithuanian Society of NJF on the theme “environmental sustainability in a climate change context: challenges and adaptation”, December 7th, 2023, online.



This conference deals with the scientific concepts that underpin modern technologies and how innovations can be exploited for the development of sustainable soil management. The 4th section was the last session of the conference. Presentations examined the accumulation of heavy metals in acid soil and uptake by plant species with phytoremediation potential, remediation of soil polluted with petroleum hydrocarbons.

Dr Brian Jonathan Young, Argentinean National Institute of Agricultural Technology-INTA, presented “Clean biofuel production and phytoremediation solutions from contaminated lands worldwide (Phy2Climate)” during the online workshop “Best Practices to apply to European Research and Innovation Funds to foster Cooperation between Bavaria and South America on Green Topics”, Tuesday, January 16th, 2024.

Alba Catalan Merlos and Romina Gargarello from Leitat Technological Center virtually presented Phy2Climate project at a secondary school in Barcelona, in the context of the programme “#100tifiques” that rises awareness about women and girls in science, Friday 16th February 2024.

Current events planned by project partners to present Phy2Climate project activities are summarised as follows:

Phy2Climate partners have been invited to join a workshop organised by GOLD project on 13th of March 2024 in Athens, Greece. This international workshop organised by GOLD project is entitled “Bridging the gap between phytoremediation solutions on growing energy crops on contaminated lands and clean biofuel production”, and for Phy2Climate the presentations will be as follows:

- Dr. Snezana Maletic – **Insights to multi-annual phytoremediation pilot field trials covering heavy metal and organic soil pollution;**
- Dr. Christopher Kick – **Valorisation of contaminated biomass applying a cascadic biorefinery process based on TCR technology.**

As dissemination activity of the UNSPMF and IFVCNS related to the WP2 activities of Phy2Climate project, an abstract for the conference SETAC Europe 34th Annual Meeting, 5 – 9 May 2024, Seville, Spain, titled "Investigation of the effectiveness of phytoremediation of dredged sediment contaminated with heavy metals" was submitted.

Abstracts on Phy2Climate have been submitted to next EUBCE, Marseille, France, June 2024. They describe the project and the results from pilot sites and several project



activities. Related presentation papers will be included in the full open access EUBCE conference proceedings database: all submitted full scientific papers of plenary, oral and visual presentations are published on-line in the EUBCE Conference Proceedings and are fully searchable and citable online.

Silesian University of Technology team will submit an abstract to the CPOTE conference (<https://cpote2024.s-conferences.eu/>), September 2024, Gliwice, Poland, where they will present an oral presentation about the (preliminary) results of Life Cycle Assessment of Phy2Climate project.

4.5 Articles and publications

A list of **dissemination articles and scientific publications** on Phy2Climate integrated process will be prepared by all project partners, especially by RTD partners, targeting academics in universities and research centres.

Scientific publications will be essential to reach different audiences of peer academics and market experts at EU/international level, while dissemination articles will be published on magazines reaching a wider audience. A series of papers and scientific publications, by the end of the project, will be prepared and get published by RTD partners on journals in Open Access modality, on the basis of specific results the consortium agrees to disseminate to a wide audience.

Scientific publications and dissemination articles already published and downloadable from project website and Zenodo project community (where they totalised 248 views and 216 downloads):

- **Clean Biofuel Production and Phytoremediation Solutions from Contaminated Lands Worldwide.**
Project Partners;
EUBCE 2022 Proceedings;
- **Phytoremediation of Contaminated Sites to Produce Feedstock for Sustainable Biofuels.**
Project Partners;
EUBCE 2023 Proceedings;
- **Development and Commissioning of an Innovative Biorefinery for the Conversion of Contaminated Biomass into High-quality Energy Carriers.**
Christopher Kick, P. Peetz; A. Apfelbacher; M. Meiller; R. Daschner; A. Hornung;



- EUBCE 2023 Proceedings;
- **Expectations and Reality of Upscaled Phytoremediation Field Trials.**
Alfreda Kasiuliene; Zygimantas Kidikas; Mantas Rubezius;
EUBCE 2023 Proceedings;
 - **Brassica Species in Phytoextractions: Real Potentials and Challenges.**
Tijana Zeremski; Dragana Randelovic; Ksenija Jakovljevic; Ana Marjanovic
Jeromela; Stanko Milic;
Plants, MDPI;
 - **Phytoextraction of Cu, Cd, Zn and As in four shrubs and trees growing on soil contaminated with mining waste.**
Heredia, Belén; Tapia, Raúl; Young, Brian Jonathan; Hasuoka, Paul; Pacheco, Pablo; Roqueiro, Gonzalo;
Chemosphere; Elsevier;
 - **Nature-Based Solution to Man-Made Problems: Fostering the Uptake of Phytoremediation and Low-iluc Biofuels in the EU.**
Matteo Fermeiglia and Marko Perišić;
Journal for European Environmental & Planning Law;
 - **Unpacking the Legal Conundrum of Nature-Based Soil Remediation and Sustainable Biofuels Production in the European Union.**
Matteo Fermeiglia and Marko Perišić;
Soil Security; Elsevier.

An article on Phy2Climate was hosted within BE-Sustainable Magazine online portal, issue of April 2021 (www.besustainablemagazine.com).

The consortium will also prepare a **final publication** in form of a paperback (ISBN) summarizing the most relevant project activities and results, in a fact-based and public-oriented way. The goal is to have a book to underline beneficial impacts promoted by Phy2Climate also beyond the project end.

The publication will be edited by **ETA with the contribution of all partners** and made available as digital format, accessible and downloadable from the project website.



5 CONCLUSIONS

Updates of the Preliminary Communication and Dissemination Plan (at least in occasion of each Periodic Reporting) were and will be prepared for including new key messages, new stakeholders reached as well as a way for measuring the impact performance and acting for improving it (whatever needed). A final deliverable will report on all the communication and dissemination tasks implemented during the project.

This report is strictly related and linked to other Communication & Dissemination deliverables:

- D7.1: Preliminary Communication & Dissemination Plan & periodic updates No.1;
- D7.2: Preliminary Communication & Dissemination Plan & periodic updates No.2;
- D7.4: Project Visual Identity and templates;
- D7.5: Website and social media feeds online;
- D7.6: 1st project workshop at the EUBCE;
- D7.7: 2nd project workshop at the EUBCE;
- D7.9: Video series available online No.1.

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7 BIBLIOGRAPHY/REFERENCES

- 1) <https://ec.europa.eu>
- 2) https://ec.europa.eu/research/participants/data/ref/h2020/other/grants_manual/amga/soc-med-guide_en.pdf: "H2020 Programme – Guidance - Social media guide for EU funded R&I projects"
- 3) https://ec.europa.eu/research/participants/data/ref/h2020/other/gm/h2020-guide-comm_en.pdf
- 4) <https://webgate.ec.europa.eu/funding-tenders-opportunities/pages/viewpage.action?pagelId=1867972>
- 5) <http://contentmarketinginstitute.com/2014/09/linkedin-groups-content-marketing-strategy/>
- 6) https://intellectual-property-helpdesk.ec.europa.eu/regional-helpdesks/european-ip-helpdesk_en
- 7) European IPR Helpdesk - Fact Sheet - The Plan for the Exploitation and Dissemination of Results in Horizon 2020

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