



Collaborative actions to bring novel **BIO**fuels **THE**ermochemical
ROutes into industrial **S**cale

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Table 1. Abbreviations and Acronyms

DE	German
EC	European Commission
ES	Spanish
GR	Greek
NL	Dutch
SAF	Sustainable aviation fuel
TG	Target group

Executive summary

Identifying and engaging with target stakeholders is essential for the successful dissemination and communication strategy of the BioTheRoS project. By understanding the diverse interests and needs of stakeholders, tailored messaging can effectively resonate with each group, ensuring increased engagement and support. The project targets a range of stakeholders. In this report, each stakeholder group is characterized, highlighting methods for integration, the correlation between project outcomes and respective groups, and anticipated occasions for engagement.

The plan summarizes dissemination methods that include peer-reviewed journals, conference participation, workshops, project videos, social media engagement, e-newsletters, press releases, and the project website. Effective planning and monitoring of dissemination activities are crucial for maximizing the project's impact, with gender balance considerations integrated throughout the process to ensure inclusivity and accessibility of project results.

Communication activities are also described in this report. These activities cover project website, flyer, social media presence, e-newsletters, press releases and featured articles. Through targeted messaging and strategic channels, communication activities seek to convey key messages, build relationships, and inspire action. Ultimately, their goal is to facilitate meaningful interactions, promote project, and drive positive outcomes for BioTheRoS.

Identification and Classification of Target Stakeholders

Identifying and classifying target stakeholders is critical for the project's dissemination and communication strategy. To determine an optimal strategy to effectively engage with them and to foster improved interaction with these stakeholders, following target groups (TG) has been identified. The below sections elaborate the characterization of each target group, highlight methods for integration, outline the correlation between project outcomes and respective groups, and specify the anticipated occasions for engagement:

Biomass providers (TG1) play an important role in the development of a pioneering value chain aimed at enhancing the value of their products. Particularly crucial for managing agro-waste, which poses unique challenges, the project aims at demonstrating the economic advantages of participating in the biofuel production chain and showing opportunities for involvement in the supply and logistics chain.

The project will deliver insights into the technical and market potential of biomass and agro-waste supply chains for biofuel production, along with innovative business models tailored to the needs of biomass providers.

To engage effectively with biomass providers, there will be workshops at local levels, fostering direct interactions and knowledge exchange. Additionally, active networking within prominent EU platforms such as ETIP Bioenergy and the European Biomass Industry Association will be pursued to broaden outreach and collaboration opportunities.

Technology and Services Providers (TG2) stand as significant beneficiaries within BioTheRoS, capitalizing on emerging market opportunities generated by the project's outcomes.

The project will set out a range of proposals for technology and service providers and equipment manufacturers including advancements in biomass pre-treatment technologies, comprehensive insights into overcoming bottlenecks and guidelines for scaling up biofuels production processes, assessments of sustainability and economic viability in the new value chain, innovative business models, exploration of market potential, and opportunities for international networking.

To facilitate robust engagement, technology and service providers are encouraged to actively participate in relevant networking platforms, such as ETIP-Bioenergy, fostering collaboration and knowledge exchange. Furthermore, information extracted from project deliverables ensures stakeholders remain informed and aligned with project developments.

Fuel producers and distributors (TG3), including refineries, are positioned to expand their portfolios with more sustainable products through their engagement with BioTheRoS. Given their significant role in facilitating the widespread adoption of biofuels, they are involved from the project's beginning. Key messages directed towards them underscore the environmental and social benefits derived from embracing biofuels, alongside the techno-economic evaluation of their utilization.

The project offers insights into addressing bottlenecks and providing guidelines for scaling up biofuels production processes, along with assessments of the sustainability and economic viability of the new value chain. Additionally, innovative business models, market potential evaluations, and opportunities for international networking will be provided. To foster collaboration and information exchange, fuel producers and distributors are encouraged to actively participate in relevant networking platforms such as CONCAWE.

Public Authorities (TG4), comprising policy makers and governmental bodies specializing in bioenergy, are the focal point of dissemination efforts aimed at sharing the project's valuable results. Emphasis is placed on disseminating insights derived from the project, particularly in terms of lessons learned and best practices for scaling up bioenergy initiatives. Furthermore, there is a crucial need to disseminate regulatory aspects at both EU and regional levels, as well as standardization issues that have the potential to impact the project's effectiveness.

The project will offer a portfolio of information packages to Public Authorities, including lessons learned for upscaling, comprehensive mapping of policy frameworks, policy recommendations, and the establishment of a knowledge-sharing database.

To effectively engage with Public Authorities, the dissemination strategy includes the publication of white papers pinpointing policy and regulatory barriers. This approach ensures that stakeholders are informed of key challenges and opportunities, facilitating informed decision-making and policy formulation processes.

Researchers and Academia (TG5), comprising the scientific community and technical experts, broadens the replication and dissemination of BioTheRoS results. At the core of their involvement lies the imperative to convey key messages regarding technical advancements, innovation.

The project provides a wealth of information such as experimental validation results, assessments of the environmental impact of processes, a multi-criteria approach for TEC technologies, insights into existing

biofuels projects and initiatives, international networking opportunities, and the establishment of a comprehensive knowledge database.

To ensure effective dissemination, project partners will publish scientific findings in Open Access publications, facilitating widespread accessibility and knowledge sharing. Active participation in technical events and conferences provides additional avenues for dissemination, fostering collaboration and the exchange of ideas.

The General Public/Citizens (TG6) form a crucial audience for dissemination efforts. Key messages aimed at this audience emphasize enhancing European competitiveness, reducing external dependency, and improving environmental impacts.

The project's dissemination strategy for TG6 includes sharing general progress and the project's approach through easily accessible channels such as the project website and social media platforms. Additionally, various communication channels such as press releases, social media updates, and open workshops will be utilized to ensure widespread outreach and engagement.

European Commission Initiatives (TG7) represent a vital aspect of the project's collaboration strategy, as synergizing with similar ongoing initiatives maximizes the project's impact. This includes sharing key project results and lessons learned while collectively identifying common goals and messages to disseminate across all target groups.

The project leverages various resources and opportunities available within EC initiatives, including insights from existing projects and initiatives in the biofuels sector and participation in international networks.

To facilitate collaboration and knowledge sharing, BioTheRoS will engage in infodays, fostering dialogue and collaboration with other EU projects. Additionally, collaboration agreements will be forged with ongoing EU initiatives, ensuring sustained cooperation and mutual support throughout the project's lifecycle.

Biofuel end users (TG8), named as shipping and aviation service providers are another target group for BioTheRoS. This category includes ship operators, both owners and charterers, as well as airlines, ports, and airports.

Their primary interests lie in assessing the sustainability and economic viability of the emerging value chain, exploring new business models conducive to their operations, and evaluating the market potential of biofuels within their respective industries.

To facilitate engagement, TG8 participants are encouraged to actively participate in relevant networking forums, such as those offered by ETIP-Bioenergy. Additionally, sharing information sourced from project deliverables ensures that end users remain informed about developments, opportunities, and advancements within the biofuels sector.

Biofuel experts in mission innovation (MI) countries (TG9) are also important for the project's engagement strategy, particularly those working on biofuels as substitutes for petroleum-derived fossil fuels in designated MI countries like India and Brazil.

They are interested in advancing technologies tailored to their regional contexts, considering prevalent feedstocks and leveraging insights from BioTheRoS evaluations to enhance their initiatives.

To foster collaboration, TG9 members are encouraged to participate in project's workshops and brokerage events, fostering dialogue and knowledge exchange.

Outreach Tools and Channels

To ensure the widespread uptake of BioTheRoS project, all project partners are dedicated to carry out dissemination and communication activities aimed at engaging a diverse range of stakeholders mentioned above. The objectives of these tools and channels include increasing project visibility and partner reputation by attracting potential end-users such as researchers, policy makers and experts. They also aim to promote knowledge co-creation with relevant communities by ensuring that research outputs and policy recommendations are adopted by decision makers, citizens and the scientific community. At the same time, these objectives aim to disseminate knowledge widely by raising awareness by making project results openly accessible under fair conditions.

Gender balance considerations have been carefully integrated into the consortium setup of BioTheRoS, and this commitment will remain steadfast throughout the project implementations. With a firm pledge to ensure accessibility of all project results and knowledge to diverse populations irrespective of gender, BioTheRoS strives for inclusivity across a broad audience spectrum. This ambitious objective will be achieved by employing inclusive communication channels, including but not limited to websites, active participation in international conferences and industrial events, and publication in open-access media platforms. Furthermore, BioTheRoS is dedicated to maintaining a gender-neutral and inclusive approach throughout all project activities, steadfastly avoiding any form of discriminatory or stereotypical language.

Table 2 presents the project's overall dissemination and communication tools and channels.

Table 2: BioTheRoS C&D Tools and Channels

Channels	Tools	Target groups	Expected impacts
Printed materials	Flyer	All target groups	Increase awareness regarding the project's objectives, expected impacts, and demonstrate its beneficial outcomes
	Poster		
	Roll up		
Online presence	Website	All target groups	Provide updates about project progress, completed and upcoming activities
	Social media		
	Introductory video		
Media assets	Newsletters	All target groups	Knowledge transfer and promote the importance of advancing sustainable aviation fuel (SAF) on a global scale
	Articles		
	Press releases		
	Media work		
Publications	Scientific papers	TG5	Provide scientific expertise on innovative SAF technologies
	Conference proceedings	TG4, TG5	Promote the knowledge exchange
Events (organised by BioTheRoS)	Workshops and webinars	All target groups	Share progress of the project, increase the outreach
	Final conference	TG2, TG3, TG4, TG7, TG8, TG9	Present and discuss the results of the project
Events (attended by BioTheRoS)	Conferences, workshops and webinars	All target groups	Raise awareness about the importance of global collaboration in SAF initiatives and increase visibility for the project

Partners' Social Network Presence

The social media presence of project partners plays a crucial role in disseminating and communicating project-related information effectively. By leveraging their networks, partners can amplify the project's reach, build credibility by sharing updates and insights, and engage directly with stakeholders to foster meaningful interactions. Regular updates and sharing of milestones help raise awareness about the BioTheRoS objectives and achievements, driving traffic to project resources and supporting efforts. Overall, partners' engagement on social media platforms enhances visibility, strengthens relationships, and contributes to the success of the project.

At the beginning of the project, partners' social network presence and capital collected and summarized relevant information. This information is documented in Table 3.

Table 3: Partners' Social Media Capital

Partner	Website	LinkedIn account	LinkedIn followers	X account	X followers
CERTH	CERTH - The Centre for Research & Technology, Hellas	Centre for Research & Technology Hellas (CERTH): Overview LinkedIn	21K	EKETA-CERTH (@CERTHellas) / X (twitter.com)	2930
BTG	BTG - Biomass Technology Group Your partner in the bioeconomy (btgworld.com)	BTG Biomass Technology Group BV: Overview LinkedIn	2K	BTGBiomassTechnology (@btgworld) / X (twitter.com)	1067
BEST	BEST bioenergy and sustainable technologies (best-research.eu)	BEST - Bioenergy and Sustainable Technologies GmbH: Overview LinkedIn	3K	-	-
CIRCE	CIRCE - Research Centre in R+D+i (fcirce.es)	CIRCE - Centro Tecnológico: Overview LinkedIn	14K	CIRCE - Centro Tecnológico (@fCIRCE) / X (twitter.com)	3459
WIP	Home - WIP Renewable Energies (wip-munich.de)	WIP Renewable Energies: My Company LinkedIn	2K	WIP Renewable Energies (@WIPRenewables) / X (twitter.com)	964
MOH	Motor Oil (moh.gr)	Motor Oil: Overview LinkedIn	79K	-	-

Dissemination Activities

The dissemination strategy of BioTheRoS aims to generate interest among target stakeholders. All partners are fully committed to ensuring the effective dissemination of the project's outcomes throughout the project and beyond. Aim of these activities is to effectively publicize project messages to stakeholders and improve their understanding of project progress. Additionally, it involves encouraging active engagement and participation from stakeholder communities through various means such as workshops. It is essential to ensure the successful dissemination of the project to achieve a sustainable and impactful outcome.

Cooperation with other projects and networking through partnerships with various platforms and associations is significant for the success of the BioTheRoS project. With its focus on accelerating sustainable biofuel production through thermochemical conversion technologies, BioTheRoS recognizes the need to collaborate with key players on both European and global scales. By leveraging the expertise and resources of technological and social specialists, renewable energy associations, and industrial stakeholders, the project aims to develop a comprehensive approach that addresses critical challenges in biofuel scaling and commercialization. Therefore, BioTheRoS is committed to establishing close collaboration links with well-known entities. In addition to building alliances with organizations such as ETIP Bioenergy and Technology Cooperation Programs (TCPs) within the International Energy Agency (IEA), the project collaborates with sister project ICARUS¹ and other similar projects to promote SAF innovations. Recognizing the importance of staying informed of the latest industry trends, project partners actively participate in relevant webinars to explore new technologies and seek potential collaborations. The table below shows the webinars to which partners are invited. Furthermore, to maximize reach and engagement, these webinars are promoted through the project's extensive social media network, enabling valuable insights and opportunities to be shared with a wider audience. Through these collaborative efforts and knowledge sharing initiatives, BioTheRoS aims to accelerate advances in sustainable biofuel production and contribute to a more sustainable future for the aviation industry.

¹ [Homepage - ICARUS BIOJET \(icarus-biojet.eu\)](https://icarus-biojet.eu)

Table 4: Invited Webinars

Date	Event title	Location	Link to event
17.01.2024	LCB forum webinar: Walk through over the whole value chain of HEFA-SAF from field to check-in	Online	LCBF 3rd meeting online - LCB-Forum
18.01.2024	GreenMeUp project webinar: Biomethane dynamics in emerging European markets	Online	Biomethane dynamics in emerging European Markets – GreenMeUp first webinar – GreenMeUP (greenmeup-project.eu)
04.04.2024	Airports & Sustainable Aviation Fuel: Opportunities from SAF Certification	Online	Advanced BioFuels USA – Airports & Sustainable Aviation Fuel: Opportunities from SAF Certification -- - April 4, 2024 --- ONLINE
11.04.2024	Putting a Price on Sustainable Aviation Fuel	Online	SAF Magazine's Webinar Series (bbimagazines.com)

The project consortium will consistently report the main findings and progress achieved through deliverables and reports. These outcomes will be disseminated continuously using various channels to enhance dissemination and impact, detailing the project's underlying theory, concept, progress, and meaningful results through the project website, social media platforms, and informative flyer. Following tools are being used for the project’s dissemination activities.

Publications

This activity involves sharing findings through academic review. Publications can take the form of peer-reviewed articles, whereby researchers prepare manuscripts, submit them to relevant journals, undergo peer review, revise based on feedback, and ultimately publish their work. Another form that has been considered is conference proceedings. Since the project will be presented at conferences, it will also generate proceedings as a scientific outcome of its presence.

As the project is currently in its initial stages, no publications have yet been produced. However, as the research progresses and data is collected, the project team anticipates generating a variety of publications to share their findings with the wider academic community and contribute to ongoing discussions in the field. Publications will eventually enhance visibility, credibility, and contributes to advancing knowledge in the project field.

Participation to conferences and other events

Consortium members are engaged to actively participate in national and international events and conferences related to the project scope. They will not only attend but also contribute in various ways, including oral presentations and poster sessions. By sharing their research findings, insights and experiences at these events, they aim to foster collaboration, exchange ideas and disseminate knowledge to a wider audience, thus enriching the project's public discourse.

Table 5 illustrates the conferences and events where the project is represented or planned to be represented.

Table 5: BioTheRoS Event Participations

Event title	Date	Location	Material presented	Partner	Status
IEA Bioenergy Technology Collaboration Programme Task 39 Meeting	October 2023	Leipzig/Germany	Project presentation	BEST	Participated
European Biomass Conference ²	June 2024	Marseille/France	Poster presentation	CERTH	Participation confirmed
BBEST - IEA Bioenergy Conference ³	October 2024	São Paulo/Brazil	Joint presentation with sister project ICARUS	BEST, WIP	Participation confirmed

Workshops

Workshops will be conducted with relevant networks to facilitate information exchange and discussion on identified topics and shared elements related to the technological work packages. Each network will host at least one workshop dedicated to exchanging information and sharing results. A notable collaboration initiative will involve a joint workshop focusing on market dynamics across all transport sectors (shipping, aviation, road transport).

² [EUBCE 2024 | 32nd European Biomass Conference and Exhibition – European Biomass Conference and Exhibition](#)

³ [BBEST & IEA Bioenergy Conference 2024 \(bbest-ieabioenergy.org\)](#)

To date, one technical workshop⁴ has been organized: *Scaling Biofuels into Thermochemical Futures*. The aim of this workshop was to foster interaction and collaboration between industry experts and our project team. During the event, participants engaged in dynamic discussions and workshops aimed at fostering collaboration. Valuable perspectives from industry leaders and project experts were gained, providing insights into overcoming barriers in the biofuel production process. Networking opportunities allowed participants to connect with like-minded professionals and expand their networks within the biomass and biofuel sectors.

All stakeholder groups were invited through a LinkedIn campaign, reaching a wide audience and ensuring comprehensive representation. Additionally, a dedicated blog article was published via the project website, providing further details and insights. This multi-channel approach aimed to maximize engagement and participation from diverse stakeholders, fostering a collaborative environment conducive to the project's objectives. The workshop took place in a hybrid format, meaning that both online and on-site participation was possible. There were 27 participants in total. Below a picture from the workshop and the agenda is illustrated.

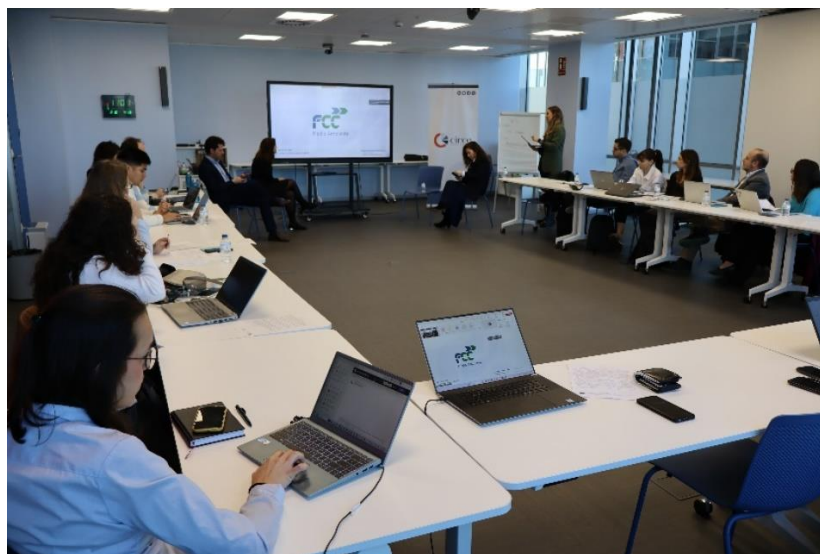


Photo 1: Project's First Technical Workshop

⁴ [EVENTS: Workshop-Scaling Biofuels Into Thermochemical Futures - www.biotheros.eu](https://www.biotheros.eu)



March 13 th , 2024 - Hybrid event	
SCALING BIOFUELS	
Into Thermochemical Futures	
Parque Empresarial Dinamiza, Avenida Ranillas, Edificio 5A, Planta Baja, 50018, Zaragoza, Spain	
09:30	INTRODUCTION: BIOTHEOS OVERVIEW (CERTH)
09:45	TOPIC 1: FEEDSTOCK (MODERATOR: CIRCE)
CIRCE	Project partner - Research Centre
MAGNON	Supplier of biomass in Spain
COGERSA (Online)	Waste manager
FCC MEDIO AMBIENTE	Waste manager
Bioplat/Biocirc	Nacional Association
ALL	Round table discussion
10:50	TOPIC 2: BIOFUEL (MODERATORS: BEST, BTG)
BEST	Project partner - KI Competence Centre
BTG (Online)	Project partner - High-tech SME
CERTH	Project coordinator - Research Centre
REPSOL	Biofuel producer
Bioenergy Europe (Online)	Europe Association
ALL	Round table discussion
WIP	Project partner - Renewable Energy consultancy
CERTH & CIRCE	Wrap up and conclusions
12:00	NETWORKING AND COFFEE
Hosted by:	Organized by:
	
Sign up to the event here:	
<p>For more information, please get in touch with CIRCE - Technological center (+34) 978 97 68 59 circe@circe.es</p> <p>The BioTheRoS Project has received funding from the European Union's Horizon Europe research and innovation programme under Grant Agreement 101122212</p>	

Figure 1: Workshop agenda

Project videos

To further enhance public awareness of the project's benefits, an animated introductory video will be launched during the middle phases of the project. This video will serve as a comprehensive overview, effectively conveying the project's concept, fundamentals, and advantages for both the environment and the socioeconomic domain in an engaging and visually appealing manner.

Additionally, as the project progresses towards its conclusion, a promotional video will be produced to highlight the scientific-technical developments achieved and outline the potential exploitation of the project results. By utilizing these multimedia approaches, the project aims to reach a broader audience and effectively communicate its impact and potential contributions.

Communication Activities

Project's communication activities refer to the planned and organized efforts undertaken to convey information, updates, and key messages related to the project to its stakeholders, audience, or the general public. The aim is to ensure transparency, foster engagement, disseminate project progress, and maintain

effective collaboration among stakeholders throughout the project's lifecycle. Communication activities are as follows:

Project website

The project website has been published at an early phase of the project: www.biotheros.eu

The original language of the website is English, including the translations into project partners' local languages (namely GR, NL, DE, ES).

The website covers the following sections:

- Home
- About the Project
 - Meet the Partners
- Project Outputs
 - Public Deliverables
 - Scientific Publications
- Events & News
- Contact

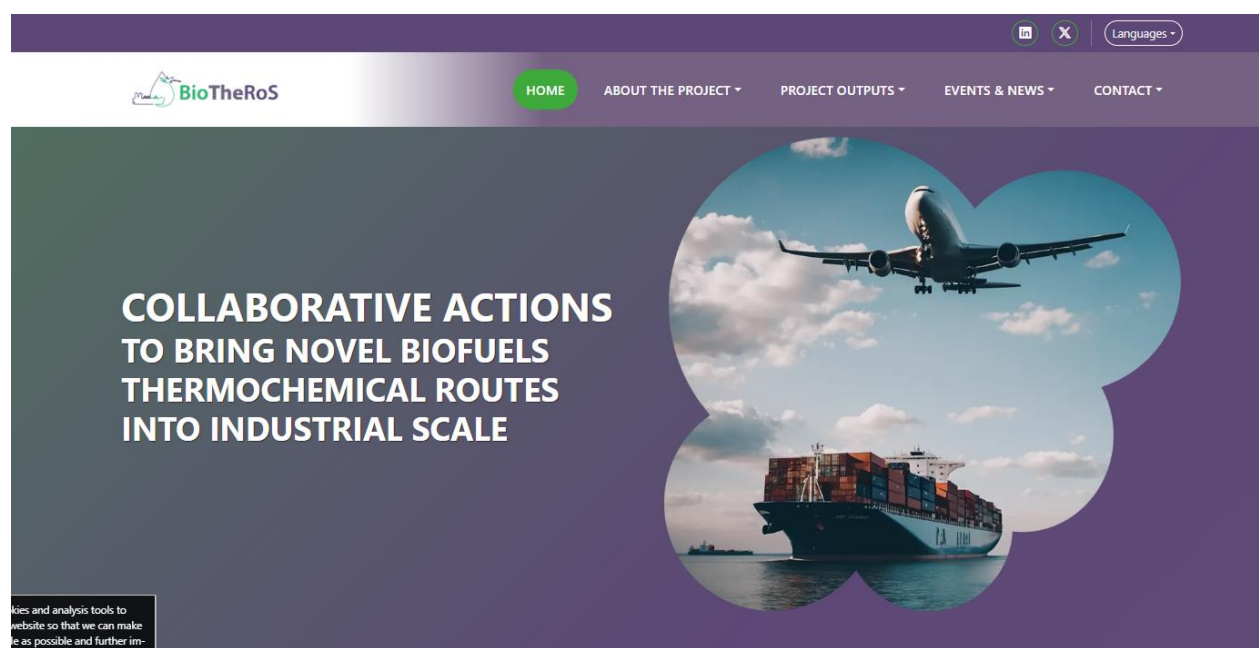


Figure 2: BioTheRoS project website

The website being monitored and regularly updated with news, events, technological developments, possible impacts for interested parties, and other dissemination activities. The website will incorporate a dedicated section specifically showcasing the outcomes of Task 7.3: Creation of a network for knowledge

sharing led by BEST and WIP. It includes searching and collating relevant information, publications, reports, and papers from various sources, including international and European networks, research projects, and databases. The objective is to create a comprehensive database that amalgamates knowledge from international projects and research networks, with a focus on highlighting European industry. This database will be accessible through a dedicated subpage on the BioTheRoS project website, featuring clustered topics and a search function with filters for easy navigation. This integration enhances the project's accessibility and facilitates information dissemination to stakeholders.

Website will remain operational for at least two years after the project completion.

The number of visitors since the launch of the website is approximately **200**. More information about the website can be found in project report: *D8.6 Definition of Project Branding*.

Project flyer

The project flyer has been developed to explain the concept and objectives of the project. It serves as a promotional tool to generate interest and awareness about the project among stakeholders, potential collaborators, and the general public. Flyer provides essential information about the project's purpose, objectives, and potential impact in a visually appealing format, making it easy for readers to grasp the key points at a glance. The section "About the Project" includes a brief introduction outlining the background, purpose, and scope of the project. This section aims to give readers a clear understanding of what the project entails and its significance.

The “Objectives” section is outlined in a separate section, briefly listing the main goals that the project aims to achieve. Each objective is described in a clear and concise manner, highlighting the specific outcomes or milestones that the project intends to accomplish.

The design reflects BioTheRoS’ color code and includes relevant images and project partners’ logos.



Figure 3 Project flyer

Social media engagement

LinkedIn and X are being used as the project’s social media channels.

The LinkedIn page ([BioTheRoS EU Project: Overview | LinkedIn](#)) was established for BioTheRoS, aimed at fostering ongoing discussion and collaboration regarding stakeholder groups. This platform serves as a hub for sharing and discussing project updates, as well as news from related projects, academic circles, and industry professionals. The goal is to capitalize on collaborative opportunities, offer reliable information, and establish BioTheRoS as a leading resource for bioenergy advancements on LinkedIn. The page, managed by WIP, invites consortium partners to join and extend invitations to their networks. Moreover, a link to the group is provided on the project website to enable wider stakeholder participation. Additionally, partners are encouraged to share project updates via their personal accounts to maximize outreach. The page is open to the public, allowing anyone to follow and stay informed about BioTheRoS developments.

Currently there are **166** followers on LinkedIn. On average the number of organic impressions per post is around **350**.

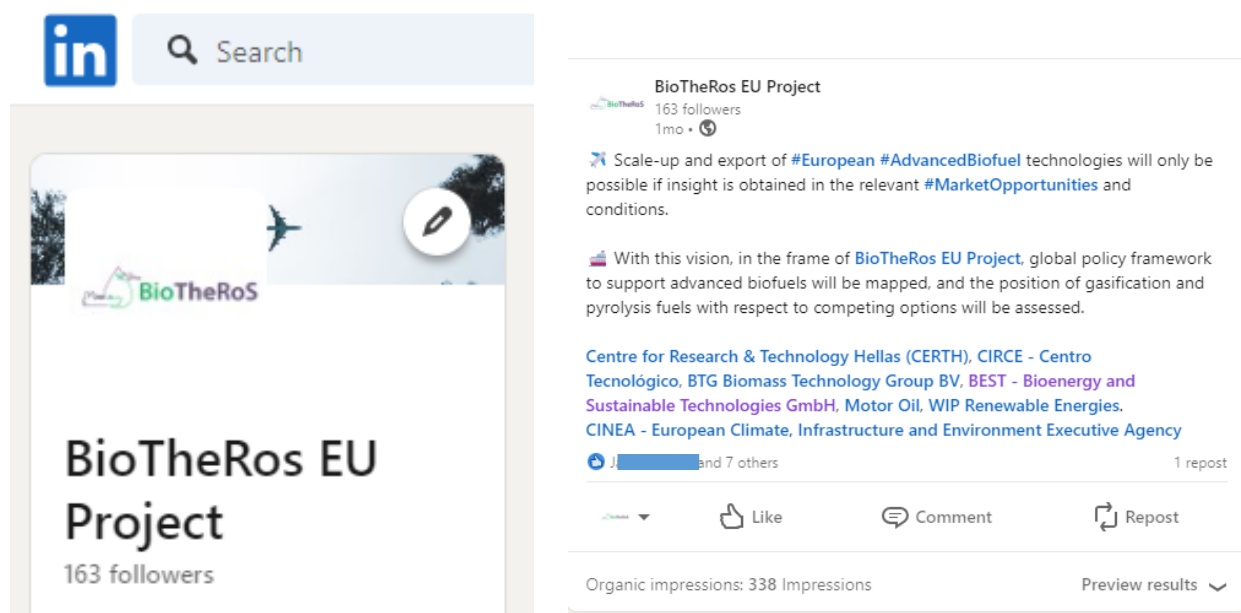


Figure 4: Project LinkedIn page

BioTheRoS is also being promoted through X ([BioTheRos EU Project \(@biotheros_eu\) / X \(twitter.com\)](https://twitter.com/biotheros_eu)). Greater dissemination impact is achieved when consortium partners tweet about the BioTheRoS project from their organization and/or personal accounts. Additional hashtags such as #bioenergy, #renewables, or #SAF may be included depending on the tweet's specific message or target audience. Tweets can also be directed to other X accounts by including their handles, engaging individuals and organizations beyond the consortium. Attaching images to tweets enhances engagement, and partners are encouraged to tag WIP and other partners for retweeting and broader outreach. When using visuals, it's essential to have the necessary credentials and provide proper credit. Additionally, incorporating the project logo into visuals can further reinforce project branding.

To date, the number of followers in X is **19**. The average view per post is approximately **50**.

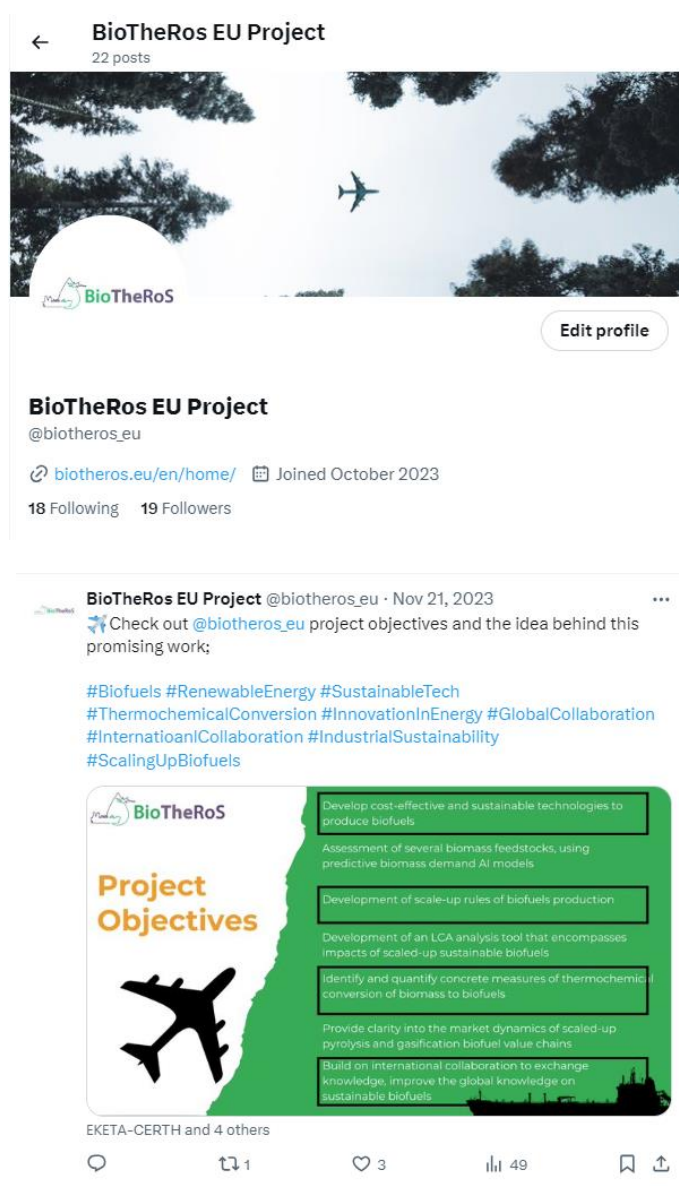


Figure 5: Project X page

E-newsletters

An online newsletter is being published every 6 months. The aim of the project e-newsletter is to publish timely updates, progress reports, and relevant information regarding the project to stakeholders, and interested parties. It serves as a communication tool to keep all involved parties informed, aligned, and engaged throughout the duration of the project. Additionally, it helps to foster transparency, collaboration, and accountability, ultimately contributing to the success and smooth realization of the project.

The first newsletter was made available to public by M6. Newsletters are distributed through LinkedIn newsletter feature. LinkedIn's newsletter tool serves as an effective communication channel due to its integration within the professional networking platform. With easy discoverability and potential promotion, LinkedIn newsletters gain visibility beyond immediate connections. Engagement tools foster discussions and networking opportunities, while analytics provide insights for content optimization. Integration with other LinkedIn features further extends reach and engagement possibilities.

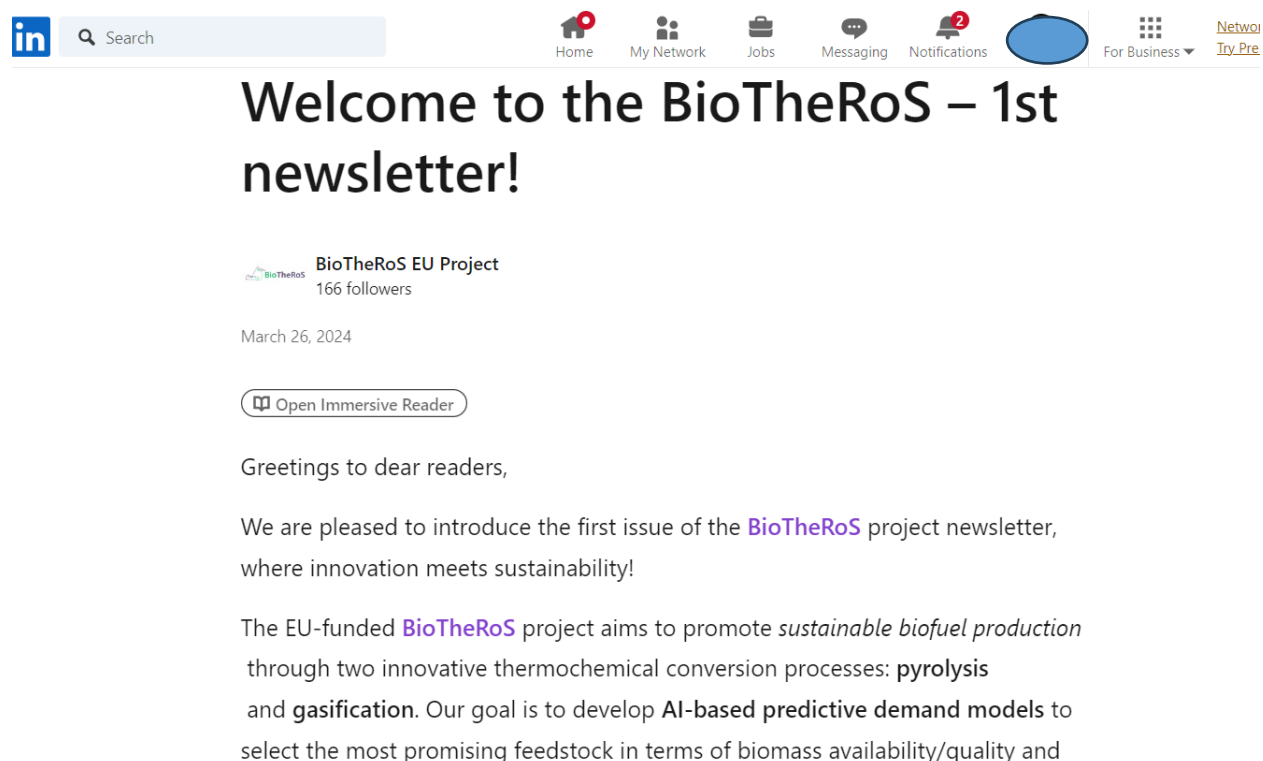


Figure 6: Project 1st newsletter

The first newsletter is also available on BioTheRoS website⁵.

⁵[NEWS: Check out the first newsletter! - www.biotheros.eu](https://www.biotheros.eu)

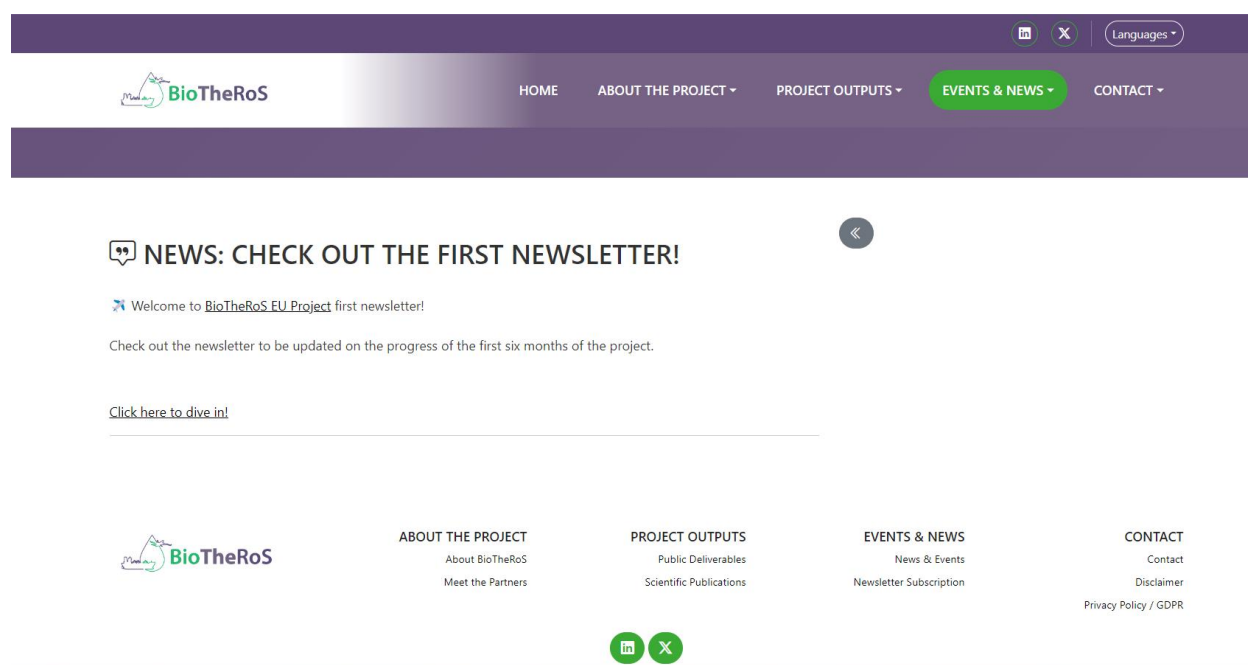


Figure 7: Website news about the project newsletter

Press releases

To date, the project has issued only one press release to officially commence activities and engage with interested parties. This press release introduces the project's background, partners, and provides links to BioTheRoS' social media channels, as well as contact information for the project coordinator.

The aim of the press release is to generate publicity, awareness, and interest in BioTheRoS by announcing important milestones, achievements, or newsworthy events related to the project. It serves as a means to communicate key information to the media, stakeholders, and the public, with the goal of garnering media coverage, attracting attention, and shaping public perception. Additionally, it can help to establish credibility, build momentum, and support marketing efforts associated with the project.

The initial press release, displayed below, was distributed through the social media platforms^{6,7} and project website⁸:

⁶ <https://www.linkedin.com/feed/update/urn:li:activity:7130940777383288832>

⁷ [BioTheRos EU Project on X: "✈️"](#)

⁸ [NEWS: Kick-Off BioTheRoS - www.biotheros.eu](#)

PRESS RELEASE

18 October 2023

BioTheRos – Collaborative actions to bring novel BIOfuels THERmochemical ROUTes into industrial Scale

The EU-funded BioTheRos project (upcoming website: biotheros.eu) has officially started in October 2023, and the project's first consortium get-together is scheduled to take place during its kick-off meeting on the 18th of October in the beautiful city of Athens.

Background

Reducing emissions and promoting sustainability is of critical importance to the EU transportation sector. While other sectors are lowering greenhouse gas (GHG) emissions, transportation is still exceeding 1990 levels, making up 22% of Europe's GHG emissions. To meet mid-century goals, transportation must cut GHG emissions by at least 60%.


To achieve EU climate and renewable energy targets, urgent action is needed to boost renewable energy sources in aviation and shipping. Sustainable biofuels, especially from lignocellulosic biomass, are viewed as crucial for decarbonization and can be easily integrated into existing infrastructure. However, today most sustainable biofuels come from limited waste feedstocks. Thus, scaling up lignocellulosic biomass conversion technologies for the production of advanced biofuels is essential, and best practices are necessary to overcome technical and non-technical obstacles and promote sustainable biofuel adoption worldwide.

BioTheRos Project

Through the use of thermochemical conversion technologies, the BioTheRos Project aims to develop a comprehensive approach that will accelerate the production of sustainable biofuels. The project will bring together important players on a European and global scale, including technological and social specialists, associations focused on renewable energy, and industrial stakeholders. For the scaling up and commercialization of biofuels, international cooperation is of large importance as several projects and initiatives already exist on global level. Thus, BioTheRos will establish close collaboration links with ETIP Bioenergy and Technology Collaboration Programmes (TCPs) within the International Energy Agency (IEA).

The assessment of current pre-treatment technologies and the availability of biomass feedstocks is the first step of the BioTheRos concept. Using predictive AI models for biomass demand, potential globally abundant biomass feedstocks suited for sustainable pyrolysis and gasification biofuel value chains will be selected. Pilot experimental validation of pyrolysis and gasification value chains will be implemented. Despite the differences between these technologies, the project anticipates synergies by using a multidisciplinary stepwise approach that includes feedstock selection, pilot experimental validation, as well as simulation and modelling for scale-up.

Furthermore, market dynamics will be evaluated by calculating the energy demand for renewable fuels in 2030, determining the applicability and costs of renewable fuels for each transport sector, performing a high-level analysis of the availability of renewable fuels, and

 BioTheRos has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement no. 101122212

developing a set of fuel mixtures for the three transport sectors (marine, road, and aviation), taking into account demand for renewable energy outside the transport sector.

The BioTheRos project is coordinated by CERTH and the project consortium comprises 6 partners from 5 countries: Greece, Netherlands, Spain, Germany and Austria. As we work toward establishing a more circular and sustainable approach to the transportation sector, we are happy to launch the project and share our efforts and findings with you.

Follow us on [LinkedIn](https://www.linkedin.com/company/biotheros) and [X \(Twitter\)](https://twitter.com/biotheros) to stay tuned!



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Figure 8: Project press release

Other Media Presence

Besides all the above-mentioned efforts, BioTheRoS is also represented in various articles and newsletters. These appearances serve as vital channels that bring the project to a wider audience and showcase its importance on an international stage. For a project that relies on promoting international cooperation as one of its aims, such representation is of paramount importance. It not only increases visibility, but also reinforces the importance of BioTheRoS in the global drive for sustainable energy solutions. By being featured in various articles, BioTheRoS not only shares its progress and achievements, but also invites stakeholders across borders to collaborate and partner. This exchange of ideas and experiences plays a fundamental role in advancing the project's goals, ensuring that the journey towards sustainable biofuel production is a collaborative effort embraced by a recognized by the global community.

Until the sixth month BioTheRoS was featured in the articles and channels detailed table below.

Table 6: Project Presence in Other Media

Material presented	Type of media	Link	Responsible partner
Project press release	News blog	BioTheRos-pressrelease_october2023.pdf (wip-munich.de)	WIP
General project information	EERA Bioenergy Newsletter	eebionews_20_autumn_winter2023.pdf (eera-bioenergy.eu)	WIP
Project kick-off	Company newsletter	WIP MUNICH (wip-munich.de)	WIP
Project website	Company newsletter	WIP MUNICH (wip-munich.de)	WIP
Project kick-off	Company news	BEST news (best-research.eu)	BEST
Project description	Newsletter	IEA Bioenergy Task 39 Newsletter Issue 64	BEST

Similar presences will continue to exist in the future, and further collaboration opportunities will be pursued.

Planning of Communication and Dissemination Activities

Communication and dissemination activities play a pivotal role in maximizing the project’s impact. Hence, the active involvement of all partners is crucial for effectively communicating and disseminating the project's outcomes. The responsibility for spearheading measures to maximize BioTheRoS impact falls under WIP's leadership as the WP8 leader. To ensure the achievement of targeted outcomes and key performance indicators related to dissemination and communication efforts, it is imperative to meticulously plan and decide on the execution of these activities well in advance.

In this regard, WIP has initiated the creation of a collaborative spreadsheet to monitor and track each partner's dissemination efforts. Through regular prompts and updates on this spreadsheet, WIP monitors the dissemination efforts undertaken by partners, including their participation in conferences and events. This valuable information equips WIP to strategize effectively for the future based on the insights provided by partners.

Furthermore, comprehensive data on publications, promotional materials, social media engagement, and partners' social media presence is systematically collected with the aid of this collaborative document. Gender balance and equity are integral considerations throughout the project's lifecycle, and as such, they are embedded in all dissemination activities.

BioTheRoS is committed to ensuring that its project results and knowledge contributions are accessible to all segments of society, irrespective of gender. This commitment will be actualized through the utilization of inclusive communication channels such as websites, active participation in international conferences and industrial events, and publication in open-access media platforms. Additionally, a gender-sensitive and inclusive approach will be adopted across all aspects of the project, with a strict adherence to eliminating discriminatory or stereotypical language. Gender balance considerations were meticulously factored into the consortium setup and remain a priority throughout the project's evolution. Ensuring representation of all genders in both project activities and communication materials is important for BioTheRoS overarching objectives.

Project Results Until M6

Within the initial six months of the project, all partners started their activities. The first step of the BioTheRoS concept includes the assessment of current pre-treatment technologies and the availability of biomass feedstocks. Within these efforts, two biomass types will be selected as potential feedstocks for the two thermochemical technologies, i.e., pyrolysis and gasification. A comprehensive review on biomass groups was conducted by CIRCE to align with the requirements of Annex IX of RED II as well as upcoming RED III regulations. Through dedicated discussions with the technologies experts and with the use of detailed questionnaires on appropriate requirements that the biomass should fulfill, particular emphasis was placed on lignocellulosic materials & solid bio-waste. BioTheRoS project targets to determine the most suitable feedstock, able to cover the project needs but also to support the technology upscaling from both the technical and the financial point of view. Ongoing evaluation of the predictive potential of biogenic residues in Europe aims to assess biomass capacity for establishing sustainable supply chains and facilitating the operation of efficient full-scale gasification and pyrolysis plants. Selection criteria encompass technical requirements to ensure smooth and efficient process, market requirements to advance technology readiness levels towards commercialization, and environmental consideration to comply with EU biofuels policies, particularly emphasizing biogenic residues-based (and non-food) biofuels as outlined in the RED II Directive. To this context, forest residues are selected as the initial biomass feedstock, with plans to select a second biomass type in the upcoming months.

BTG, responsible for validating the pyrolysis value chain, conducted initial experiments on forest residues to determine material properties and evaluate its potential use in the pyrolysis processes. The samples were characterized for their calorific, ash and moisture content, for their carbon, oxygen, hydrogen,

nitrogen and sulfur concentration by means of proximate and ultimate analysis as well as the major and the minor elements were determined. The findings showed that forest residues have the required properties, with corresponding high energy efficiency. The first fast pyrolysis tests have also been configured at bench-scale at a capacity of 2-4 kg/h of biomass feedstock. On the other hand, BEST, leading the gasification value chain, identified key technical constraints considering the scale-up of the process, particularly in the Dual Fluidized Bed steam gasification and gas cleaning systems. Gasification process operation, with forest residues as feedstock, is scheduled within the next months for the production of FT-raw product.

The impact assessment (led by CERTH) as well as the market dynamics and techno-economic feasibility of the BioTheRoS proposed pathways (led by BTG) are in progress. Specific focus is given on the thorough determination of the entire use cases, considering plant capacity and location of the scenarios in scale-up approach. Within the next months, the first business use cases will be defined and the overall life cycle framework development is expected. Furthermore, partners conduct a thorough review on EU-level and global legislation (EU27, Brazil, India, USA/Canada) and initiatives on sustainable biofuels in the maritime and aviation sectors (CORSIA, IMO). Within these efforts, the target is to build a comprehensive overview of sustainable biofuels demand per region in the next months.

International cooperation and network development (led by BEST) as well as dissemination and communication activities (led by WIP) are in constant progress. These efforts involve engaging with network leaders, conducting project presentation and providing regular social media updates to enhance project visibility and outreach of the project.

Targeted Activities in Demonstration Countries

Two demos are placed in the countries of Austria and the Netherlands, within the scope of BioTheRoS project;

- BTG - Biomass Technology Group⁹

Several test facilities, ranging from lab-scale to pilot plant, are available at BTG. With specific focus on the fast pyrolysis technology, BTG has a bench-scale (2-5 kg/h) and pilot scale (100 – 150 kg/h) fast pyrolysis units are available.

⁹ For more information about BTG facilities <https://www.btgworld.com/en/rtd/facilities/>

- BEST - Bioenergy and Sustainable Technologies GmbH¹⁰

BEST operates a lab-, pilot-, and demonstration- scale infrastructure at the Syngas Platform Vienna. With specific focus on the BioTheRoS project, BEST facilities include, (i) 1 MW Dual Fluidized Bed gasifier, (ii) 250 kW Fischer Tropsch synthesis demo and (iii) a connected laboratory supplied with real syngas for gas cleaning and upgrading.

¹⁰ For more information about BEST facilities https://www.best-research.eu/content/en/competence_areas/biorefineries/syngasplatform_technologies