



FlexSNG

Deliverable D9.2

# Communication and Dissemination Plan and periodic updates – UPDATE M18

Dissemination level: Public

Date: 22/11/2022

Grant Agreement (GA) No. 101022432  
Research and Innovation Actions (RIA) project  
Granted by: Climate, Infrastructure and Environment Executive Agency (CINEA)



This project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No. 101022432 and the Government of Canada's New Frontiers in Research Fund (NFRF) and the Fonds de recherche du Québec (FRQ).



## Document Control Sheet

Project	FlexSNG - Flexible Production of Synthetic Natural Gas and Biochar via Gasification of Biomass and Waste Feedstocks		
Call/Topic	International cooperation with Canada on advanced biofuels and bioenergy		
Type of action	Research and Innovation Action (RIA)		
Grant Agreement No	101022432		
Start date	01/06/2021	Duration	36 Months
Project Coordinator	VTT Technical Research Centre of Finland Ltd - VTT		

Work Package No	WP9	Task No	Task 9.1
Due date (in months)	M18		
Actual submission date	22.11.2022		

Lead Beneficiary	ETA-Florence Renewable Energies - ETA		
Contributor(s)	VTT		
Dissemination level	Public	x	
	Confidential, only for members of the consortium (including the Commission services)		

## Revision History

Date	Version	Modification	Author(s)
14/11/2022	0.1	Initial file	Emma Fromant (ETA)
18/11/2022	0.2	Updated file	Emma Fromant (ETA)
22/11/2022	0.3	Minor modifications, final approval	Sanna Tuomi (VTT)

## Disclaimer

The content of this report reflects only the authors' view. The European Climate, Infrastructure and Environment Executive Agency (CINEA) and European Commission are not responsible for any use that may be made of the information it contains.

## Table of Contents

1. Executive Summary.....	4
2. Introduction .....	5
2.1 Objectives and definitions.....	5
2.2 Target audience.....	6
2.3 Key messages .....	8
3. Tools for dissemination and communication .....	9
3.1 Visual identity and branding material.....	10
3.1.1 Visual identity and branding material – UPDATE M18 .....	11
3.2 Website and social media channels.....	11
3.2.1 Website and social media channels - UPDATE M18 .....	13
3.3 Digital newsletter .....	13
3.3.1 Newsletters - UPDATE M18 .....	14
3.4 Press releases .....	14
3.4.1 Press releases - UPDATE M18.....	14
3.5 Conferences and workshops .....	14
3.5.1 Conferences and workshops – UPDATE M18 .....	15
3.6 Webinars and videos.....	16
3.6.1 Webinars and videos – UPDATE M18 .....	16
3.7 Publications .....	17
3.7.1 Publications – UPDATE M18 .....	17
3.8 Clustering activities .....	21
3.8.1 Clustering activities – UPDATE M18.....	21
3.9 Participation in the “Open Research Data Pilot in Horizon 2020” .....	21
3.9.1 ORDP - UPDATE M18.....	21
4. Strategy for communication and dissemination activities.....	22
4.1 Strategy - UPDATE M18.....	26
5. Conclusions .....	26
6. Acknowledgements .....	27
Annex I – Preliminary Stakeholders List .....	28
Annex II – Updated Stakeholders.....	31

## 1. Executive Summary

FlexSNG (Flexible Production of Synthetic Natural Gas and Biochar via Gasification of Biomass and Waste Feedstocks) is an EU-Canada jointly funded project with a target of developing a gasification-based process for flexible production of pipeline-quality biomethane, high-value biochar and renewable heat from a wide variety of locally sourced, low-quality biomass residues and biogenic waste feedstocks. Through feedstock supply chain optimization and owing to the novel features of the gasification process, FlexSNG will allow to sensibly reduce both feedstock supply costs and the overall conversion costs. This way the project will attempt to tackle one of the most pressing challenges in the field of energy and environment for today's Europe, especially considering the agenda for the transition towards climate neutrality by 2050.

This report contains the FlexSNG Communication and Dissemination Plan (D9.2 – Communication & Dissemination Plan and periodic updates), which has been designed as a practical tool for efficiently implementing communication and dissemination activities to support the achievement of the project objectives through different platforms, ranging from social networks to online conferences and more. Regarding the exploitation of the FlexSNG project, the project coordinator VTT will provide three Exploitation Plans in M3, M18 and M36 where the expected outcomes of the project and the potential paths for exploitation will be presented.

FlexSNG is a project that brings together heterogeneous partners with different approaches to communication and information and in order to achieve the best possible development of the project, coordination and collaboration among the partners is needed. In this sense, this Communication and Dissemination Plan represents an essential guide that provides a common framework for all the dissemination and communication activities of FlexSNG.

M18 Update: This updated report includes an updated plan of communication and dissemination activities for the final 18 months of the project. It includes more details of planned events, publications and webinars. Annex II provides a summary of a new updated stakeholders list, however for confidentiality reasons the details cannot be published in this public deliverable.

## 2. Introduction

The Communication and Dissemination Plan (C&DP) has been elaborated considering stakeholders' categories and needs, as well as partners' communication channels and tools. In this sense, it represents a supporting tool for the individual partners in maximizing the impact of their dissemination actions while providing the appropriate means to ensure efficient visibility of the activities and outputs of the project as a whole.

The active involvement of stakeholders and target groups is one among the key success factors of the FlexSNG project. This plan proposes a list of suitable dissemination tools and activities for engaging the target groups in the project. To that end, a multi-step and multi-channel dissemination strategy is proposed in order to maximize the impact of the dissemination, adjusting the materials and tools to the specific needs, interests and potential for involvement of the target audience.

The consortium considers this Plan as a living document, reflecting an open, ongoing dialogue with potential users and related networks during the project, with the aim of guaranteeing the very best outcome possible after the previewed 36 months, but also after the life of FlexSNG. The C&DP will be updated twice during the project (M18 & M36).

The Communication and Dissemination Plan (deliverable D9.2) is also closely related to other WP9 deliverables, namely the "Project website established and social media launched" (deliverable D9.3), the "First e-newsletter and promotion leaflet" (deliverable D9.4), the "Report and a short dissemination video of the first ITW" (deliverable D9.6) and the "Report and a short dissemination video of the second ITW" (deliverable D9.7).

### 2.1 Objectives and definitions

The Communication and Dissemination Plan (C&DP) aims at defining an effective long-term strategy to pursue the following objectives:

- Raising awareness on the FlexSNG project and stimulating interest among all stakeholders.
- Disseminating the results of the project and transferring the knowledge generated by the project to relevant stakeholders.
- Facilitating the exploitation of the project's foreground.
- Ensuring the achievement of impact after the end of the project.

In the context of this document and the related activities, we consider the following definitions for communication, dissemination, and exploitation<sup>1</sup>.

Communication means taking strategic and targeted measures to promote the project itself and its results to a multitude of audiences, including the media and the public and possibly engaging in a two-way exchange. The aim is to reach out to society as a whole and to some

---

<sup>1</sup> Official links: [http://ec.europa.eu/research/participants/portal/desktop/en/support/reference\\_terms.html](http://ec.europa.eu/research/participants/portal/desktop/en/support/reference_terms.html)  
[http://ec.europa.eu/research/participants/data/ref/h2020/other/events/2017-03-01/8\\_result-dissemination-exploitation.pdf](http://ec.europa.eu/research/participants/data/ref/h2020/other/events/2017-03-01/8_result-dissemination-exploitation.pdf)

specific audiences while demonstrating how EU funding contributes to tackling societal challenges.

Dissemination is the public disclosure of the results of the project in any medium. It is an active process of promotion and awareness-raising that starts from the beginning of a project. It makes research results known to various stakeholder groups in a targeted way, to enable them to use the results in their own work. Dissemination helps to enable the transfer of knowledge and results to the ones that can best make use of it. It helps to maximize the impact of research, enabling the value of results to be potentially wider than the original focus and preventing the loss of results.

Exploitation is the use of the results during and after the project's implementation. It can be for commercial purposes but also for improving policies, and for tackling economic and societal problems.

Results are any tangible or intangible outputs of the action, such as data, knowledge, and information whatever their form or nature, whether they can be protected or not.

The Communication and Dissemination Plan represents an essential tool to guide the activities of the project consortium throughout the lifetime of the project and beyond. It is a living document that will be updated annually with the contribution of all partners. Two official updates will be provided to the Commission in M18 and M36.

The strategy for dissemination and communication is structured following these principles:

- Identifying the relevant target audience: whom does the project want to speak to?
- Defining clear messages: what messages does the project want to convey to its audience? And why?
- Identifying means and tools: how and when will those messages be conveyed to the relevant audience?
- Defining a period plan of dissemination and communication activities.

The communication activities take place in the initial phase of FlexSNG and include developing the visual identity, the early-stage materials, and tools such as brochures, leaflets, rollups, and the initial website tools. These will provide a basis for the dissemination activities that will be developed afterwards and allow to raise awareness and interest in the project already at project start-up. Stefano Capaccioli as the nominated Dissemination Manager (DM) and ETA as WP9 Leader have the overall responsibility for coordinating the dissemination and communication activities of the project as well as keeping the dissemination/communication material up-to-date.

## 2.2 Target audience

The active involvement of all key stakeholders and target groups is one among the main success factors of the FlexSNG project and its successive industrial deployment in the European and Canadian markets. The dissemination of the FlexSNG project and its results will take place at two levels:

- National level – in the Member States where FlexSNG will carry out research, dissemination and promotional activities, namely Finland, Italy, Germany, Denmark, Sweden, Greece, as well as the United Kingdom and Canada.
- EU level – outreaching the whole of the scientific, technology, bio-based industries communities, potential end-users and beneficiaries of the FlexSNG results and services. Outreach of these target groups will also take place through existing platforms (i.e. ETIP Bioenergy platform, EU Sustainable Energy Week – EUSEW, etc.), stakeholders' events and by the networking with other related projects and initiatives (i.e. by IRENA, IEA, etc.) and/or decision makers.

In order to maximise the impact of FlexSNG results both during the project and beyond, all key stakeholder groups, including end consumers, policy makers and key influencers, need to be engaged. The target audience has been categorized into four groups according to their influence and interest in the project as follows (Figure 1):

1. Key players – organizations that have both a high interest in FlexSNG solutions and a high level of influence on the project and follow-on demonstration. These players are engaged to build a relationship for use during and after the project. For example: decision makers within the participating industrial companies and members of the Industrial Advisory Board (IAB), energy and environmental authorities (local, national, EU), potential financial bodies for demo plants, technology and equipment providers, selected companies from heat, power and gas industry, chemical industries and companies with a clear policy towards renewable energy and/or fuels, feedstock providers from the agro-forestry sector and municipalities (wastes).
2. Defenders – organizations that have a high interest in FlexSNG but lack high level of influence on the project or its follow-on industrial demonstration phase. These entities will be regularly informed to keep their interest active. For example: European Natural Gas Vehicle Association, engineering and consulting companies from different industrial sectors, representatives from the energy, material and agricultural sectors as potential users of biochar as well as selected representatives of the transport sector as potential users of bio-SNG (maritime and heavy-duty road transport).
3. Context setters – organizations that have a high level of influence in the context of renewable energy and fuels, but a low interest in FlexSNG. Communication with this stakeholder group aims at increasing their interests towards the project by providing information on the potential benefits of FlexSNG. For example: Biogas and Bioenergy Associations, European Biofuels Technology Platform, Waste-to-Energy Research and Technology Council, and the scientific community.
4. Bystanders – organizations that have low or no decisive role in the initial development or demonstration phase of the FlexSNG project, although they may become relevant at later stages of commercialisation. These entities will receive the lowest priority and intensity in communication. For example: cities and regions in Europe and North America, large multi-national industries in the area of oil refining,

forest energy and chemical industries and the Confederation of European Waste-to-Energy Plants “CEWEP”.

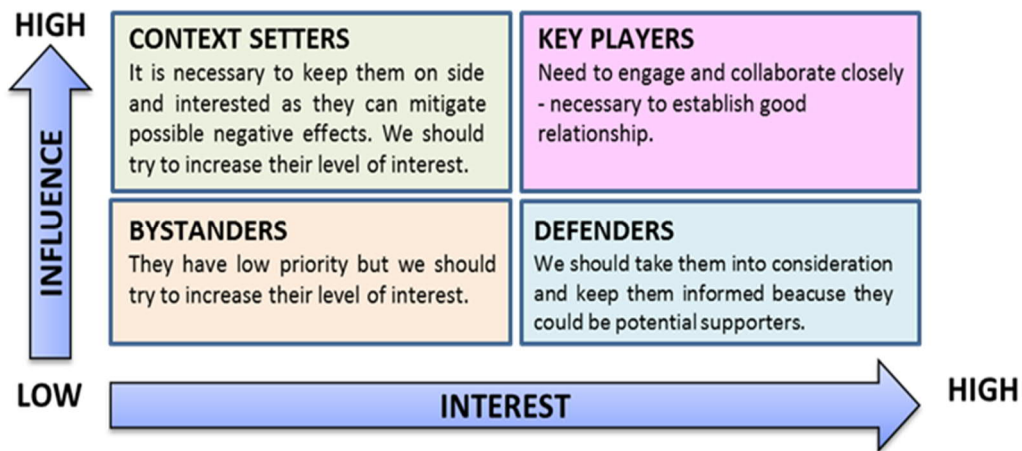


Figure 1. Target group categorisation.

The dissemination and communication actions in the project will be specifically tailored for each of these target groups (see Chapter 4). A more detailed list of key stakeholders that have been identified at the beginning of the project is provided in Annex 1. The list will be updated throughout the project.

The FlexSNG consortium will also coordinate and liaise with other relevant EU and Canadian networks and stakeholders at the policy level on the areas addressed by the project (Waste, Research & Innovation, Renewable Fuels and Bioenergy, and more), thus contributing to the further debate and scientific evidence allowing to scaling-up similar processes of energy (green energy carriers) production into the current and future policy agenda, specifically the Renewable fuels and Bioenergy strategies at EU level.

### 2.3 Key messages

The FlexSNG consortium has already defined some of the key messages that it wishes to convey to the scientific community, general public and key stakeholders. These messages form the base for the elaboration of all the dissemination and communication actions during the first year of the project. Further messages can be derived from this initial set, focusing on specific aspects pertaining to the different tasks and activities. Those messages will be complemented and updated regularly with a collaborative discussion involving all the partners. Updates will be provided at least once per year during the project annual meeting or more often if necessary.

Key messages:

1. FlexSNG introduces a novel gasification-based concept for flexible and cost-effective production of biomethane, biochar and renewable heat.
2. The FlexSNG concept has the potential to reduce biomethane production costs by more than 30% compared to state-of-the-art biomass-to-SNG technologies.



3. FlexSNG aims at demonstrating 20% reduction in feedstock supply costs through optimization of the feedstock supply chain, which allows improving the competitiveness of advanced biofuels/bioenergy carriers against fossil fuel alternatives. Feedstock supply chain optimization is carried out using a combination of systems analysis approach and advanced modelling tools.
4. The key innovative technology of FlexSNG is the flexible gasification process that can reach >80% overall efficiency and switch between two operation modes according to market signals: 1) co-production of biomethane, biochar and heat, and 2) maximised production of biomethane and heat.
5. The FlexSNG process is economically viable already in medium scale (50-150 MW feedstock input), which facilitates the use of locally sourced biogenic residues and wastes.
6. The novel gasification process is truly feedstock-flexible being able to convert a wide variety of biomass residues and waste feedstocks into high-value intermediate bioenergy carriers and renewable heat. The process is specifically tailored for processing the more challenging, lower grade feedstocks that are currently poorly utilised.
7. The biochar produced by the FlexSNG process is an easily storable bioenergy carrier that has a wide range of potential end uses, such as in energy production or industrial processes as a substitute for fossil feedstocks or in material applications (activated carbon, soil amendment etc.).
8. The novel low-cost oxygen production technology based on oxygen transport membranes (OTMs) applied in the FlexSNG process allows reducing electricity consumption by 50% compared to the state-of-the-art cryogenic air separation technology and lowering oxygen production costs.
9. The coupling of the gasification process with VESTA methanation enables cost-effective biomethane production already in medium-scale (50-150 MWth), while state-of-the-art SNG technologies would require over 200 MW plant size, which is challenging from the biomass logistics point of view. Unlike its competitors, the VESTA catalytic methanation technology does not require gas recycling and is flexible towards syngas composition, which simplifies the overall gasification process and reduces the CAPEX of the plant.

### 3. Tools for dissemination and communication

The multiplicity of messages and the diversity of target audiences identified above require the utilization of a wide series of dissemination and communication tools in order to ensure that the right message is conveyed to the relevant target audience in the most effective way.

### 3.1 Visual identity and branding material

A visual identity and branding are a crucial part of the FlexSNG communication kit: it will help to clearly identify the project among others thanks to an iconic project logo set and graphics and an effective project website. The official font-family for all Word documents and PowerPoint presentations will be Dubai. The project logo has been confirmed and it is available in multiple high-resolution versions, according to the use partners wish to make or the graphic backgrounds where it is involved. The logo contains the following colours: yellow #E8C912, green #90BC2E, brown #9F7031. The official project logo is depicted in several variations in Figures 2 to 5.



FlexSNG

*Figure 2. Vertical logo.*



FlexSNG

*Figure 3. Horizontal logo.*



*Figure 4. Pictogram.*



*Figure 5. Vector logo on dark background.*

Other basic project dissemination materials include a project leaflet, an introductory slideshow presentation, an introductory poster and roll-up. These materials will be provided for all partners for distribution in events, workshops, and all available opportunities to raise awareness on the project.

### 3.1.1 Visual identity and branding material – UPDATE M18

There is no plan to update the visual identity as the logo and colour scheme have been accepted and widely disseminated. Branded material is progressively being created depending on the need to the consortium. Most recently, a project poster and a roll-up have been designed and used as promotional material at partner’s offices and events (see Figure 6).



Figure 6. Project roll-up (left), Project poster (right).

## 3.2 Website and social media channels

A project website aims to raise awareness about the project’s activities and results achieved. In the initial phase, the website includes static pages information about the project, the partners, the process involved, the foreseen impacts of the project and the public resources produced by the project. These will be gradually complemented by a news section in blog style, which will be updated regularly with more in-depth information about each step of the process, the project’s recent activities or achievements, event announcements and other content provided by all partners. The website will be regularly updated throughout the project and every 6 months a general revision will be performed. The official FlexSNG website is <https://www.flexsng.eu/>. The website will be put online at the project outset by M4. Once published on the website, the contents are then promoted via social media channels (Twitter, LinkedIn and YouTube). Social media accounts have already been created for the FlexSNG project (Figures 7-9) and are available at the following addresses:

- Twitter: <https://twitter.com/flexSNG>

- LinkedIn: <https://www.linkedin.com/company/flexsng-project-h2020/>
- YouTube: <https://www.youtube.com/channel/UCJOP9mHxBq-ikCnuOg79uFg>



Figure 7. Twitter page.

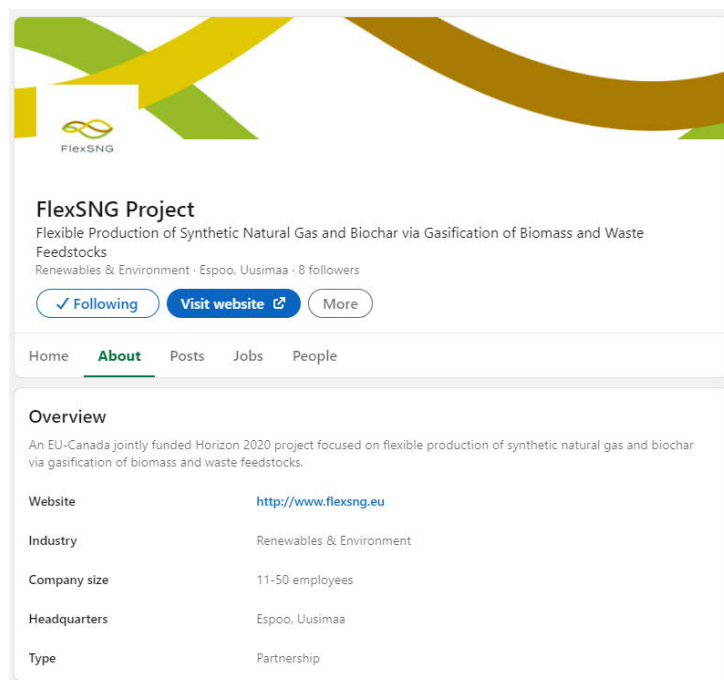


Figure 8. LinkedIn page.

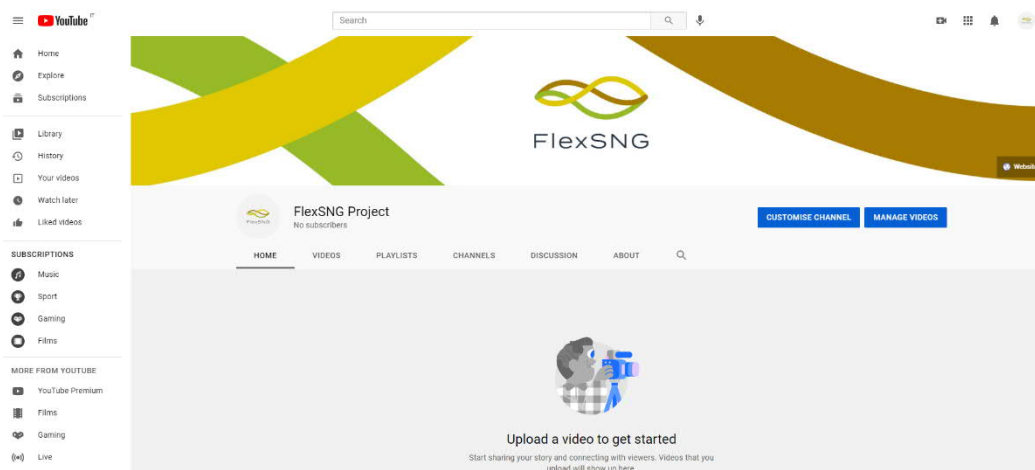


Figure 9. YouTube channel.

### 3.2.1 Website and social media channels - UPDATE M18

The website was published according to schedule by M4 and has since then been regularly updated with new items, such as newsletters, project videos, information and presentation material of Topical Workshops etc. All new content on the website has been promoted through the various FlexSNG social media accounts.

Regarding the FlexSNG social media channels, it is worth noting at this mid-way point of the project that the most successful forms of promotion have been emails to the project and ETA's mailing lists, and through social media, specifically LinkedIn. Therefore going forward it is likely that the projects Twitter page will not be updated as regularly as its impact is a lot smaller than the impact from LinkedIn and direct mailing.

### 3.3 Digital newsletter

Throughout the duration of the project, e-newsletters will be prepared and distributed. Subscription to the newsletter will be voluntary via the website, and a mass mailing system software will be used for management and distribution of the digital newsletters, ensuring the accurate monitoring of the impact of the newsletters. The newsletter will also have its own menu on the official FlexSNG website.

Newsletters will act as a compilation of news, events and information published on the FlexSNG website that will be distributed to all voluntary subscribers. The content will be based upon posts on the website and the information provided by partners on events in which the project is presented. These include key updates on the project development, presentations and workshops, reports, publications, and media interest. Newsletters will be provided in English. In occasion of particular events, special editions (with sections in other languages) will be taken into consideration, for national target groups.

Newsletters will be prepared every 4-6 months (2/3 per year), which will provide a consistent coverage of the activities implemented within the project. They will be mailed to the target audience identified in both Europe and Canada. All FlexSNG partners will be encouraged to forward the newsletter to their contact lists who might be interested in the project.

### 3.3.1 Newsletters - **UPDATE M18**

So far, two full newsletters have been published, with the third to be published in M19. The original plan was to issue a newsletter every 4 – 6 months, this have proved unsuccessful as the rate at which news and results are generated requires a fair amount of time to collect enough for a Newsletter. However, a good alternative to a full Newsletter has been the publication of 'Newsflash' items on the project's website, on average once a month. Therefore, the updated plan is as follows:

- Newsletters: 3 in the next 18 months (average 1 every 6 months).
- Newsflash items: 10 items in 18 months (average 1 every 2 months).

The Newsletters and Newsflash items are promoted through the project's social media platforms.

## 3.4 Press releases

Similarly, to the digital newsletter, press releases will have a relevant role in dissemination of project progress and results. The first press release of the project will be released on the project website and shared through all social media channels. Likewise, all future press releases will be included in the documents section on the project website.

### 3.4.1 Press releases - **UPDATE M18**

By month 18, one press release has been published on the project website at the outset of the project to raise awareness of the concept and objectives of the FlexSNG project. Two more press releases have been planned to be published in coincidence with relevant FlexSNG events and/or project achievements.

## 3.5 Conferences and workshops

In order to engage with the international bioenergy community, a half-day event will be organised by ETA in occasion of the European Biomass Conference and Exhibition (EUBCE) around M18. Speakers will be FlexSNG partners and high-level experts to guarantee an inspiring round table on most insightful project aspects. In addition, partners will take part as speakers in leading events at national and international level, addressing different audiences. These include e.g. bioenergy/biofuel conferences, sustainability fairs, renewable energy events and EU-funded projects on the sector. Reports on such events will be integrated in the final version of this Communication and Dissemination Plan.

Two Industrial Topical Workshops (ITWs) will be organized during the project with focus on interacting with different stakeholders of the value chain and getting valuable feedback. The workshops will include presentations from project participants as well as from invited speakers representing industries, raw material supply chain, policy makers, environmental organisations and financing bodies. Technical visits will be organized whenever possible, e.g. to pilot and demo plants, industrial sites etc. The two workshops will be organised as follows:

- ITW1 will be hosted in Germany by M18 (organised by EIFER and ETA). The main topics will be key enabling technologies of FlexSNG and preliminary results of

feedstock supply chain optimization and utilization options for biochar/biomethane.

- ITW2 will be hosted in Canada by M36 (organised by PM and ETA in the framework of the BIOFOR International Conference). The main topics will be FlexSNG concepts, including techno-economics, technical performance, case studies, plans for follow-on demonstration.

The final conference (around M36) will be organised as a one-day event in Helsinki to present the final project results, and to involve and mobilize relevant stakeholders (EU/Canadian decision makers, national governments, industry, scientific community, SMEs, citizens, NGOs and public media). The final conference will be conceived as a strategic comprehensive event, marking the breakthrough added value of the project at European and Canadian level and how these results can be further exploited at scientific and commercial level.

### 3.5.1 Conferences and workshops – UPDATE M18

Given that the first year of the project was hindered by the COVID pandemic travel restrictions, physical appearances at events have only just started again from mid-2022. As such the schedule for events has been somewhat condensed into the final 18 months of the project. However, aside from travelling restrictions the project and its results have been presented in four scientific conferences/workshops by month 18 (see Table 1). Several more conference appearances (oral and/or poster presentations) are anticipated during the latter half of the project once more results become available.

*Table 1. Scientific conferences and external workshops in which FlexSNG results have been disseminated by M18.*

Presentation title & presenter	Event	Partners involved
Oral presentation: "FlexSNG project introduction", Sanna Tuomi (VTT)	H2020 Virtual Clustering Meeting, Biofuel projects (CINEA), 14-15 October, 2021 (virtual)	VTT
Oral presentation: "The role of catalytic reforming in the production of synthesis gas from biomass and waste", Ilkka Hiltunen (VTT)	TCbiomass 2022, The International Conference on Thermochemical Conversion Science: Biomass & Municipal, 21 April 2022, Denver, USA	VTT
Oral presentation: "Development of a novel Bubbling Circulating Fluidised-Bed (BCFB) gasification process for co-production of synthetic natural gas and high-value biochar", Sanna Tuomi (VTT)	EUBCE2022 Advances in Gasification for Synthesis Gas Production, 9-12 May 2022 (virtual)	VTT, ETA
Oral presentation: "Development of a bubbling circulating fluidized bed reactor for biomass and waste gasification", Esa Kurkela (VTT)	IConBM2022, International Conference on BIOMASS, 6 June 2022, Naples, Italy	VTT

The first Topical Workshop took place on November 3<sup>rd</sup> 2022 in Karlsruhe, Germany, under the title of “Turning low-cost bio-feedstocks into valuable products” and was organized as a hybrid event with a possibility for remote participation via Zoom. The event covered a range of topics: the key enabling FlexSNG technologies, the markets and value of the two end products biochar and biomethane, introduction to the FlexSNG case studies and discussion on the critical role industrial symbiosis plays in the economic viability of biofuel processes like FlexSNG. In addition to presentations from the FlexSNG team members, also external experts were invited as speakers. The workshop reached a wide audience, both online and on-site at EIFER, and also provided opportunities for fruitful discussions and networking with both academia and industry.

Following on from the first Topical Workshop, successfully hosted by EIFER in M18, the main project events planned for the upcoming 18 months are as follows:

- A half-day event at the EUBCE 2023, June 5 – 8, to be held in Bologna. This event will be held in the style of a workshop with the involvement of other Horizon2020 projects. This event was postponed from year 2022 to year 2023 since in 2022, the conference was organized as an online event due to COVID and the consortium emphasized the importance of physical presence to better engage with the audience.
- A second Topical Workshop held in Canada to be organized as part of the BIOFOR International Conference, to be hosted by Polytechnic of Montréal, in the first quarter of 2024.
- A final conference is to be planned to be held in Helsinki in M36, hosted by VTT, to showcase the final results and technology.

### 3.6 Webinars and videos

Starting from M12, ETA will organise a series of one-hour long webinars to deliver information about the activities and public preliminary results of the FlexSNG project. The webinars will be recorded and made available to the public on the FlexSNG dedicated YouTube channel. ETA will also create short videos about the topics of the project, such as activities, open challenges, results and more. Short interviews to partners will also be included and shared on all FlexSNG social media channels.

#### 3.6.1 Webinars and videos – **UPDATE M18**

The project will hold a three part webinar series in the last six months of the project, roughly M30, M31 and M32 (end 2023 / early 2024). This is to allow sufficient time for the project to generate results. Each Webinar will be no longer than 1 hr, including time for audience participation, and the rough webinar programme includes:

1. Canadian case study outcomes
2. European case study outcomes
3. Potential industrial opportunities for the FlexSNG technology



Two project videos have already been produced, both giving overviews of the project objectives and activities, as well as one student interview video. The videos are accessible here:

- <https://www.flexsng.eu/news/new-video-gasification-test-campaign/>
- <https://www.flexsng.eu/news/meet-flexsngs-research-students/>
- <https://www.flexsng.eu/news/flexsng-new-video/>

It is anticipated to make at least three more short interview videos, either with the project's research students and project partners. Other video ideas include case study outcome overviews, logistic optimisation and further test campaigns. There will be one video produced as part of deliverable D9.7 ("Report and a short dissemination video of the second Industrial Topical Workshop"); it will be filmed either before or during the event. The preparation of the video concept and script begin three months before the deliverable / event, as from experience this is the required time to produce short videos.

### 3.7 Publications

Articles will be prepared for publication in peer-reviewed technical and scientific journals as well as in market-oriented magazines. The FlexSNG project follows an open and active publication policy, and scientific publications will be made available as Open Access. The FlexSNG consortium anticipates publishing 10 to 15 peer-reviewed technical papers and 15 to 20 scientific papers over the course of the project. ETA will draft and at least one article per year to be published on generic magazines to disseminate the main activities and results of the project. The Dissemination Manager Stefano Capaccioli will maintain a list of publications issued by the participants.

#### 3.7.1 Publications – **UPDATE M18**

A plan of published and anticipated publications, as prepared by the consortium, is presented in Table 2.

Table 2. A plan of published and anticipated publications in FlexSNG.

Responsible partner	Author(s)	Topic or tentative title	Type of publication (peer-reviewed article, conference paper etc.)	Related WP	Expected submission date (Month)	Status
VTT	Esa Kurkela, Minna Kurkela & Sanna Tuomi	Development of a bubbling circulating fluidized-bed reactor for biomass and waste gasification	Peer-reviewed paper	WP4	M13	Published (June 2022)
VTT	Sanna Tuomi, Esa Kurkela, Minna Kurkela	A semi-empirical model for steam/oxygen-blown fluidised-bed gasifier producing biochar and raw synthesis gas from biomass	Peer-reviewed paper	WP4/WP5	M20	
VTT	Sanna Tuomi, Minna Kurkela, Ilkka Hiltunen, Esa Kurkela	Development of a novel gasification process for co-producing biochar and SNG	Peer-reviewed paper	WP4/WP5	M30	
VTT	Christian Frilund, etc.	High temperature adsorbent-based sulphur removal in biomass/waste gasification application	Peer-reviewed paper	WP4/WP5	M25	
VTT	Sanna Tuomi, Esa Kurkela, Minna Kurkela	A conceptual investigation on the effect of tar reforming on the efficiency of a gasification-based BtL process	Peer-reviewed paper	WP4/WP5	M36	
DTU	Ragnar Kiebacha, Stéven Pirou, Lev Martinez Aguilera, Astri Bjørnetun Haugen, Andreas Kaiser, Peter Vang Hendriksen, María Balaguer, Julio García-Fayos, José Manuel Serra, Falk Schulze-Küppers, Max Christie, Liudmila Fischer, Wilhelm Albert Meulenbergh, Stefan Baumann	A review on dual-phase oxygen transport membranes: From fundamentals to commercial deployment	Review paper	WP3	M8	Published (Jan 2022)

Responsible partner	Author(s)	Topic or tentative title	Type of publication (peer-reviewed article, conference paper etc.)	Related WP	Expected submission date (Month)	Status
DTU	Lev Martinez Aguilera, Stéven Pirou, Peyman Khajavi, Julio García-Fayos, Jose Manuel Serra, Henrik Lund Frandsen, Peter Vang Hendriksen, Andreas Kaiser, Ragnar Kiebach, Astri Bjørnetun Haugena	Stable, asymmetric, tubular oxygen transport membranes of $(\text{Sc}_2\text{O}_3)_{0.10}(\text{Y}_2\text{O}_3)_{0.01}(\text{ZrO}_2)_{0.89} - \text{LaCr}_{0.85}\text{Cu}_{0.10}\text{Ni}_{0.05}\text{O}_{3-\delta}$	Review paper	WP3	M14	Published (July 2022)
DTU	Tbd	Coupling of a biomass gasifier and OTM reactor		WP3/WP5	M20	
DTU	Tbd	High performance OTM membranes for autothermal reforming of syngas		WP3/WP5	M30	
DTU	Tbd	Degradation of high performance OTM membranes in steam and CO <sub>2</sub> environment		WP3	M20	
DTU	Tbd	Tar and impurities tolerance of OTM membranes for autothermal reforming of syngas		WP3	M15	
DTU	Tbd	Cost analysis?			M36	
EIFER	Seidelt, Rabot-Querci, Witkowski	Comparison three different biochars	Peer-reviewed paper	WP6	Beg. 2023	
CERTH	Christina Antonopoulou, Konstantinos Atsonios and tbf	Comparative analysis of FlexSNG process configuration and other competing technologies	Peer-reviewed paper ?	WP7	2023/2024	
CERTH	Christina Antonopoulou, Konstantinos Atsonios and tbf	Preliminary techno-economic evaluation and business potential of a FlexSNG case study	Conference paper	WP8	2023	

Responsible partner	Author(s)	Topic or tentative title	Type of publication (peer-reviewed article, conference paper etc.)	Related WP	Expected submission date (Month)	Status
CERTH	Christina Antonopoulou, Konstantinos Atsonios and tbf	Techno-economic evaluation and business potential of a FlexSNG case study	Peer-reviewed paper	WP8	2023/2024	
CERTH	Zeneli M., Atsonios K., Tuomi S. Nikolopoulos N., Grammelis P.,	CFD simulation of a novel Bubbling Circulating Fluidized-Bed gasifier by using a 3D TFM-EMMS model.	Fluidization XVII conference, Edinburg	WP4	2023	
CERTH	Panagiotis Drosatos, Myrto Zeneli, Konstantinos Atsonios, tbf	Computational fluid dynamics simulation of a steam/oxygen-blown fluidised-bed gasifier for biomass derived syngas and biochar	Peer-reviewed paper	WP4	2023/2024	

### 3.8 Clustering activities

The consortium will actively seek links with other ongoing EU-funded projects and initiatives on similar topics to promote the project and its results through common dissemination activities as well as look for potential partners for follow-on initiatives where the FlexSNG concept could be brought to a higher TRL. The H2020 Biofuels workshops that are annually organised by CINEA provide an excellent opportunity to form such partnerships and potential collaborations. The FlexSNG representatives will take part in these workshops upon CINEA's invitation.

#### 3.8.1 Clustering activities – UPDATE M18

As part of EUBCE 2023, the FlexSNG project is planning to hold a half-day workshop which should be in collaboration with other H2020 and Horizon projects. From recent conversations with the consortium, and with knowledge of new research projects, the initial plan is to include the following projects in the in the workshop:

- CLARA - chemical looping gasification
- BioSFerA - dual fluidized bed gasification
- GreenMeUP – Green biomethan market uptake

### 3.9 Participation in the “Open Research Data Pilot in Horizon 2020”

The FlexSNG project takes part in the Open Research Data Pilot in Horizon 2020 and will deposit all published research findings and other non-sensitive project data that has longer-term value also for other researchers to an open access research data repository.

#### 3.9.1 ORDP - UPDATE M18

By month 18, the FlexSNG project has published three papers, all of which have been deposited in the open access research data repository (see Table 3).

*Table 3. Scientific papers published as open access by month 18.*

Author(s)	Title / Topic	Journal, DOI (or other status)	Partners involved
Esa Kurkela, Minna Kurkela & Sanna Tuomi	Development of a bubbling circulating fluidized-bed reactor for biomass and waste gasification	Chemical Eng. Transactions, Vol 92, 2022 DOI: <a href="https://10.3303/CET2292065">https://10.3303/CET2292065</a>	VTT
Ragnar Kiebacha, Stéven Pirou, Lev Martinez Aguilera, et al.	A review on dual-phase oxygen transport membranes: From fundamentals to commercial deployment	J. Mater. Chem. A, 2022,10, 2152-2195 DOI: <a href="https://doi.org/10.1039/D1TA07898D">https://doi.org/10.1039/D1TA07898D</a>	DTU
Lev Martinez Aguilera, Stéven Pirou, et al.	Stable, asymmetric, tubular oxygen transport membranes of (Sc <sub>2</sub> O <sub>3</sub> ) <sub>0.10</sub> (Y <sub>2</sub> O <sub>3</sub> ) <sub>0.01</sub> (ZrO <sub>2</sub> ) <sub>0.89</sub> – LaCr <sub>0.85</sub> Cu <sub>0.10</sub> Ni <sub>0.05</sub> O <sub>3-δ</sub>	Open Ceramics, Volume 11, 2022, Article 100292. <a href="https://doi.org/10.1016/j.oceram.2022.100292">https://doi.org/10.1016/j.oceram.2022.100292</a>	DTU

#### 4. Strategy for communication and dissemination activities

The communication and dissemination strategy provides a framework for maximising impact and to deploy the benefits of the FlexSNG project at scientific, market/commercial and social level. During the project, the consortium aims to reach key stakeholders, media and the public using tailored communication and dissemination tools, with the goal of paving the way for follow-on demonstration and industrial exploitation of FlexSNG technologies in the EU, Canada and export markets. The dissemination and communication strategy of the FlexSNG project (see Figure 10) is divided into two main categories of action:

1. Activities to create awareness around the project objectives and foreseen results throughout the project
2. Activities related to dissemination of specific research and marketable results

	INITIAL STAGE M3	MID-STAGE M18	FINAL STAGE M36
EXPLOITATION	<ul style="list-style-type: none"> <li>✓ Consortium agreement</li> <li>✓ Identification of stakeholders</li> <li>✓ <b>Initial Exploitation Plan</b></li> </ul>	<ul style="list-style-type: none"> <li>✓ Market potential</li> <li>✓ Exploitable project results</li> <li>✓ <b>Interim Exploitation Plan</b></li> </ul>	<ul style="list-style-type: none"> <li>✓ Exploitation agreement</li> <li>✓ LCA</li> <li>✓ Plan for follow-on industrial exploitation</li> <li>✓ <b>Final Exploitation Plan</b></li> </ul>
DISSEMINATION	<ul style="list-style-type: none"> <li>✓ Project website</li> <li>✓ Project branding</li> <li>✓ <b>Communication and Dissemination Plan (C&amp;DP)</b></li> </ul>	<ul style="list-style-type: none"> <li>✓ Project website updates</li> <li>✓ Communication material</li> <li>✓ Press releases, scientific publications, conference presentations</li> <li>✓ Workshops</li> <li>✓ <b>C&amp;DP updated</b></li> </ul>	<ul style="list-style-type: none"> <li>✓ Project website update</li> <li>✓ Final conference</li> <li>✓ Communication material</li> <li>✓ Conference presentations, scientific publications</li> <li>✓ <b>C&amp;DP updated</b></li> </ul>

Figure 10. Dissemination and communication activities during the course of the FlexSNG project.

At the beginning of the project, there will be mostly generic news and the communication will be focused on making all stakeholders aware of FlexSNG’s aims and objectives, as well as its potential role in the future low- to zero-emission energy system. In this phase (from M1 to M7/M8), mostly generic communication measures will be deployed. These activities will include the development of the project’s visual identity, production and distribution of branding material (logo, leaflets, slide presentations, posters, rollups etc.), website and social media presence, including website setup, online newsletters, initial content creation and establishment of social media channels (Twitter, LinkedIn, and YouTube) and related activities to generate general awareness. These tools and activities will be maintained and used throughout the lifetime of the project. As the project progresses and results become available, these actions will be gradually complemented by additional activities to support the dissemination of the project and to promote the future transfer of knowledge. The project consortium will, for example, organize two industrial workshops (one in Germany, one in Canada) and coordinate the one-day conference. Several partners will also participate in the European Biomass Conference and Exhibition (EUBCE) starting from the 2022 edition.

Furthermore, we will launch measures to promote the results of FlexSNG beyond the project's end (e.g., scientific and technical publications, online and print project summary publications for target groups, project conference, project repository on website, etc.), allowing for a longer lifetime and wider impact of FlexSNG. Starting from M9, the FlexSNG consortium will increasingly engage with the four target groups. By promoting the project and its results via multiple channels, the consortium will aim to reach these external stakeholders and change their perceived interest and attitude towards flexible production of bioenergy carriers and heat that is being addressed by the project. The audience will be approached with targeted information through videos, print dissemination material, presence in magazines, scientific publications, and conferences, webinars and dedicated workshops.

The dissemination and communication actions that will be undertaken in the project are defined in Table 4. A more detailed timeline for dissemination and communication activities per target group are shown in Table 5.

*Table 4. Dissemination and communication activities to be undertaken in the FlexSNG project.*

Target audience	Type of information	Timing	Means of communication
KEY PLAYERS	<ul style="list-style-type: none"> <li>• Description of the FlexSNG concept, its benefits and key impacts</li> <li>• Highlights of results and new technology developments</li> <li>• Prospects for new business, market potential</li> <li>• Considerations for legislation and regulations</li> </ul>	Key stakeholders will be identified at the beginning of the project, and communication will continue throughout the project on a regular basis.	<p>ACTIVITIES:</p> <ul style="list-style-type: none"> <li>• Direct communication, personal contacts</li> <li>• Specific events, webinars and Industrial Topical workshops (ITWs)</li> <li>• Presentations in conferences and seminars; final conference</li> </ul> <p>MATERIAL:</p> <ul style="list-style-type: none"> <li>• Distribution of leaflets, brochures, newsletters and press releases via e-mail and social media channels</li> <li>• Website updates</li> <li>• Workshop and final conference material shared to attendees through the FlexSNG website</li> </ul>
DEFENDERS	<ul style="list-style-type: none"> <li>• Description of FlexSNG concept and technologies, its benefits and key impacts on the environment and the energy and transport sectors</li> <li>• Benefits gained by potential end-users when exploiting the FlexSNG technologies</li> </ul>	At the beginning, midway and end of the project.	<p>ACTIVITIES:</p> <ul style="list-style-type: none"> <li>• Presentations in conferences and seminars</li> <li>• Industrial Topical workshops (ITWs), webinars, final conference</li> </ul> <p>MATERIAL:</p> <ul style="list-style-type: none"> <li>• Distribution of leaflets, brochures, newsletters and press releases via e-mail and social media channels</li> <li>• Website updates</li> </ul>

CONTEXT SETTERS	<ul style="list-style-type: none"> <li>• FlexSNG concept and its benefits</li> <li>• Highlights of results</li> </ul>	At the beginning, midway and end of the project.	<p>ACTIVITIES:</p> <ul style="list-style-type: none"> <li>• Presentations in conferences and seminars; final conference</li> </ul> <p>MATERIAL:</p> <ul style="list-style-type: none"> <li>• Papers in technical, scientific, market-oriented and economic journals; website updates</li> </ul>
BYSTANDERS	<ul style="list-style-type: none"> <li>• FlexSNG concept and its benefits</li> <li>• Main results achieved by the end of the project</li> </ul>	At the beginning and end of the project.	<p>ACTIVITIES:</p> <ul style="list-style-type: none"> <li>• Presentations in conferences and seminars; final conference</li> </ul> <p>MATERIAL:</p> <ul style="list-style-type: none"> <li>• Website updates</li> </ul>
Related projects	<ul style="list-style-type: none"> <li>• Highlights of results, key impacts</li> </ul>	When requested	<p>ACTIVITIES:</p> <ul style="list-style-type: none"> <li>• Project-specific discussions</li> <li>• Conferences</li> </ul> <p>MATERIAL:</p> <ul style="list-style-type: none"> <li>• Tailored presentations</li> </ul>
General public	<ul style="list-style-type: none"> <li>• Practical outcome of the project in a non-technical language</li> </ul>	The results will be evaluated for their interest to the general public and communicated when relevant.	<p>ACTIVITIES:</p> <ul style="list-style-type: none"> <li>• News coverage</li> <li>• Communication in social media</li> </ul> <p>MATERIAL:</p> <ul style="list-style-type: none"> <li>• Website, webinar, videos, press releases, publications, material for social media</li> </ul>





#### 4.1 Strategy - UPDATE M18

There are no major updates to the strategy, although as mentioned in the Section 3 update, LinkedIn has been proven to be the best social media platform for the project, so this will be considered the main method for dissemination. In addition, from the success of the first topical workshop, a project specific mailing list has been developed, consisting of registered participants of the event. This mailing list will be utilised for further project promotions and will continue to grow.

The Gantt chart shown in Table 6 displays a rough timeline for communication and dissemination activities that are planned to be carried out in M19-M36, as described in the previous sections.

Table 6. Gantt chart of the communication and dissemination activities planned for months 19-36.

Year	2022												2023					
Month	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M
Project Month	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
Newsletters	x							x								x		
Newsflash	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
3 X Press releases	x									x								x
Press review - part of final CDP																		x
EUBCE - half day workshop							x											
Canada ITW (BIOFOR conference) 2nd Topical Workshop: Report & short dissemination video															x			
Final 1 day event (Helsinki)																		x
other international events						x												
Webinar Series												x	x	x				
Videos (2mins)														x				
Interview videos				x						x					x			
Published papers (10 - 15)																		
Outreach articles							x										x	

## 5. Conclusions

The overall FlexSNG Communication and Dissemination Plan (C&DP) strategy highlights the main activities that will be carried out during the three years of the project. These activities will be tailored to match the target stakeholder group from the four that have been identified: key players, defenders, context setters and bystanders. In addition to these four groups, related projects and the general public will also be informed of the results and key impacts of FlexSNG.

During the period that goes from M1 to M8, the priority is to raise awareness about the project's activities. Under this aim, the most relevant activities involve the development of the visual identity, which concerns the elaboration of the project logo, leaflets, slideshow presentations, posters and roll ups. Moreover, the promotion through the website and the social media channels, which will be constantly updated, represents a useful way to achieve this first scope.

Starting from M9, many additional measures will be gradually implemented to support the project dissemination, exploitation and knowledge sharing, mainly throughout the organization of workshops, webinars, seminars and conferences. As the project progresses and results become available, the consortium will promote the FlexSNG's impacts and key highlights through scientific and technical publications, online and print project summary publications for target groups, project conferences, project repository on website, and more. The dissemination and communication strategy will be subject to updates during the lifetime of the project in accordance with the emerging needs, the feedback received and by the partners and the stakeholders.

Update in M18: This update of the CDP highlights the key dissemination and communication activities that will be carried out in the remaining 18 months of the project. This report is fluid and ideas and timelines may change and be adjusted through the course of the next 18 months but this provides a solid outline of activities in order to achieve all project objectives and deliverables associated with communication and dissemination.

## 6. Acknowledgements

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 101022432.

## Annex I – Preliminary Stakeholders List

### Key Players:

- Energie De France (IAB)
- Greenfield Global (IAB)
- Praxair (IAB)
- Western University (IAB)
- Helen (IAB)
- CHFCA (IAB)
- Bioenergy Europe (IAB)
- European Commission's Directorate-General for Energy (DG ENER)
- Council of European Energy Regulators (CEER)
- Finnish Energy Authority
- Finnish Energy Market Authority (EV)
- Italian Regulatory Authority for Energy, Networks and Environment (ARERA)
- German Energy Agency (Dena)
- German Federal Network Agency for Electricity, Gas, Telecommunications, Posts and Railway (BNetzA)
- Danish Energy Agency
- Danish Energy Regulatory Authority (DERA)
- Swedish Energy Agency (Energimyndigheten)
- Swedish Energy Markets Inspectorate (Ei)
- Regulatory Authority for Energy of Greece (PAE/RAE)
- UK Department of Energy and Climate Change
- UK Office of Gas and Electricity Markets (Ofgem)
- Canada Energy Regulator (CER)
- Alberta Energy
- European Investment Bank
- Deutsche Bank
- ENEL
- Enkern
- Orsted
- Engie
- Envien Group
- ChemRec
- Man Energy Solutions
- E.ON
- Suncor Energy
- Air Liquide
- BASF
- Biomass Canada
- Biomass Secure Power
- East London Waste Authority

- North London Waste Authority
- West London Waste Authority
- Berlin Waste Management (BSR)
- Amsa S.p.A. (a2a Group)
- MM S.p.A.
- FTI Stockholm (Förpacknings & Tidningsinsamlingen)

Defenders:

- European Natural Gas Vehicle Association
- Copa-Cogeca
- European Council of Young Farmers
- European Automobiles Manufacturers Association
- ePURE
- eFuel Alliance
- European Community Shipowners' Association
- European Shippers' Council
- Ensyn Technologies
- Fulcrum Bioenergy
- Cielo Canada
- RINA Consulting
- European Biochar Industry Consortium (EBI)

Context setters:

- European Chemical Industry Council (Cefic)
- European Bioeconomy Alliance (EUBA)
- European Biomass Industry Association (EUBIA)
- ETIP Bioenergy
- EBTP European Biofuels Technology Platform
- Waste-to-Energy Research and Technology Council
- FuelsEurope
- UK Natural Gas Coalition
- Canadian Bioeconomy Association
- Canadian Bioenergy Corporation
- Canadian Biomass Innovation Network
- Canadian Clean Power Coalition (CCPC)
- Canadian Fuels Association
- Canadian Renewable Fuels Association
- Biorefining Research Institute

Bystanders:

- Confederation of European Waste-to-Energy Plants (CEWEP)
- BP
- Shell

D9.2 Communication and Dissemination Plan and periodic updates



- Total Energies
- Iberdrola
- LyondellBasell
- Linde
- Avantium

## Annex II – Updated Stakeholders

Following on from the First Topical Workshop (November 3<sup>rd</sup>, 2022), a project specific mailing list has been created containing emails of all the registered online and in-person participants, 368 in total. The list contains academic, industrial, research and political stakeholders. Due to confidentiality reasons, the list will not be printed in this report but will be held in the ETA-Florence database to be used for later dissemination activities.