



Deliverable D8.5: Report on events and stakeholder engagement 1



Document control sheet

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Executive summary

This document reports in the detail the outreach and impact achieved by the project's events, organised by the project consortium or attended by project partners, that are instrumental for disseminating the project results and open potential exploitation pathways.

This report is strictly related and linked to the deliverables D8.1 Dissemination, Exploitation and Communication plan 1, and D8.2 Dissemination, Exploitation and Communication plan 2, which are the basis for the development of activities such as participation and organisation of project events. These deliverables illustrate the strategy for the Dissemination, Communication and Exploitation activities of the Fit4Micro project. These documents start with providing an overview of the project's main activities and key objectives, and then presents in detail the target audience and stakeholders relevant for Fit4Micro.

After that, the key messages relevant for the project communication are introduced, together with a list of dissemination and communication tools. In addition to the D&C tools, these documents describe a detailed schedule of activities carried out in the period M1-M18. In the end, these documents describe a detailed schedule of activities to be carried out in the period M18-M36.

Introduction

Fit4Micro - Clean and Efficient microCHCP by microturbine based hybrid systems, is a Horizon Europe project aiming at developing a highly efficient microCHCP hybrid system running on sustainable liquid biofuels and able to provide renewable heating, cooling and power production.

The project's main objective is to develop a new generation of combined cooling, heat and power (CCHP) system based on a novel technology of microturbine, running on sustainable biofuels. The system would be suitable for multi-family residential buildings and at remote or off-grid locations, for multi-office or multi-apartment buildings, hotels, hospitals and so on. The technology developed for the project is based on a hybrid heating system, which has several advantages compared to pure electrically-driven ones, and hence is particularly attractive in the retrofit market for existing buildings.

The system will comprise a double shaft microgas turbine (mGT) and a humidification unit. This unique combination is expected to drive high electrical efficiencies (>40%) and have a very flexible heat-to-power ratio. The heat can also be used in order to produce cooling by means of adsorption chillers. By the end of the project, the aim of the project is to build an integrated demonstrator to validate technology in relevant environment (TRL-5).

In the course of the outreach activities the focus is set on the analysis and mapping of stakeholders' value chain as biomass owners, fuel producers, logistic companies, and fuel utilization companies such as microCHCP manufactures as representatives of the industry sector as well as to assess their position towards the project results to set up tailored engagement strategies. During this process connections with relevant stakeholders and end-users will be integrated throughout the project.

The Fit4Micro Dissemination and Communication activities aim at ensuring an optimal transfer of knowledge and outreach to stakeholders and potential adopters of the Fit4Micro solution.

In order to do so, these Fit4Micro activities will pursue the following **objectives**:

- **Raising awareness** on the project scope: in order to reach this result, it is fundamental to emphasize CHP systems' robustness and feasibility in terms of technical performance.
- Triggering the **interest** of relevant **stakeholders** and potential **end-users**, collecting their feedback on the Fit4Micro technology.
- Increase the **general understanding** of the socioeconomic and environmental sustainability of renewable-based energy systems at the household level.

- Facilitating the **uptake of project results** by third parties at scientific, industrial and policy.
- Ensure the **uptake of Fit4Micro solutions** beyond the termination of the project.

Dissemination, communication and exploitation activities are very much linked, and will be undertaken in a coordinated way, thus exploiting synergies and avoiding overlaps.

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

During the 31st and the 32nd editions of the European Biomass Conference and Exhibition (EUBCE), organised by ETA respectively in Bologna, Italy, and Marseille, France, Fit4Micro was presented by project partners through stands and three poster presentations to engage with the international community of biomass and bioenergy engineers and researchers, as well as international industry stakeholders. The related paper of the poster presentation "Clean and Efficient MicroCHCP by Micro Turbine-based Hybrid Systems: the Fit4Micro Project" is included in the free of charge EUBCE 2023 conference proceedings database: all submitted full papers of plenary, oral and visual presentations are published on-line in the EUBCE Conference Proceedings and are fully searchable and citable online.

Target audience of Fit4Micro

For disseminating the main results of the Fit4Micro project, first of all it was fundamental to implement a detailed mapping of target groups for exploiting and disseminating the results. Since the objective of the project is to reach TRL 5 technology, the interaction with end-users will be limited. On the other side, it will be fundamental to reach those stakeholders that can function as multipliers, hence industries, renewable energy associations and so on.

The following table provides a provisional list of specific stakeholders.

Table 1. Target audience of Fit4Micro

Target audience	Specific stakeholders	Medium and means
Heating sector, energy professionals and	<ul style="list-style-type: none"> ● European Heating Industry Association (EHI) ● Federation of European Heating, 	<ul style="list-style-type: none"> ● Project website ● Press releases and newsletters

intermediaries	<p>Ventilation and Air Conditioning Associations (REHVA)</p> <ul style="list-style-type: none"> ● Renovate Europe Campaign ● European Heat Pump Association (EHPA) ● BUILDUP Platform ● European Federation of Intelligent Energy Efficiency Services (EFIEES) ● Members of COGEN Europe in various member states. 	<ul style="list-style-type: none"> ● Scientific papers and results ● Video-clips ● Events
Renewable energy sector	<ul style="list-style-type: none"> ● Bioenergy Europe ● European Biogas Association ● Liquid Gas Europe ● Solar Power Europe ● Members of the advanced biofuel coalition ● Members of BIOCOGEN 2030 	<ul style="list-style-type: none"> ● Project website ● Press releases and newsletters ● Promotional materials (leaflet, posters) ● Video-clips
Academia and research institutions	<ul style="list-style-type: none"> ● Joint Research Centre ● Building Performance Institute Europe (BPIE) ● Biogas Research Centre ● Scientific community in the fields of combined heat and power from biomass ● Partners from similar H2020 and HEU projects ● Leading research institutes (ENEA, CEA, CERTH, Fraunhofer), ● European Technology Platform for Bioenergy ● Renewable Heating and Cooling Technology Platform. 	<ul style="list-style-type: none"> ● Scientific papers and results ● Outreach articles ● Events
EU and national	<ul style="list-style-type: none"> ● European Commission (DG 	<ul style="list-style-type: none"> ● Scientific papers

policymakers	<p>ENER, DG ENV, DG CLIMA, DG GROW)</p> <ul style="list-style-type: none"> • European Parliament ENVI and ITRE Committees • Relevant policymakers in identified target countries 	<p>and results</p> <ul style="list-style-type: none"> • Outreach articles • Project website • Events
International organizations, civil society and end-consumers associations	<ul style="list-style-type: none"> • International Energy Agency (IEA) • European Consumer Association • European Environmental Bureau • WWF Europe. 	<ul style="list-style-type: none"> • Project website • Press releases and newsletters • Video-clips.

Key messages of Fit4Micro

The identification of clear and understandable messages is fundamental for a successful communication campaign, especially if our main objective is the one-off reaching specific stakeholders and potential adopters of the Fit4Micro solution.

The table below lists the key messages identified by project partners.

These key messages are and will be the guideline for online communication activities, especially through the project's website and the social media channels, but also for presentations on project activities at selected events.

Table 2. Key messages

Key message	Target audience group
Buildings represent a hard-to-decarbonise sector	Policy actors
Fit4Micro solution is based on a hybrid-heating system, which will significantly increase environmental sustainability in the building sector	Potential adopters of the Fit4Micro solution
The technology developed by Fit4Micro will increase the availability of renewable fuels for domestic usage	Producers of renewable fuels

Fit4Micro solution will combine heating, cooling and power generation	Heating sector, energy professionals and intermediaries
The micro-Gas Turbine can be integrated with Solar-PV to allow a flexible power operation and heat supply by the heat pump, limiting the biofuel usage.	Solar PV industry.

Events

Dissemination and Communication main activities from M1 to M24 focused also on events and participation in national and international conferences.

In order to increase the number of potential adopters of the Fit4Micro solution, the project have been presented and disseminated in several scientific and policy events in partners' countries. These occasions gave project partners the opportunity of demonstrating and sharing the results of the project to an audience of academic and industry representatives as well as policy makers.

As a consequence, together with the schedule of activities planned in the project, the Fit4Micro consortium participated in relevant events concerning cogeneration, where partners illustrated the project's main results and achievements.

The following table illustrates the relevant events where the project consortium disseminated and presented Fit4Micro activities and results between M1 and M24.

Table 3. Other relevant events

Event	Organizer	Where	When	Partner/s attending
COGEN annual conference 2022	COGEN Europe	Leuven (Belgium)	11-12 October 2022	COGEN Europe, MITIS
7 th Central European Biomass Conference CEBC2023	Austrian Biomass Association	Graz (Austria)	18-20 January 2023	ETA
Middle East Energy		Dubai (UAE)	7-9 March	MITIS

Dubai			2023	
EUBCE – European Biomass Conference and Exhibition 2023	ETA	Bologna (Italy)	5-8 June 2023	ETA, MITIS, BTG
BLAZE final project event	BLAZE project consortium	Bologna (Italy)	6 June 2023	ETA, MITIS, BTG
2 nd Annual Biogas Forum	Biogas Channel	Berlin (Germany)	20-21 June 2023	COGEN
ASME Turbo Expo	ASME	Boston (US)	26-30 June 2023	MITIS, UMONS
Gastech		Singapore	5-8 September 2023	MITIS
Sustainable PolyEnergy generation and HaRvesting Conf & Exhib - SUPEHR23		Savona (Italy)	6-8 September 2023	UMONS
Hydrogen Technology Conference & Expo		Bremen (Germany)	27-28 September 2023	MITIS
European Micro-Gas Turbine Forum		Brussels (Belgium)	17 October 2023	MITIS, COGEN Europe, UMONS
SmartCHP final project event	SmartCHP project consortium	Brussels (Belgium)	27 November 2023	MITIS, BTG, COGEN
Enlit Europe Exhibition 2023	Enlit Europe	Paris (France)	28-30 November 2023	MITIS

Indian Energy Week	FIPI	Goa (India)	6-9 February 2024	MITIS
Deutsche Zeolithtagung	Dechema	Jena (Germany)	28 February- 1 March 2024	Fahrenheit
Clean Energy for EU Island Forum	Clean energy for EU islands secretariat	Pantelleria (Italy)	14-15 May 2024	COGEN Europe
EUBCE 2024	ETA	Marseille (France)	24-27 June 2024	ETA, OWI, UMONS, BTG
ASME Turbo Expo 2024	ASME	London (UK)	24-28 June 2024	MITIS, UMONS
Gastech		Houston (US)	17-20 September 2024	MITIS
Fit4Micro project workshop (see following paragraph)	Fit4Micro project consortium	Aachen (Germany) and online	25 September 2024	Project partners

For pictures from several of these events, please check the following Annex 1.

Project workshop, hybrid event

The workshop on “Technologies for biofuel hybrid biomass turbines” was organised as a hybrid event by the Fit4Micro consortium on Wednesday 25th of September 2024, afternoon, INNSiDE Hotel, Aachen, Germany. The online part was implemented to involve as many interested stakeholders and participants as possible.

This event, chaired by Sangeetha Ramaswamy of OWI, introduced and explained the main current activities performed by several partners of Fit4Micro project, as for example biofuels from residues via fast pyrolysis and hydrotreatment, research on biofuels for combustion applications, gas foil bearings for small scale turbomachinery and heat pumps and chillers with natural refrigerants. In addition, in the first part of

the event, Prof. Alessandro Parente presented particular aspects of industry decarbonisation related to combustion technologies.

At the end of each presentation, time was properly allocated for Q&A from the audience and presenters.

This was the agenda of the workshop:

- Chaired by Sangeetha Ramaswamy, OWI, Germany
- 14:00
Welcome to attendees and presentation of the event
Wilfried Plum, OWI, Germany
- 14:10
Presentation of Fit4Micro Project
Michel Delanaye, MITIS, Belgium
- 14:30
Hydrogen and ammonia for industry decarbonisation: the role of diluted combustion technologies
Alessandro Parente, Université libre de Bruxelles, Belgium
- 15:30
Coffee break
- 15:45
Biofuels from residues via fast pyrolysis and hydrotreatment
Evert Leijenhorst, BTG, The Netherlands
- 16:10
Biofuels for combustion applications: Research efforts at OWI
Dirk Möntmann, OWI, Germany
- 16:45
Gas foil bearings for small scale turbomachinery
Danish Rehman, MITIS, Belgium
- 17:10
Heat pumps and chillers with natural refrigerants
Gerrit Földner, Fraunhofer ISE, Division Thermal Systems and Buildings, Germany
- 17:35
Closure of the event

This event was promoted through the project website, project social media and personal invitations to potential participants some weeks prior to the workshop, totalising as follows:

- 23 participants on site;

- 67 participants connected online:

These 90 participants in total represented many countries, mainly from Belgium, Germany, Italy, The Netherlands, France, Poland and Portugal, but also from Brazil, India, Thailand, South Africa and Argentina.

Some pictures of workshop presentations as follows:



Fit4Micro project workshop, Aachen, 25 September 2024: presentation of Michel Delanaye.



Fit4Micro project workshop, Aachen, 25 September 2024: presentation of Danish Rehman.



*Fit4Micro project workshop, Aachen, 25 September 2024:
Presentation of Alessandro Parente.*



*Fit4Micro project workshop, Aachen, 25 September 2024:
Presentation of Gerrit Földner.*

All presentations are available to this link of the project website:
<https://www.fit4micro.eu/news/workshop-on-technologies-for-biofuel-hybrid-biomass-turbines/>

The recorder video is available in the Youtube channel:

<https://www.youtube.com/watch?v=RxdSSJVeNZ8&t=6977s>

and to this link of the project website:

<https://www.fit4micro.eu/results/>

Conclusions

This document represents the first version of the report on events and stakeholder engagement and related project activities carried out. It covers the period from M1 to M24, hence from 01/10/2024 to 31/08/2026, when a second updated version will be finalised.

Further information on events described in this report is available at the project website: <https://www.fit4micro.eu/news/>.

Annex 1 – Pictures from events



CEBC – Central European Biomass Conference, Graz, 18-20 January 2023.



MEE – Middle East Energy, Dubai, 7-9 March 2023.



EUBCE, Bologna, 5-8 June 2023, project stand.



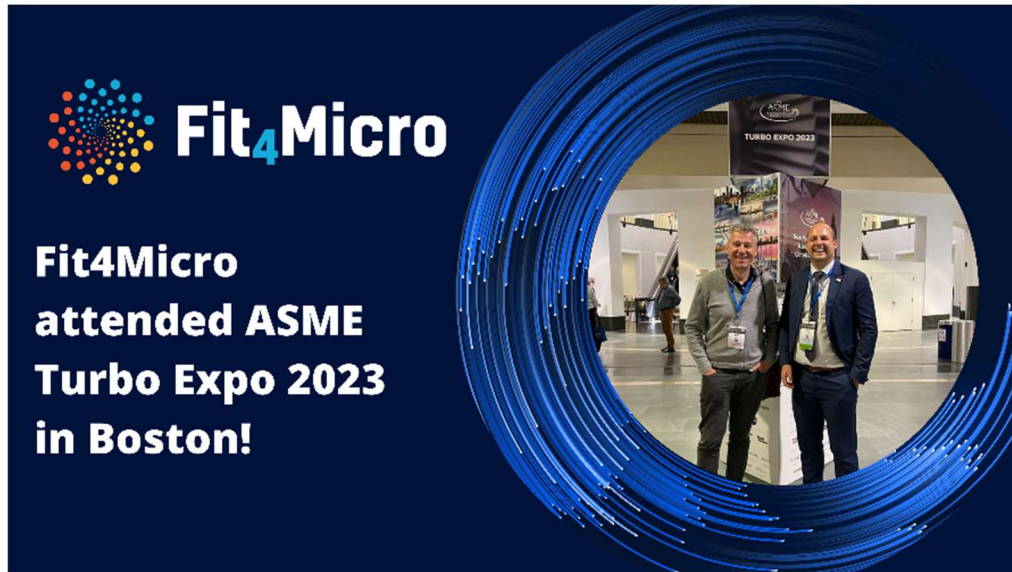
EUBCE, Bologna, 5-8 June 2023, project presentation.



EUBCE, Bologna, 5-8 June 2023, project poster presentation.



EU project BLAZE workshop, Bologna, 6 June 2023, project presentation.



ASME Turbomachinery Technical Conference & Exposition, Boston, 26-30 June 2023.



Gastech, Singapore, 5-8 September 2023.



Carbon Capture technology expo – Bremen, 27-28 September 2023.



European Micro-Gas Turbine Forum, Bruxelles, 17 October 2023.



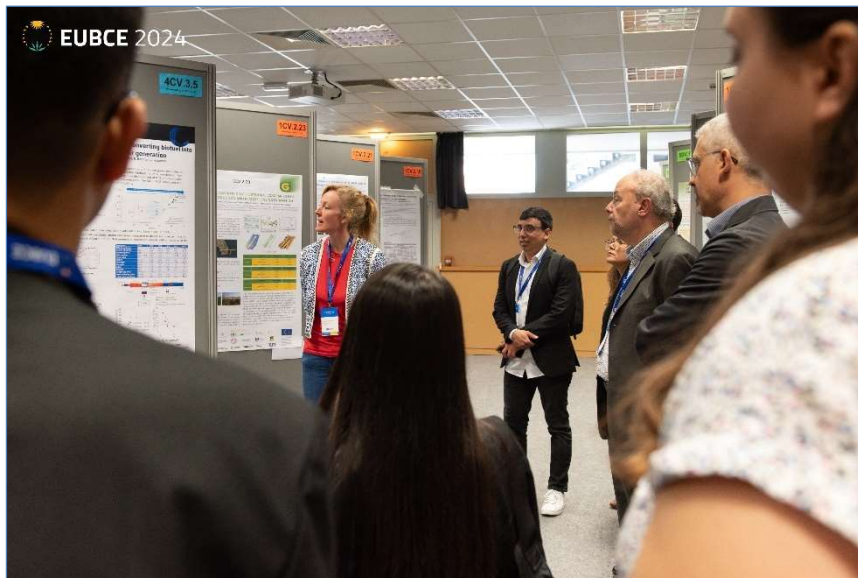
SmartCHP Final event, 27 November 2023.



ENLIT Europe, Paris, 28 November 2023.



Indian Energy Week – 6-9 February 2024.



EUBCE, Marseille, 24-27 June 2024, project poster presentation.



ASME Turbo Expo 2024, MITIS and UMONS members.



Gastech – Houston, 17-20 September 2024.

All individuals recognizable in these pictures have been informed that their photos would be shared.