



# FLEX 4 FACT

Industrial flexibility platform  
for sustainable factories

## D7.7 COMMUNICATION, DISSEMINATION AND EXPLOITATION PLAN UPDATE

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## DELIVERABLE DESCRIPTION

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30.11.2024	3.0	Ivo Zeller, Jacqueline Findling	Update including reached KPIs of communication, dissemination and exploitation activities incl. results by M30

## DISSEMINATION LEVEL

PU – public, fully open	X
SEN – sensitive, limited under the conditions of the Grant Agreement	

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## LIST OF ABBREVIATIONS

ACRONYM	DESCRIPTION
CA	Consortium agreement
CDE	Communication, dissemination, and exploitation
CI	Corporate Identity
DMP	Data Management Plan
DSO	Distribution System Operator
F4F	FLEX4FACT
GA	Grant agreement
GAP	Gender Action Plan
HEU	Horizon Europe
KPI	Key performance indicator
RE	Renewable Energy
TSO	Transmission System Operator

## SUMMARY

The FLEX4FACT project aims to make industrial sites and processes more flexible through digitisation, automation, and smart control systems. It will assist industrial stakeholders seeking to integrate more renewable sources into their industrial energy systems and to provide flexibility to the electrical systems via demand response measures. The project communication, dissemination and exploitation activities support these goals and ensure large-scale awareness, understanding and uptake of the project's objectives and results amongst a broad variety of stakeholders.

This deliverable outlines the strategy for communication, dissemination, and exploitation (CDE) activities, during the project lifecycle. The CDE plan provides guidance to all consortium members and ensures a consistent approach to CDE activities. It describes the communication and dissemination objectives, identifies the key target groups, defines key messages, and presents the different communication and dissemination channels and tools developed within the project.

The identified target groups to be reached through communication and dissemination of the project are:

- End users – industrial plant operators,
- Energy providers, distribution system operators,
- Energy and digital solution providers,
- EU research community,
- Technological expert groups, EU working groups, standardisation bodies,
- Public authorities,
- Investors,
- General public.

To address these stakeholders, FLEX4FACT uses the following communication and dissemination activities and channels:

- Creation/production of a project website, social media channels, a roll-up, project brochures and video, ✓
- Regular publication of newsletters and press releases, ✓
- Collaborations with other similar projects, organizations and networks, ✓
- Participation in at least ten international conferences and fairs, ✓ (M30 - 16 conferences)
- Publication of at least ten scientific open-access publications, ✓ (M30 – 13 publications)
- Organisation of three showcase events to demonstrate the feasibility of the FLEX4FACT solution to relevant stakeholders. (M30 – 2 showcase events)

Communication and dissemination activities are continuously monitored to assess their effectiveness and if required improved them. SIG provides regular feedback to the steering committee regarding the implementation of CDE activities against the action plan provided in this report.

# 1 INTRODUCTION

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This report is the communication, dissemination, and exploitation (CDE) plan update for the FLEX4FACT project. The purpose of the original version of this document in M6 was to set the strategic framework for communication, dissemination and exploitation tools and activities to achieve the largest possible impact for the project. This update of the CDE plan additionally describes the current status of communication, dissemination and exploitation activities. For easier readability, updated sections of the document will be highlighted in green.

The FLEX4FACT project aims to develop an end-to-end ecosystem based on a modular and multi-level architecture to enable flexible production in the energy intensive industries and create the conditions for the necessary energy transition in which all stakeholders can participate and benefit from. Communication, dissemination, and exploitation activities aim at raising awareness of the FLEX4FACT results and paving the way for their future commercialisation and further development in follow-up projects.

The CDE plan supports the specific objectives of WP7 'Community uptake and sustainability, dissemination, exploitation and standardization'. It has 4 main objectives:

1. Inform about the necessity and viability of energy flexibilization in industrial processes and manufacturing to make EU industry more competitive and integrate more renewable sources,
2. Maximize success, visibility, and knowledge transfer through effective dissemination during and after the project,
3. Enhance knowledge exchange and transfer through facilitation of European and international collaborations and active contributions to networks, associations and their activities on training and standardization,
4. Pave the way for exploitation through Intellectual Property (IP) management and by developing an exploitation roadmap and identifying suitable business models.

On the one hand, the FLEX4FACT communication and dissemination activities aim to increase the general awareness and understanding of industrial flexibility solutions. On the other hand, they aim at supporting the future exploitation of the project results. The CDE plan consists of four main chapters: the second chapter provides an overview of the communication and dissemination strategies and approaches, the third chapter focuses on communication and dissemination activities and presents the target audiences, key messages, channels and activities to be performed while chapter 4 shows how communication and dissemination activities will be monitored and assessed throughout the project by using KPIs. Chapter 5 is dedicated to the project exploitation strategy including the methodology and IP management plan.

This is the planned CDE update in M30 (D7.7). SIG will provide regular feedback to the steering committee regarding the implementation of CDE activities against the action plan provided in this report. SIG will integrate such intermediate updates in project periodic and final reports, incl. KPIs on reached targets.



## 1.1 PURPOSE OF THIS REPORT

Sound communication, dissemination and exploitation activities are an integral part of any EU-funded project. Along with communicating project objectives and results, they also contribute to stronger visibility of the EU Research and Innovation funding and bring science and technological development closer to the public. According to Article 17 of the Horizon Europe grant agreement, beneficiaries are required to promote the action and its results by providing targeted information to different audiences (including the public) in a strategic and effective way<sup>1</sup>.

**D7.1 the original CDE Plan was drafted at an early stage of the project (M6)** in order to provide a framework for all partners, helping to effectively communicate and report all relevant activities and outcomes. It summarizes the communication and dissemination activities and tools defined in the project's Grant Agreement and drafts a roadmap towards successful implementation of these activities. The expectations, needs and communication and dissemination plans of project partners were collected with the help of a questionnaire to be able to develop the most suited CDE plan at project level.

## 1.2 CONTRIBUTIONS OF PARTNERS TO THIS REPORT

The CDE plan is drafted by work package and CDE leader SIG. Inputs from all consortium partners were collected through a questionnaire. **Shortly after the submission of the CDE plan a monitoring tool in form of an excel file was created and stored in the Flex4Fact repository on SINTEF's sharepoint. All partners have been regularly reminded to enter all their communication and dissemination activities into that file. All partners actively engage in conferences, publications, social media posts, press releases, posters and panel discussions to discuss their current research as well as foster exchanges with external stakeholders for knowledge transfer and the creation of new ideas. All communications are supported and normalized through SIG's project identity helping to recognize the project leading for example to FLEX4FACT being mentioned in the newest European Commission's [R&I Industrial Transformation Newsletter](#) as A.Spire success story.**

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<sup>1</sup> European Commission, European Research Executive Agency, Are you communicating your Horizon Europe project? Publications Office of the European Union, 2022, <https://data.europa.eu/doi/10.2848/078892>

## 2 APPROACHES FOLLOWED AND RULES TO BE OBSERVED

### 2.1 MAIN DEFINITIONS IN THE CONTEXT OF HORIZON EUROPE

Communication about European research projects should aim to demonstrate the added value of research and innovation for the main project target groups. The projects' communication and dissemination should demonstrate how European cooperation contributes to competitiveness, scientific excellence and solving societal challenges and show the relevance of the results to daily lives of citizens, in terms of job creation, and reduction of emissions. Exploitation activities seek to utilizing the project results in further activities for societal, scientific, economic, and technological purposes.

**Communication measures** should promote the project throughout its entire lifespan. The aim is to inform and reach out to society and show the impacts and benefits the project will have for citizens. Communication activities include the development of a visual identity (logo, graphic charter...) and a project brochure, the launch of a public website, and social media channels, the production of a general videos, and the regular publication of press releases and newsletters. Communication objectives are:

- Create awareness of the project's objectives, activities, and results,
- Encourage active engagement with stakeholder groups,
- Seek exchange and feedback with target groups,
- Involve external partners in the network to benefit from the solutions after the project.

**Dissemination** targets the transfer of knowledge and results to enable stakeholders to use and take up results (e.g. through scientific publications), thus maximizing the impacts the project. Dissemination objectives are as follows:

1. Share the project's outcomes and produced knowledge to achieve replicability,
2. Foster strategic partnerships and collaborations to disseminate the project's results,
3. Inform about barriers and difficulties regarding uptake of results,
4. Make the project results available, accessible, and usable to potential users,
5. Improve the visibility and impact of the project.

Successful communication and dissemination also involve tracking and monitoring activities, to ensure their outreach and effectiveness.

**Exploitation** ensures the effective use of the project results in further research and innovation activities, including among other things, commercial exploitation such as developing, creating, manufacturing, and marketing a product or process, or scientific exploitation intended to advance methods, tools, and scientific knowledge.

## 2.2 SPECIFIC APPROACH FOLLOWED FOR FLEX4FACT

The main purpose of this CDE plan is to establish clear guidelines to ensure targeted and effective dissemination and exploitation of the project's results. It is expected that the implementation of this plan coupled with partners' activities will achieve maximum awareness of project activities and results. As shown by the following figure, CDE activities should help maximize the impacts of the project and help transform the results into tangible outcomes and impacts supporting the targets of the European commission.

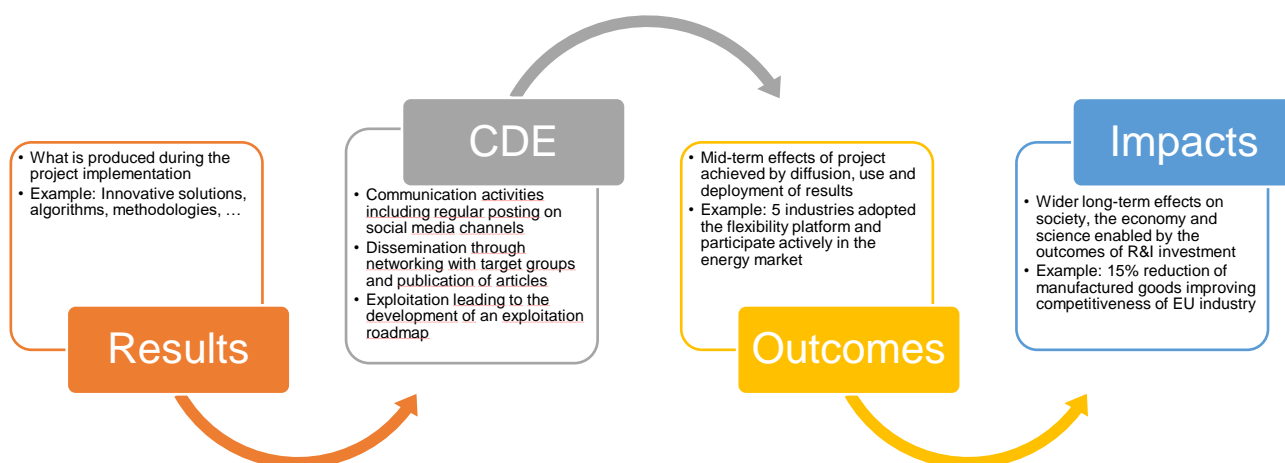


Figure 1: Impact pathway of Horizon Europe project results

The impacts to be reached by the FLEX4FACT project are as follows:

- Economic/technological impact - Reduction of production costs in energy intensive industries and increased uptake of renewable energies through FLEX4FACT' modular hardware and software solutions,
- Economic/technological impact - Creating more and better jobs by transforming the energy supply of energy intensive industries from centralised to decentralised energy systems,
- Scientific impact - Strong European science in the field of digitalisation and automation of manufacturing processes as well as energy management, driven by new high-quality results and knowledge sharing and exploitation with EU research community,
- Scientific impact - Trained and skilled EU workforce boosting the digital industry transition and the use of flexibility from industrial processes,
- Societal impact - Build resilient energy infrastructures, promote inclusive and sustainable EU industries and foster innovation,
- Societal impact - Ensure access to affordable, reliable, sustainable and energy for all by facilitating the integration of renewable energies,
- Societal impact - Reduction of CO2 emissions, leading to more livable and cleaner industrial cities and better health.

The following table shows the specific CDE activities that will be implemented to contribute to the achievements of the project impacts. Further information on planned activities is provided in chapters 3 and 5.

Table 1: Correspondence between planned CDE measures and achievements of outcomes and impacts

CDE MEASURES	TARGET GROUPS	OUTCOMES	IMPACTS
<p><b>D</b> Exchanges with Advisory Committee providing regular feedback</p> <p><b>D</b> Networking activities at EU level</p> <p><b>D</b> Showcase events</p> <p><b>E</b> Series of exploitation workshops to characterise key exploitable results and define IP rights</p> <p><b>E</b> Individual exploitation interviews</p> <p><b>E</b> Develop business models and exploitation roadmap</p>	<p>Potential end users and business facilitators (TG1, TG2, TG3, TG4)</p>	<ul style="list-style-type: none"> <li>- Increase of RE share in energy intensive industries substituting fossil energy sources.</li> <li>- Increased flexibility potential of the industrial sector leading to reduced costs of EU goods and more jobs.</li> <li>- Replication: 50 industrial sites equipped with FLEX4FACT tools by 2030.</li> </ul>	<ul style="list-style-type: none"> <li>- <b>Economic/technological impact</b> - Reduction of production costs in energy intensive industries and increased uptake of renewable energies through FLEX4FACT' modular hardware and software solutions.</li> <li>- <b>Economic/technological impact</b> - Creating more and better jobs by transforming the energy supply of energy intensive industries from centralised to decentralised energy.</li> </ul>
<p><b>D</b> At least five scientific publications and ten industrial publications</p> <p><b>D</b> Participation in at least 10 exhibitions, conferences, workshops, or industrial events</p> <p><b>D</b> Main lessons learned, and best practices included in project guidebook</p>	<p>Scientific community and technological expert groups (TG5, TG6)</p>	<ul style="list-style-type: none"> <li>- Young and skilled professional contributing to EU growth.</li> <li>- 100 workers attending workshops.</li> <li>- More women students enrolled in education programs focusing on the digital industry.</li> <li>- Several methodologies and tools published in open access.</li> </ul>	<ul style="list-style-type: none"> <li>- <b>Scientific impact</b> - Strong European science in the field of digitalisation and automation of manufacturing processes as well as energy management, driven by new high-quality results and knowledge sharing and exploitation with EU research community.</li> <li>- <b>Scientific impact</b> - Trained and skilled EU workforce boosting the digital industry transition and the use of flexibility from industrial processes.</li> </ul>
<p><b>D</b> Training materials included in guidebook</p> <p><b>C</b> EU and national communication campaigns</p>	<p>Public authorities and general public (TG7, TG8)</p>	<ul style="list-style-type: none"> <li>- Reduction of industry-related emissions and better and safe jobs benefitting all EU citizens.</li> </ul>	<ul style="list-style-type: none"> <li>- <b>Societal impact</b> - Build resilient energy infrastructures, promote inclusive and sustainable EU industries and foster innovation.</li> <li>- <b>Societal impact</b> - Ensure access to affordable, reliable, sustainable and energy for all by facilitating the integration of renewable energies.</li> <li>- <b>Societal impact</b> - Reduction of CO<sub>2</sub> emissions, leading to more livable and cleaner industrial cities and better health.</li> </ul>

## 2.3 COMMUNICATION AND DISSEMINATION OBLIGATIONS ENSHRINED IN GA AND CA

The legal documents signed by members of the consortium, the Grant Agreement, and the Consortium Agreement, contain obligations related to communication, dissemination, and exploitation. This section presents the rules to be followed regarding communication and dissemination (some of these obligations can also be found in D8.1 – FLEX4FACT project handbook) while subchapter 5.3 describes in more details the way in which IP rights are administered within FLEX4FACT.

### 2.3.1 INFORMING THE GRANTING AUTHORITY WHEN PLANNING HIGH IMPACT ACTIONS

According to article 17.1 of the Grant Agreement, beneficiaries must promote the action and its results by distributing target information to multiple audiences. If they engage in communication and dissemination actions expected to have major impacts, they should inform the granting authority in due time.

### 2.3.2 ACKNOWLEDGEMENT OF EU SUPPORT AND DISCLAIMER REGARDING QUALITY OF INFORMATION

To ensure visibility and transparency, all recipients of EU funds have the legal obligation to explicitly acknowledge that their action has received EU funding (see article 17.2 of the Grant Agreement). The obligation requires all beneficiaries, managing authorities and implementing partners of EU funding to acknowledge the support from the European Union on all communication materials. Therefore, the European Union emblem and the funding statement must be displayed prominently on all printed and digital products, websites, social media channels and other communication products:



*Co-funded by the European Union*

Furthermore, any communication or dissemination action must use factually correct information. It must indicate the following disclaimer (see article 17.3 of the GA):

*“Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or [name of the granting authority]. Neither the European Union nor the granting authority can be held responsible for them”.*

### 2.3.3 PRIOR NOTICE OF ANY PLANNED PUBLICATION AND DISSEMINATION ACTIVITY

According to article 8.4.2.2 of the Consortium Agreement, prior notice of any publication activity shall be given at least 28 calendar days before the intended publication and a copy of relevant material should be distributed at least with 14 calendar days before publication. Any objection to the planned publications must be made by written notice within 7 calendar days after reception of the notice and 7 calendar days after reception of the material. If no objection is made, the dissemination activity is permitted.

According to article 8.4.2.3, prior notice of any other planned dissemination activity shall be given to the beneficiaries at least 45 days before the activity such as publication or presentation and a copy of the material 30 days before the planned dissemination. The same objection rules than those applying to publications are to be observed. A short list of justified reasons to waive an objection are provided in article 8.4.2.4 of the CA.

### 2.3.4 PRIOR APPROVAL BEFORE USE OF NAME, LOGOS AND OTHER PARTY' BACKGROUND AND RESULTS FOR DISSEMINATION PURPOSE

According to article 8.4.3 and 8.4.5 of the CA, a party shall not include in any dissemination activity another party's results or background, names, and logos without their prior written approval.

## 2.4 COMPLIANCE WITH OPEN SCIENCE PRACTICES

### 2.4.1 OPEN SCIENCE PRACTICES IN HORIZON EUROPE PROJECTS AND EXPECTED BENEFITS

Open Science is defined by Horizon Europe as an approach to the scientific process based on open cooperative work, tools, and knowledge diffusion. Open Science includes open access to scientific publications, research data management and the active engagement of society, as well as optimal dissemination and exploitation of knowledge. In this way the advancement of knowledge can be accelerated by making it more reliable, efficient, and accurate, more easily understood by society and responsive to societal challenges.<sup>2</sup>

By making project results and data accessible to all societal actors, other researchers, innovators, and the public can find and re-use these for their own specific needs. In this way, further research is encouraged, novel solutions can be found, and complex challenges can be tackled. The benefits of open science include<sup>2</sup>:

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<sup>2</sup> European Commission, European Innovation Council and SMEs Executive Agency, Scherer, J., Weber, S., Alveen, P., et al., European IP Helpdesk : successful valorisation of knowledge and research results in Horizon Europe : boosting the impact of your project through effective communication, dissemination and exploitation, Publications Office of the European Union, 2022, <https://data.europa.eu/doi/10.2826/437645>



- Increased visibility of research, enhanced reputation and better understanding and support (also financially), by presenting research and its results not only to the scientific community, but also to potential industrial partners, policymakers and society at large,
- Exchange of knowledge on cross-sectoral and interdisciplinary levels will help discover novel approaches and solutions,
- Knowledge transfer, uptake and commercialisation of novel technologies and results by industry, decision makers and the scientific community will strengthen Europe's research and innovation landscape,
- Making project results openly available and searchable will spread knowledge and allow that knowledge to be built upon.

Providing open access to peer-reviewed publications resulting from the project is mandatory for Horizon Europe funded projects. This includes articles and long-text formats, such as monographs and other types of books. Immediate open access is required i.e. at the same time as the first publication, through a trusted repository, and using specific open licences (a Creative Commons licence). Open access is encouraged for those publications that are not peer-reviewed. Beneficiaries should also ensure open access to research data via a trusted repository under the principle 'as open as possible, as closed as necessary'. The Open Research Europe (ORE) platform, set up by the European Commission in 2020 can be used as an open access platform for scientific publications to fulfil the open access requirements.

## 2.4.2 FLEXFACT'S OPEN SCIENCE STRATEGY

FLEX4FACT conforms to the Horizon Europe open science policy<sup>3</sup> and will ensure open access of scientific results generated by the project to interested stakeholders. FLEX4FACT will implement different actions to cope with the open science practices:

1. Disseminate project deliverables and results – as soon as possible – through appropriate means, including their diffusion via scientific publication (Article 17 of the Model Grant Agreement),
2. Ensure open access (online access to research outputs provided free of charge to the end-user) to all peer-reviewed scientific publications relating to its results (Article 17 of the Model Grant Agreement),
3. Manage the digital research data generated in the action responsibly, in line with the FAIR (Findable, Accessible, Interoperable and Reusable) principles (Article 17 of the Model Grant Agreement),
4. In order to provide clarity in intellectual property and assets management and to allow the European Commission to follow up and provide help when needed, the beneficiaries must indicate the owner(s) of the results (Results Ownership List) in the final periodic report (Article 16 of the Model Grant Agreement). Further information is provided in subchapter 5.5.

A Data Management Plan (D8.2) will provide further information on data and publications to be disseminated in an open science manner. It will help planning and structuring the research data

<sup>3</sup> European Commission, Directorate-General for Research and Innovation, Horizon Europe, open science: early knowledge and data sharing, and open collaboration, Publications Office of the European Union, 2021, <https://data.europa.eu/doi/10.2777/18252>

management, to ensure that the relevant data is findable, accessible, interoperable and reusable (“FAIR”), as well as define the procedures involved in capturing, handling and managing the research data throughout the project’s life cycle and beyond. Open Science should not affect the IP generated by the project’s research results and is based on an adequate management of IP. The DMP is aligned with the CDE plan.

## 2.5 COMPLIANCE WITH OVERALL GENDER STRATEGY

The FLEX4FACT consortium commits to include gender dimension in all communication and dissemination activities.

The EU Gender Action Plan III calls for a gender equitable world and provides a strategic, ambitious policy tool that sends a clear message of the EU's commitment to gender equality and women's empowerment in all areas of its external action<sup>4</sup>.

In line with the EU's Gender Action Plan (GAP), the FLEX4FACT project supports gender equality in three main areas:

1. **Advancing equal participation and leadership.** Women are and will be included in the project work, both as researchers, administrative personnel, and work package/task leaders.
2. **Strengthening economic and social rights and empowering women and girls.** By encouraging women to take leading roles in FLEX4FACT, the project will support women's career advancement, equal access to employment and financial opportunities.
3. **Combatting gender-based violence.** FLEX4FACT Gender Action Plan will take steps to ensure that actors involved in the project follow a code of conduct prohibiting all forms of sexual harassment and other forms of gender-based violence.

FLEX4FACT’s GAP is built on "Horizon Europe Guidance on Gender Equality Plans (GEPs)"<sup>5</sup> and the Gender Equality in Academia and Research (GEAR) tool, co-developed by the European Institute for Gender Equality (EIGE) and the European Commission’s Directorate General for Research and Innovation.

The main guidelines defined for project communication and dissemination are as follows:

- Increasing the visibility and representation of women in science and engineering by putting women staff in the spotlight when communicating and disseminating results.
- Ensure the timing and locations of project-related meetings are convenient for all participants.
- Provide project information and services through media which all target groups are likely to access.
- Ensure project documentation is provided in local languages, taking account of literacy levels.
- Participate in EU initiatives promoting gender diversity in the energy sector such as

<sup>4</sup> European Commission website, Gender action plan, 25 Nov. 2020, visited on 28.10.2022, [https://ec.europa.eu/commission/presscorner/detail/en/IP\\_20\\_2184](https://ec.europa.eu/commission/presscorner/detail/en/IP_20_2184)

<sup>5</sup> European Commission, Directorate-General for Research and Innovation, Horizon Europe guidance on gender equality plans, Publications Office of the European Union, 2021, <https://data.europa.eu/doi/10.2777/876509>



Women4Energy<sup>6</sup> and Women in Green Hydrogen<sup>7</sup>.

Further ideas on how the FLEX4FACT project will contribute to gender equality were collected in the project handbook (D8.1):

- Exchange on the projects' commitment to gender equality and the progress made with project partners,
- Ensure that dissemination activities are carried out equally by all genders,
- Conduct a seminar/lecture on gender equality and gender bias in research,
- Creation of guides and compendia on gender equality to publish on the FLEX4FACT website,
- Prevent harassment during project work.

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<sup>6</sup> Women4Energy, official website, visited on 28.10.2022, <https://women4energy.eu/>

<sup>7</sup> Women in Green Hydrogen, official website, visited on 28.10.2022, <https://women-in-green-hydrogen.net/>

## 3 COMMUNICATION AND DISSEMINATION STRATEGY

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The project's communication and dissemination strategy has six main objectives:

- Raising awareness of FLEX4FACT solutions,
- Engaging with stakeholders,
- Disseminating the project' results,
- Promoting the FLEX4FACT industrial use cases,
- Setting up feedback channels to gather inputs from the target groups,
- Facilitating the market uptake of results by promoting their economic, technical, scientific, and societal benefits.

The following sections provide an overview of the key messages, target groups and channels as well as activities to be used to achieve these objectives. The results of the communication and dissemination strategy will be constantly monitored in order to assess its effectiveness, its progress, and to implement changes where necessary. This is explained in more depth in chapter 4.

### 3.1 KEY MESSAGES

To assure a clear communication and dissemination strategy, a set of key messages and topics relevant for the project, has been defined.

The following **key topics** are the most common and relevant for the project and will constitute the backbone of the FLEX4FACT communication activities:

- Industrial flexibility,
- Manufacturing flexibility,
- Energy flexibilization,
- Renewable energy production,
- Energy storage systems,
- Digital twin.

Key messages should be direct, simple, clear, action-oriented concise and consistent (Wilson et al, 2010)<sup>8</sup>. The project partners identified the following **key messages** to be communicated:

- **General messages regarding flexibilization of industrial sites:**
  - Process flexibility and efficient energy storage systems are essential to compensate for fluctuating energy production from renewables,
  - Flexibility solutions are key to increase the use of renewable energies in the industrial sector, thus contributing to the EU Green Deal goals,
  - Energy flexibilization will help move towards a safe, clean, and sustainable EU

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<sup>8</sup> Wilson, P.M., Petticrew, M., Calnan, M.W. et al. Disseminating research findings: what should researchers do? A systematic scoping review of conceptual frameworks. *Implementation Sci* 5, 91 (2010). <https://doi.org/10.1186/1748-5908-5-91>

industry.

**- FLEX4FACT related messages:**

- Offer demand response services to external energy agents through a cloud service,
- Achieve environmentally friendly production through renewable sources integration,
- Deliver digital tools that will unleash the flexibility potential of industrial processes,
- Develop digital twins to support the optimisation of industrial processes,
- Develop solutions making EU manufacturing more cost-efficient and competitive,
- Integrating renewable energy sources and on-site storage technologies in industrial settings.

### 3.2 TARGET GROUPS

The following table shows the different target groups to be reached by the FLEX4FACT CDE activities. Additionally, the table lists the interests and main roles of the target groups regarding the project’s results as well as examples of local EU stakeholders, identified by project partners.

*Table 2 – List of the FLEX4FACT target groups, their interests and main roles and examples of target groups identified by the project partners.*

TARGET GROUPS	INTERESTS AND MAIN ROLES	EXAMPLES
TG1 - End users – industrial plant operator	Reduction of energy costs; increased use of renewable energies	<a href="#">Seac</a> , <a href="#">Standard Profil</a> , <a href="#">Celsa</a> , <a href="#">Inaventa Solar</a>
TG2 - Energy provider DSO, TSOs, Energy retailers and aggregators	Selling energy; preventing congestion; balancing out fluctuations in the availability of renewable energies	<a href="#">Plenitude</a> , <a href="#">EirGrid</a> , <a href="#">Iberdrola</a> , <a href="#">Endesa</a> , <a href="#">Naturgy</a> , <a href="#">OEDAS</a> , <a href="#">A2A</a> , <a href="#">Sede</a> , <a href="#">ENTSO-E</a> , <a href="#">ANELL</a> , <a href="#">EnBW</a>
TG3 - Software and Hardware solutions providers – energy solutions – digital solutions	Developing and selling energy/digital solutions that best meet the needs of users; applying FLEX4FACT results and knowledge	<a href="#">Nuvve</a>
TG4 - Investors	Invest money to accelerate the market entry of green innovations and make long-term gains	
TG5 - EU research community	Support EU leadership in digitalisation and energy flexibility; Knowledge exchange	<a href="#">Tekniker</a> , <a href="#">Tecnalia</a> , <a href="#">Leartiker</a> , <a href="#">EERA</a> , <a href="#">EFFRA</a>

TG6 - Technological expert groups, EU working groups, standardisation bodies

Advance standards; leverage fundings; Knowledge exchange

[A.SPIRE](#), [ESTEP](#), [PACE](#), [European Clean Hydrogen Alliance](#), [European Circular Economy Stakeholder Platform](#), [BRIDGE](#), [Manufuture](#), [ACER](#)

TG7 - Public authorities

Adopt new rules and legal frameworks

TG8 – General public

Be informed about latest technological trends and improved quality of life/health

### 3.3 PRINTED AND DIGITAL COMMUNICATION CHANNELS AND TOOLS

In order to engage with the target groups presented above, FLEX4FACT uses a large variety of channels and tools to communicate and disseminate the project’s activities and outcomes. Furthermore, the project operates as a communication channel to support relevant European Commission Energy Directives and legislation.

Communication and dissemination materials related to the project activities are based on the FLEX4FACT Corporate Identity (CI) toolkit, which was developed in Task 7.2 together with a professional design agency. The CI toolkit comprises the project logo, a colour palette, fonts, key visuals and templates for the newsletters, Power Point and Word templates (e.g. for deliverables, press releases and articles). The toolkit also includes a short style guide. All elements of the CI toolkit are accessible to the project partners via the project SharePoint repository and were described in more detail in deliverable D7.2 – Communication and dissemination toolbox and website (M9).

In the following, tools and channels used for the project communication and dissemination are presented.

#### Project Website

The project website is one of the main communication tools for EU funded projects. The FLEX4FACT project website is to be published by M9 and is accessible under [www.flex4fact.eu](http://www.flex4fact.eu). The FLEX4FACT website includes the following content:

- **Project Homepage** - General overview of the project,
- **About FLEX4FACT** - Background, Objectives, Concept, Impact,
- **Consortium** - Short descriptions of the project partners, their contribution to the project and contact information,
- **Pilots** - Company description, use case information, challenges, and benefits,
- **News & events** – News about the project,
- **Resources** – Public deliverables, communication materials,
- **Contact details and newsletter subscription.**

The website is administrated and maintained by project partner SIG and is updated on a regular basis with latest results and news concerning the project. Additionally, it will be maintained for at least 2 years after the project. Moreover, the website offers the possibility for visitors to subscribe to the newsletter, to follow the project's Twitter and LinkedIn accounts, and to contact the website administrator (SIG) via a dedicated email address [flex4fact@steinbeis-europa.de](mailto:flex4fact@steinbeis-europa.de).

The main target audience of the website are industrial stakeholders and research organisations working on projects and topics related to the flexibilization of industry and, to a lesser extent, people interested in these topics in general. The expected key performance indicator (KPI) for this channel is 500 visits per month, 20% returning visitor rate and 50 downloads/months once public reports are uploaded.

### **Social media channels (LinkedIn, Twitter)**

Social media channels have become an effective way to expand reach and foster stakeholder engagement and interactive communication. Two social media channels have been set up in September 2022 (M4) to support the FLEX4FACT communication and dissemination activities:

- LinkedIn (@Flex4Fact Project): [LinkedIn profile](#)
- Twitter (@Flex4Fact): [Twitter profile](#)

The accounts are managed by project partner SIG. They will regularly publish general information on the project, participation in events, updates on the project advancement, etc. The consortium will support SIG and provide inputs. Moreover, all partners will contribute to giving the project more visibility via their own channels.

The use of **LinkedIn** allows FLEX4FACT to communicate rapidly with a wide audience of engaged users. LinkedIn is used for professional networking and focused on business-to-business prospects relationships. This platform is an ideal place to share content, connect with similar initiatives, promote events and start lively discussions.

Since its rebranding to X in October 2022, SIG as CDE leader will monitor developments and reserve the right to remove the project from the platform if it is found not to be in line with the general communication and dissemination guidelines of Horizon Europe projects. **X turned out to be under-used by project stakeholders and is kept running but produces less than what could control herself.**

The main target audience are stakeholders working on projects and topics related to the flexibilization of the industry, professional networks, similar EU projects, politic decision makers and people interested in these topics in general.



Figure 2 - Screenshot of the FLEX4FACT LinkedIn profile.

### Brochure

A project brochure will be created, in order to promote the FLEX4FACT project to a wider audience. The brochure will include an overview of the project, its technologies and industrial use cases, project partners, links to the website and social media channels etc. It will be distributed during events, conferences and workshops and will be displayed at the partner's offices.

### Roll-Up Banner

A roll-up banner will be designed based on the project CI. It will contain a shortened version of the brochure content and is designed to generally target the visitors of conferences and fairs. It serves for promoting the FLEX4FACT project during events, conferences, workshops etc.

### Press releases

Press releases will be published online and in printed magazines, highlighting the project achievements and main advances. They will be uploaded to the website, disseminated via the FLEX4FACT social media channels and by each partner via their own channels (own social media, website and mailing lists, local media and press, etc.). In the course of the project, a total of 7 press releases will be published, approximately every 6 months. Since the targeted audience of press releases can vary substantially, the channels suitable for disseminating press releases will be chosen as appropriate to the situation.

### Newsletter

E-newsletters will be published every 8-9 months. They will cover main project progress, news from the industrial use cases and upcoming events. Each edition will contain an editorial and four to five articles. The electronic newsletters will be sent via email to the registered recipients. The newsletter will further be uploaded to the website and disseminated via the FLEX4FACT social media channels.



The main target audience of the newsletters are:

- Stakeholders working on projects and topics related to the flexibilization of the industry
- The project partners' networks
- People interested in the topic of flexible industry

### **General project presentation**

A general FLEX4FACT PowerPoint presentation will be created and shared with all partners. Based on the project results, this presentation will be updated regularly. The presentation contains a non-confidential overview of the project, which will be used for dissemination purposes when for instance attending scientific conferences and fairs.

### **Project video**

A [project promotional video](#) has been developed, produced and published at M24 will target a broad audience of business stakeholders and general public by explaining the project' technologies, its economic and social benefits through video animations and partners' interviews and include sequences presenting use cases visualizing the actual implementation. This way, the video will raise awareness of FLEX4FACT project, its activities, and efforts to make industry more flexible.

### **Accessibility of results after the end of the project**

Publications and public deliverables will be made available on openAIRE, Zenodo and the project website. On Zenodo, the possibility of creating a FLEX4FACT community where all papers and results of the project are visible together, will be considered.

## **3.4 PLANNED DISSEMINATION ACTIONS - PUBLICATIONS, EVENTS AND NETWORKING**

Numerous dissemination and communication activities were and will be carried out within the FLEX4FACT project to engage with stakeholders and promote the project's outcomes. In the following sections the different activities are described in more detail.

### **3.4.1 PUBLICATIONS**

To facilitate the uptake of FLEX4FACT's results in research and ensure knowledge and technology transfer FLEX4FACT will publish at least 10 scientific publications. As a first step the partners identified possible publication topics (see following Table 3). This table will be refined and updated during the project duration, as the project partners achieve results and have more precise plans regarding their planned publications. SIG uploads publications in openAIRE, the online repository Zenodo and on the project public website.

Table 3 – Possible publication topics identified by the project partners.

PARTNER	POTENTIAL TOPICS
Evolvere, SINTEF Energy	Electricity market regulations, definition of flexibility in the FLEX4FACT context
SINTEF Energy	Energy systems modelling, renewable energy integration, capacity expansion optimisation, energy flexibility
UCC	Process mapping, Design Structure Matrix (DSM)
UPC	Algorithms for scheduling production – Algorithms for flexibility offers – Aggregation algorithms
RWTH	Excess energy use, energy flexibility, building simulation, grey-box modelling, model predictive control, carbon footprint reduction, industry-building synergies
SINTEF MAN	Cyber Physical System Manufacturing, Energy efficiency in Machinery and Architecture for Manufacturing
HSAS	Digital Twin modelling, European balancing power markets
ITAINNOVA, IFE	Digital Twin modelling for manufacturing process, Energy Digital Twin

A list of scientific journals that support open access publication is given in the following table. This list of potential journals for FLEX4FACT project publications was gathered through the communication and dissemination survey filled out by the project partners.

Table 4 – List of potential open-access publication platforms to be used for FLEX4FACT publications

NAME OF JOURNAL	EDITOR	AREA(S) OF INTEREST
Open Research Europe <a href="#">Weblink</a>	European Commission	All
IEEE Open Access Journal of Power and Energy <a href="#">Weblink</a>	IEEE journals	Renewables



IEEE Transactions on Smart Grid <a href="#">Weblink</a>	IEEE journals	Smart grids
European Journal of Operational Research <a href="#">Weblink</a>	Elsevier	Methodology of operational research and the practice of decision making
Renewable Energy <a href="#">Weblink</a>	Elsevier	Renewables
Energies <a href="#">Weblink</a>	MDPI	Renewables
Renewable and Sustainable Energy Reviews <a href="#">Weblink</a>	Elsevier	Renewable and Sustainable Energy
Energy <a href="#">Weblink</a>	Elsevier	Energy engineering and research
Applied Energy <a href="#">Weblink</a>	Elsevier	Energy
Frontiers in Energy Research <a href="#">Weblink</a>	Frontiers	Energy
Procedia CIRP <a href="#">Weblink</a>	CIRP	high quality proceedings from CIRP conferences
Mathematical Methods of Operations Research <a href="#">Weblink</a>	Springer	mathematics, statistics, and computer science
Expert System with Applications <a href="#">Weblink</a>	Elsevier	expert and intelligent systems applied in industry, government, and universities worldwide
International Journal of Production Research <a href="#">Weblink</a>	Taylor & Francis	manufacturing, industrial engineering, operations research and management science
Computer Methods in Applied	Elsevier	mathematical models, variational

Mechanics and Engineering

[Weblink](#)

formulations, and numerical algorithms

Robotics and Computer-Integrated Manufacturing

[Weblink](#)

Elsevier

machining processes, modelling and simulation, supply chain management, and resource optimisation

### 3.4.2 INTERNATIONAL CONFERENCES AND FAIRS

Together with the publication of results in scientific and industrial publications, the visit of international conferences and fairs will be a crucial lever to disseminate the project’ findings to a scientific and technical audience. This way, the partners will facilitate the market uptake of the FLEX4FACT solutions, connect with stakeholders, enhance knowledge transfer and exploit synergies with other EU & international projects. Partners of the F4F project plan to participate in at least ten exhibitions, scientific conferences, workshops or industrial events. Scientific conferences will offer a further opportunity for partners to present results in the form of papers and posters.

The following table lists events, relevant to the FLEX4FACT topics, that project partners plan to attend to dissemination results and connect with the main target groups.

*Table 5 – List of events with potential participation/contribution of FLEX4FACT.*

EVENT NAME, DATE AND LOCATION	DESCRIPTION FROM WEBSITE	WEBSITE
<b>ENLIT Europe</b> 29 Nov – 1 Dec 2022 Frankfurt, Germany	Enlit is a constantly growing, inclusive and end-to-end forum that addresses every aspect of the energy agenda.	<a href="#">Weblink</a>
<b>ICORES 2023</b> 19-21 Feb 2023 Lisbon, Portugal	Bringing together researchers, engineers, faculty, and practitioners interested in both theoretical advances and practical applications in the field of operations research.	<a href="#">Weblink</a>
<b>World Sustainable Energy Days</b> 28 Feb – 3 Mar 2023 Wels, Austria	The annual conference is a leading event on the energy transition and climate neutrality with over 650 participants from over 60 countries.	<a href="#">Weblink</a>
<b>Energy Storage World Forum</b>	Evaluating Energy Storage for large scale, C&I and microgrid at the economic and technical level.	<a href="#">Weblink</a>

May 2023  
Berlin, Germany

**ETG Kongress**  
03-04 May 2023  
Wuppertal, Germany

Regulatory framework and business models for the energy transition, digitalisation of the energy transition, components and technologies for the energy transition, sector coupling and electromobility, projects and applications)

[Weblink](#)

**All-Energy Exhibition and Conference**  
10-11 May 2023  
Glasgow, Scotland

Connect suppliers of renewable and low carbon energy solutions and policy makers to developers, investors, buyers and a number of professionals from around the world, facilitating business and knowledge exchange.

[Weblink](#)

**E-World – energy & water**  
23-25 May 2023  
Essen, Germany

Information platform for the energy sector, gathering international decision makers.

[Weblink](#)

**The Smarter Europe**  
14-16 June 2023  
Munich, Germany

The focus is on renewable energies, decentralization and digitalization of the energy industry as well as cross-sector solutions from the electricity, heat and transport sectors.

[Weblink](#)

**IBPSA conference**  
4-6 Sep 2023  
Shanghai, China

Strategy and techniques toward the carbon neutralization; energy transition for smart metropolis; performance driven building design; system operation with big data; simulation techniques and software development; indoor environment and human behavior; the renaissance of cultural heritage.

[Weblink](#)

**Smart Energy Systems International Conference**  
12-13 Sep 2023  
Copenhagen, Denmark

Presenting and discussing scientific findings and industrial experiences related to the subject of Smart Energy Systems based on renewable energy, District Heating Technologies, e-fuels and energy efficiency.

[Weblink](#)

**CISBAT 2023**  
13-15 Sep 2023  
Lausanne, Switzerland

OPERATION - energy management, efficiency, control  
WELL-BEING - comfort, health, indoor environment  
CIRCULARITY - materials, embodied energy, construction

[Weblink](#)

**Metering Days 2023**

Smart metering technologies and the national rollout

[Weblink](#)

17-18 Oct 2023  
Fulda, Germany

plans.

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**CIRP CMS 2023**

24-26 Oct 2023  
Cape Town, South  
Africa

Manufacturing in an age of disruption

[Weblink](#)

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**IEEE PES ISGT**

23-26 Oct 2023  
TBD

Powering solutions for decarbonized and resilient  
future smartgrids.

[Weblink](#)

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**Sustainable Places  
Conferences**

TBD

Platform for the dissemination of research, the  
organisation of workshops, EU project clustering and  
networking with regard to technology transfer,  
renewable energy integration and energy security.

[Weblink](#)

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**European Sustainable  
Energy Week**

TBD

The European Sustainable Energy Week (EUSEW)  
focussing on the REPowerEU plan, digitalisation,  
energy efficiency and a fair energy transition for all.

[Weblink](#)

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**Conference on  
Sustainable  
Development of  
Energy, Water and  
Environment Systems  
(SDEWES)**

24 – 29 Sep 2023  
Dubrovnik, Croatia

Advancement and dissemination of knowledge on  
methods, policies and technologies for increasing the  
sustainability of development by de-coupling growth  
from the use of natural resources and by a transition to  
a knowledge-based economy.

[Weblink](#)

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### 3.4.3 SHOWCASE EVENTS TOGETHER WITH USE CASE PARTNERS

Three showcase events, one per project year, are organized together with use cases INAVENTA, BARNA STEEL SA and SEACSUB SPA to demonstrate the feasibility of the FLEX4FACT solution to relevant stakeholders to promote the project and boost market uptake:

1. Business stakeholder workshop organized by INAVENTA in Norway on the **26<sup>th</sup> of October 2023**
2. Online show case event for BARNA in Spain **incl. EU projects Twinghy and Alchimia on 25<sup>th</sup> of October 2024**
3. Forum on flexibility and demand response in the energy domain organized by START4.0 and SEAC in Italy.

These events combine site visits and workshops related to topics of the project. They are intended to build a community of followers around the project and help the project partners to connect with potential end users of the FLEX4FACT solutions.

### 3.4.4 SYNERGIES/INTERACTIONS WITH OTHER PROJECTS AND INITIATIVES

Projects under the same call often share goals and aim at similar audiences. Connecting and clustering with likeminded beneficiaries, e.g. by following their social media channels, can attract each other’s followers, enlarging the community of interested individuals and organisations.

FLEX4FACT aims to implement fifteen dissemination actions to actively build synergies with and share knowledge with similar R&D projects and networks/clusters (e.g. A.Spire, EFFRA, Spanish rubber cluster, Norwegian Solar Energy Cluster).

Possible synergies are:

- Exchange of knowledge through workshops and participation in EU networks,
- Build on experience gained during the implementation of the projects,
- Joint communication activities (e.g. common participation in events and joint presentations/workshops, common newsletter articles, etc.),
- Cross-feeding of social media channels.

EU projects identified for collaboration are listed in the following table.

*Table 6 - List of projects with suitable for building synergies.*

PROJECT	PROGRAM	SHORT DESCRIPTION
TRINEFLEX <a href="#">Weblink</a>	HORIZON.2.4 – Digital, Industry and Space	Transformation of energy intensive process industries through integration of energy, process, and feedstock flexibility.
FLEXIndustries <a href="#">Weblink</a>	HORIZON.2.4 – Digital, Industry and Space	Digitally enabled flexible Industries for reliable energy grids under high penetration of Variable Renewable Energy Sources
s-X-AIPI <a href="#">Weblink</a>	HORIZON.2.4 – Digital, Industry and Space	self-X Artificial Intelligence for European Process Industry digital transformation
CONVERGING <a href="#">Weblink</a>	HORIZON.2.4 – Digital, Industry and Space	Social industrial collaborative environments integrating AI, Big Data and Robotics for smart manufacturing
Circular TwAI <a href="#">Weblink</a>	HORIZON.2.4 – Digital, Industry and Space	AI Platform for Integrated Sustainable and Circular Manufacturing

<p>RE4DY <a href="#">Weblink</a></p>	<p>HORIZON.2.4 – Digital, Industry and Space</p>	<p>European Data as a Product Value Ecosystems for Resilient Factory 4.0 Product and Production Continuity and Sustainability</p>
<p>STAND4EU <a href="#">Weblink</a></p>	<p>HORIZON.2.4 – Digital, Industry and Space</p>	<p>Boosting the Exploitation of Standardisation Inputs from European Projects</p>
<p>DENIM <a href="#">Weblink</a></p>	<p>H2020-EU.2.1.5. – Industrial leadership</p>	<p>Digital intelligence for collaborative Energy management in Manufacturing</p>
<p>BD4OPEM <a href="#">Weblink</a></p>	<p>H2020-EU.2.1.1. – Industrial leadership</p>	<p>Big Data for OPen innovation Energy Marketplace</p>
<p>FEVER <a href="#">Weblink</a></p>	<p>H2020-EU.3.3 – Societal challenges</p>	<p>Flexible Energy Production, Demand and Storage-based Virtual Power Plants for Electricity Markets and Resilient DSO Operation</p>

Networks and clusters for possible collaborations identified by the consortium are listed in the following table.

*Table 7 - Networks and clusters identified by the project partners for possible collaborations.*

NETWORK/CLUSTER	SHORT DESCRIPTION
<p>Processes4Planet <a href="#">Weblink</a></p>	<p>The Processes4Planet (P4Planet) Partnership aim is to transform the European process industries to achieve circularity and overall climate neutrality at the EU level by 2050 while enhancing their global competitiveness.</p> <p>CELSA participates in the working group on energy (see next section for further information).</p>
<p>EFFRA <a href="#">Weblink</a></p>	<p>The European Factories of the Future Research Association (EFFRA) is a non-for-profit, industry-driven association promoting the development of new and innovative production technologies.</p>
<p>NCP4Industry <a href="#">Weblink</a></p>	<p>European Network of HE Cluster 4 Industry National Contact Points</p>

IEA

[Weblink](#)

The IEA is the global authority for energy efficiency data, analysis and policy advice.

### 3.4.5 CONTRIBUTIONS TO PROCESSES4PLANET AND FURTHER PARTNERSHIPS

The Processes4Planet (P4Planet) Partnership<sup>9</sup> is a co-programmed EU public-private partnership implemented as part of the Horizon Europe programme. It aims to transform the European process industries to achieve circularity and overall climate neutrality at the EU level by 2050 while enhancing their global competitiveness. It has three objectives: 1. Developing and deploying climate neutral solutions, 2. Closing the energy and feedstock loops and 3. Achieving global leadership in climate-neutral and circular solutions, accelerating innovation and unlocking public and private investment. P4Planet established six permanent working groups dedicated to several topics such as: energy, resources and circularity, process optimisation and CCU, framework conditions, industrial symbiosis/Hubs4Circularity and societal innovation. SIG and CELSA are partners of the partnership and seek to regularly participate in working group meetings and P4Planet events to promote the latest results of FLEX4FACT.

Collaborations with further EU networks and initiatives will be strengthened: partner SINTEF manufacturing will participate in activities of the European Factories of the Future Research Association (EFFRA) is a non-for-profit, industry-driven association promoting the development of new and innovative production technologies<sup>10</sup>. BARNSTEEL is member of ESSA<sup>11</sup>, the European Steel Skills Agenda, a partnership aiming at the identification of skill needs and demands for building appropriate training and curricula and development and promotion of successful sectoral recruitment and upskilling schemes. BARNSTEEL will continue working together with ESSA and share findings related to the FLEX4FACT project, while partner SPS will actively contribute to the activities of the Spanish rubber cluster.

### 3.4.6 FLEX4FACT'S ADVISORY COMMITTEE (AC)

An External Advisory Committee (EAC) has been formed to provide regular feedback and support the dissemination activities of the project. The voluntary advisors are Hanne Saele from Statnett SF, Dr. Sadeeb Simon Ottenburger from Karlsruhe University of Technology, Enrico Pochettino from Iren S.p.A., Massimiliano Varrucchi from Comune di Genova, Adina Georgescu from Eurometaux and Carlos Gamarra from HARC. The first of several workshops was organised at the FLEX4FACT general assembly in Milan on the 5<sup>th</sup> of June 2024 to discuss progress of FLEX4FACT and collect feedback from potential future end users of the developed solutions. The formation of this committee and coordination of activities will be managed by partner START4.0.

<sup>9</sup> Aspire, official website, visited on 07.11.2022, <https://www.aspire2050.eu/p4planet/about-p4planet>

<sup>10</sup> EFFRA, official website, visited on 07.11.2022, <https://www.effra.eu/effra>

<sup>11</sup> ESSA, official website, visited on 07.11.2022, <https://www.estep.eu/essa/>



### 3.4.7 PUBLICATION OF A PROJECT GUIDEBOOK

The project guidebook will be one of the most important dissemination tools of FLEX4FACT. This guidebook will contain a short presentation of challenges faced by the industrial sector in EU, a detailed presentation of key exploitable results of FLEX4FACT, and a description of newly produced training materials. This guidebook will be written in an easy and accessible way to be suitable for as many target groups as possible. It will be made available to the general public for download on the project webpage and a few printed copies will be handed to project partners to foster the uptake of results.

### 3.5 STAKEHOLDER OUTREACH

The following matrix provides a rough overview of which communication and dissemination tools and channels are suitable for reaching the main target groups. The overall aim of this matrix is to tailor the communication and dissemination activities to the main target groups in order to maximize the impact of the communication and dissemination activities. The table contains crosses and crosses in brackets indicating for which target groups the tools and channels are most suitable: a cross indicates that a media is suitable for a target group while a cross in brackets indicates that the content of the media is only partially suitable for a target group. This table shows, for example, that the website is a communication and dissemination channel providing information in an easy and accessible way adapted to all target groups, while demonstration events and scientific publications are suitable only for a limited audience having already first knowledge of energy and industry related topics.

Table 8 - Matrix of communication and dissemination tools and channels tailored to the target groups.

	END USERS	ENERGY PROVIDERS, DSO	SOLUTION PROVIDERS	EU RESEARCH COMMUNITY	TECHNOLOGICAL EXPERT GROUPS	PUBLIC AUTHORITIES	INVESTORS	GENERAL PUBLIC
Website	X	X	X	X	X	X	X	X
Social media	X	X	X	(X)	(X)	X	X	X
Brochure	X	X	X	(X)	(X)	(X)	(X)	X
Roll-Up	X	X	X	(X)	(X)	(X)	(X)	(X)
Newsletter	X	X	X	(X)	(X)	(X)	(X)	X



Press release	X	X	X	(X)	(X)	(X)	(X)	X
Networking activities	X	X	X	X	X	X	X	(X)
Conferences and Fairs	(X)	(X)	(X)	X	X	(X)	(X)	
Scientific publications	(X)	(X)	(X)	X	X	(X)	(X)	
Showcase events	X	X	X			(X)	(X)	
Project guidebook	X	X	X	X	X	X	X	X

### 3.6 AGENDA OF PLANNED ACTIVITES

The communication and dissemination activities planned by the FLEX4FACT consortium until the end of the project are detailed in the following table. The list will be further refined and completed in the course of the project.

*Table 9 - Communication and dissemination activities planned by the FLEX4FACT consortium.*

TITLE	PLANNED DATE	INVOLVED PARTNERS	DESCRIPTION AND ACTION POINTS
Launch of the Website	M9	SIG + all partners	Project website will be published.
Continuous updates of website	M9-M42	SIG + all partners	Upload of communication and dissemination Materials (brochure, public deliverables, newsletters, press releases). Write and publish news articles on project advancement, participation to events, etc.
Continuous posts on social media channels (LinkedIn + Twitter)	M3-M42	SIG + all partners	Communication of non-sensitive information about the project and its progress to raise awareness amongst targeted audiences.
Publication of press	M1-M42	SIG + all	A minimum of 7 press releases will

releases		partners	be prepared in the course of the project.
Publication of newsletters	M1-M42	SIG + all partners	E-newsletters will be published every 8-9 months.
Showcase event N°1	Between M6–M18	INAVENTA, Norway	Introductory workshop
Publication of project video	M24	SIG + all partners	A project video will be released in M24.
Showcase event N°2	Between M18–M30	BARNA, Spain	Business stakeholder workshop
Showcase event N°3	Between M30–M42	START4.0 and SEAC, Italy	Forum on flexibility and demand response in the energy domain
Final conference/event	M42	SINTEF	Final event to present the main results and network with the main target groups to support exploitation and uptake of results

## 4 MONITORING AND EVALUATION OF COMMUNICATION AND DISSEMINATION ACTIVITIES

The results of the communication and dissemination strategy is constantly monitored in order to assess its effectiveness and the general progress and make changes where necessary. To monitor communication and dissemination activities, Key Performance Indicators (KPIs) have been identified and defined.

### 4.1 KEY PERFORMANCE INDICATORS AS TOOLS FOR MONITORING OF COMMUNICATION AND DISSEMINATION ACTIVITIES

WEBSITE	KPI 1: visits per month KPI 2: returning visitor rate KPI 3: downloads per month
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In order to keep track of the website activities, web analytics were installed. The expected KPI's are: 500 visits per month, 20% returning visitor rate and 50 downloads/months once reports are uploaded. This is tracked monthly.

From the very beginning of the project, we have exceeded KPI 1. Early in the project, we already achieved 960 unique visitors per month, and this number has grown steadily over time. By M30, we recorded an average of 1,543.7 unique visitors per month. In recent months, this figure has risen further, with an average of approximately 2,000 unique visitors. Notably, these visitors show a strong engagement, with an average return rate of 38%, exceeding the set KPI by 18%.

Regarding downloads, we average 18.5 downloads per month. Available resources include public deliverables, newsletters, press releases, communication materials, publications, and the project video. Many of our resources are accessible via direct links, reducing the need for document downloads.

The Flex4Fact website is continuously updated to ensure that it remains current, offering visitors a comprehensive and user-friendly overview of the project and its activities. This commitment to keeping the site dynamic and informative ensures its role as a key tool in the project's dissemination and communication strategy.

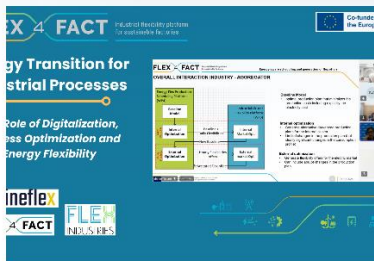


## Goal of the Horizon Europe FLEX4FACT project

The FLEX4FACT project aims to develop an end-to-end ecosystem based on a modular and multi-level architecture to



Screenshot of the Flex4Fact website "Home"



### News

29. October 2024

## Flex4Fact Workshop Wrap-UP

On the 25th October we held an exclusive workshop on the energy transition for industrial processes, organized in collaboration with FLEXIndustries and Trineflex.



### event

29. October 2024

## Revolutionizing Green Industries: Cutting-Edge Digital Solutions for Steel Decarbonization – Use Case CELSA

Join us on 7 November from 15:00 to 16:30 CET for an



### News

18. October 2024

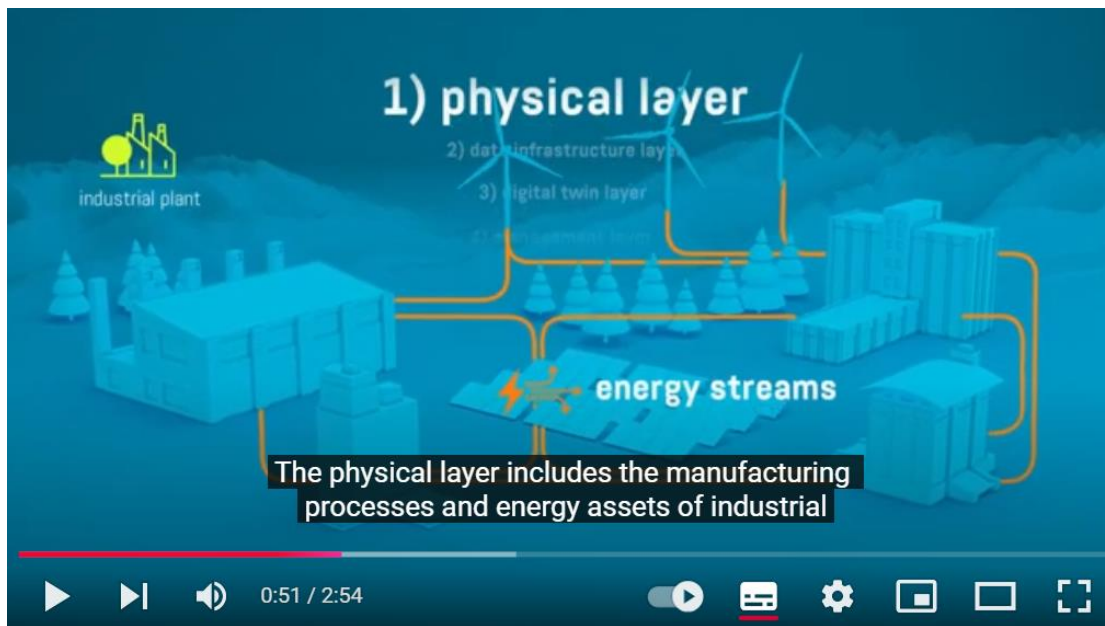
## New Publication Alert: How Advanced Decision Support Tools Can Enhance Energy Efficiency in Industries

Learn more about our new publication: "How Advanced Decision Support Tools Can Enhance Energy Efficiency in Industries"

Screenshot of the Flex4Fact website "News&Events"

A special highlight of the Flex4Fact website is the project video which was created in M24. This video, produced in collaboration with a specialized 3D animation agency, effectively communicates the technical aspects of the project in an accessible way. The project video is

available on the Flex4Fact website and across its social media channels. Additionally, it has been uploaded to the newly created Flex4Fact YouTube channel, which serves as a platform for hosting longer content, such as project videos, pilot videos, and recordings of webinars and training sessions. The link to the project video is the following: [FLEX4FACT Project Video](#)



Screenshot from the Flex4Fact Project Video

Social media Accounts

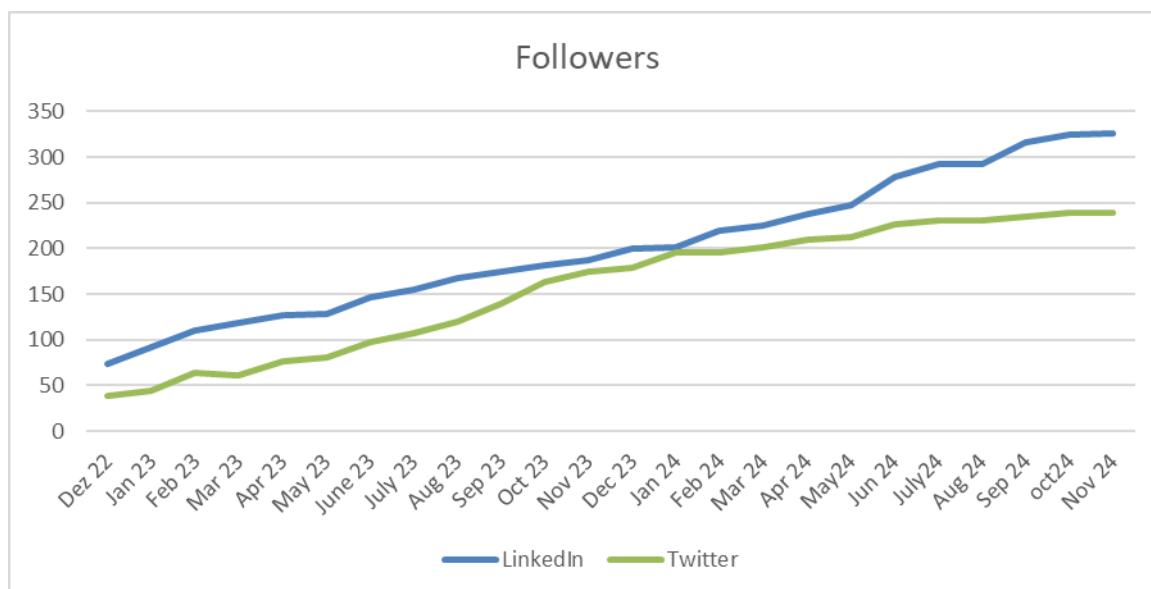
- KPI 4: NUMBER OF FOLLOWERS
- KPI 5: NUMBER OF POSTS
- KPI 6: NUMBER OF POST INTERACTIONS
- KPI 7: NUMBER OF PEOPLE REACHED/POST

To monitor the impact of our social media activities, metrics such as the number of followers, posts, interactions, impressions, and reach per post are regularly tracked. The table below summarizes the social media performance of the Flex4Fact project from M3 (when the accounts were created) to M30 (November 21, 2024). It is noteworthy that during this period, Twitter transitioned to X, reflecting changes in its structure and user base.

MONTH	LINKEDIN				X				
	N° Followers	N° posts	N° post impressions/month	N° people reached / post	N° Followers	N° Tweets	N° impressions/month	Post / month	N° people reached / post
M3	25	2	1415	707,5	24	2	75		37,5
M18	187	2	2430	1215	187	2	57		28,5
M24	248	3	1506	502	212	2	44		22
M30	326	5	2607	521,4	239	3	37		12,33

As of M30, we have published a total of 74 posts on LinkedIn and 48 on X. On LinkedIn, posts achieve an average of 27.94 interactions and reach 951.97 people per post, while on X, posts average 6.78 interactions and reach 140 people.

Although no specific KPIs were set for social media activities, the goal is to maintain and steadily grow the number of followers, interactions, and audience reach. This will be achieved by consistent posting, engaging with other accounts, and fostering interaction through campaigns and collaborations.



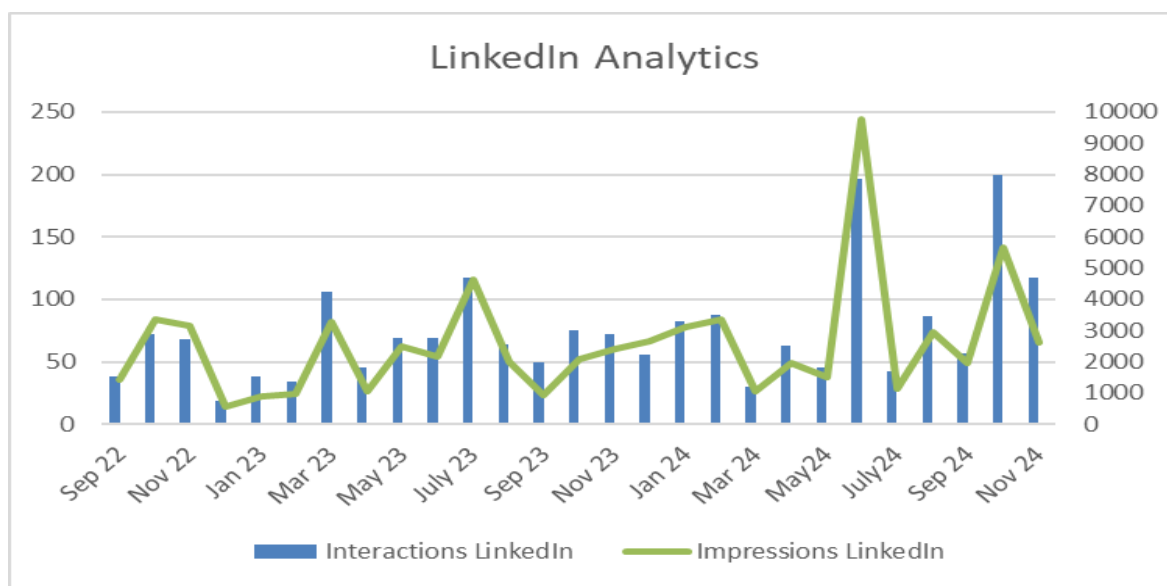
Graph of follower growth of the Flex4Fact social media channels throughout the project

As it can be seen in the graph above the number of followers on both LinkedIn and X has shown



steady growth, demonstrating that once a follower is gained, they tend to remain engaged with the project.





However, X has proven less effective for reaching our intended audience, particularly since its transition. As a result, our communication efforts are now focused on LinkedIn, which consistently delivers better results in terms of engagement, reach, and feedback. Nevertheless, X continues to be maintained as part of the dissemination strategy.



LinkedIn analytics showing the number of interactions and impressions of posts of the Flex4Fact LinkedIn account

LinkedIn has shown a steadily growing follower base and a comparatively high interaction rate. Engagement levels and impressions on LinkedIn have remained stable and are trending upward over the course of the project. For example, the peak in June coincided with the Flex4Fact partner meeting in Milan, while October saw a boost due to site project workshops and the project's representation at Enlit2024. These results highlight that posts achieve the highest impact when reporting on live events and tagging participating organizations and individuals.

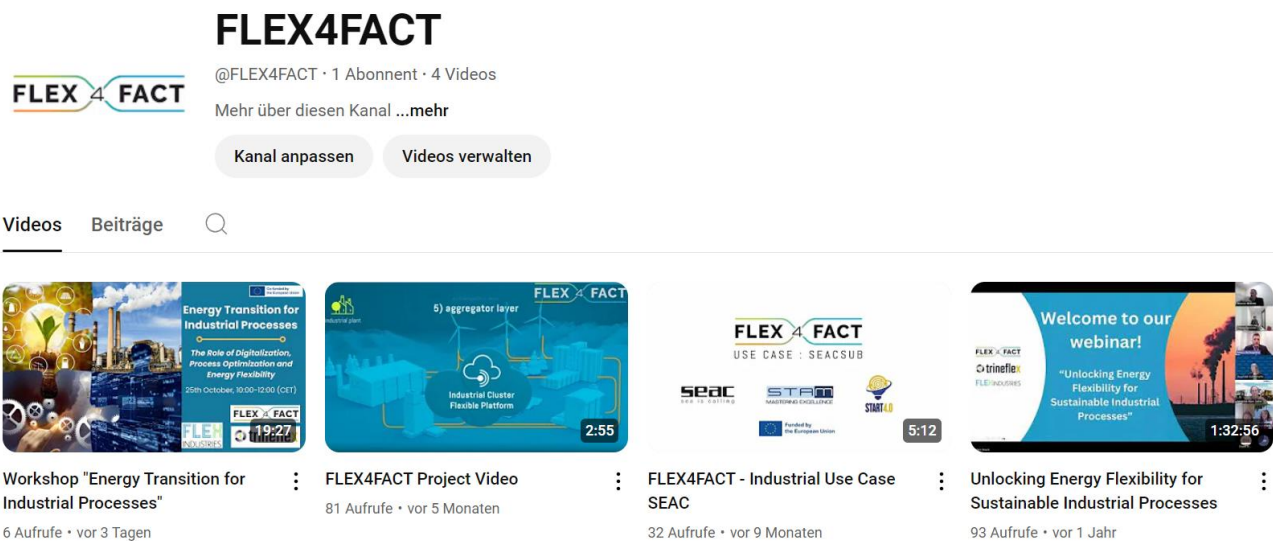
The Flex4Fact project is committed to providing a clear and structured added value through its social media presence by focusing on the project and its activities. This is achieved through intensive campaigns: These include special collaborations or events that are carefully planned, promoted, reported in real time and followed up. Accompanied by engaging series of posts: For example, the "Meet the Consortium" series introduces the project team and partners, bringing the project closer to the audience. And timely and regular posting: Ensure updates are relevant, fresh and shared consistently across channels. The most popular post has received 3993 impressions, was shared ten times and got 82 likes

<p>FLEX4FACT Project hat dies gepostet • 5 Monate</p>  <p>👍 Flex4Fact Project Partner Meeting in Milan 🍷</p> <p>Today the <b>FLEX4FACT Project</b> partners got together for a face-to- ... mehr</p> <p>👍❤️🌱 82</p> <p>1 Kommentar • 10 direkt geteilte Beiträge</p>	<p>▲ 3.993 Impressions</p>
<p>FLEX4FACT Project hat dies gepostet • 5 Monate</p>  <p>👍 Flex4Fact Project Partners Meeting Day 2 🍷</p> <p>After a successful first day full of information sharing, interesting.. ... mehr</p> <p>🌱🌱🌱 55</p> <p>4 direkt geteilte Beiträge</p>	<p>▲ 3.089 Impressions</p>
<p>FLEX4FACT Project hat dies gepostet • 1 Jahr</p>  <p>🌟 Our Project Partner <b>Universitat Politècnica de Catalunya (UPC)</b> had the opportunity to showcase their impactful work at the 17th SET-Plan conference on "Energy Research &amp; Innovation for a competitive E ... mehr</p> <p>🌱🌱 56</p>	<p>▲ 2.263 Impressions</p>
<p>FLEX4FACT Project hat dies gepostet • 10 Monate</p>  <p>🌟 Make women in STEM the norm, not the exception. 🚀</p> <p>To celebrate the International Day for Women and Girls in Science ... mehr</p> <p>👍❤️🌱 52</p>	<p>▲ 2.149 Impressions</p>

Screenshot of the most popular posts of the Flex4Fact LinkedIn account

In addition to LinkedIn and Twitter, the Flex4Fact project also has a dedicated YouTube channel. The purpose of this channel is to provide access to longer content such as the project video, pilot videos, and recordings of webinars and training sessions. Currently, four videos are available on the Flex4Fact YouTube channel. Two of these are recordings of webinars, while the highlight is the Flex4Fact project video, and the last video covers the Celsa use case. The advantage of hosting these videos on YouTube is that it helps maintain the speed of our website, as we link to the videos rather than hosting them directly. This ensures that the website doesn't need to load large video files every time, which could slow down performance.





Screenshot of the Flex4Fact YouTube channel

Building on these gained insights from above, the Flex4Fact project will continue to focus on:

- **Timely reporting:** Publishing updates about project activities on the same day whenever possible.
- **Tagging partners:** Amplifying engagement by tagging participating organizations and individuals in posts.
- **Highlighting events:** Prioritizing posts that showcase active engagement in project-related events, meetings, and workshops.
- **Leveraging LinkedIn for newsletters:** Following positive trends, upcoming newsletters will also be published on LinkedIn to maximize visibility and reach.

This structured and proactive social media strategy ensures the effective dissemination of project results, fosters greater engagement with stakeholders, and enhances the overall visibility of Flex4Fact.

## NEWSLETTER

KPI 8: Number of newsletters issued

KPI 9: Number of newsletter subscribers

Within the project 5 newsletters will be issued every 8-9 months. The newsletters are promoted through the social media channels, the website and by partners. To monitor the performance of the FLEX4FACT outreach activities, the number of subscribers to the newsletters is tracked.

NEWSLETTER	DUE DATE	TOPICS	PUBLISHED	SUBSCRIBERS
N°1	M8		24.03.2023	9
N°2	M16		17.11.2024	23
N°3	M24		11.02.2014	34
N°4	M32		planned	
N°5	M40		planned	

To increase the visibility of the Flex4Fact newsletter, the next newsletter in M32 will be produced and published via LinkedIn. Experience from other projects shows that this approach significantly increases the number of subscribers and broadens the audience. As the current number of subscribers is relatively low, we aim to use this strategy to attract more subscribers and increase the impact of the newsletter with the next release.

The next newsletter will focus on attended events and collaborations and especially on concrete project results including publications and focusing on the pilots.

## Editorial

Dear readers,

Welcome to this special edition of the FLEX4FACT newsletter. In recognition of the International Day of Women and Girls in Science, we are pleased to draw your attention to the diverse women actively involved in shaping the FLEX4FACT project and influencing the landscape of energy flexibility.

Get to know the different roles, tasks and responsibilities of the multiple women in the FLEX4FACT project and learn about their wishes and visions for the Future of women in science.

We are delighted to be working with so many amazing women in the project!

*First page of the latest Flex4Fact newsletter*

### PRESS RELEASE

### KPI 10: Number of press releases issued

A total of 7 press releases will be published online and in printed magazines. They already are and will be uploaded to the website, disseminated via the FLEX4FACT social media channels and by each partner via their own channels (own social media, website and mailing lists, local media and press, etc.).

The first press release was issued in June 2022(M1). A link to the press release published on the website of project coordinator SINTEF can be found here: [Weblink](#).

The second press release was issued in in August 2023 (M15). A link to the press release published on the website can be found here: [Weblink](#).

The next press release is in preparation and will be published soon. There have been few tangible project results to report. However, as we approach the final year of the project, this has changed, and the project is gaining significant momentum and starting to deliver results. As a result, the timing of press releases is being adjusted to focus more on the later part of the project. This will ensure that the content of the releases reflects the progress and impactful results of the project, thereby maximising their relevance and dissemination potential.

**2<sup>nd</sup> FLEX4FACT Press release**

Trondheim, August 25<sup>th</sup>, 2023

**Advancing energy flexibility and sustainability: FLEX4FACT first-year achievements and digital tools pave the way towards energy-efficient industrial sites in the EU.**

*Trondheim, August 25, 2023 - After more than a year of dedicated work, the FLEX4FACT project partners have made significant progress in optimising energy flexibility and demand-response services in the manufacturing industry. Following a detailed mapping of the five industrial use cases as an initial project step, first key results were achieved including the FLEX4FACT System Reference Architecture, the SanFlex Decision Support Tool, and the development of several Digital Twins.*

*FLEX4FACT's tools and knowledge are expected to accelerate the digital and energy transformation of the industrial sector in Europe and support the uptake of new renewable sources in the EU power grid. Industrial partners will be able to reduce their dependence on fossil fuels, reduce energy costs and switch to renewable sources, while generating additional revenues through the provision of flexibility services. This will increase the competitiveness and the sustainability of the EU's industry.*

*Excerpt of the second Flex4Fact press release*

**BROCHURE**

**KPI 11: Number of copies distributed**

The project brochure is used to promote the project to a wider audience. It is distributed during events, conferences and workshops and is displayed at the partner's offices. To keep track of stakeholders reached through the brochure, the number of copies distributed to the partners is monitored. At the partner meeting in Trondheim 100 flyers in different languages were distributed to each partner. At the partner meeting in Milan another 50 flyers were distributed. Partners use the flyers to distribute it on events and thus promoting the Flex4Fact project. In addition to that the flyer is also available on the Flex4Fact website, where it can be downloaded in English, German, Spanish and Italian.



Flex4Fact project flyer

## PUBLICATIONS

KPI 12: Number of publications

In order to keep track of the number of publications produced by the partners, they are monitored here. At least ten scientific Open Access publications will be produced throughout the project.

In M30, the Flex4Fact project has already published 6 Open Access publications. A [Zenodo community](#) has been set up for the project, where all publications have been and will be uploaded. In addition, all publications are uploaded to the [Flex4Fact website](#) as resources and promoted through the project's social media channels.

The screenshot shows the Zenodo profile for the HE FLEX4FACT project (Grant Agreement 101058657). The profile includes a 'New upload' button and navigation links for Records, Requests, Members, Settings, and About. A search bar indicates '6 results found' and a 'Sort by' dropdown is set to 'Newest'.

The list of publications includes:

- August 25, 2024 (v1)** | Journal article | Open  
**Design and utilization of a decision support tool to advance energy efficiency in industries**  
Ashabi, Arman; Mostafa, Mohamed; Hryshchenko, Andriy; and 2 others  
No description  
Part of HE FLEX4FACT project (Grant Agreement 101058657)  
Uploaded on November 5, 2024
- October 1, 2024 (v1)** | Conference paper | Open  
**Multi-stage optimization flexibility algorithm for demand response in ancillary services. An industrial case study**  
Fisco-Compte, Pau; Bullich-Massagué, Eduard; Domenech, Bruno; and 3 others  
To ensure that future electrical distribution networks can effectively meet the dynamic demands of the evolving energy landscape due to the penetration of renewable energy sources, the energy-oriented industrial sector has th...  
Part of HE FLEX4FACT project (Grant Agreement 101058657)  
Uploaded on October 31, 2024 | Published in: IET Conference Proceedings, 2024(5), 476-479, ISSN: 2732-4494, 2024.
- August 1, 2024 (v1)** | Publication | Open  
**A comprehensive overview of industrial demand response status in Europe**  
Bullich-Massagué, Eduard; Ranaboldo, Matteo; Aragües-Peñalba, Mónica; and 15 others  
No description  
Part of HE FLEX4FACT project (Grant Agreement 101058657)  
Uploaded on August 8, 2024
- April 26, 2024 (v1)** | Conference paper | Open  
**Industrial Energy Cluster Optimization using Flexibility Aggregation**  
Adriano, Caprara; Gonzalez Font de Rubinat, Paula; Ranaboldo, Matteo; and 3 others  
Individual industries can reduce their energy related costs by stipulating collaborative arrangements in the form of industrial energy communities. This paper analyses a case study of two manufacturing factories constituting an...  
Part of HE FLEX4FACT project (Grant Agreement 101058657)  
Uploaded on August 8, 2024
- April 26, 2024 (v1)** | Conference paper | Open  
**The Impact of Electricity Tariffs on Optimal Production Scheduling**  
Fisco-Compte, Pau; Bullich-Massagué, Eduard; Domenech, Bruno; and 3 others  
Energy costs can represent a large portion of the total production costs, and therefore, any changes in electricity tariffs can have a significant impact on profitability. This paper analyses how different types of electricity tariffs can...  
Part of HE FLEX4FACT project (Grant Agreement 101058657)  
Uploaded on May 14, 2024
- December 2, 2023 (v1)** | Conference paper | Open  
**A Framework for Enabling Manufacturing Flexibility and Optimizing Industrial Demand Response Services**  
Paul Kengfai, Wan; Matteo, Ranaboldo; Alessandro, Burgio; and 2 others  
The energy industry is experiencing significant changes in terms of sustainability and competition, primarily driven by the introduction of renewable energy targets and emission limits. Demand response is a potential solution to reduc...  
Part of EU Open Research Repository, HE FLEX4FACT project (Grant Agreement 101058657)  
Uploaded on December 6, 2023

At the bottom of the list, there is a pagination control showing '1' and a note '10 results per page'.

Screenshot of the Flex4Fact Zonodo account where publications are uploaded



CONFERENCES AND FAIRS

KPI 13: Number of conferences visited

The partners will participate in and contribute to at least ten exhibitions, scientific conferences, workshops, or industrial events. As of Month 30, of the Flex4Fact project, we already have successfully achieved this KPI 13. Below is a detailed summary of our contributions:

1. We delivered a panel talk at the Enlit 2024 event, engaging with industry and business partners on digitalization in energy transitions.



Partners of UPC, STAM and Steinbeis at the Enlit 2024

2. The project was represented at the 17th SET-Plan Conference 2023, where our role in energy research and innovation for Europe was highlighted.





Partners from UPC showcase their work at the 17th SET-Plan conference on “Energy Research & Innovation for a competitive Europe.”

3. At the ESRE 2024 Conference, our award-winning paper, "Green Hydrogen Penetration in Steel Industry Operations," was presented, emphasizing green technology and sustainability.



Colleagues from University College Cork presenting their conference paper

4. Our team participated in the CIRCEAD 2024 Workshop in Vienna, contributing to discussions on digital twins and industrial innovation.



Two PhD students from UPC at the CIRCEAD workshop in Vienna 2024

5. At the INDTech Conference 2024 in Namur, Belgium, Flex4Fact showcased sustainable advancements in industrial processes.



Partners from SINTEF and Steinbeis with a Flex4Fact booth at the INDTech in Namur 2024

6. The project was featured during an oral presentation at the SDEWES 2022 Conference in Paphos, focusing on the Digital Twin concept for industrial applications.

7. Partners from ITA attended the SDEWES Conference 2024 in Rome where the Digital Twin developed by ITA · Instituto Tecnológico de Aragón on the Standard Profil Group rubber co-extrusion process was presented.



*ITA presenting the Digital Twin at SDEWES 2024 in Rome*

8. At the EASN International Conference 2023 in Salerno, Italy, we discussed energy transition possibilities in the aerospace sector.

9. Our contributions to digital manufacturing strategies were highlighted during the Processes4Planet Project Forum 2023 in Brussels, Belgium.



*The technical project coordinator taking part at a panel discussion at Process4Planet 2023*

10. We participated in the FlexCommunity Conference 2024, fostering collaboration on innovative energy systems among industry and business partners.

11. Our project partner Universitat Politècnica de Catalunya (UPC) presented two papers based on findings from the FLEX4FACT project at the CIO2023 in Barcelona: Paper 1: "The Impact of Electricity Tariffs on Optimal Production Scheduling" - The primary objective of the study was to optimize production costs through a demand response price-based program. Paper 2: "Industrial Energy Cluster Optimization using Flexibility Aggregation" - Research to explore the concept of Industrial Energy Cluster Optimization through Flexibility Aggregation, offering solutions to reduce emissions and energy costs.





Colleagues from UPC at CIO 2023 in Barcelona

12. Finally, a paper presentation at the APMS 2023 Conference in Trondheim, Norway shared advancements in production planning and flexible manufacturing.

All participations are documented in SyGMa, where details can be accessed as shown in the accompanying screenshot.

Dissemination Activity Name	What? Type of dissemination activity	Who? Target audience Reached	Why? Description of the objective(s) with reference to a specific project output (max 200 characters)	Status of the dissemination activity
CIO 2023 Paper presentations	Conferences	Research communities, Industry, business partners, Innovators	CIO, Barcelona, 16-17 July 2023. Project partner	Delivered
Paper presentation at APMS 2023	Conferences	Research communities, Industry, business partners, Innovators	APMS Conf. (IFIP) Trondheim 17-21 September	Delivered
Oral presentation at the SDEWES 2022 conference	Conferences	Research communities, EU Institutions, Industry, business partners, Innovators	SDWES 2022 Online Conference (Cyprus) 6-10.	Delivered
START 4.0 Event, Oral Presentation of Flex4Fac	Clustering activities	Research communities, EU Institutions, Other, Industry, business partners, National authorities, Specific end user communities, Local authorities, Innovators	Presentation in the context of the Start 4.0 Ev	Delivered

Screenshot of SyGMa showing dissemination activities

## NETWORKING ACTIVITIES

## KPI 14: Number of networking interactions

FLEX4FACT is actively fostering synergies with similar R&D projects and contributing to networks and clusters through at least fifteen dissemination actions. A key focus has been collaboration with sister projects, where the cooperation has been particularly productive and well-received. These activities have consistently drawn significant participation and positive feedback, emphasizing their value to the broader research and industrial community.

The joint webinar "Navigating Regulatory and Authorisation Barriers in Energy Flexibility", co-hosted with TRINEFLEX and FLEXIndustries, addressed critical regulatory challenges and attracted a large and engaged audience.



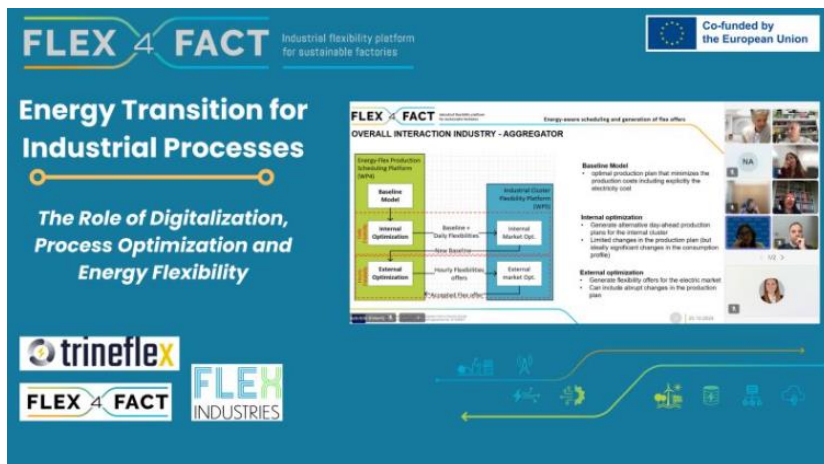
Screenshot of the webinar where the Flex4Fact Project was presented

The webinar "Revolutionizing Green Industries: Digital Solutions for Steel Decarbonization", organized with Alchimia and Twinghy, showcased innovative digital solutions and drew substantial stakeholder interest.



Promotional Banner Webinar "Revolutionizing Green Industries"

The webinar "Driving the Energy Transition in Industrial Processes", in collaboration with TRINEFLEX and FLEXIndustries, highlighted opportunities for energy transition within industrial systems and was met with enthusiastic participation.



*Screenshot of the Webinar “Energy Transition for Industrial Processes”*

The webinar "Unlocking Energy Flexibility for Sustainable Industrial Processes", hosted with TRINEFLEX and FLEXIndustries, explored energy flexibility strategies, engaging a broad audience of industry and research participants.

In addition to these collaborations with sister projects, FLEX4FACT has undertaken several other impactful dissemination actions:

5. The consortium visit to the Inaventa use case in Jevnaker, Norway, where the use case was presented to consortium members.
6. The Processes4Planet Project Forum 2023 in Brussels, where FLEX4FACT’s contributions to sustainable industrial strategies were presented.
7. Participation at the Energy Transition Conference 2024, a hybrid event focused on sustainable solutions, where the project was promoted.
8. Discussions on sustainable energy systems at ONS Norway 2024 in Stavanger, Norway.
9. Engagement with students at the DENSYS MASTER Initiating Day 2024 in Barcelona, where SENER and the FLEX4FACT project were presented as part of an academic-industry exchange.



*Partner from Sener presenting the Flex4Fact Project at DENSYS Summer Week 2024*

10. A site visit by the Upper Austrian Economic Chamber to the Inaventa use case, where project advancements were presented.



*FLEX4FACT Project partners, Institute for Energy Technology and Inaventa Solar, met to advance the FLEX4FACT project, focusing on the development and implementation of Digital Twins for various manufacturing processes and energy resource management.*



- 11. FLEX4FACT's role was highlighted during the IPMED Project Study Visit in Genoa, as part of START4.0 initiatives.
- 12. A showcase webinar with TRINEFLEX and FLEXIndustries, offering project and use case presentations.
- 13. Discussions during the FLEXIndustries Consortium Meeting, where advancements and collaborations were reviewed.
- 14. The FLEX4FACT Project team participated in the European Process Industry Conference 2024, hosted by ASPIRE2050.



*Partners from SINTEF and CELSA with a Flex4Fact Booth at the Process4Planet 2024*

With 14 dissemination actions already completed, only one more is needed to achieve the KPI. FLEX4FACT remains highly motivated to continue their efforts in this field, ensuring sustained engagement and impactful dissemination. All activities have been thoroughly documented in SyGMa, where further details about each action, including audience metrics and objectives, can be accessed, ensuring transparency and valuable insights for project stakeholders.



## 4.2 KPIS VALUES AT THE END OF THE SECOND REPORTING PERIOD (BY M30)

The following table with updated KPI values presents the results achieved by M30.

Table 10: KPIs to monitor the progress of the communication and dissemination activities

ACTION	CHANNEL	KPIs (OBJECTIVES FOR THE WHOLE PROJECT)	ACHIEVED BY M30	BY
	<b>Website</b>	KPI 1: visits per month (500 visits per months) KPI 2: returning visitor rate (20% returning visitor rate) KPI 3: downloads per month (50 downloads/months)	The webpage was launched in M9. Between M9 and M30 the website on average had: KPI 1: 4395,8 visits per months KPI 2: 38% returning visitor rate KPI 3: 18,25 downloads per months	
<b>COMMUNICATION</b>	<b>Social Media Accounts</b>	KPI 4: number of followers KPI 5: number of posts KPI 6: number of post interactions KPI 7: number of people reached/post (common objective for all KPIs is to further increase the number of followers and people reached)	KPI 4: 326 followers on LinkedIn, 239 followers on Twitter KPI 5: Average number of posts per month: 3 KPI 6: Average number of post interactions: LinkedIn 74, Twitter 6 KPI 7: Average number of people reached / post: LinkedIn 952, Twitter 141	

	<b>Newsletter</b>	<p>KPI 8: Number of newsletters issued (5 newsletters will be issued every 8-9 months)</p> <p>KPI 9: Number of newsletter subscribers</p>	<p><b>KPI 8: 3 newsletters issued</b></p> <p><b>KPI 9: 34 subscribers</b></p>
	<b>Press release</b>	<p>KPI 10: Number of press releases issued (a total of 7 press releases will be published)</p>	<p><b>2 press releases issued:</b> the first one just after the start of the project and the second one in M15</p>
	<b>Brochure</b>	<p>KPI 11: Number of copies distributed (100 copies distributed per project partner)</p>	<p>100 flyers in different languages distributed to each of the partners at the partners meeting in Trondheim. <b>Another 50 flyers were distributed to the partners at the partners meeting in Milan.</b> The flyer can also be downloaded in various languages from the Flex4Fact website</p>
	<b>Publications</b>	<p>KPI 12: Number of publications (at least 10 scientific open-access publications)</p>	<p><b>6 publications have been published</b></p>
<b>DISSEMINATION</b>	<b>Conferences and fairs</b>	<p>KPI 13: Number of conferences visited (at least 10 participations in conferences and fairs)</p>	<p>FLEX4FACT was presented at <b>10</b> events, mostly scientific dissemination events</p>
	<b>Networking</b>	<p>KPI 14: Number of Networking</p>	<p><b>9</b> networking actions so far (1</p>

**activities**

interactions (15 main networking interactions with similar R&D projects and clusters/networks)

participation in Process4Planet forum, 3 workshops with other EU projects FLEXIndustries and TRINEFLEX, Twinghy, Alchimia and 3 networks joined - A. SPIRE, ENGINE Initiative and FlexCommunity)

### 4.3 LISTS OF MAIN COMMUNICATION AND DISSEMINATION ACTIVITIES PERFORMED

The two tables below provide an excerpt of the communication and dissemination activities conducted up until M30 of FLEX4FACT. A complete overview of all activities can be found on the SyGMA reporting tool.

In the earlier sections, many dissemination activities under Conferences and Fairs (KPI 14), Networking Activities (KPI 13), and Publications (KPI 12) have been addressed. Additionally, key communication activities related to the Website (KPI 1), Social Media Accounts (KPI 5), Newsletter (KPI 8), Press Releases (KPI 10), and the Brochure (KPI 11) were highlighted.

A final and detailed representation of all communication and dissemination activities is comprehensively documented in SyGMA.

#### 4.3.1 COMMUNICATION ACTIVITIES

All communication activities can be found in SyGMA. Examples of communication activities that have been delivered are shown in the table below.

Table 11: List of performed communication activities

COMMUNICATION ACTIVITY NAME	DESCRIPTION	WHO? TARGET AUDIENCE	HOW? COMMUNICATION CHANNEL	OUTCOME	STATUS
FLEX4FACT Website	FLEX4FACT Project website with general information on the project, resources, news and events etc.	Citizens	Website	Project Website	Ongoing
FLEX4FACT brochure	FLEX4FACT brochure with information about the project. The brochure is distributed by all project partners	Citizens	Print materials (brochure, leaflet, posters, stickers, banners)	2400 project brochures distributed to all project partners	Delivered

FLEX4FACT roll-up	FLEX4FACT Roll-Up with information about the project. This will be used to promote the project at conferences and events.	Research communities	Print materials (brochure, leaflet, posters, stickers, banners)	FLEX4FACT Roll-Up	Delivered
FLEX4FACT social media channels	LinkedIn and Twitter Account informing about news from the project.	Citizens	Social Media	Two social media channels	Ongoing
Blog article on SINTEF website	Blog article on the website of project coordinator SINTEF introducing the FLEX4FACT project. Title: Integrating more renewables in the industry energy mix. (05/2022)	Industry, business partners	Website	Project Introduction on SINTEF website	Delivered
News article on RWTH website	News article about the project kick-off published on the university website: Kick-off of the Horizon Europe project FLEX4FACT with EBC participation (06/2022)	Research communities	Website	News article on RWTH website	Delivered
1st FLEX4FACT Press Release	1st press release informing about the project kick-off and the project objectives. (06/2022) <a href="https://flex4fact.eu/wp-content/uploads/2023/01/1st_Press_release_FLEX4FACT.pdf">https://flex4fact.eu/wp-content/uploads/2023/01/1st_Press_release_FLEX4FACT.pdf</a>	Industry, business partners	Press Release	1st FLEX4FACT Press Release informing about the project start	Delivered
FLEX4FACT project page on partner website	Pages dedicated to the FLEX4FACT project on the website of RWTH, SIG, UPC, SINTEF, Start 4.0 and Albsig with general information about the project.	Industry, business partners	Website	Project Pages informing about FLEX4FACT	Delivered

CELSA LinkedIn Post about project participation	LinkedIn post on the participation of CELSA in the FLEX4FACT project. (11/2022)	Industry, business partners	Social Media	LinkedIn post	Delivered
CELSA LinkedIn post about the use case visit	LinkedIn Post about the use case visit to the CELSA Barcelona Plant by the FLEX4FACT project partners. (11/2022)	Industry, business partners	Social Media	LinkedIn post	Delivered
Video about Inaventa Use Case visit	Video with Interviews from the Use Case visit at Inaventa Solar by the FLEX4FACT project partners. (12/2022) <a href="https://www.youtube.com/watch?v=W65EGBDGnDY&amp;feature=youtu.be">https://www.youtube.com/watch?v=W65EGBDGnDY&amp;feature=youtu.be</a>	Industry, business partners	Video	Video about Use Case visits	Delivered
News article about the Use Case Visits	News article about the Use Case Visits in Italy, Germany, Spain and Norway published on the RWTH website. (12/2022)	Industry, business partners	Website	News article on RWTH website	Delivered
Article about Sustainable Manufacturing	News article about sustainable manufacturing at Inaventa Solar with mention of the FLEX4FACT project. (03/2023)	Industry, business partners	Website	Website article	Delivered
1st FLEX4FACT Newsletter	1st newsletter published with general project information, news about the use case visits etc. (03/2023) <a href="https://flex4fact.eu/?mailpoeter_outer&amp;endpoint=view_in_browser&amp;action=view&amp;data=WzcsjljyNDc0MTF">https://flex4fact.eu/?mailpoeter_outer&amp;endpoint=view_in_browser&amp;action=view&amp;data=WzcsjljyNDc0MTF</a>	Citizens	Newsletter	1st FLEX4FACT newsletter	Delivered
Newsarticle about the	News article about the General Assembly in Trondheim by	civil society	Website	News article	Delivered

General Assembly	RWTH, Itainnova and Standard Profil				
Processes 4Planet project forum	Social media post by Start 4.0 about F4F participation to the Processes4Planet project Forum (09/2023)	Industry, business partners	Social Media	LinkedIn Post	Delivered
2nd FLEX4FACT Press Release	2nd Press release with news about the Project progress. This involves the SanFlex Decision Tool, the Digital Twin development etc. The Press release was distributed by all project partners. (08/2023)	Industry, business partners	Press Release	2nd FLEX4FACT press release	Delivered
Future Steel Forum	LinkedIn Post by Celsa about the Future Steel Forum acknowledging the participation to the FLEX4FACT project. (09/2023)	Industry, business partners	Social Media	LinkedIn Post	Delivered
Press Release by SINTEF	Press release: Energy Innovation in the European Manufacturing Industry: Highlights from FLEX4FACT's First Year (10/2023)	Industry, business partners	Press Release	Press release by SINTEF	Delivered
Joint Webinar	Social media post about webinar "Unlocking Energy Flexibility for Sustainable Industrial Processes" by IFE. (10/2023)	Industry, business partners	Social Media	LinkedIn Post	Delivered
Roll-Up by Inaventa Solar	Roll-up on Inaventa's R&D activities, incl. FLEX4FACT for the BYGG REIS DEG 2023 Fair in Norway. (10/2023)	Industry, business partners	Print materials (brochure, leaflet, posters, stickers, banners)	Roll-Up	Delivered
ENGINE Newsletter	Participation to the ENGINE Initiative Newsletter with a short text about the joint webinar.	Innovators	Newsletter	Participation to newsletter	Delivered



(11/2023)

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Newsarticle in Italian	Article about F4F project with overview of interim results based on 2nd Press Release within online magazine by Start 4.0. (10/2023). <a href="https://www.bitmat.it/news/flex4fact-la-svolta-nellinnovazione-ene">https://www.bitmat.it/news/flex4fact-la-svolta-nellinnovazione-ene</a>	Innovators	Media article	News Article in Italian	Delivered
2nd FLEX4FACT Newsletter	2nd FLEX4FACT newsletter published with an interview and news about the project. (11/2024)	Innovators	Newsletter	FLEX4FACT Newsletter	Delivered
SET plan	UPC participated to the SET Plan Conference and showcased their projects. A roll-up with information about FLEX4FACT was shown. (11/2023)	Research communities	Event (conference, meeting, workshop etc.)	Roll-Up presentation at Conference	Delivered
<del>CELSA-LinkedIn post about the use case visit</del>	<del>LinkedIn Post about the use case visit to the CELSA Barcelona Plant by the FLEX4FACT project partners. (11/2022)</del>	<del>Industry, business partners</del>	<del>Social Media</del>	<del>LinkedIn post</del>	<del>Delivered</del>
<del>Video about Inaventa Use Case visit</del>	<del>Video with Interviews from the Use Case visit at Inaventa Solar by the FLEX4FACT project partners. (12/2022) <a href="https://www.youtube.com/watch?v=W65EGBDGnDY&amp;feature=youtu.be">https://www.youtube.com/watch?v=W65EGBDGnDY&amp;feature=youtu.be</a></del>	<del>Industry, business partners</del>	<del>Video</del>	<del>Video about Use Case visits</del>	<del>Delivered</del>
<del>News article about the Use Case Visits</del>	<del>News article about the Use Case Visits in Italy, Germany, Spain and Norway published on the RWTH website. (12/2022)</del>	<del>Industry, business partners</del>	<del>Website</del>	<del>News article on RWTH website</del>	<del>Delivered</del>

Article about Sustainable Manufacturing	News article about sustainable manufacturing at Inaventa Solar with mention of the FLEX4FACT project. (03/2023)	Industry, business partners	Website	Website article	Delivered
1st FLEX4FACT Newsletter	1st newsletter published with general project information, news about the use case visits etc. (03/2023) <a href="https://flex4fact.eu/?mailpoeter_outer&amp;endpoint=view_in_browser&amp;action=view&amp;data=WzcsljlyNDc0MTF">https://flex4fact.eu/?mailpoeter_outer&amp;endpoint=view_in_browser&amp;action=view&amp;data=WzcsljlyNDc0MTF</a>	Citizens	Newsletter	1st FLEX4FACT newsletter	Delivered
News article about the General Assembly	News article about the General Assembly in Trondheim by RWTH, Itainnova and Standard Profil	civil society	Website	News article	Delivered
Processes 4Planet project forum	Social media post by Start 4.0 about F4F participation to the Processes4Planet project Forum (09/2023)	Industry, business partners	Social Media	LinkedIn Post	Delivered
2nd FLEX4FACT Press Release	2nd Press release with news about the Project progress. This involves the SanFlex Decision Tool, the Digital Twin development etc. The Press release was distributed by all project partners. (08/2023)	Industry, business partners	Press Release	2nd FLEX4FACT press release	Delivered
Future Steel Forum	LinkedIn Post by Celsa about the Future Steel Forum acknowledging the participation to the FLEX4FACT project. (09/2023)	Industry, business partners	Social Media	LinkedIn Post	Delivered
Press Release by SINTEF	Press release: Energy Innovation in the European Manufacturing Industry: Highlights from FLEX4FACT's	Industry, business partners	Press Release	Press release by SINTEF	Delivered

First Year (10/2023)

Joint Webinar	Social media post about webinar "Unlocking Energy Flexibility for Sustainable Industrial Processes" by IFE. (10/2023)	Industry, business partners	Social Media	LinkedIn Post	Delivered
Roll-Up by Inaventa Solar	Roll-up on Inaventa's R&D activities, incl. FLEX4FACT for the BYGG REIS DEG 2023 Fair in Norway. (10/2023)	Industry, business partners	Print materials (brochure, leaflet, posters, stickers, banners)	Roll-Up	Delivered

### 4.3.2 DISSEMINATION ACTIVITIES

All dissemination activities can be found in SyGMA. Examples of dissemination activities that have been delivered are shown in the table below.

Table 12: List of performed dissemination activities

DISSEMINATION ACTIVITY NAME	WHAT? TYPE OF DISSEMINATION ACTIVITY	WHO? TARGET AUDIENCE REACHED*	WHY? DESCRIPTION OF THE OBJECTIVE(S) WITH REFERENCE TO A SPECIFIC PROJECT OUTPUT	STATUS OF THE DISSEMINATION ACTIVITY
Paper presentation at CIO2023	Conferences	<ul style="list-style-type: none"> <li>•Industry, business partners</li> <li>•Innovators</li> <li>•Research community</li> </ul>	Project partner UPC presented two papers showcasing their findings from their work within the FLEX4FACT project (07/2023)	Delivered
Paper presentation at APMS 2023	Conferences	<ul style="list-style-type: none"> <li>•Industry, business partners</li> <li>•Innovators</li> <li>•Research community</li> </ul>	Paper presentation by SINTEF at the APMS Conference in Trondheim. (09/2023)	Delivered
Oral presentation at the SDEWES 2022 conference	Conferences	<ul style="list-style-type: none"> <li>•Innovators</li> <li>•Research community</li> </ul>	ITA presented Standard Profil IS and the proposed Digital Twin	Delivered
Processes4Planet Project Forum	Clustering activities	<ul style="list-style-type: none"> <li>•Industry, business partners</li> <li>•EU institutions</li> <li>•Research</li> </ul>	SINTEF presented the project at the Processes4Planet Project Forum in Brussels. The	Delivered

		community	forum provided an opportunity to exchange ideas and promote collaboration between projects (09/2023)	
Joint webinar with TRINEFLEX and FLEXIndustries	Collaboration with EU-funded project	<ul style="list-style-type: none"> <li>•Industry, business partners</li> <li>•Innovators</li> <li>•EU institutions</li> <li>•Civil society</li> <li>•Research community</li> <li>•Specific enduser communities</li> </ul>	FLEX4FACT hosted a webinar together with the EU-projects TRINEFLEX, and FLEXIndustries. The joint webinar focused on energy flexibility in the industrial sector (10/2023)	Delivered
EASN International Conference	Conferences	<ul style="list-style-type: none"> <li>•Industry, business partners</li> <li>•Innovators</li> <li>•Research community</li> </ul>	Oral presentation of the FLEX4FACT project by SINTEF at the International Conference on Innovation in Aviation and Space, discussing about the transition to energy on demand (09/2023)	Delivered
DENSYS Summer Week 2024	Workshops	<ul style="list-style-type: none"> <li>• Research community</li> </ul>	Sener presented the exemplary approach to industry participation in the energy transition, combining	Delivered

		flexibility, renewables and storage	
<p>Flex4Fact PhD Workshop Facilitating Collaboration and Knowledge Sharing 2024</p>	<ul style="list-style-type: none"> <li>• Research community</li> </ul>	<p>In March, FLEX4FACT hosted a workshop where 11 PhD students presented their research and its alignment with project objectives.</p>	<p>Delivered</p>
<p>Paper presentation at the 6<sup>th</sup> International Conference on Environmental Sciences and Renewable Energy (ESRE 2024)</p>	<p>Conferences</p> <ul style="list-style-type: none"> <li>• Industry</li> <li>• business partners</li> <li>• Innovators</li> </ul> <p>Research community</p>	<p>University College Cork presented the conference paper "Green Hydrogen Penetration in Steel Industry Operations". The presentation was awarded the Best Presentation Award for Session 1 on "Industrial Innovation, Green Technology, and Environmental Sustainability."</p>	<p>Delivered</p>

## 5 EXPLOITATION STRATEGY

FLEX4FACT’s exploitation strategy is driven by minimizing the time to market of the FLEX4FACT solutions such as the cluster aggregator platform, to accelerate the flexibility provision by industrial sites and the uptake of renewable energy sources energy intensive industries as fast as possible.

### 5.1 METHODOLOGY

Several exploitations activities **have been** performed to ensure that the most promising results are exploited after project end: a series of exploitation workshops **helped** identify and characterise the main exploitable results. **To further understand and strengthen exploitation plans individual interviews were set up with all partners.** Detailed business case analysis will be conducted to take into account the variety of technology pathways, the specificities of European energy markets, industry sectors and players that are involved in the deployment of the FLEX4FACT solution. The following figure<sup>12</sup> shows the 6 pillars/steps of IP management in collaborative research projects to be followed by FLEX4FACT. Further information on IP rights management is provided in subchapter 5.3.

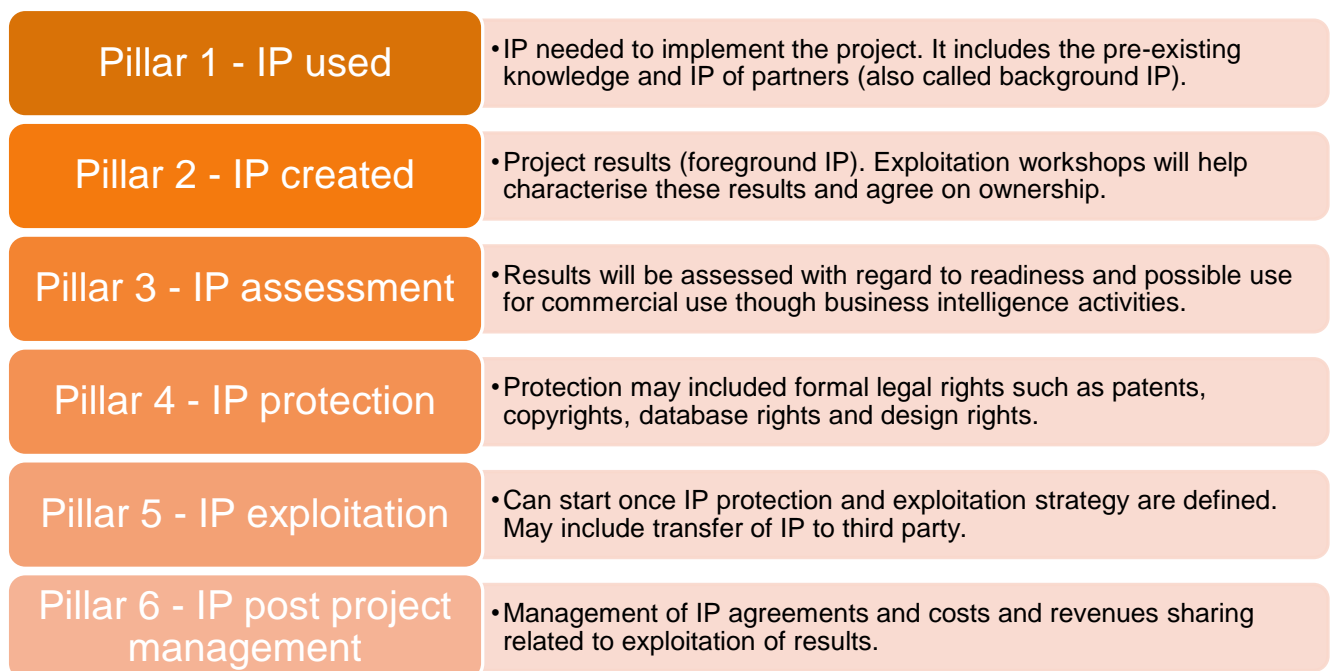


Figure 3: The six steps of IP management in collaborative Horizon Europe research projects

An internal training on IP **was** performed as part of the first exploitation workshop on May 30<sup>th</sup> 2023. The main goal of this workshop **was** to present basic information on exploitation and IP management in Horizon Europe projects so that all partners are aware of the main rules and requirements related

<sup>12</sup> European Commission, IP management in collaborative Horizon Europe projects, 2021, <https://cms.eurice.eu/storage/uploads/news/files/ip-management-in-collab-horizon-projects.pdf>



to background and foreground IP.

The second exploitation workshop, conducted on the 21<sup>st</sup> of February 2024, dealt with the accumulated results list, ownership and access claims.

The third exploitation workshop was substituted by a series of individual exploitation interviews conducted on 15 different occasions in October 2024. These interviews had the goal to a) narrow down the list of exploitable results to Key Exploitable Results, b) talk to partners in detail about their technology and development strategy within the project and c) create clarity on their exploitable results and exploitation strategies. This also gives partners the opportunity to seek company-internal discussions with relevant departments to understand precisely which circumstances and agreements need to be created to enable successful exploitation.

These activities are complemented by workshops with members of the advisory committee, external stakeholders, and potential end users to validate the project results and assumptions underlying business models.

## 5.2 LIST OF KEY EXPLOITABLE RESULTS

The following table presents the list of Key Exploitable Results of FLEX4FACT. This list was completed, and the Key Exploitable Results were characterised during the exploitation workshops and interviews. Every result owner is/has been made aware of necessary exploitation measures to ensure the future uptake of results, how interested parties have access to results and what are the most promising exploitation pathways for the results. Especially the two platforms are investigated on how they can support the achievements of wider impacts of the European Commission and what are the necessary conditions for a successful exploitation by considering external factors and barriers to remove not directly linked to the project (e.g. regulatory and legal aspects such as new laws, financial and economic aspects such as public funding schemes and competitors).

Table 13: List of the FLEX4FACT' Key Exploitation Results

Task	Main result	Description	Owner(s)	Exploitation claims
T1.4	Final architecture description	Final architecture and potentials in terms of scalability/replicability (more theoretical)	SINTEF, SPS, STAM, UPC, INAVENTA, THEBEN, CELSA, SEAC, WEP, Capgemini, Evolvere, ALBSIG, ITA	Knowledge transfer through the guidebook in D7.5
T2.1	SanFlex D.S.T	Sankey diagram-based tool for visualization of process energy streams which requires inputs of process data	UCC	Further Research Publication
T2.4	Energy system modelling tool	Modelling and optimization toolkit (EnergyModelsX.) enabling design and operational analysis of inherent flexibility of manufacturing processes and added demand-side flexibility from on-site measures as storage and RE generation	SINTEF ENERGI	<a href="#">MIT license</a> (open to use and open to contribute)
T2.5	Building/industry interaction toolbox	Collection of different methods for modelling and assessment of production/building energy demand and interactions (two levels: on-site internal usage like in offices and off-site buildings such as residential districts)	RWTH	Further Research Publication
T3.3	DT Standard Profil	DT of a extruder, DT of IR oven, DT of MW oven, DT of gas oven, DT of extrusion manufacturing line	ITA	Already exploited at SPS

T3.3	DT CELSA	energy DT of the EAF	ITA	Already exploited at CELSA
T3.3	DT SEAC	DT of Photovoltaic Panel, DT of Photovoltaic Panel System, DT of Moulding Process	STAM	Already exploited at SEAC
T3.3	DT INAVENTA	DT of the material flow steady states, DT of transient temperatures in the die, DT of the stresses and strains in the sheets as they undergo crystallization, Material model for the PPS, DT-Extruder, DT-BTES, DT-Energy	IFE	Already exploited at INAVENTA
T3.3	DT Theben	DT of Production Lines (including soldering), DT of Photovoltaic Panel, DT of Photovoltaic Panel system	ALBSIG	Already exploited at Theben
T4.2	Algorithms for industrial process flexibilization - complete model	Algorithms to optimize industrial process scheduling through flexibilities provided by manufacturing process, RE generation and storage - complete version (including sending flexibility offer to the market)	UPC	Integration into Flexible platform
T4.5	Flexible platform	Cloud platform consists of 2 main modules: 1. container for algorithm and 2. data lake/analytics. It will communicate with the edge/plant, digital twins, enterprise analytics, and the aggregator platform	We+/ UPC	Commercial exploitation in the future. To be determined
T5.1	Forecast algorithms	Python-based algorithms to forecast the day ahead and 5 days ahead electricity prices and CO2 emissions derived from the grid for Germany, Italy, Norway and Spain	UPC	Integration into Industrial Cluster Flexibility Platform
T5.2	Internal market algorithm	Algorithm to provide a 1-3 hour time window to allow grid operators to exploit flexibility for grid balancing purposes	UPC	Integration into Industrial Cluster Flexibility Platform
T5.2	Flexibility Market Tool	Algorithm that optimizes the remaining flexibilities compared to wholesale markets for flexibility.	ALBSIG	To be determined
T5.4	Industrial cluster flexibility platform	Platform is a software-as-a-service solution consisting of a hardware and software part	PLENITUDE	

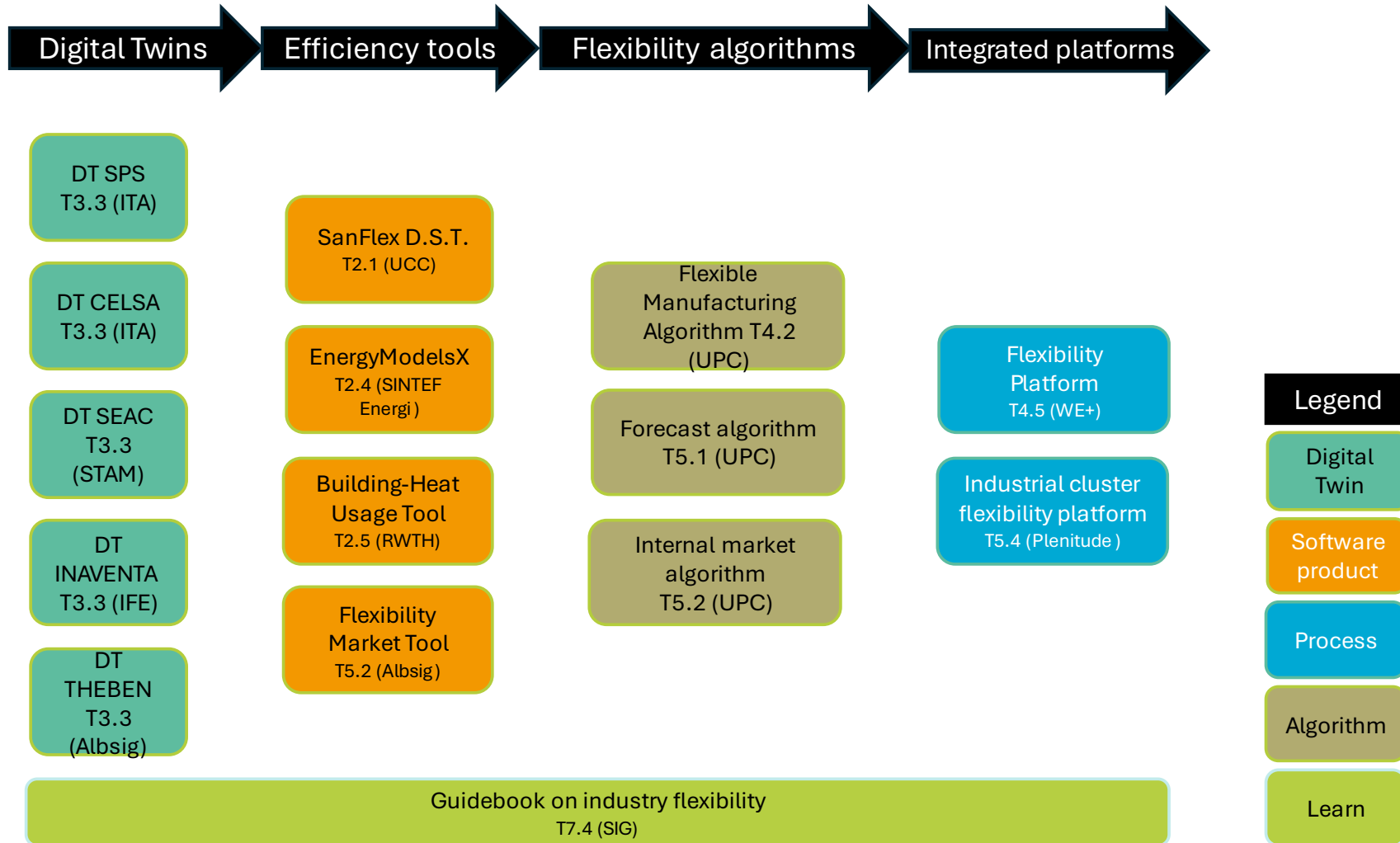


Figure 4: Colour code KER overview

The current document is public which limits the level of detail the results can be described. D7.6 will describe and report on all active exploitation in further detail.

### 5.3 IP RIGHTS MANAGEMENT PLAN

This section presents the way in which IP rights are handled in the FLEX4FACT project. Most of the information presented in the following table are extracts from the Grant Agreement – Article 16 on IPR, background and results. The project follows general recommendations<sup>13</sup> on IP rights management in research projects developed by the IP helpdesk.

Table 14: Rules and obligations regarding IP rights management of the FLEX4FACT project

SCOPE	RULES AND OBLIGATIONS
Access rights to background and results	<p><u>Access rights for implementing the action</u></p> <p>Beneficiaries must give each other access to the background and results on a royalty free basis identified as needed for implementing the action.</p>
	<p><u>Access rights for exploiting the results</u></p> <p>The beneficiaries must grant each other access under fair and reasonable conditions, to results needed for exploiting their results. Requests for access must be made, unless agreed otherwise in writing, up to one year after the end of the project.</p>
Ownership of results	Results are owned by the beneficiaries that generate them. Two or more beneficiaries own results jointly if they have jointly generated them.
Protection of results	Beneficiaries must adequately protect their results – for an appropriate period and with appropriate territorial coverage – if protection is possible and justified.
Exploitation of results	Beneficiaries must up to four years after the end of the action use their best efforts to exploit the results directly or have them exploited indirectly by another entity, in particularly through transfer of ownership or licensing.
	<p>If despite a beneficiary’s best efforts, the results are not exploited after within one year after the end of the project the beneficiaries must use the Horizon Results Platform to find interested parties to exploit the results.</p> <p>If results are incorporated into standards, the beneficiaries must ask the standardisation body to include the funding statement in the standard.</p>
Transfer and licensing of results	<p><u>Transfer of ownership</u></p> <p>The beneficiaries may transfer ownership of their results, provided this does not affect compliance with their obligations under the Grant Agreement. The beneficiaries must ensure that their obligations are passed on to the new owner and that this new owner has the obligation to pass them on in any</p>

<sup>13</sup> The European IP helpdesk, Successful valorisation of knowledge and research results in Horizon Europe, 2022, <https://op.europa.eu/en/publication-detail/-/publication/ca9e23d5-aa5b-11ec-83e1-01aa75ed71a1/language-en/format-PDF/source-253824310>

subsequent transfer.

Moreover, they must inform the other beneficiaries with access rights of the transfer at least 45 days in advance unless agreed otherwise.

#### Granting licenses

The beneficiaries may grant licenses to their results, including on a exclusive basis, provided this does not affect compliance with their obligations. Exclusive licences may be granted only if all the other beneficiaries concerned have waived their access rights.

## 5.4 PROCEDURES TO SAFEGUARD EXPLOITATION

In addition to the management of IP rights, further measures to safeguard successful exploitation of project results **have been** implemented. This includes:

- Keeping confidential all data, documents or materials that is identified as sensitive regarding the future exploitation of results: Members of the Advisory Committee will have to sign a non-disclosure agreement and the information and results to be shared with this body will be thoroughly assessed before diffusion to avoid any infringement on partners' IP. **The information contained in this deliverable are agreed on by the result owners and protect further exploitation strategies.**
- Assessing and balancing the varying exploitation interests of beneficiaries through exploitation workshops and exploitation interviews to come up with a common strategy in line with the expected impacts and partners' interests,
- Assessing the compatibility of IP management strategy with the project dissemination strategy. **It has been a key activity to adjust the right balance between IP protection for safeguarding the partners' interests and the implementation of open science practices to share cutting-edge knowledge with the EU research community.** Beneficiaries may decide not to provide open access to research data if this goes against the beneficiaries' legitimate interests. If so, this will be indicated in the Data Management Plan (see public deliverable 8.2).

## 5.5 FLEX4FACT'S EXPLOITATION ROADMAP

The exploitation roadmap will be one of the final deliverables summarising all exploitation results of FLEX4FACT (deliverable D7.6 labelled sensitive). This report will contain a short overview of the market of smart and digital manufacturing, key facts on flexibility provision by industrial stakeholders and integration of renewable sources into industrial settings in EU. Furthermore, it will present the list of key exploitable results including their:

- Description,
- Ownership status (in addition a so-called "Research Ownership List" will be included in the final project report),
- Sector of application and,
- Planned protection measures – if applicable.

## 6 CONCLUSIONS

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The FLEX4FACT project addresses a large variety of stakeholders, from industrial plant operators to public authorities and the general public. Accordingly, the communication and dissemination activities within the project use a broad variety of tools and channels to address all these stakeholders and connect with them. Communication and dissemination activities will aim to further increase stakeholders' interest in the project and to support the uptake of results of the FLEX4FACT project.

This document serves as an update of CDE activities of all partners. SIG will continue the monitoring of activities to ensure that objectives are met, and it is possible to adapt the content and planning of activities if it appears necessary. Up to M30, SIG's strategy has served well, and the community of all stakeholder groups is continuously growing. The final year of the project will focus on the end of project preparation leading partners and results to the highest level of clarity regarding access claims and individual and joint exploitation strategies.



## 7 ANNEX

### 7.1 ANNEX I: QUESTIONNAIRE SENT TO ALL PARTNERS TO COLLECT INPUTS FOR THE COMMUNICATION AND DISSEMINATION STRATEGY

#### **FLEX4FACT comm/diss/ex plan - Questionnaire**

Dear partners,

With this questionnaire, we want to collect your feedback regarding planned communication and dissemination activities to be implemented in the course of the project. The answers will help draft the joint communication, dissemination, and exploitation (CDE) strategy (D7.1) intended to maximise the impacts of the project.

We would be very happy if you could take 10 to 15 minutes to fill this survey. The more information you provide the easier for us to draft a comprehensive CDE plan. Thanks in advance for your support!

Many thanks,  
Karoline and Paul from SIG

#### **General information**

Question 1. Please provide your contact details (name and email address) and the name of your company.

#### **Target Groups**

Target groups are stakeholders interested in the results of the project and whom F4F wants to reach out to ensure knowledge transfer and future exploitation of results.

As a reminder the main target groups of F4F are:

1. End users - industrial plant operators. Role - these are the future users of F4F solutions
2. Energy provider, distribution system operator. Role - sell energy and prevent grid congestion by activating flexibility
3. Solutions provider - energy and digital solutions (software and hardware). Role - develop and sell solutions best adapted to industrial site operators
4. EU research community. Role - support EU leadership and foster innovation in digitisation and energy flexibility
5. Technological expert groups, EU working groups, standardisation bodies. Role - advance standards, leverage funding
6. Public authorities. Role - adopt new rules, adapt legal frameworks, support roll-up of

solutions

7. Investors. Role - invest money to accelerate the market entry of green innovations and make long-term gains

8. General Public. Main interests - be informed about latest technological trends and solutions aiming at reducing emissions from industry such as those developed in F4F

Question 2. Are there other important target groups - not considered in the list above - that should be included in our CDE strategy, due to their importance regarding the achievement of project impacts?

Question 3. Can you give us some examples of organisations/stakeholders you know that belong to target group 2 - Energy providers, distribution system operators? (preferably organisations with which you or your organisation is in contact)

Question 4. Can you give us some examples of organisations/stakeholders you know that belong to target group 4 - EU research community? (preferably organisations with which you or your organisation is in contact)

Question 5. Can you give us some examples of organisations/stakeholders you know that belong to target group 5 - technological expert groups, EU working groups, standardisation bodies? (preferably organisations with which you or your organisation is in contact)

**General information**

1. Please provide your contact details (name and email address) and the name of your company.

**Open Science Dissemination**

Open science is the movement to make scientific research (including publications, data, physical samples, and software) and its dissemination accessible to all. It encompasses practices such as publishing open research, campaigning for open access, encouraging scientists to practice open-notebook science.

Open science is at the heart of Horizon Europe strategy regarding the dissemination of research results.

Note: Not all results to be produced by the project shall be disseminated in an open science manner. One of the objectives of the exploitation activities will be to find the right balance between IP protection for safeguarding the partners' exploitation interests and the implementation of open science practices for sharing cutting edge knowledge with the EU research community..

Question 6. Will your organisation produce data or tools to be shared with the public / EU community?

If yes, please specify:

- What kind of data or tool will you produce (broad topic)?
- What online repository do you plan to use?
- In which year, approximately, will the results be produced and shared?

Question 7. Is your organization planning to publish a scientific publication?

If yes, please specify:

- What will be the (broad) topic of the publication?
- Name 2-3 scientific journals you could publish it in.
- In which year, approximately, will the publication be issued?

**Participation in conferences/fairs and networking with similar projects/initiatives**

Results should be disseminated to the main target groups by presenting them at industrial fairs or conferences. Collaborations with similar projects, networks and initiatives should be strengthened

Question 8. Do you plan to participate in any industrial fairs or conferences?

If yes, please specify:

- Fairs/Conferences on which topic would you visit?
- Name 2-3 examples of fairs/conferences you would like to visit. (in your country, in EU, worldwide) and indicate in which year it is expected to take place

Question 9. Do you know other projects (national, European, international) with a similar topic, with which FLEX4FACT could interact/share knowledge with? Please also specify the type of cooperation/synergy possible.

Question 10. Do you know other initiatives/working groups/networks that focus on the same topic, with which FLEX4FACT could interact/share knowledge with? Please also specify the type of cooperation/synergy possible.

**General remarks**

Question 11. Do you have any other ideas or remarks regarding the FLEX4FACT communication and dissemination strategy?

## 7.2 ANNEX II: FIRST PRESS RELEASE OF FLEX4FACT

Brussels, June 30th, 2022

European project FLEX4FACT: FACILITATING THE PROVISION OF FLEXIBILITY SERVICES FROM INDUSTRIAL LOADS TO BOOST INTEGRATION OF RENEWABLE SOURCES IN THE EU

### Horizon Europe project FLEX4FACT has just started

The FLEX4FACT project officially started on June 1st 2022 and will run for 42 months. A hybrid kick-off meeting held on June 16th and 17th brought together 23 organisations from 5 European countries representing the consortium. During the meeting, partners had the opportunity to introduce their competences and skills and to discuss and validate an action plan for the upcoming weeks and months of the project. With the successful launch, the partners can now start implementing the project.



FLEX4FACT Kick-off meeting, 16-17 June 2022 (Barcelona, Universitat Politècnica de Catalunya)

### An end-to-end solution for industrial sites and stakeholders

FLEX4FACT aims to make industrial sites and processes more flexible through digitisation, automation, and smart control systems. It will support industrial stakeholders seeking to integrate more renewable sources into their industrial energy systems and to provide flexibility to the electrical systems via demand response measures. FLEX4FACT will develop an end-to-end solution made of 1. tools supporting the definition of pathways for increased renewable penetration in industrial sites, 2. digital twins of 5 different industrial sites based on real use cases from the industrial partners of FLEX4FACT, 3. a module for manufacturing process planning & control and 4. a cloud platform allowing industrial sites to participate in the ancillary energy market. Cutting-edge technologies including edge computing, AI and machine learning will be deployed to optimise the energy management of industrial sites. All solutions will be developed in a modular way to allow for easy replication and upscaling in the EU.

### Boosting the digital and energy transformation of the EU industry

The developed tools and knowledge are expected to accelerate the digital and energy transformation of the industrial sector in Europe and support the uptake of new renewable sources in the EU power grid. Industrial partners will be able to reduce their dependence on fossil fuels, reduce energy costs and switch to renewable sources, while generating additional revenues through the provision of flexibility services. This will increase the competitiveness of the EU industry. Additionally, FLEX4FACT will help secure the EU leadership in research and

innovation in the cyber-physical transformation of manufacturing, leading to the creation of a skilled workforce. Furthermore, the project supports the EU Green Deal through reduction of GHG emissions and creation of conditions for more liveable industrial cities.

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### **The FLEX4FACT project in short**

The project, coordinated by SINTEF Manufacturing AS, started in June 2022 and will run until November 2025. It consists of 23 partners from Norway, Spain, Germany, Italy and Ireland:

Sintef Manufacturing AS, Sintef Industry AS, Sintef Energy AS, CITCEA-UPC and DOPS from Universitat Politècnica de Catalunya, Instituto tecnologico de Aragon, Steinbeis-Europa-Zentrum, Evolvere SPA societa benefit, Aingura IIOT SL, Ikergune, We Plus S.p.a., Centro di competenza Start 4.0, Standard profil Spain SA, Inaventa solar AS, Seacsub SPA, Barna Steel SA, University College Cork, Caggemini Engineering, Fachhochschule Albstadt-Sigmaringen, Institut for energiteknikk, Rheinisch-Westfaelische technische Hochschule Aachen, Stam SRL, Sener ingeniera and sistemas SA and Theben AG.

FLEX4FACT is receiving funding from the European Union's Horizon Europe research and innovation programme under grant agreement 101058657. The European Commission is co-funding the project with nearly € 18 million.

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### **Contact**

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**Please feel free to contact us for further information.**