D8.6

Clustering plan and education and learning programme - 1

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D8.6	Work Package No.	WP8	Task/s No.	T8.4,T 8.5
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Document Contributors

Deliverable responsible	COMILLAS		
Contributors	**Organization**	**Reviewers**	**Organization**
Matteo Troncia	COMILLAS	Leonor Ruiz	SOUL
José Pablo Chaves Ávila	COMILLAS	Adam Christensson	E.ON
Carmen Valor Martinez	COMILLAS		
Tomas Gomez San Roman	COMILLAS		
Eliana Ormeño Mejía	COMILLAS		
Valeria Karina Moreno	COMILLAS		
Miguel Ángel Ruiz Hernández	COMILLAS		
José Villar	INESC-TEC		
Fábio Coelho	INESC-TEC		
Luis Rodrigues	INESC-TEC		
Blanca Del Guayo	ZABALA		

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List of abbreviations

AB	Advisory Board
CBP	Capacity Building Program
CEM	Clean Energy Ministerial
DC&E	Dissemination, Communication and Exploitation
DER	Distributed Energy Resources
DSO	Distribution System Operator
EDC	Electricity Distribution Companies
ESCO	Energy Service Company
EU	European Union
FCVC	Flexibility-Centric Value Chain
GDBN	Grid Data and Business Network
IAB	International Advisory Board
IEA	International Energy Agency
IP	Intellectual Property
IPR	Intellectual Property Rights
ISGAN	International Smart Grid Action Network
ITN	Innovative Training Network
KPI	Key Performance Indicator
MOOC	Massive Online Open Course
SDG	Smart Distribution Grid
SLFP	Small-Load Flexibility Providers
TCP	Technical Collaboration Programme
TSO	Transmission System Operator
WG	Working Group
WP	Work Package

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Executive Summary

The BeFlexible project aims to increase the flexibility of the energy system, improve cooperation between Distribution System Operators (DSOs) and Transmission System Operators (TSOs) and facilitate the participation of all energy-related stakeholders.

In the BeFlexible project, Work Package 8 (WP8) "Exploitation, Dissemination & Communication, Clustering activities & Capacity Building programme" implement the project's Dissemination, Communication and Exploitation (DC&E) strategies, during the project lifetime.

In the context of WP8, task 8.4 deals with the definition of a Clustering Plan and Education and Learning programme, including KPIs definition, a compendium of networking progress (including a list of stakeholders contacted and interactions with BRIDGE's relevant working groups) education and training actions.

The present document "D8.6 - Clustering plan and education and learning programme – 1" describes the realisation of a Massive Online Open Course, MOOC, based on the outcome of the activities of WP1 "Regulatory analysis, proposals for efficient flexibility mechanisms and demonstrators' framework" and WP2 "– Market actors value propositions, engagement and legal & ethics compliance". In particular, the MOOC prepared offers a set of learning modules to industrialists, research infrastructures and non-specialists concerning the regulatory analysis, the flexibility acquisition mechanisms design, the flexibility-centric energy value chain, and the cross-sector business models developed in WP1. The MOOC also leverages on the WP2 activities concerning the value propositions for all market actors through the proposed flexibility services and the Framework for incentives to small-flexibility providers.

Furthermore, this document provides an overview of the activities concerning the definition of a clustering plan, defined and implemented within Task 8.5: Clustering Activities and Interaction with BRIDGE. The plan aims to strengthen the project's positioning and promote cooperation with ongoing initiatives. BeFlexible actively engages with various projects and initiatives, such as EU projects funded under the same call and the GlocalFlex Energy Nexus Cluster, to synergistically enhance its impact. In addition, its membership in the BRIDGE initiative significantly boosts BeFlexible's visibility and dissemination of project results across broader communities.

The BeFlexible Clustering Building Programme (CBP) plan consists of in the combination of training approaches (i.e., Massive Online Open Course – MOOC, workshops and tutorials, a simulator for professionals, a final conference).

A structured methodology has been adopted to prepare the MOOC education materials, that include videos, subtitles, PowerPoint presentations, further readings, and a multiple-choice test, along with learning objectives, further resources, and key takeaways for each module. The steps of the adopted methodology are:

1. Identification of the MOOC learning objectives and definition of MOOC structure
2. Draft a Word Document with the Script
3. Create a PowerPoint Presentation
4. Propose Further Readings
5. Create a Multiple-Choice Test

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6. Video Recording
7. Video Editing
8. MOOC Upload to Diffusion Platform
9. MOOC Diffusion Through Project Channels

The MOOC is titled “Opportunities and challenges for enabling flexibility solutions in electricity systems”. The MOOC is available at the following link: https://moocs.comillas.edu/courses. As shown in Table 1, the MOOC comprises 5 modules, each addressing different aspects of flexibility deployment as tackled in WP1 and WP2 of the BeFlexible project. Each module is characterized by specific learning objectives and contains a set of videos, with each video focusing on a specific topic related to the module's aspects. These topics are accompanied by multiple-choice quizzes designed to assess learning comprehension. Participants who successfully pass all the quiz sessions will be awarded a certificate.

Table 1 MOOC structure

	MOOC modules’ titles	Nº of topics (videos)
1	Flexibility services and Small-load providers	5
2	Small-Load Flexibility Providers (SLFPs): A Framework for Incentives	3
3	Proposal for flexibility mechanisms design: from standalone mechanisms to efficient combinations	4
4	Regulatory framework for fostering flexibility deployment: roles, responsibility of agents and tools	5
5	Flexibility-centric energy and cross-sector business models	4

The MOOC provides a certification that is granted if the assessment included for each topic to assess comprehension is passed. Each topic’s assessment includes a short multiple-choice quiz, and it is necessary to correctly answer more than 60% of the questions to pass the assessment test.

The delivery of this training programme is carried out in dedicated knowledge exchange spaces. A digital campaign to promote the MOOC developed under Task 8.4 is underway with the identification of the actions needed on the website and social media channels to maximize the impact of the created materials. The campaign will start in September 2024, after the MOOC’s launch.

Moreover, the first workshop of the Capacity Building programme was held on October 25th, 2023, with the title “Enticing Residential Consumers to Become Electricity Flexibility Providers.” The BeFlexible project webinar presented findings from WP2 on this topic. The webinar was co-organised with and hosted by the Virtual Learning task of the International Smart Grid Action Network (ISGAN). Webinar recording is available at:

https://www.youtube.com/watch?v=OENQ1WIAXyI

The clustering plan and networking progress regards collaboration with other Horizon Europe projects. BeFlexible has established a cluster with the two other projects funded under the same call, ENFLATE and STREAM, which has proven highly fruitful in establishing synergies. Furthermore, BeFlexible’s membership in the BRIDGE initiative offers numerous benefits, including increased visibility for projects, opportunities for

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strategic collaborations, and access to a broad network of experts and stakeholders. This engagement helps to effectively disseminate its results, leverage shared resources, and remain at the cutting edge of energy sector advancements, ultimately maximizing its contribution to the transition towards a more sustainable energy system. BeFlexible actively participates in several working groups (i.e, Regulation, Data Management, Business Models, Consumer and Citizen Engagement). As a part of the networking activities, the project maintains continuous contact with a diverse range of stakeholders, actively expanding its network and connections, including EU projects, energy and utilities sector, policy makers & regulatory bodies, associations, energy events & fairs, media, research institutions, and the project advisory board members.

The CBP is expected to have significant impacts, including enhancing the energy sector's attractiveness to highly skilled workers and increasing opportunities for students. By providing comprehensive training and education resources, the CBP aims to facilitate the uptake of BeFlexible solutions, ensuring their continued relevance and application beyond the project's lifespan. Additionally, the program is anticipated to contribute to social cohesion by fostering a more educated and better-trained workforce, which in turn supports the alignment of sector wages with European standards, leading to improved job satisfaction and higher salaries within the industry.

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1. Introduction

1.1. BeFlexible project

The BeFlexible project aims to increase the flexibility of the energy system, improve cooperation between Distribution System Operators (DSOs) and Transmission System Operators (TSOs) and facilitate the participation of all energy-related stakeholders. This is pursued through the validation and large-scale demonstration of adapted and proven cross-sectoral services, interoperable data exchange platforms for smart grids operation and the creation of the required system architecture framework that will enable the creation of new business models providing additional value to meet consumers' needs in compliance with a stable regulatory framework.

1.2. Work Package 8 organization and interaction with other Work Packages

In the BeFlexible project, Work Package 8 (WP8) "Exploitation, Dissemination & Communication, Clustering activities & Capacity Building programme" implement the project's Dissemination, Communication and Exploitation (DC&E) strategies, during the project lifetime, including:

1) Dissemination and Communication activities oriented to show results and their impact towards target audiences.
2) Exploitation actions to establish the main pillars for a future market uptake plan for the results generated, widening opportunities for innovation and business and implementing an Intellectual Property Rights (IPR) strategy.
3) Define a clustering plan to build a collaborative network promoting an active participation with BRIDGE initiative.
4) Ensure transfer of knowledge through the definition a Capacity Building Programme.
5) Organise/manage advisory board (AB).

WP8 is organised in six tasks, as described in Table 1.1.

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Table 1.1 – Description of the tasks that form BeFlexible WP8

Task	Task Title	Task description
8.1	Implementation of the Dissemination strategy	Task 8.1 deals with the definition and implementation of the dissemination strategy for the project considering the type of partner involved and the target audience per action (i.e., scientific conferences/journals, EU/National events, trade fairs, workshops, joint public-private publications, and CINEA activities).
8.2	Implementation of the Communication strategy	Task 8.2 concerns with the definition and implementation of the communication strategy for the project considering the project website, social media management, supporting communication means, marketing, and communication channel departments.
8.3	Exploitation strategy and IPR	Task 8.3 deals with the exploitation strategy with an intellectual property (IP) and knowledge management strategy developed and executed during the whole duration of the project.
8.4	Capacity Building Programme	Task 8.4 develops a complete and robust training & education Capacity Building Program (CBP) oriented to industrialists, research infrastructures and non-specialists to enable the BeFlexible solution uptake after the project ends, consisting in a combination of training approaches, guidelines for IT & digital solutions.
8.5	Clustering activities and interaction with BRIDGE	Task 8.5 is responsible for the clustering activities and interaction with BRIDGE with the goal of establishing networking and clustering, to build up a solid and self-sufficient international contact network surrounding the project, and to share the knowledge generated delivering conclusions and recommendations about the future exploitation of the project results.
8.6	Interaction with International Advisory Board	Task 8.6 deals with the interaction with the International Advisory Board (IAB) composed by stakeholders, users and experts to provide valuable external input and feedback on the BeFlexible project activities.

1.3. Scope and objectives of this deliverable

This document, Deliverable 8.6 titled “Clustering plan and education and learning programme - 1”, is to report the work developed in Task 8.4 (T8.4) with consists in the “Capacity Building Programme”.

In T8.4, a complete and robust training & education Capacity Building Program (CBP) is developed, oriented to industrialists, research infrastructures and non-specialists. Its objective is to facilitate the BeFlexible solutions uptake after the project ends, and it consists of in a combination of training approaches such as:

- Tutorials,
- MOCC,
- Workshops.

Regarding the CBP, this document focuses on the MOOC realisation and the first workshop held.

Figure 1.1 outlines the interactions between Task 8.4 other WPs within the project, as described in this document.

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In the context of T8.4 activity, this document (D8.6) concerns the definition of a clustering plan and education and learning programme, including KPIs definition, a compendium of networking progress (including a list of stakeholders contacted and interactions with BRIDGE's relevant working groups) education and training actions.

This document (D8.6) describes the realisation of the MOOC based on the outcome of the activities of WP1 "Regulatory analysis, proposals for efficient flexibility mechanisms and demonstrators' framework" and WP2 "– Market actors value propositions, engagement and legal & ethics compliance". In particular, the MOOC offers a set of learning modules to industrialists, research infrastructures and non-specialists concerning the regulatory analysis, the flexibility acquisition mechanisms design, the flexibility-centric energy value chain, and the cross-sector business models developed in WP1. The MOOC also leverages on the WP2 activities concerning the value propositions for flexibility all market actors through the proposed services and the Framework of incentives for small-flexibility providers.

Furthermore, this document provides an overview of the activities concerning the definition of a clustering plan, aimed at strengthening BeFlexible's positioning and fostering cooperation with relevant ongoing initiatives. It first describes the project's active engagement with other EU projects, which has proven to be highly beneficial, resulting in joint communication and dissemination efforts, participation in key energy sector events, and enhanced digital outreach. Additionally, the document outlines the notable element of the membership in the BRIDGE initiative. This ongoing collaboration significantly boosts the project's visibility and facilitates the dissemination of project results. Furthermore, BeFlexible actively participates in the BRIDGE working groups, through which the initiative promotes continuous knowledge sharing among projects and contributes to the broader advancement of the energy sector.

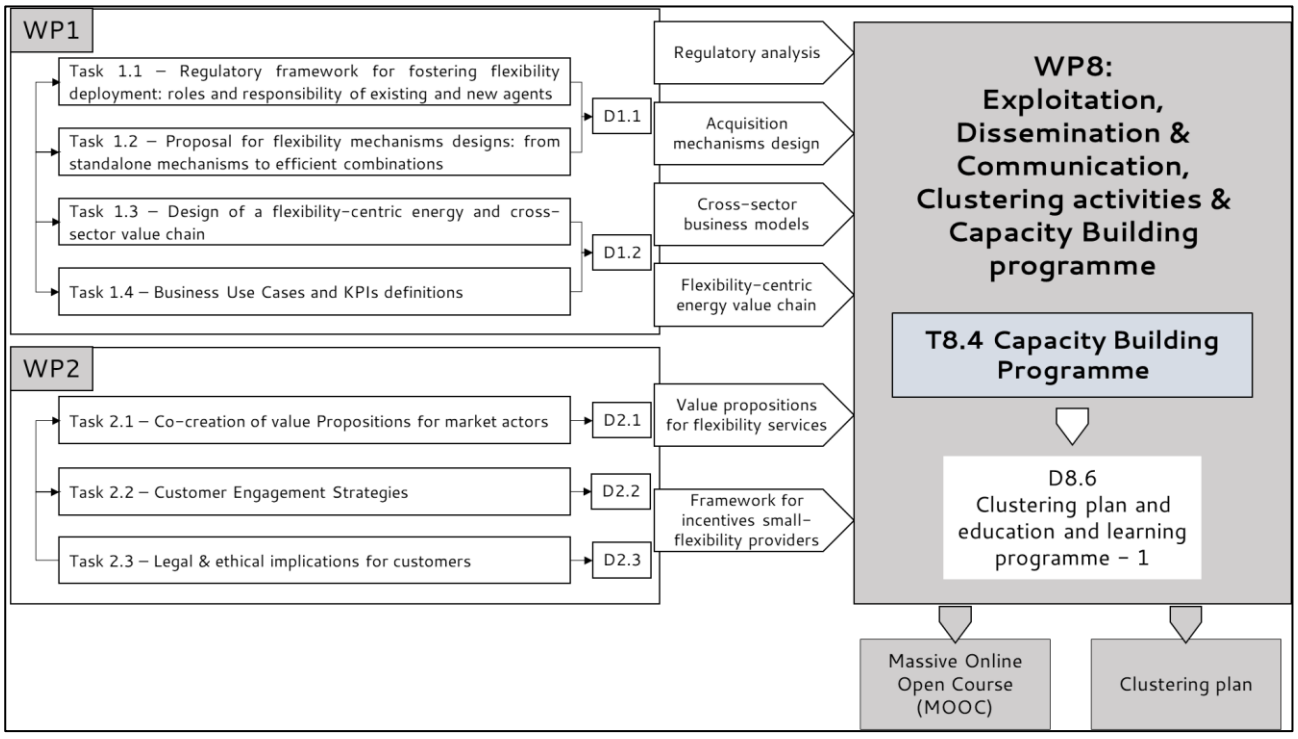

Figure 1.1 - Overview of the interactions between Task 8.4 and other BeFlexible WPs

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1.4. Deliverable structure

The structure of this deliverable is the following:

- Section 2 deals with the education and learning programme and training actions. Section 2 outlines the capacity building programme plan and provides a detailed description of the activities to build the MOOC (i.e., development methodology, structure and model description, platform implementation, and deployment plan). Moreover, it describes the realisation of the first BeFlexible online workshop titled “Enticing Residential Consumers to Become Electricity Flexibility Providers”.
- Section 3 outlines the realisation of the clustering plan and compendium of networking progress. It encompasses collaboration with related projects and relevant initiatives in the energy sector, participation in key events, fairs, and networking opportunities, and activities related to BeFlexible’s membership in the BRIDGE initiative, covering both DC&E collaboration as well as involvement in BRIDGE working groups.

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2. Education and Learning programme and training actions

2.1. Capacity Building Programme plan

The Capacity Building Programme (CBP) developed in the context of Task 8.4 of the BeFlexible project is characterised by a complete and robust training & education resource oriented to industrialists, research infrastructures and non-specialists to enable the BeFlexible solutions uptake after the project ends.

In addition to the activities of the project to analyse flexibility market mechanisms and regulation and develop customer centric flexibility-oriented business models and the flexibility centric value chain, conclusions and lessons learned must be collected and shared in a comprehensive manner.

Thus, an educational CBP has been developed for industrialists, research infrastructures and non-specialists to facilitate solutions uptake after the project ends. This will make the energy sector more attractive to highly skilled workers and provide more opportunities for students.

Another objective of the CBP is to stimulate social cohesion by developing added value in the sector, which requires better-trained and educated workers, with higher salaries by fostering the alignment with European wage standards for the sector.

The BeFlexible CBP plan consists of in the combination of the following training approaches:

- 3 tutorials
- A Massive Online Open Course – MOOC: building of an education and learning programme in the form of a MOOC[1] to share the key findings of WP1 and WP2 of the BeFlexible project, see section 2.2.
- A simulator for professionals
- 3 workshops with third parties: training workshops and the related e-learning material oriented to various stakeholder groups to inform them about the specific benefits and best practices. As part of these workshops, a webinar titled “Enticing Residential Consumers to Become Electricity Flexibility Providers” was delivered through the ISGAN Virtual Learning initiative on 25 October 2023, see section 2.2.
    - Publication of guidelines for IT & digital solutions, adapted for Energy sector company owners, managers and workers
    - Shared knowledge exchange spaces to increase knowledge and take-up of BeFlexible solutions.
    - A specific session dedicated to the integration of smart distribution grids (SDGs) and due diligence.

[1] Available at the following link: https://moocs.comillas.edu/courses

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- A final conference to present the final results. Massive Online Open Course development.

2.1.1. MOOC Development methodology

This section describes the methodology followed for creating the MOOC educational materials, including videos, subtitles, PowerPoint presentations, further readings, and a multiple-choice test, along with learning objectives, further resources, and key takeaways for each module.

This methodology provides a structured approach to creating educational materials that are engaging, informative, and accessible, by linking learning objectives to content and assessment, and providing additional resources for further learning, ensuring a comprehensive educational experience.

The methodology has the following steps:

1. Identification of the MOOC (Massive Open Online Course) learning objectives and definition of MOOC structure
    - Each module must have clear, specific, and measurable learning objectives. These objectives guide the MOOC content and must be linked to the questions in the multiple-choice test.
    - Definition of the number and scope of modules and the included videos.
    - Definition of the take-away messages that summarize the key points that learners should remember after watching each video.
    - Identification of the MOOC platform that suits the target audience.
2. Draft a Word Document with the Script:
    - Prepare a detailed script for each video of each module. The scripts are used for the subtitles of the videos.
    - Peer-review to ensure the script is clear, concise, and aligned with the learning objectives.
3. Create a PowerPoint Presentation:
    - Develop slides that visually support the key points of the script.
        1. Include charts, graphs, and images to illustrate complex concepts.
        2. Use bullet points to summarize important information.
    - Peer-review to ensure the slides are visually engaging.
4. Propose Further Readings:
    - Identify open-access resources, including websites, articles, and reports, that offer deeper insights into the topics covered.
    - Ensure the resources are reliable and relevant to the learning objectives.
    - Provide a link for each resource.
5. Create a Multiple-Choice Test:
    - For each video in each module, develop a set of questions that assess the understanding of the key concepts.
6. Video Recording:
    - Video recording sessions by using high-quality equipment to guarantee professional standards.
    - Video recording addressed by following the script closely to ensure the content is accurate and comprehensive.

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7. • Video Editing:
    - Edit the recorded videos:
        1. Add subtitles using the prepared script.
        2. Incorporate visuals from the PowerPoint presentation.
        3. Ensure smooth transitions between sections.
    - Peer-review of the video editing outcome to ensure the quality of the result.
8. • MOOC Upload to Diffusion Platform:
    - Upload the edited videos to the MOOC platform.
    - Include the supplementary resources.
    - Set up the multiple-choice test within the platform.
9. • MOOC Diffusion Through Project Channels:
    - Promote the MOOC through various project channels.
    - Monitor engagement and gather feedback to improve future iterations of the course.

2.1.2. MOOC Structure and modules description

This section describes the structure of the MOOC and provide a description of the key aspects concerning each learning module. The MOOC course is titled "Opportunities and challenges for enabling flexibility solutions in electricity systems", Figure 2.1 shows the front page on the MOOC, while Figure 2.2 shows the MOOC landing page presentation.

Figure 2.1 - Front page of the MOOC

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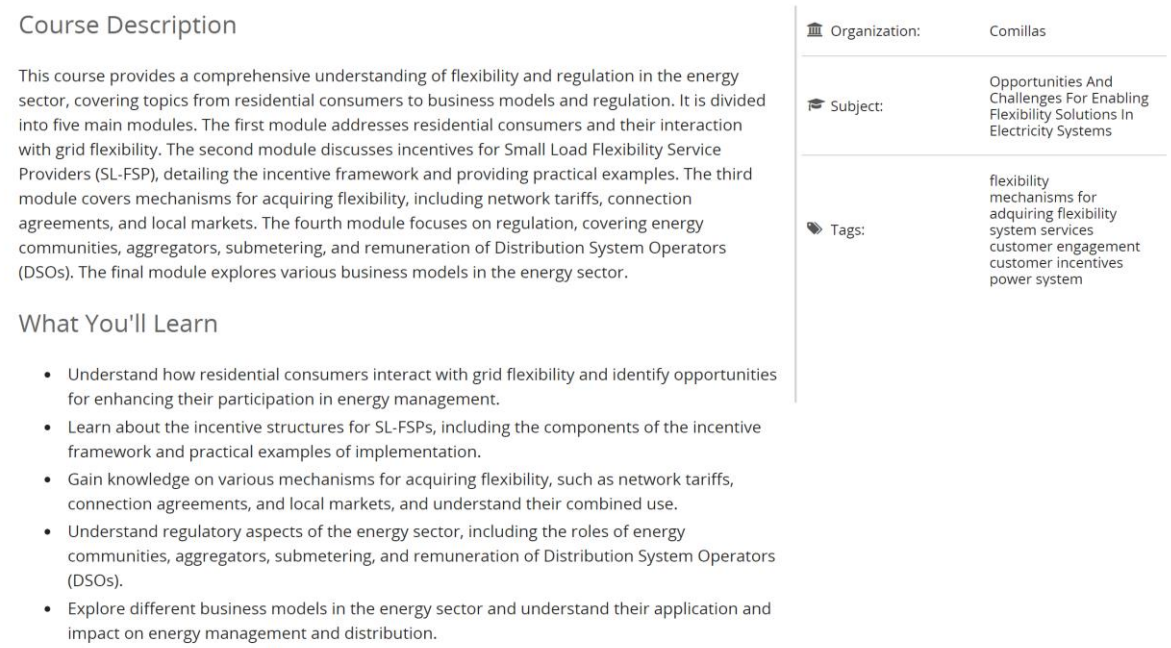

Figure 2.2 - MOOC landing page presentation

As shown in Table 2.1, the MOOC comprises 5 modules, each addressing different aspects of flexibility deployment as tackled in WP1 and WP2 of the BeFlexible project. Each module is characterized by specific learning objectives.

Each module contains a set of videos, with each video focusing on a specific topic related to the module's aspects. These topics are accompanied by multiple-choice quizzes designed to assess learning comprehension. Participants who successfully pass all the quiz sessions will be awarded a certificate.

Table 2.1 MOOC structure

	MOOC modules' titles	Nº of topics (videos)
1	Flexibility services and Small-Load Flexibility providers (SLFPs)	5
2	Small-Load Flexibility Providers (SLFPs): A Framework for Incentives	3
3	Proposal for flexibility mechanisms design: from standalone mechanisms to efficient combinations	4
4	Regulatory framework for fostering flexibility deployment: roles, responsibility of agents and tools	5
5	Flexibility-centric energy and cross-sector business models	4

2.1.2.1. Module 1: Flexibility services and Small-load providers

Module 1 is titled "Flexibility services and Small-Load Flexibility providers (SLFPs)".

This module explains in a non-technical and friendly way the main transformation trends of the energy system and why flexibility is necessary. It describes the two approaches to providing flexibility. The module

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closes by discussing the benefits that consumers can obtain by providing flexibility and the challenges encountered by consumers.

Module 1 is characterised by the following learning objectives:

- Understand the key transformations of the energy system: the 3D transformation
- Recognize the need of energy flexibility
- Be able to differentiate between the two broad approaches for flexibility provision
- Explore the manifold benefits that flexibility provision has for consumers
- Understand the challenges or barriers that consumers encounter and how to address them

Module 1 is intended for energy industry professionals, researchers and academics, energy policymakers and regulators, as well as students and learners.

Table 2.2 outlines the structure of Module 1, listing the titles of the video topics.

Table 2.2 MOOC structure for the module 1: "Flexibility services and Small-Load Flexibility providers (SLFPs)"

	Topic (Video)
1	The new energy landscape
2	Why do we need flexibility?
3	Incentivized or explicit flexibility
4	Benefits for consumers
5	Challenges for consumers

2.1.2.2. Module 2: Small-Load Flexibility Providers (SLFPs): A Framework for Incentives

Module 2 title is "Small-Load Flexibility Providers (SLFPs): A Framework for Incentives".

This module deals with the incentives for small-load flexibility providers by introducing Small-Load Flexibility Providers (SLFPs) and their role in the electricity market, describing the main stakeholders (i.e., DSO/TSO and aggregator), introducing the proposed incentive framework and explaining how incentives can boost the participation of SLFPs in the flexibility market. Furthermore, the module describes the components of the incentive framework (i.e., monetary and non-monetary incentives, penalties, long-term benefits, etc.) and discusses how each component can motivate SLFPs to provide flexibility. Finally, the module concludes with providing practical examples from the United States of America.

Module 2 is characterised by the following learning objectives:

- Identify the roles and benefits of Small-Load Flexibility Providers (SLFPs) in the energy market.
- Understand the foundational framework for incentivizing energy flexibility and its importance for aggregators and end-customers.
- Recognize the four essential conditions (critical mass, reliability, loyalty, and versatility) for the viability of aggregator business models.

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- Analyse various strategies for compensating customers for their flexibility, with a focus on explicit demand response facilitated by aggregators.
- Explore the importance of aligning incentives with the technical and operational needs of the energy grid, as well as DSO/TSO requirements.
- Gain a clear understanding of the types of incentives employed in real-world energy flexibility programmes and how they motivate customer participation.
- Connect theoretical energy management concepts with practical applications, evaluating how effectively these real-life programmes align incentives with the broader goals of energy efficiency, flexibility, and customer satisfaction.
- Assess the role of incentives in bridging theory and practice within the energy sector, contributing to a more sustainable and efficient energy ecosystem through customer engagement and technology adoption.

Module 2 is intended for energy industry professionals, researchers and academics, energy policymakers and regulators, as well as students and learners.

Table 2.3 outlines the structure of Module 2, listing the titles of the video topics.

Table 2.3 MOOC structure for the module 2: "Small-Load Flexibility Providers (SLFPs): A Framework for Incentives"

	Topic (Video)
1	Incentives for Small-Load Flexibility Providers
2	Components of the Incentive Framework
3	Practical Examples

2.1.2.3. Module 3: Proposal for flexibility mechanisms design: from standalone mechanisms to efficient combinations

The Module 3 is titled "Proposal for flexibility mechanisms design: from standalone mechanisms to efficient combinations".

This module emphasizes the increasing need for system flexibility due to the integration of distributed renewable resources. It introduces key concepts, including system services categorized into frequency ancillary, non-frequency ancillary, and congestion management services. The module also covers various mechanisms for acquiring system services, ranging from market-based approaches like auctions and bilateral contracts to regulated methods such as network tariffs and flexible access agreements.

Focusing on the design of acquisition mechanisms for Distributed System Operator (DSO) services, the module investigates the synergies and potential conflicts between various mechanisms. It highlights the importance of recognizing these synergies, which is crucial for stakeholders within the electricity grid's regulatory and operational spheres. The module provides a brief description of network tariffs, rule-based approaches, flexible connection agreements, and local markets for DSO services. General concepts are

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described, and examples of their application are provided. Design dimensions and options for all mechanisms defined under the methodology developed within the BeFlexible initiative are presented.

Finally, the module addresses the gap in understanding how these mechanisms might interact, identifying potential synergies or incompatibilities resulting from their interplay. The methodology developed within the project for analysing the combined design of different acquisition mechanisms is illustrated with examples.

Module 3 learning objectives are:

- To understand how network tariffs, flexible connection agreements, and local markets can be strategically utilized to solve network problems and enhance system flexibility.
- To introduce the design dimensions and options for network tariffs, flexible connection agreements, and local markets for Distribution System Operator (DSO) services, as developed in the BeFlexible initiative.
- To grasp the foundational concepts, objectives, and design principles of network tariffs and rule-based approaches as mechanisms for acquiring system services, focusing on their role in addressing network issues.
- To explore the combined use and potential synergies of various acquisition mechanisms in power systems, aiming to maximize their collective benefits.
- To examine the interactions between network tariffs, flexible connection agreements, and local markets, highlighting their importance in the context of modern power systems management and the energy transition.

Module 3 is designed for energy industry professionals, researchers and academics, energy policymakers and regulators, students and learners.

Table 2.4 outlines the structure of Module 3, listing the titles of the video topics.

Table 2.4 MOOC structure for the module 3: "Proposal for flexibility mechanisms design: from standalone mechanisms to efficient combinations"

	Topic (Video)
1	Introduction to system services acquisition mechanisms design
2	Mechanisms for acquiring DSO services: Network tariffs and Rule-based approaches
3	Mechanisms for acquiring DSO services: Flexible connection agreements and Local markets for DSO services
4	Methodology for combine mechanisms for DSO services and future steps

2.1.2.4. Module 4: Regulatory framework for fostering flexibility deployment: roles, responsibility of agents and tools

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The Module 4 is titled “Regulatory framework for fostering flexibility deployment: roles, responsibility of agents and tools”.

This module first deal with the topic of energy communities, discussing definitions, regulation, and market access. The module delves into the vital role that energy communities play in the transition towards a sustainable energy system and describes the project's contribution to designing these communities emphasizes their integration into the current electricity supply and system service framework. Moreover, the module examines the crucial function of aggregators in the context of the current energy transition towards renewable dominance. The module outlines the European Union Electricity Directive 2019/944’s perspective on aggregation, which involves combining customer loads or generated electricity for demand response and active market participation. Aggregators, likened to virtual power plants, can pool various energy resources, contributing value to network operations, capacity markets, and energy trading.

Furthermore, this module delves into the role of submetering in enabling the participation of small flexibility service providers in flexibility markets. Based on BeFlexible WP1 findings, this module presents the concept of smart meters and submeters, detailed benefits, current implementation of submetering usage, and the main challenges for successful implantation in the electricity markets.

This module presents the regulatory aspects concerning the remuneration of electricity distribution within the energy transition landscape, unpacking the role and regulation of electricity distribution companies (EDCs), focusing on their transition towards flexible operations. The module discusses the BeFlexible findings on the strategies for incorporating flexibility within remuneration schemes for EDCs.

Finally, this module discusses the regulatory experimentation in fostering innovation while maintaining the essential balance of regulation—stability and predictability, by pointing out the importance of regulatory experimentation in empowering the energy sector to innovate while safeguarding regulatory stability and service quality.

Module 4 learning objectives are:

- To explore the concept, structure, and functions of energy communities, and the role of aggregators within the renewable energy transition, emphasizing their integration and the need for system flexibility.
- To analyse the regulatory frameworks governing energy communities and aggregators, identifying the challenges and opportunities they present for the deployment of flexibility solutions within the current energy system.
- To understand submetering technology, its benefits, and its contributions to market phases and the challenges it poses for safe and reliable usage. To gain insights into the applications and challenges of submetering, along with understanding the regulatory aspects of electricity distribution and the objectives of such regulation.
- To grasp the principles behind the regulation of electricity distribution, the objectives of DSO remuneration, and the evaluation of different remuneration approaches to foster the integration of flexibility solutions into DSO operational procedures.

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- To appreciate the significance of regulatory experimentation as a means to foster innovation in the energy sector, including understanding the benefits, approaches, and dynamic nature of regulatory experimentation.

Module 4 is designed for energy industry professionals, researchers and academics, energy policymakers and regulators, students, and learners.

Table 2.5 outlines the structure of Module 4, listing the titles of the video topics.

Table 2.5 MOOC structure for the module 4: "Regulatory framework for fostering flexibility deployment: roles, responsibility of agents and tools"

	Topic (Video)
1	Energy Communities: definitions, regulation, and market access
2	Aggregators: A key business model for fostering customer flexibility
3	Submetering: enabler of small flexibility providers in flexibility markets
4	Remuneration of Electricity Distribution
5	Fit for purpose framework design for regulatory experimentation

2.1.2.5. Module 5: Flexibility-centric energy and cross-sector business models

The module 5 is titled "Flexibility-centric energy and cross-sector business models".

This module introduces the BeFlexible role model, which serves as the foundation to build flexibility-centric energy and cross-sector business models. Flexibility relevance for the energy sector is increasing with the continuing large-scale deployment of renewable energy sources to support the ongoing decarbonisation of the European power sector. The creation of new roles, not previously considered, anticipates the expansion into cross-sector business models to enrich the role model and add value to flexibility.

Moreover, this module delves into the dynamic evolution of business models in the energy sector, shifting from the traditional energy supply to innovative models that leverage on DERs, demand response, smart devices, and cross-sector integration and self-consumption structures. Indeed, as the energy landscape undergoes significant changes driven by the need for sustainability and increased system flexibility, new business models are emerging. Through detailed analysis, this module explores 8 business models identified in the BeFlexible project, customer centric and oriented to the provision of flexibility. We examine how these models integrate roles, actors, and technologies.

After the role model and the business models identified, this module presents and describes the flexibility-centric value chain (FCVC), describing the main and secondary activities for the provision of flexibility, involved actors, and cross-sector links. Then, the Grid Data and Business Network (GDBN) is presented. The GDBN is a digital platform designed to support the activities of the FCVC, or integrate other systems or

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platforms also involved in the support of such activities (such as flexibility market platforms), to facilitate the integration and onboarding of all stakeholders in the flexibility provision, and also supporting DSO in the flexibility activation phase, usually not supported by flexibility market platforms. This platform is particularly beneficial for consumers looking to manage energy costs and become active participants of the energy system, and for service providers aiming to increase their participation in local flexibility markets by providing services in the different phases of the FCVC.

Finally, this module revisits the most important concepts, business models, and the role of the FCVC that have shaped our understanding of the modern energy sector. The module also explores potential challenges and opportunities that could arise as the energy sector continues to evolve.

Module 5 learning objectives are:

- Understand the BeFlexible role model, highlighting its contribution to promote power systems' flexibility and cross-sector collaboration.
- Identify roles and actors and understand their contributions and how they interact to maintain and enhance the energy ecosystem.
- Learn how to integrate actors and roles to build comprehensive, high-level business models that are sustainable, adaptable, and capable of meeting contemporary energy demands.
- Recognize the importance of cross-sector activities for flexibility in the energy sector.
- Identify and describe BeFlexible business models and evaluate their sustainability and scalability.
- Understand the structure of the flexibility-centric value chain (FCVC), learning about each stage and how it supports the dynamic management of energy flexibility.
- Explore the concepts and main functionalities of the Grid Data and Business Network (GDBN), exploring its key concepts and functionalities that support the flexibility-centric value chain and enhance stakeholder engagement.

Module 5 is designed for energy industry professionals, researchers and academics, energy policymakers and regulators, students and learners.

Table 2.6 outlines the structure of Module 5, listing the titles of the video topics.

Table 2.6 MOOC structure for the module 5: "Flexibility-centric energy and cross-sector business models"

	Topic (Video)
1	The role model
2	Business models: evolving from the energy supply
3	Business models and the flexibility value chain
4	Conclusions and Future Steps

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2.1.3. MOOC certification

The MOOC offers certification upon passing assessments for each topic to gauge comprehension. Each module culminates in an assessment test, with participants permitted two attempts per test. These tests cover specific topics and consist of short multiple-choice quizzes. To pass, participants must correctly answer at least 60% of the questions. Successfully passing all assessments qualifies participants for certification.

The certification granted by the MOOC is a Certificate of Completion. At the end of the course, students will find the following announcement:

"If you want to request a Certificate of Completion for the course, make sure you have answered all the self-assessment questions and request it through the link you will find at the end of the course introduction page (at the following link): https://moocs.comillas.edu/courses.

Figure 2.3 shows a screenshot of the form students registration needed to complete to request the MOOC certificate that is issued by the BeFlexible MOOC.

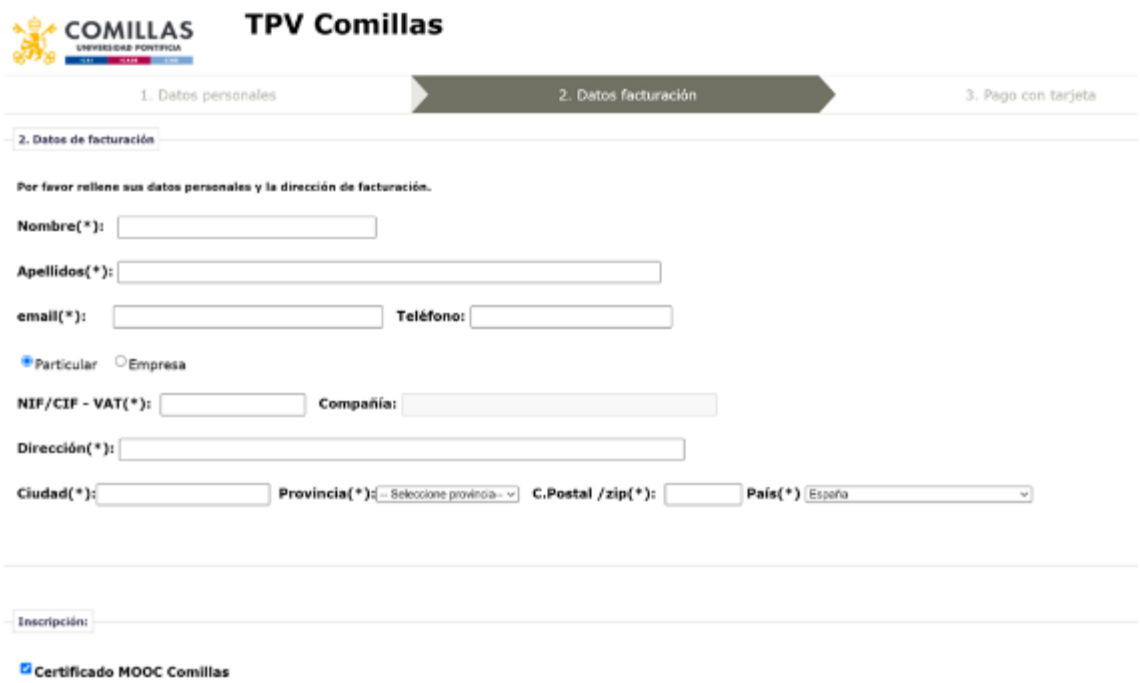

Figure 2.3 – Screenshot of the MOOC registration form

2.1.4. Massive Online Open Course deployment plan

2.1.4.1. MOOC platform implementation

The MOOC titled "Opportunities and challenges for enabling flexibility solutions in electricity systems" is made available at the following link: https://moocs.comillas.edu/courses.

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The BeFlexible MOOC is hosted on the “Open edX” platform, chosen for its suitability and recognition in providing structured open-access courses. Open edX offers comprehensive features for creating engaging and scalable MOOCs, catering to both instructors and learners. It provides tools for:

- **MOOC Development:** Content creation, editing, collaborative development, and course scheduling.
- **Learner Engagement:** System interoperability, and gamification.
- **Management and Administration:** Learner enrolment, cohort management, assessment tools, reporting, and analytics.

Additionally, as an open-source software, Open edX allows customization, integration with other learning tools, and white-labelling for seamless branding of the MOOC platform.

The platform also supports sending personalized messages to invite future students, using the following message:

“The course "Opportunities and challenges for enabling flexibility solutions in electricity systems", provided by Universidad Pontificia Comillas ICAI-ICADE, is open for enrolment. Please navigate to this course at https://moocs.comillas.edu/courses to enrol.”

Figure 2.4 shows the landing page of the MOOC.

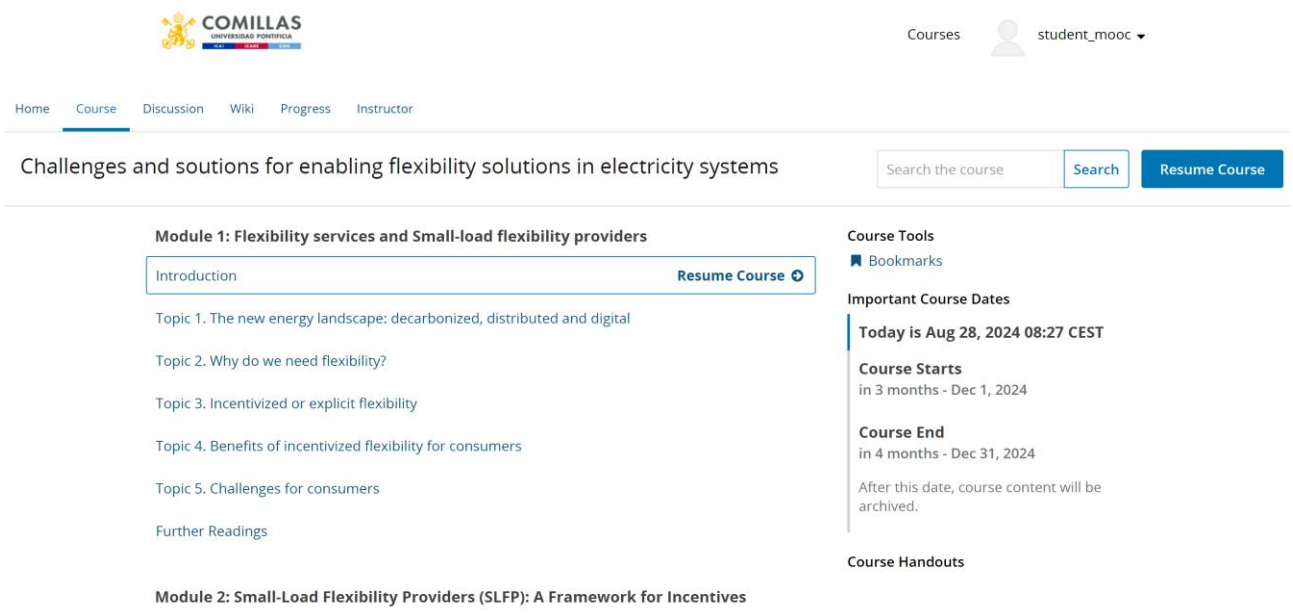

Figure 2.4 – Screenshot of the MOOC landing page

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The screenshot of the MOOC dashboard that is shown to the course users is provided in Figure 2.5.

Figure 2.5 – Screenshot of the MOOC dashboard

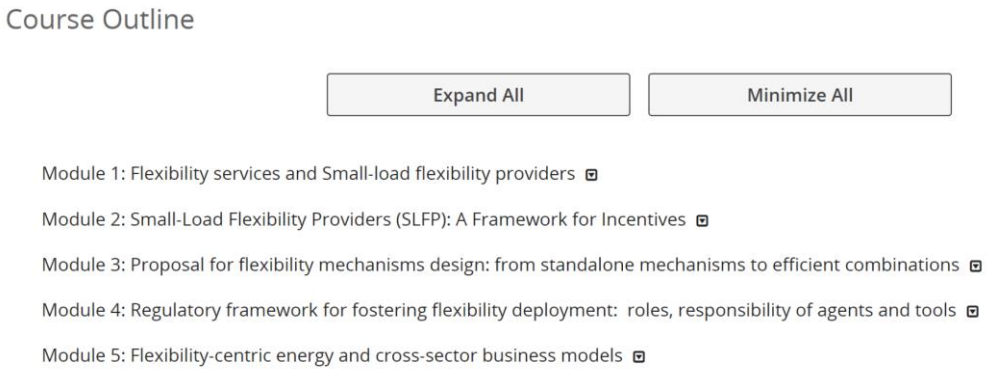

Table 2.7 shows the instructors of the MOOC, listed in the order of their module appearances.

Table 2.7 List of MOOC instructors, listed in the order of their module appearances

	MOOC instructors	Affiliation
1	Carmen Valor Martinez	Comillas Pontifical University
2	Valeria Karina Moreno	Comillas Pontifical University
3	Matteo Troncia	Comillas Pontifical University
4	Eliana Ormeño Mejía	Comillas Pontifical University
5	Tomas Gomez San Roman	Comillas Pontifical University
6	José Pablo Chaves Ávila	Comillas Pontifical University
7	Miguel Ángel Ruiz Hernández	Comillas Pontifical University
8	José Villar	INESC-TEC
9	Luis Rodrigues	INESC-TEC
10	Fábio Coelho	INESC-TEC

2.1.4.2. MOOC deployment plan

The delivery of this training programme will be carried out in dedicated knowledge exchange spaces as Energy Education facilities open to the Engineering and PhD students, but also through R&D collaboration programmes / research networks (Marie-Curie, ITNs, etc.).

A digital campaign to promote the MOOC developed under Task 8.4 is underway. Zabala and Comillas Pontifical University have initiated planning to determine the actions needed on the website and social media channels to maximize the impact of the created materials.

The campaign will start in September 2024, after the MOOC's launch.

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2.2. Online workshop: Enticing Residential Consumers to Become Electricity Flexibility Providers

As a part of the CBP plan workshops, the first one corresponds to a webinar titled "Enticing Residential Consumers to Become Electricity Flexibility Providers" has been held on October 25th, 2023.

The webinar has been co-organised with and hosted by the Virtual Learning task of the International Smart Grid Action Network[2] (ISGAN). ISGAN is a Technology Collaboration Programme (TCP) of the International Energy Agency (IEA). ISGAN is also an initiative of the Clean Energy Ministerial (CEM) formally established in 2011. ISGAN creates a strategic platform to support high-level government attention and action for the accelerated development and deployment of smarter and cleaner electricity grids around the world. ISGAN comprises contracting parties from 28 countries worldwide. ISGAN facilitates dynamic knowledge sharing, technical assistance, peer review and, project coordination among its Contracting Parties. The ISGAN value proposition relies on conferences and workshops, policy and technology briefs, discussion and technical papers, casebooks, and webinars.

Within ISGAN, Virtual Learning offers the ISGAN community means of rational and continuous technical skills update in the field of smart grids. The Virtual Learning is proposed as a set of e-learning and reading core modules dealing with the entire value chain of smart grid.

ISGAN Virtual Learning has been identified as an effective channel for hosting webinar to maximize their impact on professionals in the electricity sector. ISGAN Virtual Learning provides technical support through its well-established webinar series, offers access to a potential audience of thousands of smart grid stakeholders worldwide, and allows for hosting webinar recordings on their YouTube channel. Moreover, the ISGAN webinar format features a 40-minute presentation of project findings followed by a 15-minute moderated question-and-answer session. This format allows for the exchange of ideas with the webinar audience, clarifying doubts, and receiving feedback from the smart grid community.

The BeFlexible project webinar presented findings from WP2 on enticing residential consumers to become electricity flexibility providers. Many studies have highlighted the numerous barriers that residential consumers face in becoming providers of flexibility services. Research with consumers has identified unmet needs that can be addressed to create value for them. The webinar showcased the project's proposals for value propositions that can be used to market flexibility services to residential consumers.

The webinar's speakers were Carmen Valor and Valeria Karina Moreno from Comillas Pontifical University. The intended audience included policymakers, senior and junior engineers, ESCOs, and aggregators. The key messages of the webinar were:

- Flexibility provision creates value for consumers.
- Five value propositions to entice consumers to become flexibility providers.

Webinar recording is available at this link: https://www.youtube.com/watch?v=OENQ1WIAXyI

The one-hour webinar had 121 registrations and was attended by 54 people.

[2] https://www.iea-isgan.org/

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3. Clustering plan and compendium of networking progress

Under Task 8.5, specific activities have been implemented to strengthen BeFlexible's positioning and foster collaboration with relevant ongoing initiatives. BeFlexible is actively engaging with various projects and initiatives to synergistically enhance its impact, with its membership in the BRIDGE initiative being particularly significant. This collaborative approach not only boosts BeFlexible's visibility but also enhances the dissemination of project results across wider communities. Additionally, it creates valuable networking opportunities, enabling BeFlexible to connect with key stakeholders, explore new partnerships, and leverage collective expertise to advance its objectives.

3.1. Clustering activities

Regarding collaboration with other Horizon Europe projects, BeFlexible has established a cluster with the two other projects funded under the same call, ENFLATE and STREAM, which has proven highly fruitful in establishing synergies.

During the launch meeting, a roadmap for future cluster dissemination and communication activities was established, including participation in common events, organizing webinars and workshops, publishing cluster articles on respective websites (like this one), engaging on social media, sharing milestones via email, and arranging regular meetings with technical coordinators and for D&C strategies. Furthermore, project presentations were extended to each other's consortiums during the General Assembly of BeFlexible (25-26 September 2023) and ENFLATE (17-18 October 2023).

This collaboration is proving highly beneficial for **joint participation in relevant EU-level events**, where clustering participation is highly valued and enhances audience attraction and impact:

1. The first cluster session, organized by Zabala, was held at **ENLIT Europe 2023 (November 28th, Paris)**, a prominent fair in the utilities sector, featuring products and services in digitization, network optimization, customer management, Big Data, transmission, distribution, measurement systems, monitoring, and related solutions. The fair attracted 506 exhibitors from 42 countries and 10,000 professional visitors.

The cluster session, titled "Unlocking Flexibility Markets: Are Customers Ready to Embrace Innovation?", attracted over **150 attendees** eager to explore the intricacies of the evolving energy sector. The dialogue featured:

- Fernando David Martin Utrilla: i-DE (Iberdrola group), BeFlexible Project Coordinator.
- Jan Jeriha: University of Ljubljana, STREAM Project Coordinator.
- Katerina Drivakou: UBITECH, ENFLATE Project Coordinator.
- Ricardo Bessa: INESC TEC, Keynote Speaker, BeFlexible Project.
- Susana Garayoa: Institutional Relations at Zabala Innovation, and part of BeFlexible.

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In addition, BeFlexible also had its own project stand at ENLIT 2023 to interact with stakeholders and present the project to the interested attendees.

2. The subsequent milestone in cluster event participation occurred at the **European Sustainable Energy Week 2024 (11th-13th June, Brussels)**, organized by the European Commission. EUSEW serves as a platform for stakeholders from across Europe to convene, exchange ideas, and discuss sustainable energy policies and practices, aiming to foster collaboration among policymakers, industry representatives, NGOs, academia, energy consumers, and citizens.

BeFlexible coordinated the session "What about flexibility? How customers can improve power systems" by engaging various EU projects and initiatives in the field, coordinating with the EUSEW organization and leading the event promotion (see section 4.4). The session was divided into two panels that dived into essential aspects of customer engagement and the evolution of flexibility services and platforms toward a fully integrated energy system. Emphasizing customers' availability and willingness to participate actively, the session explored critical topics surrounding flexibility markets and future opportunities within the energy sector. The session attracted a total of 275 attendees (200 in-person and 75 online).

- Panel 1: "Unlocking local energy flexibility potential: are customers ready to embrace innovation?". Featuring:
  - Moderated by Ms. Tzeni Varfi, E.DSO.
  - Mr. Veli-Pekka Saajo, Council of European Energy Regulators (CEER).
  - Mr. Fernando David Martin Utrilla, i-DE (Iberdrola) and BeFlexible project.
  - Mr. Tomi Medved, University of Ljubljana and STREAM project.
  - Ms. Katerina Drivakou, UBITECH ENERGY and ENFLATE project.
  - Mr. Josh Roberts, REScoop.eu.
  - Ms. Rose Matthews, Smart Innovation Norway.
- Panel 2: "Scaling demand response in Europe: lessons learned from field-proven solutions". Featuring:
  - Moderated by Ms. Marion Malafosse, SmartEn.
  - Mr. Thomas Bobinger, Federation of German Consumer Organisations, VZBV.
  - Mr. Sebastien Condom, Voltalis.
  - Ms. Lindsay Sugden, NIBE.
  - Mr. Charles Verhaeghe, Compass Lexecon.
  - Ms. Olivia Sicurani, Sympower.

3. Currently, the WP8 team (specifically Zabala Innovation) is actively preparing for **ENLIT Europe 2024 (22-24 October, Milan)**. Following the success of the previous edition, participation will include a cluster session featuring the three projects. To enhance and broaden the discussion, an external expert from a regulatory or policy background will be invited to contribute. Additionally, BeFlexible will once again have its own exhibition stand.

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In addition to collaboration with the sister projects, BeFlexible has joined the Energy Nexus Cluster, an initiative funded by the European Union, which aims to foster collaboration between projects and provide a platform for projects to exchange knowledge, organize match-making events and workshops, and disseminate their results with a broader network of other projects. The cluster will organize quarterly online meetings, through which projects will showcase and share methodologies, best practices, technologies developed, use cases, etc.

For comprehensive details on the promotional campaigns for these events, as well as the materials created for pre-event, during-event, and post-event promotion, please refer to Document D8.4 Report on communication & dissemination activities, interactions with BRIDGE and AB - 1. This document contains all relevant information regarding the strategies and materials utilized throughout the dissemination process.

3.2. Interaction with BRIDGE initiative

The BRIDGE initiative is a collaborative platform designed to enhance the integration and coordination of European energy projects. It brings together various stakeholders, including research projects, industry partners, and policy makers, to facilitate knowledge sharing, best practices, and joint initiatives. The impact of BRIDGE is significant, as it fosters synergies among projects, amplifies their reach, and accelerates the transition to a more sustainable energy system.

BeFlexible's membership in the BRIDGE initiative offers numerous benefits, including increased visibility for projects, opportunities for strategic collaborations, and access to a broad network of experts and stakeholders. This engagement helps BeFlexible effectively disseminate its results, leverage shared resources, and remain at the cutting edge of energy sector advancements, ultimately maximizing its contribution to the transition towards a more sustainable energy system.

3.2.1. DE&C activities in collaboration with BRIDGE

Since the inception of the project, BeFlexible has leveraged cross-promotion and collaboration through its participation in the BRIDGE initiative. BRIDGE is a European Commission initiative which unites Horizon 2020 and Horizon Europe Smart Grid, Energy Storage, Islands, and Digitalisation Projects to create a structured view of cross-cutting issues which are encountered in the demonstration projects and constitute an obstacle to innovation. This partnership has facilitated joint communication opportunities, with constant contact with the BRIDGE dissemination team. Some examples are:

- Presentation of BeFlexible on the BRIDGE brochure.
- Promotion of BeFlexible content in the BRIDGE newsletter (February 2024 issue and July 2024 issue), significantly extending its reach within the energy sector.
- BeFlexible has actively participated in BRIDGE General Assemblies (2023 and 2024).

3.2.2. Contact for potential collaborative events and fairs, and networking opportunities. Contribution to BRIDGE knowledge creation

Additionally, BeFlexible actively contributes to BRIDGE's knowledge creation activities by participating in surveys, studies, and collaborative research initiatives. This engagement allows BeFlexible to contribute

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valuable insights and data from its own research and implementation efforts, thereby shaping and advancing the understanding of flexible energy systems within the BRIDGE community. By sharing its findings and experiences, BeFlexible enriches the collective knowledge base, strengthening its own impact while fostering a dynamic dialogue among members. This not only strengthens the project's impact but also fosters ongoing dialogue.

This year 2024, BeFlexible has contributed to the BRIDGE survey "Survey on Innovations in Flexible Energy Systems" and " Assessment of progress in energy R&I in Europe - Survey".

3.2.3. Participation in BRIDGE working groups

The BRIDGE initiative fosters continuous knowledge sharing amongst projects allowing them to deliver conclusions and recommendations through four working groups (WGs) representing the main areas of interest. BeFlexible actively participates in these working groups.

1. Regulation Working Group

Partners involved: i-DE (Iberdrola), Comillas Pontifical University, Timelex.

BeFlexible is leading Action 5, which focuses on supporting system operators to prepare the grid for 2030. The main objective is to identify necessary innovations to advance processes and tools related to network planning and operation. Topics in scope include flexibility integration in network planning, balancing grid investment with flexibility, congestion management, and remuneration mechanisms for system operators. Notable projects expressing interest include ATTEST, BeFlexible Communitas, ELECTRON, ENFLATE, EUniversal, INSULAE, NATURSEA-PV, OneNet, PARMENIDES, REEMPOWERED, SENERGY NETS, STREAM, and XL-Connect. A workshop held on 11/01/2023 in collaboration with ISGAN Working Group 6 explored how Action 5 could align with the development of the EU GRID Plan. Action 5 was presented during the workshop, and the next steps involve working with interested members to define the future direction and also preparing a second workshop with interested parties such as ETIP SNET.

BeFlexible participated in Action 3 “Facilitate energy and flexibility market coordination and integration“ for the period 2023-2024. The action addressed an analysis of the barriers and lessons learned from EU project activities regarding flexibility market design and integration. BeFlexible contributed by participating to surveys and workshops.

BeFlexible leads in Action 3 “Facilitate energy and flexibility market coordination and integration“ for the period 2024-2025. Bridge Regulatory Working Group (RWG) Action 3 aims to analyse the best practices and the barriers of developing and implementing energy and flexibility market across the European Union countries. Action 3 has the objective to review the proposals and experience from EU funded project to formalise recommendations to foster energy and flexibility market coordination and integration. To achieve this goal, Action 3 reviews what the design options are for the acquisition mechanisms for flexibility with the aim to analyse how local flexibility markets can be integrated and coordinated. This activity is in line with the BeFlexible D1.1 findings on flexibility acquisition mechanisms design.

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2. Data Management Working Group

Partner involved: Timelex.

The Data Management Working Group has outlined several actions for its 2023-2024 program, including further development of the use-case repository, integration of BRIDGE Federated Services Catalogue and interactive visualization into the EU Data Exchange Reference Architecture (DERA), addition of new Generic Business Processes to the Reference Framework, liaison between BRIDGE Standards User Group (BSUG) and standardization bodies, and further investigation into the interoperability of home appliances. Continued efforts will be made to follow up on these actions and increase contributions as more results from BeFlexible become available.

3. Business Models Working Group

Partners involved: InescTec, Soulsight.

The paper Analysis of Flexibility-centric Energy and Cross-sector Business Models | IEEE Conference Publication | IEEE Xplore, a set of slides prepared for T1.3 to explain the roles model, identified business models and the proposed flexibility value chain, deliverable D2.1 (Value Propositions for market actors) with relevant stakeholders for analysis, and an extract from the draft of D1.2 (Framework for a flexibility centric energy and cross-sector value chain, Business Use Cases and KPIs definition). Upon completion of the review process, the final version of D1.2 was also shared.

4. Consumer and Citizen Engagement Working Group

Partner involved: Soulsight, Comillas Pontifical University.

Deliverable 2.1 on Value Propositions has been shared with stakeholders by Soulsight, and there is consideration to share the Value Proposition Framework pending further assessment of its necessity. Comillas participated in all meetings held by the Citizen Engagement Working Group meetings and the Subworking group Indicators of Engagement. Comillas was responsible for writing the Emotional Indicators section of the Working paper. Comillas also attended the Online Seminar Smart Tools for consumer engagement.

The Subworking Group Indicators of Engagement was further divided into two subgroups: one focused on "What Influences Engagement: Theories of Engagement," and the other on "Expanding Existing Indicators." Each subgroup had a representative from Comillas. Between the two subgroups, a report was created with the principal findings, and the Comillas team actively participated in its drafting.

3.3. Networking progress

As evidenced in previous sections, the BeFlexible project maintains continuous contact with a diverse range of stakeholders, actively expanding its network and connections. This ongoing engagement ensures the project remains at the forefront of industry developments, fostering collaboration and enhancing its impact across the energy sector. Key to this effort are the numerous events BeFlexible participates in, which serve as vital platforms for networking, knowledge sharing, and establishing new partnerships with policy makers and regulators.

The list of stakeholders contacted includes, but is not limited to:

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- **EU projects:**
  - ENFLATE
  - STREAM
  - GlocalFlex
- **Energy and utilities sector:**
  - Voltalis
  - NIBE
  - UBITECH
  - Compass Lexecon
  - Sympower
  - Svenska Kraftnät
  - Equigy
  - OMIE
  - Digital4Grids
- **Policy makers & regulatory bodies:**
  - ARERA
- **Associations:**
  - ENTSO-E
  - REScoop.eu
  - SmartEn
  - Federation of German Consumer Organisations, VZBV
  - Swedenergy - Energiföretagen Sverige
- **Energy events & fairs:**
  - EUSEW organization
  - ENLIT organization
- **Media:**
  - El Periódico de la Energía
  - Smart Grids Info
  - PV Magazine
  - REVE
  - La Vanguardia
  - Servimedia
  - Europa Press

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- **Research institutions:**
  - University of Ljubljana
  - Energy Systems Catapult
  - IDAE
  - EPRI
- **BeFlexible Advisory Board members:**
  - Equigy
  - Energy Systems Catapult
  - OMIE
  - Swedenergy - Energiföretagen Sverige
  - ARERA
  - IDAE
  - Digital4Grids

This list is not exhaustive and is continuously evolving as BeFlexible expands its outreach. Moving forward, the project will continue to prioritize these interactions, leveraging events and other opportunities to broaden its reach, strengthen its connections, and drive innovation in the energy sector.

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4. Conclusions

The BeFlexible project, through its comprehensive approach to increasing system flexibility and fostering collaboration between Distribution System Operators (DSOs), Transmission System Operators (TSOs), and various energy stakeholders, has laid a solid foundation for the transition towards a more sustainable and resilient energy system. The activities carried out under Work Package 8 (WP8) have been instrumental in disseminating the project's findings and ensuring the widespread adoption of its solutions.

The development of the Capacity Building Programme (CBP) within Task 8.4 exemplifies this effort, offering a robust educational resource aimed at industrialists, research infrastructures, and non-specialists. The creation of a Massive Online Open Course (MOOC), based on the outcomes of WP1 and WP2, provides a structured learning pathway that not only disseminates knowledge but also equips participants with the necessary skills to implement flexibility solutions in the energy sector. By integrating theoretical concepts with practical applications, the MOOC and associated training materials ensure that the insights gained from BeFlexible are accessible and actionable.

Moreover, the clustering activities and strategic collaborations with other Horizon Europe projects, as well as participation in the BRIDGE initiative, have significantly amplified the project’s impact. These efforts have not only enhanced the visibility of BeFlexible but also fostered valuable synergies and networking opportunities that are crucial for the ongoing development and implementation of energy flexibility solutions.

Looking ahead, the educational resources and collaborative networks established by BeFlexible are expected to have lasting impacts on the energy sector. By attracting highly skilled professionals, enhancing educational opportunities for students, and promoting a more cohesive and well-trained workforce, the project contributes to the broader goals of sustainability and social equity. Ultimately, BeFlexible’s efforts will continue to support the evolution of the energy sector, ensuring that it remains adaptive, innovative, and capable of meeting the challenges of the future.

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