



D3.6 Awareness-raising actions for improving bioenergy perceptions and image- Final

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About

Over the last years, the EU has witnessed some remarkable steps in Renewable Energy (RE) deployment. However, at the same time, we see an increasingly uneven penetration of RE across the different energy sectors, with the heating and cooling sector lagging behind. Community bioenergy schemes can play a catalytic role in the market uptake of bioenergy heating technologies and can strongly support the increase of renewables penetration in the heating and cooling sector, contributing to the EU target for increasing renewable heat within this next decade. However, compared to other RES, bioenergy has a remarkably slower development pace in the decentralised energy production which is a model that is set to play a crucial role in the future of the energy transition in the EU.

The ambition of the EU-funded BECoop project is **to provide the necessary conditions and technical as well as business support tools for unlocking the underlying market potential of community bioenergy**. The project's goal is to make community bioenergy projects more appealing to potential interested actors and to foster new links and partnerships among the international bioenergy community.

The project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 952930.

Project partners



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Abbreviations

ARC	Awareness Raising Campaign
BE	Bioenergy
BEC	Bioenergy Community
D & C	Dissemination and Communication
DH	District Heating
DYK	Did You Know
EC	Energy Community
EU	European Union
KPI	Key Performance Indicator
RE	Renewable Energy
RES	Renewable Energy Source
RESCoop	Renewable Energy Cooperative
SoMe	Social Media

Executive Summary

Task 3.3 played a significant role in the BECoop project, a Horizon 2020 Research and Innovation initiative by the European Union (EU). This task was instrumental in increasing awareness and educating citizens about community bioenergy heating and cooling solutions, both at the pilot and EU levels. Drawing insights from WP1, CBS, in collaboration with local partners and the project's dissemination manager, designed and executed tailored awareness campaigns and strategies.

The primary goal of T3.3 was to design and deploy a set of awareness-raising campaigns aimed at achieving higher social and user acceptance of bioenergy. These campaigns sought to **reshape negative perceptions, enhance understanding of community bioenergy heating and its benefits, and convince stakeholders of the opportunities presented by local value chains.**

In the initial iteration of this deliverable, we presented the preparation process and the primary goal of creating awareness-raising campaigns (ARCs) in the four pilot regions and at the EU levels.

The task began with analysis of existing ARCs at both regional and EU levels, providing insights into effective messaging, media channels, and formats. CBS conducted a series of creative workshops with each pilot and national team, gathering ideas, and identifying local needs, target groups, and suitable media channels for efficient execution. CBS summarized and compared the outcomes of these workshops with previous campaigns and assisted the pilot partners in developing the four pilot-tailored ARC strategies. Leveraging the findings from T1.3 "Identification of stakeholders' perceptions and needs," CBS, pilot partners, and the dissemination and communication (D&C) manager developed detailed plans, content, and messages tailored to each pilot region (Spain, Greece, Poland, and Italy) and for a broader audience, including citizens, biomass providers, local authorities, and businesses at the EU level.

The second phase of T3.3 involved **implementing these strategies through four (4) regional and one EU-level awareness-raising campaigns, both online and offline.** The activities carried out in T3.3 included the development of custom infographics, the organisation of regional events centred around the key messages (with three information days per pilot area), and field visits for local populations to observe successful examples of community bioenergy heating. The task incorporated simple green nudges, such as social norms and labels, to encourage behavioural changes and utilised communication tools (videos, printed materials, SoMe) to convey these messages. These campaigns provided comprehensive information on the benefits of local bioenergy supply chains and included technical evidence to address environmental concerns. Additionally, for the online ARC at the EU level, CBS and IEECP produced a series of informational banners about biomass, Bioenergy (BE), and Energy Communities (EC), briefings, articles, and promotional videos.

T3.3 was closely linked to WP6, where the responsible partners framed the messages, developed the materials, and leveraged appropriate tools. The report also builds upon the results of other WPs and tasks, including T1.3 market research findings, needs assessment, bioenergy mapping, and stakeholder identification (T3.1).

A few valuable aspects, categorised as challenges and lessons learned, were identified in the engagement process such as:

- **Local Involvement:** Collaboration with key figures and local authorities, enhances community engagement.
- **Resistance to Change:** Overcoming resistance to change, especially in areas with long-lasting energy practices (such as coal combustion), requires practical examples and demonstrations.

- **Low Awareness and Knowledge:** Low awareness and knowledge can be tackled through targeted educational efforts and hands-on demonstrations.
- **Learning from Prior Experience:** Recognising past disappointment with (community) energy initiatives help build trust and navigate resistance.

The recommendations for overcoming some of the challenges in developing effective BE ARCs for behavioural changes cover:

- **Tailored Messaging:** Customised messages to address local concerns and values, emphasising the benefits of BE and ECs specific to the region.
- **Engagement of Local Authorities:** Collaboration with mayors and other key stakeholders to gain their support, which can enhance campaign credibility and community involvement.
- **Real-World Demonstrations:** Utilisation of workshops, practical demonstrations, and hands-on activities to showcase the practical advantages of bioenergy and energy communities.
- **Raising Biomass Awareness:** Prioritize educating communities about the sustainable use of locally sourced biomass for energy production, emphasizing environmental and economic benefits.
- **Acknowledgement of Past Experiences:** Recognition of previous disappointments and offering viable alternatives that demonstrate the value of BE and community engagement.

This report presents a comprehensive overview of the awareness-raising initiatives that the pilot teams, CBS and D&C managers carried out within the framework of the project. Building upon the results of the initial stage, this report offers a detailed account of the strategy and implementation of the ARCs at both the pilot and EU levels.

Significant improvements have been made in this revised edition, distinguishing it from the original version. The updates include the following enhancements:

- A **thorough presentation of pilot-level ARCs**. We delve into the details of these campaigns, showcasing the development, execution, and outcomes achieved.
- A **comprehensive coverage of the implementation** of the EU-level awareness campaign. We examine its deployment, exploring how it aligns with the broader project objectives.
- A comprehensive section on the **monitoring and evaluation** of the ARC. We provide insights into the statistics, tools, and methodologies used to assess the effectiveness of these initiatives.
- Identification of **challenges encountered** during the process and some well-considered **recommendations** for future awareness-raising efforts in the bioenergy sector.

1 Introduction

In this report, we reflect upon the outcomes of the task that provided the working framework (T3.3), which aimed to develop ARCs to transform perceptions about BE and promote community bioenergy heating. The objective was to enhance understanding, foster social acceptance, and facilitate the growth of BECs.

Aligning with the initial strategies and recommendations (presented in D3.3), the collaboration among CBS, the pilot teams, and the D&C manager was pivotal for the development of the ARCs both at the pilot and EU levels. CBS organised regular meetings with them to refine the campaign actions, generate content, and provide support to the pilot teams and IEECP through the campaigns. Furthermore, CBS developed a monitoring template to continually assess the effectiveness of the campaigns, ensuring their alignment with the project's overarching goals.

Each campaign was carefully crafted to convey detailed information regarding the opportunities and co-benefits arising from local BE supply chains. Furthermore, these campaigns offered technical evidence concerning the environmental impact of bioenergy heating technologies.

This report starts with an in-depth overview of the strategies and implementation of the ARCs at the pilot level, presented in **Chapter 2**.

Chapter 3 sheds light on the strategy and execution of the EU-level campaign, emphasising on the activities.

Chapter 4 delves into the monitoring and evaluation aspects, presenting the methodologies and tools used to assess the effectiveness of the campaigns and their implications.

Chapter 5 spotlights the distinct challenges by each pilot case. This chapter underscores the obstacles of regional contexts and the solutions employed to address them.

Chapter 6 presents the lessons learned through the process, emphasising the broader implications and potential for future endeavours in the realm of bioenergy awareness.

Chapter 7 provides a set of valuable recommendations derived from the experiences of the pilot campaigns. These offer guidance for overcoming challenges in future awareness campaigns in the field of bioenergy and energy communities.

Chapter 8 draws conclusions and summarises the impact the ARCs can potentially have beyond the end of the project.

Overall, T3.3 was instrumental in bridging the gap between bioenergy initiatives and public acceptance, driving positive change and perceptions, and fostering the growth of bioenergy communities.

2 Awareness Raising Campaign (ARC) Strategy and Implementation per Pilot Area

Building upon the findings of T1.3 and leveraging the local knowledge of the pilot partners within their communities, CBS and the pilot teams developed the campaign strategies tailored to the four pilot regions (Spain, Greece, Poland, and Italy). Drawing from the available insights of the creative workshops, the pilot and national partners identified the specific target audiences for the campaigns, working always in close collaboration with CBS and IEECP to developing a detailed plan for the awareness-raising actions. This involved shaping the content and messages of the campaign activities along with simple green nudges, which were seamlessly integrated into the conveyed messages to act as effective behavioural change triggers. As previously mentioned, D3.3 provided a thorough overview of the results from the creative workshops with the pilot and national partners and the pilot-tailored strategies.

The conclusion of these efforts resulted in the implementation of awareness-raising campaigns in the four pilot regions, encompassing both online and offline components. Offline activities were a fundamental component of these campaigns, encompassing the creation of customised infographics, the organization of regional events, including three (3) info days per pilot area, and field visits that allowed local communities to explore exemplary cases of community bioenergy heating and other successful RESCoops.



Figure 1: Promotional Leaflets - Greece

Simultaneously, the awareness-raising campaign at the EU level, deployed by the D&C manager and CBS, further extended the reach of these initiatives.

CBS consistently organised bilateral meetings with the pilot partners, providing a platform to consider the campaigns' progress at the pilot levels and offer new ideas and suggestions for further enhancements. These meetings frequently included the active participation of the D&C manager, who played a pivotal role in assisting the teams with shaping the visual material tailored to the unique requirements of each pilot. The D&C manager also facilitated the dissemination of pilot activities on the project's SoMe channels.

This document outlines the activities undertaken by the pilot teams, providing details about both online and offline initiatives. Visual materials from these activities are showcased, and we extensively present the consolidated results derived from the monitoring template, offering a thorough understanding of the scale and scope of engagement.

It is important to mention that the Key Performance Indicator (KPI) outlined in the grant agreement aimed to reach a minimum of 20,000 people through the awareness-raising activities conducted within the BECoop framework. The collective efforts of the pilot teams, CBS, and IEECP in implementing the campaigns significantly surpassed this initial target. With thorough monitoring, it is evident that the campaigns collectively reached an audience of **566,000 individuals**. It is worth noting that, in certain instances involving TV, radio, or print press activities, the teams could not obtain the statistics. Consequently, we have reason to believe that the campaigns may have reached an even larger audience than the confirmed numbers indicate.

The figure below provides an overview of the info days organised by each pilot team. Error! Reference source not found. showcases the number of events held in each pilot region, outlining an extensive outreach. It also presents event participation numbers, emphasising local involvement.

Overview of Info Days in the Pilot Regions

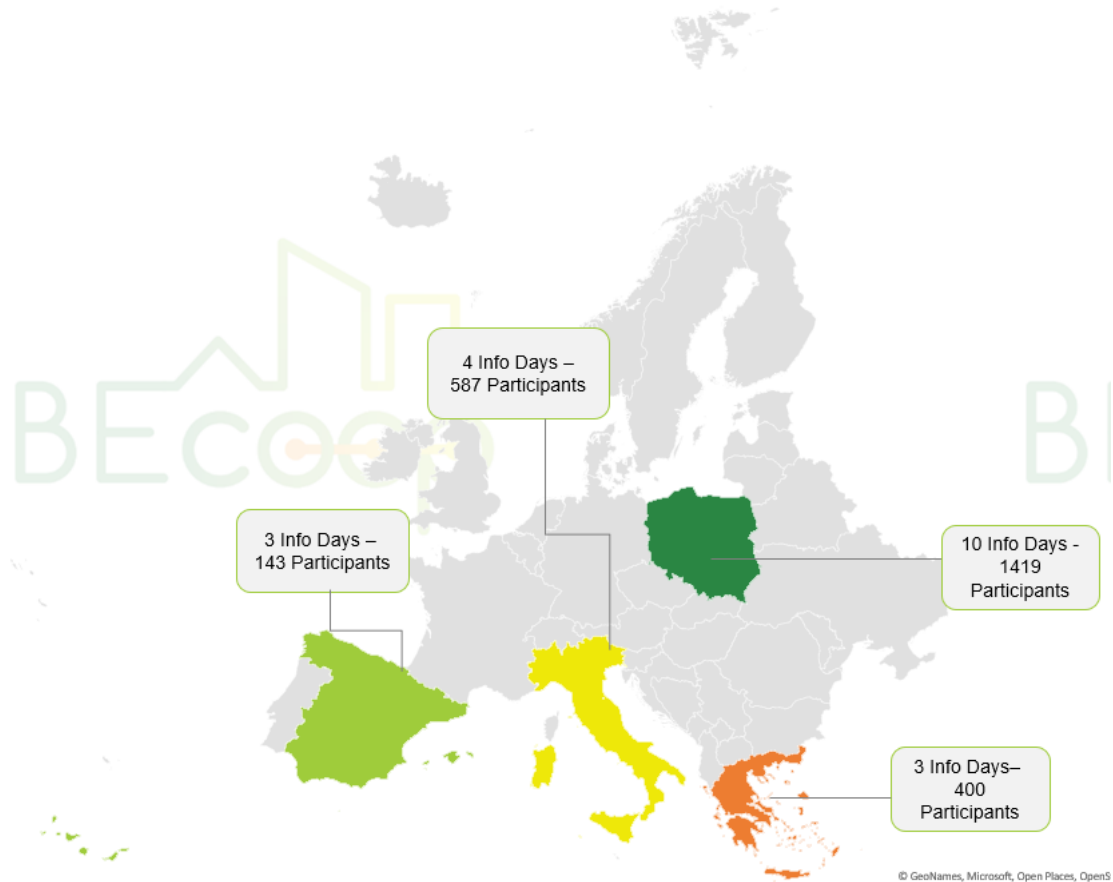


Figure 2: Info Days in the Pilot Regions

In the following sections, we delve into the implementation of these campaign strategies initially introduced in D3.3 for each pilot case.

2.1 Spanish Pilot

In the initial deliverable, we presented the Spanish Awareness Raising Campaign (ARC) strategy. GOIENER, the pilot leader, jointly developed the campaign strategy with the national partner CIRCE and the support of CBS. The strategy primarily focused on the pilot region but considered potential outreach to a broader audience for media-related actions. The core objective of the Spanish ARC was to present the opportunities offered by BECs in thermal decarbonisation and energy independence to a wide range of stakeholders. The team outlined an action plan as a foundational framework for their awareness-raising campaign. The plan encompassed various activities, including info days, interviews, press releases and more, with a strong focus on reaching diverse audiences. **Table 1** summarises the suggestions from the initial plan.

Table 1: Suggested Action Plan (D3.3)

Suggested Activities	Description
Workshops & Information Sessions	Educational sessions for stakeholder engagement on bioenergy
Unión Renovables Newsletter	Collaboration to share energy insights with a broad membership (117,000 members- 19 RESCoops)
Interview	Interviews to disseminate bioenergy related information
Press Releases in Local & Specialised Media	Dissemination of bioenergy messages through press releases
Short Videos on YouTube and Other Media	Creation and sharing of short educational videos on various platforms
Info Days and Events	Information events at fairs to educate attendees
AVEBIOM Bulletin	Contributions to a biomass bulleting for targeted messaging

Table 2 presents some of the media dependents that were identified during the creative workshops and were presented in D3.3.

Table 2: Identified Potential Media Dependents & Means for the Spanish ARC (D3.3)

Media Dependents & Means	
Prints	Brochures/ Local Newspapers/ QR Cards
SoME	Posts and Short Videos
Radio	Local Radio or Audio Spots
Videos	Presentation of BECoop Tools or/and Information about BECs and heating potentials

Following the initial suggested ARC action plan and the identified mediums (presented in D3.3), the Spanish pilot, with the support of CBS and the D&C manager, successfully executed a diverse array of awareness activities. The Spanish ARC officially initiated in M20 and continued until the project’s conclusion. The campaign revolved around disseminating knowledge through info days, radio interviews, presentations, and articles published in local and regional newspapers, as well as on biomass and RE-related websites. These activities not only highlighted the project activities but also emphasized the advantages of harnessing local biomass resources for heating solutions. Another major achievement of the team was the development of a “Guide to creating renewable energy communities using a participative approach”. GoiEner originally formulated the guide in the Basque and Spanish languages. To promote the guide, the team organised a special presentation to RESCoops promoters. The team later professionally translated the guide into English, making it available to a broader audience. The English version is available on the [BECoop website](#).

Additionally, the GOIENER and CIRCE teams actively engaged in various conferences. These participations were integral to the project’s broader dissemination activities and have been reported within the framework of WP6.

During these activities, the pilot team made effective use of various visual aids, including roll-ups, PowerPoint presentations, informational leaflets, and poster. The D&C manager supported the team in the design of communication materials, when needed. This collaborative effort ensured that the communication materials were aligned with the project identity and there was a consistency among the pilots.

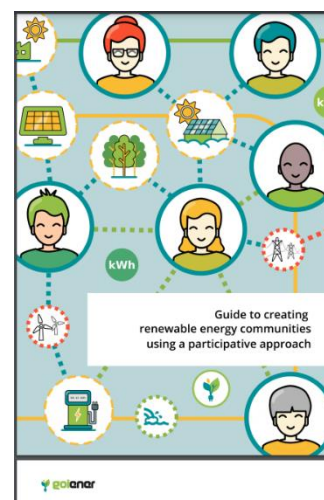


Figure 3: The Cover Page of the Guide



Figure 4: At the Bioterra Info Day

Table 3 and Table 4 summarise the most important activities the Spanish pilot team organised.

Table 3: Info Days Organised By GOIENER

Spain	When	People Reached
Info Day	M19	8
Info Day (BIOTERRA)	M20	15
Info Day (GOIENER 10-year Anniversary)	M25	120
Total		143

Table 4: Other Awareness Activities Organised by GOIENER

Activity	Medium	Link	When	People Reached
Interviews (2)	Radio - Local Media	EKOSFERA Radio GUAIXE	M18 and M25	Around 9,000
Press Releases (5)	Local Press & Online Press, and Specialized Magazines	Noticias de Alava Biomasa New Union Renovables¹ Cronica Vasca ESEficiencia	Between M19 & M28	13,508
Presentations (2)	Posters & PowerPoint Presentations	Avebiom Asociacion Biomasa YouTube Channel	M25 & M31	103
Field Visits (3)			M20, M25, & M27	45
Total				22,799

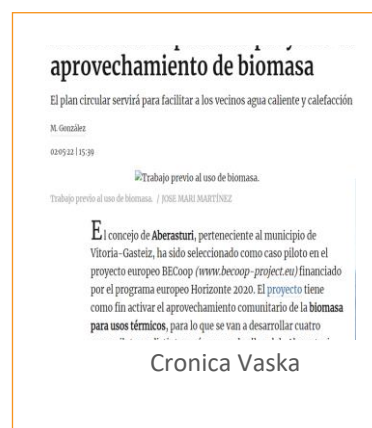
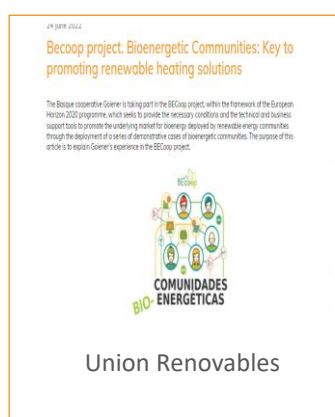


Figure 5: Screenshots from Different Articles

¹ Unión Renovables: The association has 117.000 members from 19 different RESCoops

The table below presents an overview of the types of stakeholders reached during the Spanish ARC.

Table 5: Types of Stakeholders Reached

Types of Stakeholders	
Citizens & Public	Boiler manufacturer
RESCoops	Energy Community Promotors
Local Authorities	Biomass Expo Attendees
Energy Market Actors	Research Centers / Universities
ESCOs	



Figure 6: Highlights from Info Days and the Guide Presentation

The pilot team consistently maintained and updated their SoMe channels, ensuring that their audience remained well-informed about their ongoing activities.

The company 89up selected Sabando, one of the light house field visits, as an engaging activity for citizens, as a case study and is preparing for a media visit. They initiated contact with GoiENER within the context of the BECoop project (though RESCoop.eu). The project is still work in progress and will be released after the end of the project. However, we consider this as another awareness raising activity.

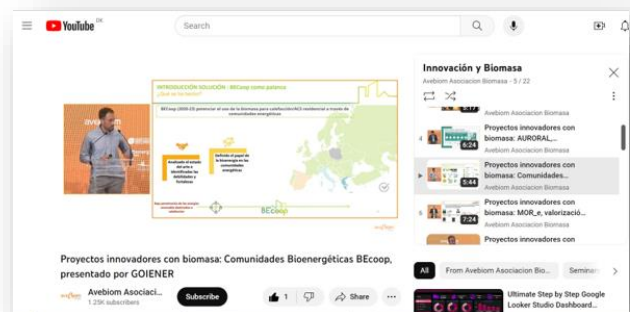


Figure 7: Screenshot from the Avebiom YouTube Channel - GOIENER's Latest Presentation



Figure 8: T-Shirt with the Message

“*Argindarra Herriarendako*” or “Power to the People” in English, was a prevalent and impactful message the Spanish pilot team regularly used throughout the awareness campaigns. It served as a compelling reminder of the people’s capacity to take charge of their energy production, fostering a sense of empowerment and control over their energy future.



Figure 9: The Students of the Murgia Vocational School with the T-Shirts

2.2 Greek Pilot

In the initial deliverable, we presented the Greek Awareness Raising Campaign strategy. ESEK, the pilot leader, jointly developed the campaign strategy with the national partners CERTH and Q-Plan, and the support of CBS. The strategy primarily focused on the pilot region, Karditsa, but considered potential outreach to a broader audience for media-related actions. Local insights and challenges guided the strategy’s development, addressing issues such as limited knowledge of the subject of BECs, negative examples of other energy cooperatives, and misconceptions about biomass and negative perceptions regarding its environmental impact. The core objectives of the Greek ARC were to showcase the opportunities provided by BECs in achieving thermal decarbonisation and energy independence, with a focus on reaching a broad audience in the pilot region and beyond. The team outlined an action plan as a foundational framework for their awareness-raising campaign. The plan encompassed various activities, including info days, interviews, press releases and more with a strong focus on reaching diverse audiences. **Table 6** summarises the suggestions from the initial plan.

Table 6: Suggested Action Plan (D3.3)

Suggested Activities	Description
Banners & Green Nudges	Materials promoting coffee grounds for energy
Public Street Poster	Poster targeting local farmers
Customised Bus Ad	Bus ad promoting clean energy
Short Videos	Short videos showcasing forestry and coffee ground harvesting

Summer School Participation	Involvement in summer school organised by local NGOs
Presentation	Presentation of BECoop project to graduate students
Info Day with Electra Energy RESCoop	Education combined with experiential workshops
School Tree Planting	Activity to educate students and parents about biomass energy
SoMe Sharing	Engagement on ESEK's SoMe with informative posts

Table 7 presents some of the media dependents that ESEK identified during the creative workshops, and they were presented in D3.3.

Table 7: Identified Potential Media Dependents & Means for the Greek ARC (D3.3)

Media Dependents & Means	
Prints	Brochures-Leaflets/ Banners/ Local Newspapers/ QR Cards
SoME	Posts and Short Videos
TV & Radio	Information sessions with experts on the topic
Videos	Short videos with actual footage of activities of ESEK

Following the initial suggested ARC action plan and the identified mediums (presented in D3.3), the Greek pilot with the support of CBS and the D&C manager, successfully executed a diverse array of awareness activities. The Greek ARC officially initiated in M20 and continued until the project's conclusion. The campaign disseminated knowledge through info days, radio interviews, presentations, and articles. More particularly, ESEK, in collaboration with CERTH, Q-PLAN and local NGOs, in June 2022 organised a two-day information event in Karditsa featuring information stalls, banners, and video presentations. They provided the local community with insights into the BECoop project and ESEK's activities, and RE alternatives. The D&C manager prepared a promotional video with highlights from the event. The video was shared on all BECoop channels and is available [here](#).

Moreover, in December 2022, ESEK hosted an info day at the Elve Mill - Magical Christmas Park in Trikala. They educated students and parents from the Thessaly region, showcasing how recycling coffee grounds can create an eco-friendly energy source. To demonstrate this, ESEK installed a domestic biomass boiler at the Santa Claus post office to heat the premises during the Christmas season, creating a heart-warming experience for visiting children.

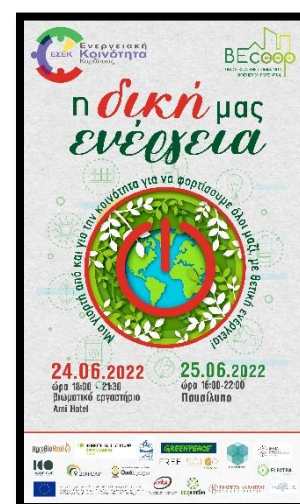


Figure 10: The "Our Energy" Invitation Poster of the Two-Day Info Event in Karditsa



Figure 11: The Biomass Boiler at the Christmas Post Office

Their outreach extended through articles about coffee pellets and the biomass boiler in the kindergarten, including publications in the local and national press, and specialised magazines.

ESEK employed information poster on authorised municipal notice board to inform local

stakeholders, particularly biomass producers, about how they could become members of ESEK and transform residual biomass into green energy.



Figure 12: The Poster at the Authorised Board

Furthermore, ESEK conducted numerous interviews on local and national TV and radio stations, covering topics such as coffee grounds as an energy source and waste biomass collection. They also engaged with international news station CGTN. [The interview](#) was broadcasted in China, Canada, Europe, and the USA, reaching a global audience.

Additionally, ESEK organised an interactive event in Karditsa, encouraging locals to learn about converting coffee ground into heating pellets. The event featured a prominent stall in Karditsa’s central square, where people could bring their coffee residues, snap photos, and share them on SoMe with the hashtag #anakiklonotonkafemou (I recycle my coffee grounds). The most engaging photo had the chance to win a brunch at a local coffee shop. On top of that, local students collaborated with ESEK and the Municipality of Karditsa to distribute coffee pellets to a local social grocery store. The initiative involved the collection of coffee residues, which were then provided to ESEK for pellet production. The pellets were distributed for free to the local social grocery store for vulnerable households.



Figure 13: Screenshot from CGTN website - Greek Pilot Case

ESEK maintained an active SoMe presence, ensuring their audience was consistently informed about their impactful activities. These activities not only highlighted the project activities but also emphasized the advantages of harnessing local biomass resources for heating solutions. Additionally, the ESEK and CERTH teams actively engaged in various conferences. These participations were integral to the project’s broader dissemination activities and have been reported within the framework of WP6.

During these activities, the pilot team made effective use of various visual aids, including roll-ups, PowerPoint presentations, informational leaflets, and poster. The D&C manager supported the team in the design of communication materials, when needed. This collaborative effort ensured that the communication materials were aligned with the project’s identity and there was a consistency among the pilots.



Figure 14: BECoop Informational Brochures

Table 8 and Table 9 summarise the most important activities of the Greek ARC.

Table 8: Info Days Organised by ESEK

Info Days		
Greece	When	People Reached
Info Day	M20	60
Info Day	M20	140
Info Day	M26	100
Total		400



Figure 15: Highlights from Different Awareness Activities

Table 9: Other Awareness Activities Organised by ESEK

Activity	Medium	Link	When	People Reached
Presentations (2)	PowerPoint Presentation/ Roll-Up/ Poster	-	M20 & M23	400
Articles (6)	Local Press/ National Press/ E-Press	Kathimerini/ Karditsa Live/ Alfavita/ Karditsa Live Net	M23, M24, & M32	1,000
Advertisements in authorized municipal spot	Poster	=	M24	-
TV Interviews (7)	National & Local TV	SkaiTV YouTube Channel/ AlphaTV/ News ERT3 (42:00-45:00) / Kriti TV (32:10-37:10)/ OPEN TV YouTube Channel/ ERT/ ERT YouTube Channel	M23 & M24	357,443 ²
Radio Interviews (3)	National Radio Stations (ERT Radio, Easy 982 & Skai Radio 100.3)	=	M23 & M24	-
Coffee Ground Collection Action	Leaflets/ Banner/ Customised Collection Bin/ Hashtag	=	M24	-
Short Statement	Video	Greenpeace Greece	M25	129 views
Interview at CGTN	TV	CGTN YouTube Channel	M26	445 views on YT
Free Distribution of Coffee Pellets to the Social Grocery Store	Coffee Pellets	-	M28	-
Participation in Bravo School Competition – High School collaborated with ESEK	Clean Energy Video	Quality Net Foundation YouTube Channel 45:30-46:36	M32	2,900 views on YT
Field Visits (2)			M30 & M33	120

² In most of the cases it was not possible to obtain the number of viewers. Therefore, we believe this number might be bigger than reported.

Activity	Medium	Link	When	People Reached
Promotional Video of ESEK's Activities	Video	ESEK's YouTube Channel	M35	83 views
Total				362,920

Table 10 presents the type of stakeholders reached during the Greek ARC.

Table 10: Types of Stakeholders Reached

Types of Stakeholders	
Citizens & Public	Students & Teachers
SMEs	Energy Community Members
Local Authorities	Research Centers / Universities
ESCOs	Biomass Producers

ESEK employed a diverse range of tailored messages and nudges to effectively convey their campaign's key ideas and engage their audiences. Below we see the ones the team used more often.



Figure 16: We Recycle our Coffee Grounds here

Table 11: Targeted Messages and Nudges

Targeted Messages & Nudges	
Original Message (Greek)	In English
Η Δική μας Ενέργεια	Our Own Energy
-	The Power of Citizen Energy
Εσύ Ξέρεις την Αξία του Καφέ που Πίνεις; Ανακυκλώνουμε. Αλλάζουμε Συνήθειες. Κλύνουμε τον Κύκλο. Βοηθάμε το Περιβάλλον.	Do you know the Value of the Coffee you Drink? We Recycle. We Change Habits. We Close the Loop. We Help the Environment

2.3 Polish Pilot

In the initial deliverable, we presented the Polish Awareness Raising Campaign strategy. OBS, the pilot leader, jointly developed the campaign strategy with the national partner WUELS, and the support of CBS. The strategy primarily focused on the pilot region but considered potential outreach to a broader audience for media-related actions. Local insights and challenges guided the strategy’s development, addressing issues such as limited knowledge of the subject of BECs, negative examples of other agricultural cooperatives, habit of coal burning, reluctance to change heating system, and misconceptions about biomass and negative perceptions regarding its environmental impact. The core objectives of the Polish ARC were to showcase the opportunities provided by BECs in achieving thermal decarbonisation and energy independence, with a focus on reaching a broad audience in the pilot region and beyond. The team outlined an action plan as a foundational framework for their awareness-raising campaign. The plan encompassed various activities, including info days, interviews, press releases and more with a strong focus on reaching diverse audiences. **Table 12** summarises the suggestions from the initial plan.

Table 12: Suggested Action Plan (D3.3)

Suggested Activities	Description
Banners & Green Nudges	Clear and concise messages explaining biomass for BE
Images	Visuals showcasing environmental advantages
Custom Infographics	Informative graphics like CO2 emission reduction and financial benefits (i.e., reduced energy bills)
Expert Interviews	Videos featuring experts discussing BE and BECs and successful examples
SoMe Posts	Posts with images of relevant activities and brief content on SoMe channels
Presentation	Presentation of BECoop project to graduate students
Informational Quizzes	Quizzes for educating audience on relevant topics encouraging participation

Table 13 presents some of the media dependents that OBS? identified during the creative workshops, and they were presented in D3.3.

Table 13: Identified Potential Media Dependents & Means for the Polish ARC (D3.3)

Media Dependents & Means	
Prints	Brochures-Leaflets/ Banners/ Local Newspapers/ Infographics
SoME	Info and News Posts and Short Videos
Videos	Local TV
Presentations	Conferences, workshops, and seminars for external stakeholders



Figure 18: Promotional Material and Information Brochures

participating in local fairs and festivals, including the Days of Oborniki Śląskie, Family Day in Paniowice, and the Strawberry Festival in Pegów, among others. These events featured information booths, leaflets, small gifts, and roll-up displays to engage with the local community. The focus was on educating people about the BECoop project, its activities, and the advantages of locally sourced biomass as a greener energy source. Moreover, OBS released a series of articles in local newspapers, covering related topics and news.

In parallel, WUELS released some posts, information and interviews via its academic social media and webpage.



Figure 19: Screenshot from the Video of the Interview with the Mayor

To reach a broader audience, OBS displayed the [BECoop promotional video](#) in a local movie theatre before regular and children’s screenings. Information posters were strategically placed in 25 villages across the municipality, with the bulletin boards in each village. The city hall’s monitor also featured the BECoop video. Information brochures were made available along with tax-related information, further enhancing the dissemination of knowledge and project visibility in the region.



Figure 20: The City Hall's Monitor Featuring the BECoop Video

Following the initial suggested ARC action plan and the identified mediums (presented in D3.3), the Polish pilot team with the support of CBS and the D&C manager, successfully executed a diverse array of awareness activities. The Polish ARC officially initiated in M19 and continued until the project’s conclusion. The campaign revolved around disseminating knowledge through info days, interviews with experts, presentations, and articles published in local newspapers. More particularly, OBS, in collaboration with WUELS, organised a series of info days



Figure 17: Info Day

The team conducted interviews with key local figures, including a mayor and a woodsman from the National Forest Company (Agency) in the Oborniki Śląskie Commune, to provide a practical example of biomass use for heating and the replacement of fossil fuels with biomass pellets. Another noteworthy initiative was the distribution of free pellets to households with boilers for testing purposes. After the tests, the team conducted the individual satisfaction survey.



Figure 21: : Information Plate (left down corner) at the City Hall



Figure 22: The Information Plaque

Table 14 presents the info days organised by OBS.

Table 14: Info Days Organised by OBS

Info Days		
Poland	When	People Reached
Info Day	M19	350
Info Day	M20	N/A
Info Day	M22	85
Info Day	M22	73
Info Day	M23	96
Info Day	M24	53
Info Day	M31	280
Info Day	M32	250
Info Day	M32	180

Info Day	M35	52
Total		1,419

Info Days



Figure 23: Highlights from Different Info Days

Table 15: Other Awareness Activities Organised by OBS and WUELS

Activity	Medium	Link	When	People Reached
Article	Local Newspaper	-	M19	7,000 copies
Information Plaque	A3 Information Table	-	M20	-
Interviews with Experts (2)	Video	IEECP You Tube Channel	M20	-
Pellet Distribution	A+ Class Pellets	-	M24	49
Promo BECoop Video	Video on local movie theatre	IEECP You Tube Channel	M27	903
Information leaflets	Info Brochures		M27	2,000 copies
BECoop Video at the Municipal Building	Video	IEECP You Tube Channel	M29	The municipal building receives around 3.2k visitors each month 65 views on the BECoop YT channel
SoMe Posts and Updated	OBS municipal website and FB, WUELS academic	=	M30	18,000 visits

Activity	Medium	Link	When	People Reached
	website and social media			
BECoop-related posters around the region	Posters	-	M25 and M30	75
Field Visits	-	-	M36	72
Presentations at Conferences	Presentations/posters	-	M19-M36	450
Pellets production demonstrations and testing by potential producers	Videos on OBS Webpage and FB	-	M31, M32, M33, & M36	-
Replacement of coal by biomass in manual and fully automated boilers	Videos on OBS/WUELS webpage and FB	-	M32	-
Total				30,033³

Additionally, the OBS and WUELS teams actively engaged in various Polish and International conferences. These participations were integral to the project’s broader dissemination activities and have been reported within the framework of WP6.

During these activities, the pilot team made effective use, as already mentioned, of various visual aids, including roll-ups, PowerPoint presentations, informational leaflets, and poster. The D&C manager supported the team in the design of communication materials, when needed. This collaborative effort ensured that the communication materials were aligned with the project’s identity and there was a consistency among the pilots.



Figure 24: Excerpt from a Local Newspaper Article

Table 16 presents the types of stakeholders who were reached during the Polish ARC.

Table 16: Types of Stakeholders Reached

Types of Stakeholders	
Citizens & Public	Students & Teachers
Biomass Producers	Local Authorities
SMEs	Research Centers / Universities

³ In some cases, it was not possible to obtain the number of viewers. Therefore, we believe this number might be bigger than reported.

Types of Stakeholders	
ESCOs	Farmers

OBS employed a diverse range of tailored messages and nudges to effectively convey their campaign’s key ideas and engage their audiences. Below we see the ones the team used more often.

Table 17: Target Messages and Nudges

Targeted Messages & Nudges	
Original Message (Polish)	In English
Zamień Czarną Energię na Zieloną - To Bardzo Proste!	Turn Black Energy into Green - It's Very Easy!
Zrób Powietrze Bardziej Zielone Przy Użyciu Lokalnej Biomasy	Make the Air Cleaner by Using Local Biomass

2.4 Italian Pilot

In the initial deliverable, we presented the Italian ARC strategy. FIPER, the pilot leader, developed the campaign strategy with the support of CBS. The strategy primarily focused on the pilot region, Tovo Sant’ Agata and the neighbouring regions, but considered potential outreach to a broader audience for media-related actions. Local insights and challenges guided the strategy’s development, considering the presence of biomass resources in forested mountain regions suitable for DH, municipalities without gas connections but located near forests, the suboptimal nature gas (NG), the availability of biomass, and the competitive pricing of bioenergy compared to NG, and the low level of



Figure 25: Technical Visit Demonstration (Cross WP Activity)

public awareness. The core objectives of the Italian ARC were to showcase the opportunities provided by BECs in achieving thermal decarbonisation and energy independence, with a focus on reaching a broad audience in the pilot region and beyond. The team outlined an action plan as a foundational framework for their awareness-raising campaign. The plan encompassed various activities, including info days, interviews, press releases, strong presence on SoMe and more with a strong focus on reaching diverse audiences.

Table 18 and **Table 19** summarise the suggestions from the initial plan and the identified mediums.

Table 18: Suggested Action Plan (D3.3)

Activity	Description
Billboards	Street billboards featuring BE and BECs messages
Ads on Local Transport Network	Ads on buses promoting BE and its benefits
Interviews of Experts on Local and National TV	Experts Interviews on Local (Teleunica) and National TV
Information Events in Schools	Educational events in schools to raise awareness about bioenergy
Open Days at the Local DH Plant Activities	Visits to the local DH plant with interactive activities

Table 19: Identified Potential Media Dependents & Means for the Italian ARC (D3.3)

Media Dependents & Means	
Prints	Brochures/ Local Newspapers/ Billboards
SoME	Info and News Posts and Short Videos
Videos	Local TV
Voice	Local Radio
Newsletters	

Following the initial suggested ARC action plan and the identified mediums (presented in D3.3), the Italian pilot team, with the support of CBS and the D&C manager, successfully executed a diverse array of awareness activities. The Italian ARC officially initiated in M23 and continued until the project’s conclusion. The campaign revolved around disseminating knowledge through info days, interviews with experts, presentations, articles published in local newspapers, educational videos, and presence on SoMe. More particularly, FIPER, conducted a series of informative events to raise awareness about the BECoop. These activities included hosting info days to introduce the project and highlight the potential of woody biomass in green energy transition. The team also engaged with academic audiences through lectures at the Polytechnic University and University of Milan for under- and postgraduate students, focusing on bioenergy.

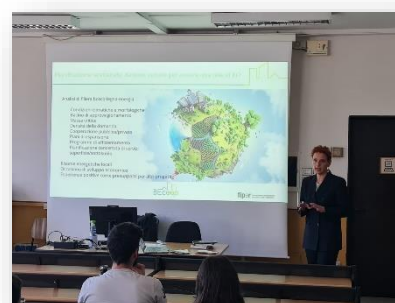


Figure 26: Lecture at the University of Milano

They expanded their outreach by participating in regional events like the Longarone Forest Fair and the Gecko Festival, showcasing the potential of residue forest

biomass as an energy resource. In addition to these events, the pilot published articles in local and national newspapers and e-press to discuss various aspects related to forest management and DH, emphasising the benefits for the local communities.

Furthermore, the pilot made appearances on local television, providing insights into the project activities and how local communities can benefit from such initiatives. They actively maintained their presence on SoMe platforms, updating their



Figure 28: Video Shooting with the Young Theatre Students

audience about project

developments and other information about BE and its benefits. Notably, they collaborated with young theatre students to create a video focusing on the wood supply chain, placing a strong emphasis on engaging with and educating the youth, recognizing their role in shaping the future.

The FIPER team created multiple promotional videos highlighting all their actions.



Figure 27: Excerpt from a Local Newspaper Article

Table 20 and Table 21 present the info days and some of the most important awareness activities.

Table 20: Info Days Organised by FIPER

Info Days		
Italy	When	People Reached
Info Day	M20	65
Info Day	M23	52
Info Day	M32	450
Info Day	M32	20
Total		587



Figure 29: Highlights from Info Days

Table 21: Other Awareness Activities Organised by FIPER

Activity	Medium	Link	When	People Reached
Public Meeting	PowerPoint Presentation/ Banner/ Leaflets	-	M23	23
News Broadcast (3)	Tele Sondrio TV Channel	-	M23	96,000
Articles (7)	Newspapers (Il Giorno & Strategie amministrative)	Strategie amministrative/ Tiranese/ La Provincia/ La Provincia	M22 & M23	46,165
Participation at Fairs	Live Broadcasting	NA	M23	
Lectures at Universities (3)	PowerPoint Presentation	NA	M26 M29	50
Field Visits (2)		NA	M29	40
SoMe Posts	SoMe Posts and Videos	NA	-	At least 1,000 impressions
Total				143,865⁴

⁴ In some cases, it was always not possible to obtain the number of viewers. Therefore, we believe this number might be bigger than reported

Additionally, the FIPER team with the support of the Polytechnic University of Milan actively engaged in various conferences. These participations were integral to the project broader dissemination activities and have been reported within the framework of WP6.

During these activities, the pilot team made effective use, as already mentioned, of various visual aids, including roll-ups, PowerPoint presentations, informational leaflets, and poster. The D&C manager supported the team in the design of communication materials, when needed. This collaborative effort ensured that the communication materials were aligned with the project’s identity and there was a consistency among the pilots.

FIPER employed a diverse range of tailored messages and nudges to effectively convey their campaign’s key ideas and engage their audiences. Below we see the ones the team used more often.

Table 22: Target Messages and Nudges

Targeted Messages & Nudges	
Original Message (Italian)	In English
I Nostri Boschi: Energia Della Valle!	Our Forests: Energy of the Valley
Siamo Energia!	We are Energy!

3 European Awareness Raising Strategy and Implementation

The European awareness raising strategy was based, as presented in D3.3, in the outcomes of several creative sessions involving CBS, the pilot partners and D&C manager (IEECP). The campaign was designed to complete the pilot-level campaigns and was executed online, led by IEECP in close collaboration with CBS. Together, they formulated key messages, figures, and facts to drive the campaign's objectives.

The EU campaign, mirroring the overarching campaign theme, focused on reshaping negative perceptions, and enhancing understanding of the benefits of bioenergy and bioenergy communities. With a broader target audience in mind, the campaign aimed to reach not only those who were already knowledgeable and dedicated to promoting bioenergy and related actions. It also targeted individuals who perceived bioenergy negatively due to a lack of knowledge. The campaign's purpose was succinctly articulated to ensure clarity for all recipients. It combined attention-catching, appealing, and informative messages with technical statements and facts to induce curiosity and active engagement.

The D&C manager shared all the awareness-raising campaign materials on [BECoop's website](#) and SoMe accounts. These activities included informational banners, sharing pilot-related actions, briefings, promotional videos, and collaboration with sister-project awareness-raising campaigns. Special attention was also given to engaging women in BE and BEC initiatives, promoting gender equality and participation in the energy transition. CBS and IEECP closely monitored the EU campaign throughout its duration.

In the following sections, we provide an in-depth overview of the internal steps and guidelines CBS and IEECP developed for the implementation of the EU awareness campaign. Furthermore, we offer comprehensive insights into activities the two teams conducted, complete with metrics and the visual materials created as part of the campaign.

3.1 Internal Steps and Guidelines

The CBS and IEECP teams worked together on the development and implementation of the EU awareness-raising campaign. They conducted multiple bilateral meetings to refine and execute the initial ideas presented in D3.3. CBS conducted research and gathered updated material and facts about biomass, bioenergy, and energy communities. To maintain the organisation of this information, CBS established a document titled “EU Campaign Content.” Within this document, the team systematically organised the collected material into succinct, well-structured posts, ensuring clarity and conciseness. The teams primarily employed a bullet-point format, tables, and images to effectively convey the campaign’s key messages. **Figure 31** is a screenshot of this document.

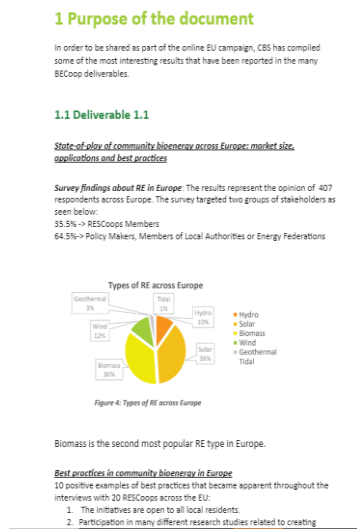


Figure 30: Screenshot from the EU Campaign Content Document - Deliverables

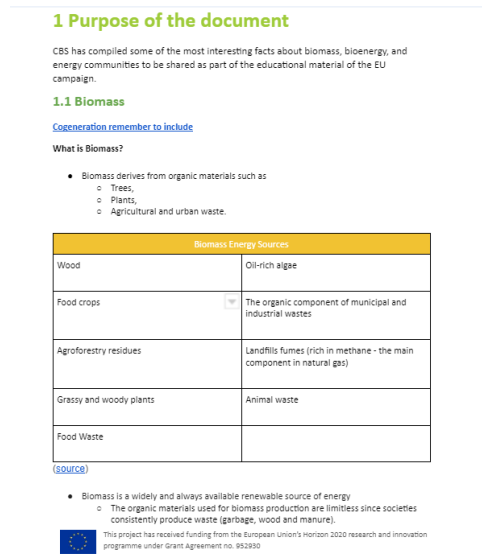


Figure 31: Screenshot from the EU Campaign Content Document

CBS used an additional document with similar function. The team used the file as a repository for gathering the most critical and valuable information sourced from the BECoop deliverables. This encompassed the presentation of the BECoop tools, technical and business catalogues, and results derived from various survey and interviews conducted during the project’s course. CBS collected valuable feedback and comments from all project partners to ensure that the materials could be optimally utilised for the campaign’s purpose. Figure 30 provides insight into this document.

The D&C manager regularly accessed this document to extract the messages/ posts for use in the subsequent online awareness activities. The manager transformed all this material into visually appealing educational content and disseminated through BECoop’s SoMe channels.

The campaign included actions like “Did you know?” banners, articles, briefings, and promotional videos. We present the online awareness activities in detail in the subsequent section.

3.2 EU Awareness Campaign Implementation

In this section, we provide a comprehensive overview of all the activities conducted by the IEECP and CBS teams as part of the EU awareness- raising campaign. Our aim is to offer insights into the various initiatives undertaken to promote awareness of biomass, bioenergy, and energy communities. We also present key metrics and visual materials employed throughout these activities, offering a detailed account of our efforts. In the following subsections, we will delve into each of these activities, providing a closer look at their objectives, executions, and outcomes.

“Did You Know?” Educational Banners: One of the central elements of our campaign strategy was the creation and dissemination of educational banners. These “Did you know?” (DYK) banners summarised in a simplify way essential information about the benefits of sustainably source biomass, bioenergy, and energy communities. These banners also drew extensively from BECoop deliverables’ findings, including survey and interview results, the BECoop tools and knowledge acquired throughout the project’s duration. In total, IEECP released eight (8) banners over a nine-week period, spanning from M24 to M27 of the project.

Some of the messages that were conveyed via these banners are presented both in the list and images below.

“Did you know?”

- **Banner 1:** Bioenergy/biomass derives from living organic materials and is one of the many Renewable Energy Sources (RES) available to help meet increasing energy demands. Flexibility and reliable, storable, dispatchable, and mostly locally sourced, bioenergy has a positive socioeconomic impact, increases job creation, ensures the transition from fossil fuels, and can replace oil, gas, and coal in the electricity and heating sectors.
- **Banner 2:** Bioenergy is the most widely used renewable energy source in the world and can be available on demand. It accounts for roughly 1/10 of the world's total primary energy supply and represents over 1.1 billion tons of oil equivalent.
- **Banner 3:** Biomass can be carbon neutral since the same amount of carbon is released into the atmosphere as was absorbed by plants through photosynthesis. Contrary to the CO₂ released from fossil fuel burning, which has been buried for millions of years.
- **Banner 4:** Biomass for energy (bioenergy) remains the main source of renewable energy in the EU
 - Its share is almost 60%,

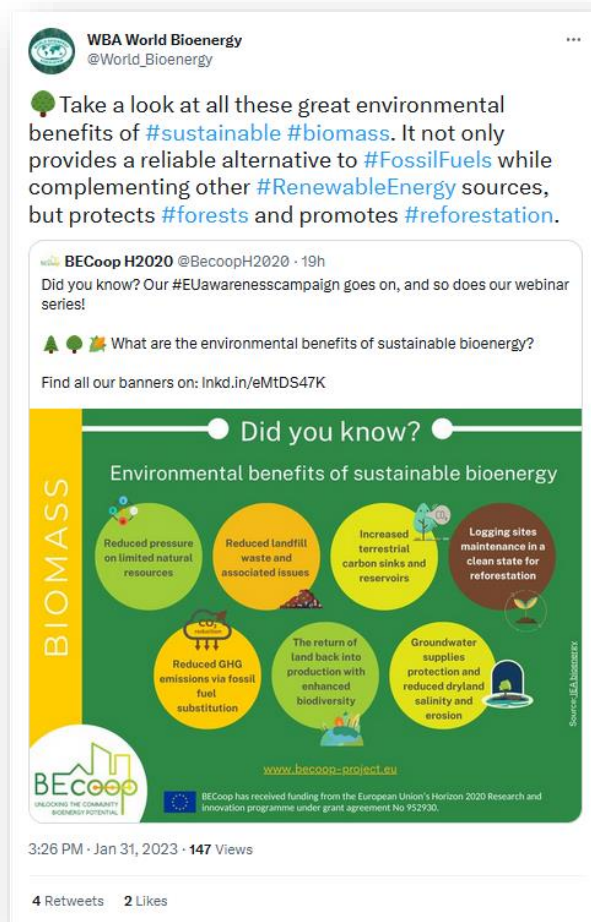


Figure 32: A Post on World Bioenergy’s Twitter Channel using one of BECoop’s DYK Banners

- 75% of it all is used by the heating and cooling sectors,
- Forestry is the main source of biomass for energy, such as
 - Logging residues
 - Wood processing residues
 - Fuelwood.

●**Banner 5:** Biomass for energy (bioenergy) remains the main source of renewable energy in the EU

- Wood pellets for heating and electricity production have become a significant “energy carrier.”
- The largest consumers of bioenergy in absolute terms in Europe are
 - Germany,
 - France,
 - Italy,
 - Sweden and
 - The UK
- The largest consumers of bioenergy per capita in Europe are:
 - The Scandinavian,
 - The Baltic countries and
 - Austria.

●**Banner 6:** Bioenergy supports the development of local economies:

- Creation of new jobs in the procurement, handling, and support of the feedstock supply chain.
- Additional income for different groups like foresters, farmers, wood and food processing industries and communities.
- Increased income and affordable energy reduce energy poverty and inequalities.

●**Banner 7:** Environmental benefits of bioenergy:

- Reduced pressure on limited natural resource
- Reduced landfill waste and associated issues
- Logging site maintenance in a clean state for reforestation
- Increased terrestrial carbon sinks and reservoirs
- Reduced GHG emissions via fossil fuel substitution
- Groundwater supplies protection and reduces dryland salinity and erosion
- The return of land back into production with enhanced biodiversity

●**Banner 8:** Energy Communities (ECs) and Renewable Energy Cooperatives (RESCoops) are citizen-led initiatives that collectively own and manage renewable energy projects, providing environmental, economic, and social benefits to their members and local communities.

The figures below depict some of the banners released on BECoop’s SoMe channels.



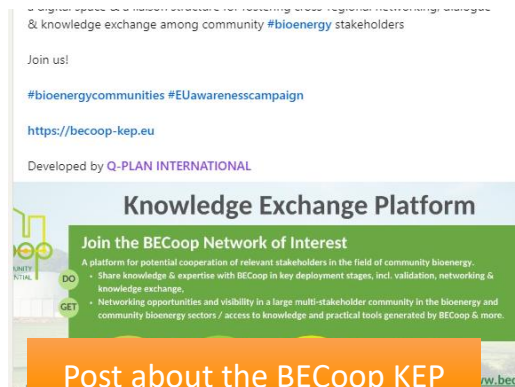
Figure 33: Some of the Banners created for the DYK Awareness Action



Unlocking the community bioenergy potential - The EU-funded project



Screenshot from the Latest BECoop Video



Post about the BECoop KEP

Figure 34: More Online Actions

Article on Pilot Teams' Awareness Activities: IEECP, with the support of CBS and the pilot partners, released (M27) an informative article highlighting the awareness-raising activities organised by the pilot teams. This article served as a valuable resource for conveying the achievements and impact of these initiatives to a wider audience, while providing good examples on how to deploy successful campaigns. The [article](#) is available on the BECoop website. The D&C manager promoted the article on all the project's SoMe channels.

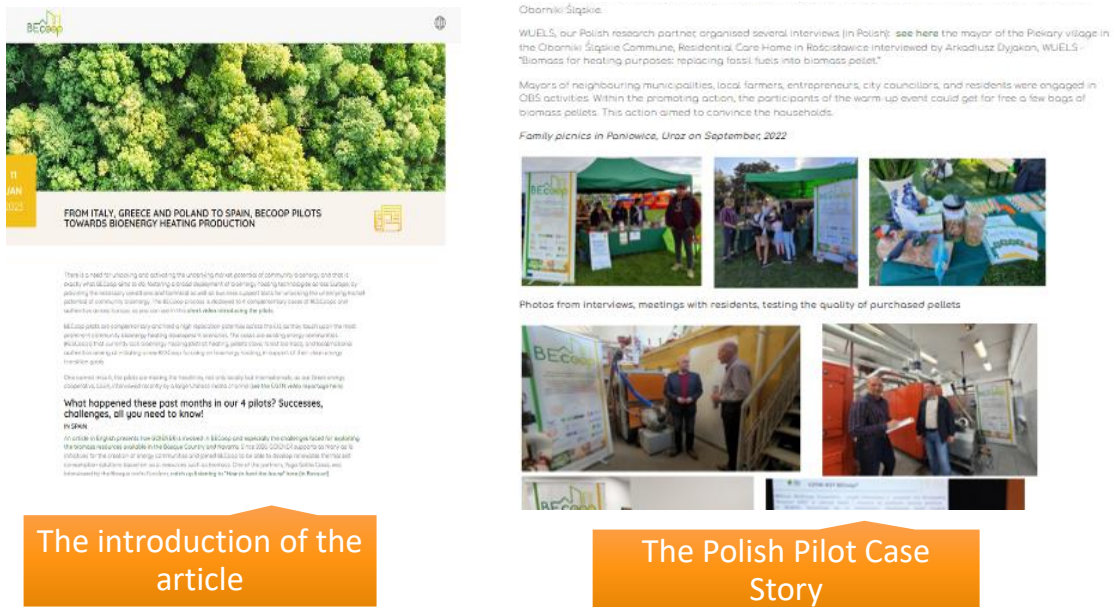


Figure 35: Screenshots from the Article on BECoop's Website

Briefings on Semester Meetings: IEECP produced two briefings dedicated to the project meetings held in Italy and Spain. These briefings provided detailed insights into the site visits and activities conducted during these meetings, offering a comprehensive view of the project's progress along with some lighthouse examples.

1. **Italy Field Visits:** The first briefing (released M31) covered a visit to forestry sites, sawmills, and district heating plans in Trentino-Alto Adige / South-Tyrol, North Italy. It also showcased the impact of successful RESCoops in the region and how they can unite communities in investing in RE projects, sharing the benefits, and reducing reliance on fossil fuels. The briefing transported readers on a virtual tour (see Italian awareness campaign) to discover and learn more about the places visited, offering a vivid snapshot of the experience.

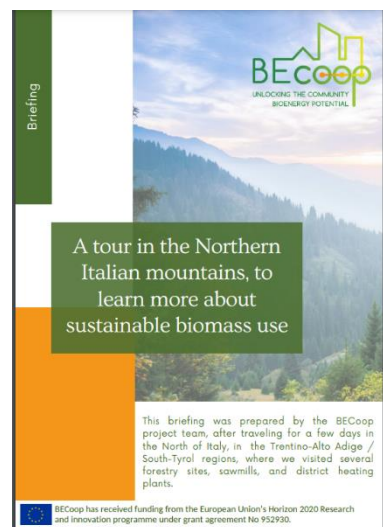


Figure 36: The Briefing for the Visit to the Italian Pilot Region

2. **Spain Semester Meeting:** The second briefing (released M32) explored the visit in the Basque Country, specifically the Aberásturi, Murgia, Zuia, and Vitoria-Gasteiz areas. The meeting organized by the GoiEner team, offered the opportunity to explore the Spanish pilot case. The briefing provided valuable insights into the how forest management and energy communities play a significant role for local societies. The briefing offered a concise overview of the key takeaways from this immersive experience.



Figure 37: A Screenshot of the Briefing for the Visit in the Spanish Pilot Region

Video Showcase of Final Project Meeting in Greece:

IEECP created a short video highlighting the final semester meeting in Karditsa, Thessaly. This video not only conveyed the meeting’s significance within the BECoop project but also showcased the wood pellet production process at the ESEK plan. Special emphasis was placed on pellets made from coffee residues and city pruning, illustrating the sustainable practices. The video also offered a tour of Greece’s first kindergarten using these pellets to meet its thermal requirements, showcasing real-world applications of bioenergy.



Figure 38: The Video Produced after the Visit in Karditsa, GR

The video was released on YouTube on M36 and is available here.

Finally, CBS and IEECP released an article (M36) about the project’s influence on the four pilot regions. The pilot teams provided their perspectives and observations regarding changes in behaviour and perceptions related to BE and ECs by the end of the project. This article served as conduit for showcasing tangible examples of the impact of EU-funded projects on a local level.

The table below presents overview of the metrics on BECoop SoMe platforms.

Table 23: EU-Level ARC – The Metrics

EU-Level ARC – The Metrics							
Activity	BECoop Website	LinkedIn		Twitter		Facebook	You Tube
		Impressions	Engagement	Impressions	Engagement	Engagement	Engagement
Banners	54 Views	1,300	124	3,742	94	51	
Briefings	-	-	56	275	8	15	
Article about	-	-	28	-	-	-	60

Pilot Activities								
Videos							147	
Total	54	1,300	108	4,017	102	66	207	5,854

Given the strong interconnection between T3.3 and WP6, it is essential to underscore that all the activities and materials that IEECP and the D&C manager produced throughout the project’s duration served a dual purpose. These efforts extended beyond mere promotion of project activities; they represented a robust commitment to raising awareness about sustainable bioenergy heating solution and the pivotal role of ECs in local societies. For in-depth information on these endeavours, please refer to the WP6 deliverables.

For comprehensive information and tips on mobilising and reaching out to the wider community to build a BEC, the [BECoop Replication Handbook](#) is an essential guide. This handbook offers valuable insights, practical advice, and relevant links to assist in team building and effective awareness campaigns.



Figure 39: Mobilisation and Outreach Section in the BECoop Replication Handbook

4 Awareness Raising Campaign Success

Monitoring and Evaluation

As introduced in the initial iteration of this deliverable (D3.3), a comprehensive monitoring and evaluation plan is integral to the success of ARCs. Such a plan ensures that campaign organiser can continually assess the campaigns' effectiveness, make real-time adjustments, and analyse their overall impact⁵. The strategy should emphasize the importance of integrating evaluation measures into the campaigns inception rather than waiting until the end. This proactive approach involves including both quantitative and qualitative indicators in the initial campaign strategy to measure effectiveness and convey value to stakeholders⁵.

Informed by the findings from T1.3 and European market research, combined with the local insights of pilot partners, the ARCs' baseline knowledge about the target audience's understanding and perceptions of BE and BECs was established. At the outset, the campaign acknowledged that in Europe, there is generally high awareness of RES and BE. However, at the pilot level, there is limited knowledge on these concepts. Negative perceptions of biomass included environmental concerns and reluctance to switch from familiar energy sources.

Taking this baseline knowledge into account, the campaigns incorporated various measures and tools for continuous monitoring and evaluation throughout their implementation to effectively raise awareness and change perceptions.

Table 24 presents the monitoring and evaluation actions that were identified and presented in D3.3.

Table 24: Online and Offline Monitoring actions (D3.3)

Online Actions		Offline Actions	
Activity	Monitoring Tool	Activity	Monitoring Tool
Websites	Google Analytics	Info Days – Field Visits – Summer schools – Fairs	No of Participants
Social Media Channels	Number of followers, Impressions (Likes, Comments, Share) – Channels own Analytics		
YouTube	No of views and Impressions		
Webinars	No of attendees		

CBS and IEECP employed these tools throughout the lifecycle of the campaigns. This approach allowed the pilot teams, CBS, and IEECP to monitor the success of all the awareness-raising activities and assess their overall impact on perception regarding BE and BECs.

⁵ Sayers, Richard. (2006). *Principles of awareness-raising*. UNESCO.

To facilitate the monitoring of online and offline awareness-raising initiatives, CBS implemented a comprehensive template (excel spreadsheet file) that all the pilots regularly updated. This template encompassed critical data, including the activity type, date, location, the number of individuals reached, the various stakeholder types, and the mediums employed (video, voice, print, and SoMe) to convey the campaigns’ key messages.

OFFLINE ACTIVITIES (INFO DAYS, FESTIVALS, WORKSHOPS, etc)	Short Description on the Activity	DATE	PLACE	Number of People Reached	Types of Stakeholders Reached	TYPE OF PROMOTIONAL MATERIAL PRODUCED (LEAFLETS, POSTERS, BANNERS, GADGETS, UMBRELLAS, BAGS, NEWSPAPERS etc)	No OF PRODUCED MATERIAL	GENDER REPRESENTATION (IF POSSIBLE PLEASE STATE THE No and/or the % of MALE & FEMALE PARTICIPATION)	ONLINE ACTIVITIES (Some POSTS, VIDEOS, INTERVIEWS etc)	Short Description of the Activity	Date	NAME OF MEDIUM (SoMe Platforms, YOUTUBE, TV & RADIO Stations, Digital Newspapers etc.)	OUTREACH (SoMe Impressions, Followers, Views, Listeners etc.)	Link If Available	Green Nudges (in your own language and English)
GOOD ENERGY FESTIVAL	Presentation	2022-05-05	Croatia	170		Brochures	200								
Workshop		2022-06-24	Karditsa	200		Brochure / Flyers	>200		Video	Short video of the 2day event in Karditsa		YOUTUBE	65VIEWS (on 13.10.2022) 6likes		"Η δική μας Ενέργεια" (Our Own Energy)
Info Day		2022-06-25							LinkedPost	About the 2day event	2022-08-20	ESEK's LinkedIn	10 likes 3 reposts		
The citizen energy movement in the Balkans Summer School (3days) - Presentation		2022-06-28	Thessaloniki	100		Brochure / Flyers	>150		Participants of the event talk about energy democracy			Youtube	85 views (on the 26.09.22) 10 likes	GreenPeacegr Youtube	
									SoMe post	Review Meeting	2022-07-18		18likes 4shares >900 views		

Figure 40: Screenshot of the Monitoring Template

On the other hand, IEECP and the D&C manager used monitoring tools to assess the effectiveness of the EU-level campaign. Google Analytics played a crucial role in analysing website traffic, user behaviours, and engagement metrics. This tool helped measure the number of visitors, their interactions, page views, and the time they spent on the BECoop website.

Additionally, IEECP closely tracked the growth in the number of followers on the project’s SoMe platforms. The D&C manager monitored how many people engaged with the campaign content, including likes, shares, comments, and overall interactions. The manager also watched impressions, or the number of times campaign content was displayed to assess the campaign’s reach.

5 Identified Challenges per Pilot Case and Behavioural Change

In the upcoming sections, we share valuable insights derived from the pilot cases. These insights offer a deeper understanding of the challenges and lessons learned when involving local communities in the implementation of ARCs. They also showcase the strategies employed to address these challenges. Our objective is to provide a thorough understanding of the *ARCs' influence on local communities on noticing behavioural change* by examining both shared experiences and unique approaches.

5.1 Spanish Pilot

The Spanish pilot encountered several challenges during the awareness campaign. The region, characterized by a **relatively low population density** with a significant proportion of older residents, presented certain obstacles. Many of the inhabitants had a **low- awareness level about the advantages of biomass as a heating solution** and were traditionally reliant on established energy sources.

In Aberasturi, some residents expressed **concerns regarding the sustainable harvesting of forestry biomass**, which posed a specific challenge. Their hesitance was partially influenced by reports of biomass plants that import wood from ancient forests, leading to the wholesale depletion of these ecosystems, rather than implementing sustainable management practices. This **lack of knowledge about what constitutes sustainable forest management** played a significant role in engaging with them.

The awareness activities and the involvement of forest management public institutions played a crucial role in addressing this concerns. They managed to provide the residents with a clearer understanding of what sustainable forest management can offer, ultimately helping to overcome the challenge related to the hesitance about biomass harvesting.

Additionally, the **prevalence of local communities, primarily initiating with photovoltaic (PV) self-consumption projects**, added complexity to the landscape.

In contrast, the experience of the Sakana case, which got involved in the BECoop activities (T3.2 training workshop and as a follower case T5.2), highlights the impact the awareness activities can have. As an outcome of these activities, Sakana Valley is now actively in the process of establishing its own energy community, with a strong likelihood that biomass will assume a substantial role in the community's forthcoming projects.

5.2 Greek Pilot

The Greek pilot faced some notable challenges. ESEK reported that **low environmental awareness was a significant issue**, with residents **lacking an understanding of the environmental benefits of utilising residual biomass**. Additionally, many community members were **unaware of the advantages of biomass-based energy** and energy communities and, along with the bad reputation of cooperatives, this **lack of knowledge** posed a substantial barrier to gaining their support.

At the beginning of the project, **local authorities displayed reluctance and suspicion about the potential success of the project**. Even when ESEK contacted the kindergarten director in Kallifoni to inform them of their selection for testing the biomass boiler heating the school with coffee pellets, the director initially showed hesitance toward the initiative.

Despite these challenges, ESEK awareness activities and engagement strategies have observed a positive change in behaviour within the local community. Notably, the local authorities, having witnessed the effectiveness of the biomass boiler in the school and the reduction of costs, have become interested in extending similar initiatives to other public buildings.

Furthermore, the local population has become increasingly aware of ESEK's activities, particularly in the production of coffee pellets, and is displaying a greater interest in adopting more sustainable practices. Many local coffee shops have expressed interest in providing their coffee grounds to ESEK for pellet production.

5.3 Polish Pilot

The Polish team faced several significant challenges during the awareness campaign, primarily stemming from **deeply rooted cultural and economic factors**. Generations of **coal combustion and a longstanding preference for cheap energy sources** in rural areas created a strong resistance to new solutions like BECoop initiatives. OBS also reported that the local community in the region had **previously experienced disappointment related to government-promoted programs**. These programs had encouraged a switch from coal boiler to gas boilers, promising more affordable heating solutions. However, the actual outcome was quite different, as it led to significantly higher gas prices and bills for the residents. This prior experience had a lasting impact and contributed to potential resistance and reluctance among the local population when considering alternative energy sources.

Another significant challenge was the **low level of knowledge among local stakeholders about biomass pellets and their potential to replace coal**. During a particular activity where biomass pellets were distributed for free, OBS noticed reluctance. Initially the response was cautious, but word quickly spread in the area, and more residents expressed interest in trying the pellets. The success of this initiative was reflected in the high number of satisfied responses.

The awareness campaign had an impact, fostering discussions within the community about biomass, energy cooperatives, environmental protection, and the transition from coal to biomass pellets. The team discovered the importance of engaging local mayors to introduce and promote the concept, as residents tend to trust and connect more with familiar figures in their community. Some mayors embraced the idea and actively participated in promotional activities, which facilitated the involvement of residents in different events. The OBS team reported that the Oborniki Śląskie mayor have seriously considering the positive impact a biomass-based energy community on the local community.

Additionally, people preferred tangible examples and practical demonstrations, which the team provided through workshop and presentations (connected with cross-WP activities, too). This approach led to residents initiating discussions and seeking advice on transitioning to biomass pellets.

Lastly, the team reported that numerous residents expressed a genuine interest in joining a BEC once the energy market stabilises and offers a competitive alternative to coal.

5.4 Italian Pilot

The Italian faced some notable challenges during their ARC. At the initial stage of the project, **Lovero's mayor initially showed reluctance toward the project**. This initial resistance was largely attributed to the mayor's recent commitment to a methane-based energy project for her municipality, which made it challenging to allocate time and resources to the project.

Another significant obstacle was **the demographic composition of the area**. The region's population predominantly consisted of **older individuals who were traditionally reliant on established energy sources** (i.e., fossil fuels or natural gas), making challenging their interaction with them. Their resistance was rooted in **familiarity with their current heating methods** and a **lack of awareness about the benefits of bioenergy solutions**.

During the awareness activities, such as the info days and the public assembly, **participants frequently expressed concerns, with a primary focus on the cost of implementing new CHP DH system** and how this transition would impact them. Many community members were apprehensive about potential financial implications, particularly the costs associated with shifting from their existing heating methods to DH based on sustainable biomass.

To address these challenges, the Italian pilot team, the support of the local authorities, the Polytechnic University of Milano, put significant effort to address these concerns and challenges. The target and well-structured ARC addressed financial aspects and provided transparent information about the long-term cost benefit and sustainability advantages of biomass-based DH systems and communicate these benefits effectively to the local community to alleviate their concerns and build support to the project.

At this point, the impact of the awareness campaign and the overall project activities have been notably significant, extending beyond the project's conclusion to offer lasting benefits to the local community. Notably, the Melavì Cooperative, an agriculture collective representing over 200 apple producers from the valley, a region renowned for its apple cultivation, showed a keen interest. Recognizing their substantial energy requirements and potential as both end-users of the energy community and suppliers of biomass from apple grove pruning their involvement marked a pivotal moment.

Subsequently, the commitment of the Lovero, Tovo Sant' Agata, and Valtellina, grew even. They are actively engaged in securing funding for the construction of the district heating plant. Additionally, they are searching and deliberating the most suitable governance structure for the envisioned energy community.

6 Lessons Learned

The awareness campaigns conducted in the pilot regions yielded valuable insights and lessons. While each pilot encountered region-specific challenges, several common themes emerged, providing general lessons for future campaigns:

Local Engagement and Familiar Individuals: The success of ARCs in all pilot cases emphasised the importance of involving local authorities and key figures. Mayors' commitment, along with well-known personalities, greatly facilitated community engagement and encouraged residents to participate in project activities. For example, in the Italian pilot region, ***the enthusiastic participation and support of the three mayors in various awareness activities***, including info days, field visits and interviews played a catalytic role in creating trust of the local communities towards bioenergy heating solutions. Additionally, ***the engagement of forest management public institutions in info days and presentations*** contributed to shedding light on the advantages of sustainable forest management, effectively addressing concerns related biomass harvesting practices.

Resistance to Change: In regions with established traditions, such as coal combustion in Poland and a strong resilience on existing energy sources, resistance to change posed a significant challenge. Offering practical examples and demonstrating the advantages of biomass helped in being more acceptable and open to initiatives like the BECoop project. For instance, in the case of Oborniki Śląskie ***the distribution of free pellets*** to some residents effectively demonstrated the feasibility and benefits of transitioning from coal to biomass-based energy sources.

Educating the Local Community: Low levels of awareness and knowledge about sustainable biomass as energy source were common challenges across the pilot regions. In response, targeted educational initiatives, info days, and visits to successful cases proved to be effective strategies for increasing local stakeholders' understanding of BE and BECs. In the Greek pilot, ***the multiple interviews*** both at national and regional levels played an important role in increasing people's awareness of the advantages of sustainable biomass energy production to the local community. Furthermore, the ***active participation of residents and local coffee shops in collecting coffee residues*** for pellet production effectively demonstrated the ease of adopting more sustainable daily habits.

Building on Prior Experience: Prior experience, such as disappointments with government- promoted energy-related programs, significantly influenced local people's receptiveness to new energy solutions. Recognizing and addressing these prior experiences through awareness actions allowed the pilot teams to start building trust and navigate potential resistance. ***The field visits of local populations to lighthouse cases*** conducted in all pilot regions provided concrete examples of how BECs initiatives can foster local development, reduce dependence on fossil fuels, and create trust.

These lessons provide valuable insights into the challenges faced by the pilot teams and highlight the importance of awareness campaigns for fostering behavioural change, and engaging community members in sustainable BE initiatives.

7 Recommendations

Below we provide some recommendations for overcoming challenges in building effective ARCs for changing negative perceptions about BE and encouraging behaviour shifts.

Tailored Communication: Tailoring communication strategies to the specific needs and concerns of local communities is crucial. Adapting messages, material, and engagement methods to align with regional conditions and expectations is essential for success.

Continuous Monitoring and Evaluation: Monitoring and evaluation processes into campaigns from the beginning are crucial. Regular assessment of the campaign's effectiveness, feedback from participants, and adaptation of strategy can optimise results.

Engaging Local Authorities: Engaging local mayors and public officials can play a pivotal role in attracting community participation. Their support and belief in such initiatives can influence community participation and help overcome initial resistance to change.

Promoting Biomass Awareness: Development of educational campaigns to raise awareness about biomass and bioenergy, highlighting the environmental and economic benefits of locally sourced biomass, to counter misconceptions and foster acceptance.

Showcasing Success Stories: Practical demonstrations, workshops, and real success stories can effectively showcase the benefits of BE and BECs. Success stories help community members to visualise the impact of sustainable heating solutions on their lives and provide evidence that the proposed solutions work.

Emphasising Practical Benefits: Highlighting the practical advantages of BE and BECs, such as reduced energy costs, job creation, environmental benefits, and energy independence, can make the concept more appealing.

Learning from Past Experiences: In regions where residents have experience disappointment from government-promoted programs, it was important to acknowledge experience and offer viable alternatives, demonstrating the advantages of BECs to alleviate potential resistance.

Support of Behaviour Change: Awareness campaigns that not only inform but also inspire behaviour change can encourage communities to adopt to more sustainable practices and consider biomass as a viable energy source.

Collaboration with Local Partners: Close collaboration with local organisations, schools, and other community institutions that community members trust can strengthen a campaign's reach and impact.

The lessons learned from the pilot regions emphasise the pivotal role of continuous awareness campaigns in fostering community engagement, overcoming resistance to change, and ultimately promoting the adoption of BECs. The success of the pilot campaigns highlights the effectiveness of tailored communication and successful examples in promoting sustainable biomass energy solutions.

8 Conclusions

This report primarily focuses on the comprehensive ARCs strategies and their implementation strategies in the pilot regions, aiming to reshape negative perceptions of bioenergy, promote understanding of community bioenergy heating, and boost social acceptance. It also examines the EU-level campaign and monitors the impact of these initiatives, identified, challenges, and distilled lessons learned.

In conclusion, the impact and added value of Task 3.3 on the pilot regions beyond the end of the project can be substantial and encompass various aspects:

Enhanced Public Awareness: Increasing public awareness is crucial because it helps people understand the benefits and value of BE heating solutions. A well-executed campaign should aim to inform the public about how BE and BECs can lead to local economic growth (especially in rural and depopulated areas), stable non-market reduced costs, cleaner air, and more sustainable, locally produced energy choices. By enhancing public awareness, individuals are more likely to accept BE as a viable heating option.

Community Enlargement: Successful awareness campaigns can pave the way for the expansion of BECs. When more people become aware of the benefits and potential of such communities, they may express interest in joining or supporting them. This expansion strengthens the collective effort to adopt sustainable energy sources.

Behavioural Shift: Behavioural changes is a fundamental objective of awareness campaigns. By using techniques like green nudges and tailored messaging, campaigns can motivate individuals to shift from traditional energy sources to BE. The goal is to encourage people to adopt more eco-conscious behaviours and switch to sustainable energy practices.

Knowledge Transfer: The experiences and lessons learned throughout the project can serve as a valuable knowledge base. This knowledge can be leveraged for future community bioenergy ARCs, potentially leading to broader regional adoption of sustainable bioenergy heating and cooling practices.

This deliverable highlights the project's dedicated efforts in implementing successful awareness campaigns. It showcases the substantial progress made in the pilot regions and EU level, emphasising the valuable lessons learned through the process. The insights gained from these campaigns provide a strong foundation for fostering sustainable bioenergy solutions and building resilient, inclusive communities.