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BOOSTING RURAL BIOECONOMY NETWORKS

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Boosting Rural bioeconomy Networks  
following multi-actors approaCHES

**Deliverable D3.4 Best practice show cases and implementation possibilities –  
Summary**

**Kirsikka Kiviranta, VTT**



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<b>Title</b>	DELIVERABLE D3.4 BEST PRACTICE SHOW CASES AND IMPLEMENTATION POSSIBILITIES – SUMMARY
<b>Creator</b>	Kirsikka Kiviranta
<b>Description</b>	The deliverable summarizes the BRANCHES WP3 showcase days in WP3 partner countries.
<b>Contributors</b>	All showcase organizers/hosts, WP3 Leader
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## 1 – Goal of Showcase days

“Showcases” aim to achieving several goals at one time, and namely:

Showcase days are a fundamental tool to expand the impact of novel solutions at the reach of possible practitioners. The Showcase days will contribute to increase user acceptance and interest in implementation. They do not only demonstrate the feasibility of technical solutions, but also the impact of bioenergy and bioeconomy applications on the local and rural economy. In WP3, a totaling a number of six (6) Showcase days, have been organized (in Finland (2), Spain (1), Italy (1), Poland (1) and Germany (1)). The specific topics of the Showcases have been decided in the course of the project based on the main interest areas of actors and stakeholders. Preliminary ideas for Showcase were already identified during the project proposal stage. In general, the Showcase Days will represent bio-based solutions in different environments and applications in order to guarantee the widest coverage of end-users.

## 2 – Type of Showcase days

Showcase days were organized as physical events. On some occasions the Showcase days took place in combination with other events (fairs, tradeshows etc.) or were stand-alone events, depending on the target groups or aim of the Showcase day. Showcase days were recommended to be conducted in National languages to ensure the BRANCHES bottom-up approach, but they could have also been held in English for international events with a wider audience.

## 3 – Number of Showcase days

During the BRANCHES project, WP3 focused on boosting the uptake of proposed solutions through continuous interaction with practitioners, including 6 showcase days. The original plan of BRANCHES was to organize one (1) Showcase day per country, and hence the project exceeded the amount of held Showcase days by one.

## 4 – Practicalities

When organizing a Showcase day, the following practical guidelines were carefully considered:

- Showcase Days are referring to the BRANCHES project
- If feasible, banners or roll-ups are installed at physical Showcase sites to advertise the BRANCHES project
- Photos are taken at each Showcase Day
- Attendance lists are compiled, indicating: 1) date and place and 2) name, company, and country

## 5 – Showcase day Reports

A Showcase day report was compiled for each Showcase day, providing an overview of the participation, topics of the demonstrated technical solutions and compiled summary of the main outcomes of the Showcase day.

**In summary**, a total of six (6) Showcase day were held in BRANCHES WP3, hence exceeding the original plan by one (1) Showcase day event. Workshops were held in Finland (2), Poland (1), Spain (1), Italy (1) and Germany (1). 5 of the conducted Showcase days were physical events, 1 was held as hybrid event.

Altogether, **251** participants joined the Showcase days of WP3. Participants represented a wide variety of stakeholders and practitioners, including companies, public agencies, research and development (R&D), primary producers (farmers and forest owners), engineering, and other stakeholders such as students.

Country	Name of the Showcase day	Date	Type	Number of participants
<b>Finland</b>	Farm-scale energy solutions - a visit to Qvidja farm/ Maatilaympäristön energiaratkaisut - vierailu Qvidjan tilalla	24.8.2023	Physical	9
<b>Finland</b>	Farm-scale energy solutions – a visit to Volter and Viskaali farm/ Maatilaympäristön energiaratkaisut - vierailu Volterilla ja Viskaalin tilalla	21.11.2023	Physical	16
<b>Poland</b>	Good agricultural practices – workshop and study visit	6.9.2023	Physical	65
<b>Spain</b>	Vineyards pruning valorisation for energy purposes as local strategy to promote circular economy	27.4.2022	Hybrid	16
<b>Italy</b>	Travelling upstream to the source of woodchips	19.9.2023	Physical	130
<b>Germany</b>	From hemp to composite material/ Vom Hanf zum Composite-Material	11.10.2023	Physical	15

A Showcase day Annex (A to F) is attached to this document, including a report for each conducted Showcase day by BRANCHES WP3 project partners.

## A. Annex 1 – Showcase day report “First Showcase day Finland”

### Name of the Showcase Day:

Maatilympäristön energiaratkaisut - vierailu Qvidjan tilalla  
Farm-scale energy solutions - a visit to Qvidja farm

### Description of the Showcase Day:

The Showcase Day for BRANCHES WP3 in Finland was organized in Qvidja farm on 24.8.2023 to increase the interest and user acceptance and facilitate knowledge transfer of the solutions piloted at the site. The Showcase Day included three different presentations and a tour on the experimental facilities located at the farm. The experimental facilities provide information on farm-scale renewable energy production and include biogas production, wood gasification, wood chip fuelled heating plant and CHP and solar PV. In addition, a presentation and tour by QPower was included in the program as well. QPower is a company with experimental facilities located at the Qvidja farm. QPower is a company commercializing biological methanation. In biological methanation, microbes are utilized to produce methane from carbon dioxide and hydrogen. As QPower is based on research work starting from laboratory-scale methanation trials and is currently building its first industrial-scale reference for synthetic fuel production, the company is a perfect example of a success story in which research has promoted bioeconomy.

The Showcase Day was organized in Finnish and the number of participants was nine. Two (2) of the participants were also primary producers/foresters. Most of the participants were from R&D sector. The aim was to attract a higher number of participants to the event. However, the coinciding harvesting season in the region took place at the same time with the Showcase Day that may have contributed to the lower involvement of the primary producers. Actions to consider in the future to boost the number of participants to similar events are discussed later in the report.

The Showcase Day was planned and organized by Finnish partner VTT.

Showcase day type  online  physical  hybrid  other, please specify:

Showcase day organization  stand-alone  
 in connection with another event (xxx)  
 other

BRANCHES working package:  WP1  WP2  WP3  WP4  
 other, please specify: \_\_\_\_\_

**Goal of the Showcase Day:**

The goal of the Showcase Day was to increase the interest and user acceptance and facilitate knowledge transfer of the different renewable energy solutions piloted at the Qvidja farm.

**Place & region of Showcase Day:**

Qvidja farm, Kuitiantie 337, 21630 Parainen

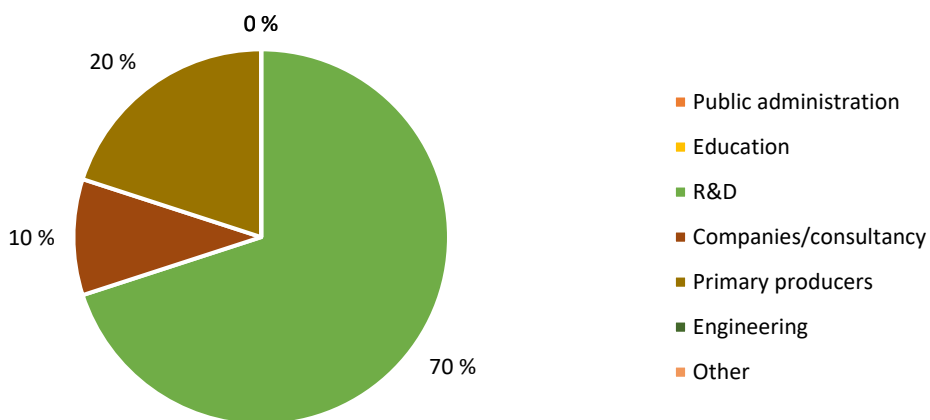
**Date of Showcase Day:** Thursday 24<sup>th</sup> August 2023 (10:00-15:00 EET)

**Organizers:**



**Number of attendees:** 9

**Profile of Finnish Showcase Day participants**



Audience breakdown (n° of attendees)	Category	Count
	Companies/Consultancy	1
	Public Administration	0
	Primary Producers	2
	R&D	6
	Education	0
	Other	0

**Moderator's summary of practitioners' feedback:**

The Showcase Day started with a BRANCHES presentation by Kirsikka Kiviranta (VTT) describing the overall objectives of BRANCHES project and information of where material produced during the project can be found. During her presentation, a BRANCHES-video filmed at the Qvidja farm was also viewed. The video was filmed at the Qvidja farm during summer 2022. The second presentation was held by Pekka Heikkinen, the steward of Qvidja farm. He gave an overall presentation of the different methods and pilots take are being experimented at Qvidja farm to fight climate change. Lastly, Marko Niskanen, Technical Director of QPower, introduced QPower and described the company's ongoing work and future ambitions in utilizing carbon dioxide from different industrial processes to produce synthetic methane.

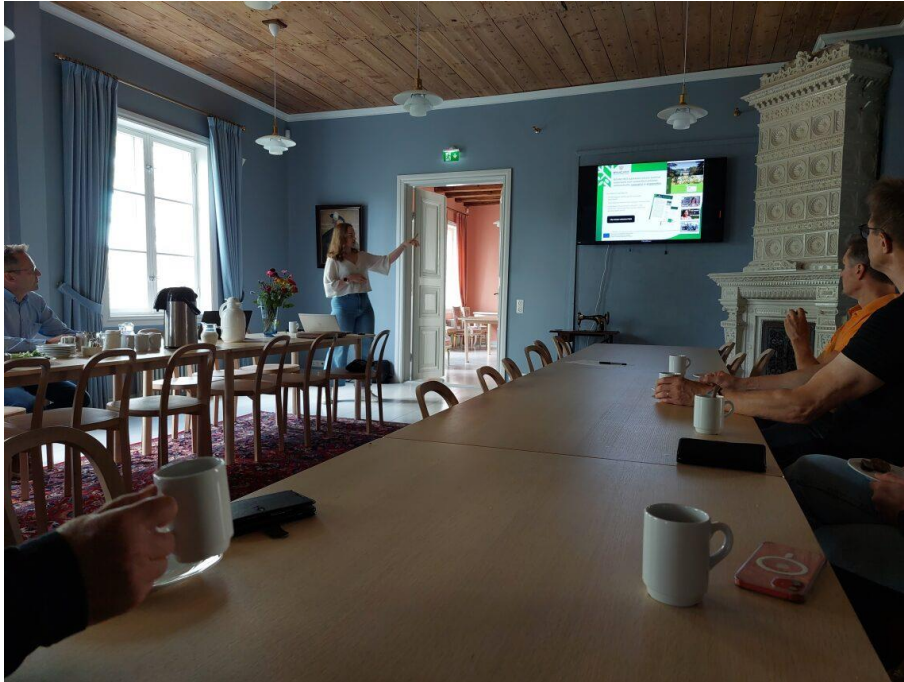
After the presentations and lunch, the Showcase Day continued with a tour the pilot facilities. The tour included visits to the following facilities: biogas production, solar PV, wood gasification, wood chip fuelled heating plant and CHP and the biological methanation units. The tour ended with a visit to the fields in which different soil amendments have been tested to investigate their potential in healing the soil conditions and improving the carbon sequestration potential of the soil.

The conversation was vivid during the entire Showcase Day. The participants were especially interested of the biological methanation and wood gasification technologies piloted at the site. Conversations were held e.g., on from which sources carbon dioxide can be sourced for the biological methanation. According to QPower, various carbon dioxide streams with different purity levels ranging from high purity CO<sub>2</sub>-streams separated from biogas plants to lower purity CO<sub>2</sub>-streams from industrial flue gases can be utilized in biological methanation, making the process flexible. Carbon dioxide emissions from pulp and paper sector were seen as highly potential CO<sub>2</sub> source in Finland for synthetic methane production. The solution QPower is offering is also scalable, as the facilities would consist of modules that can be replicated as many times as the capacity requires. Discussion was also held on the next steps to take to facilitate the market entry of QPower's biological methanation solution. According to the Technical Director of QPower, the next actions to take are to increase the number of full-scale references. However, the absence of sustained regulatory measures and increased costs have slowed down new investments.

During the tour, participants were also interested in quite technical questions related to the different pilots. As the audience consisted of R&D experts, the host from Qvidja farm was also able to create new contacts for future research work on e.g., wood gasification.

Overall, the participants found the event interesting and based on feedback, they received new information of the presented solutions. The expectations were that the Showcase Day would have attracted more interest among regional primary producers. One probable cause for the low involvement was the coinciding harvesting season in the region and the somewhat remote location of the farm. In addition, the regional rural advisory organization ProAgria could have been used to market the event as they have direct contacts with the local farmers. If similar events are still to take place in BRANCHES project, the communication channels of the regional ProAgria centers should be utilized, if possible, to reach the local primary producers.

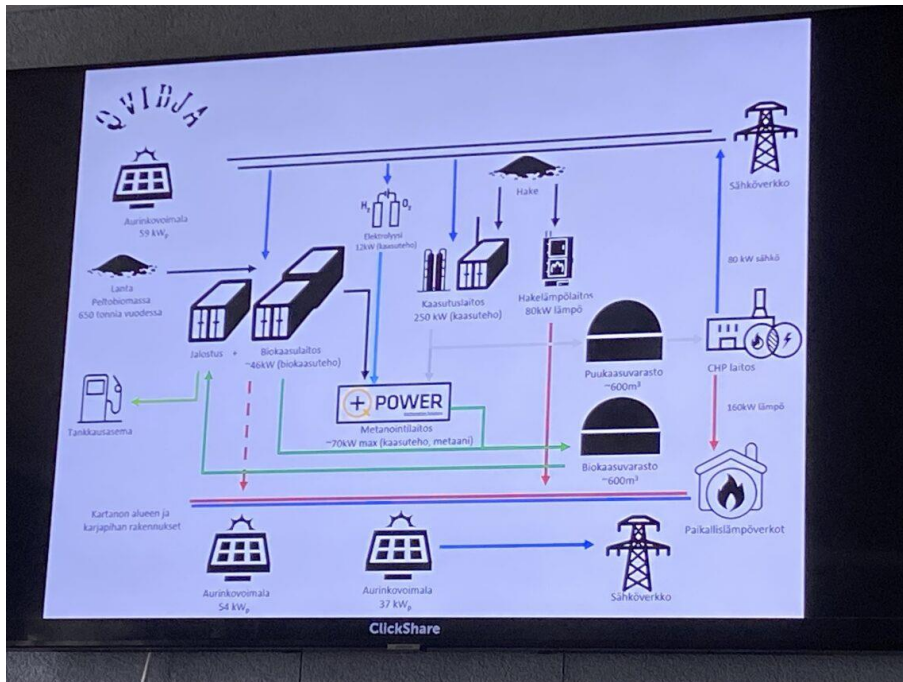


**Images:**

**Picture:** Kirsikka Kiviranta (VTT) introduced the BRANCHES project and showed the BRANCHES-video “The farmer is the solution” filmed at the Qvidja farm.



**Picture:** Pekka Heikkinen (steward of Qvidja farm) gave an overall presentation of the regenerative farming practices for food and renewable energy production taking place at Qvidja farm.



**Picture:** The presentation of Qvidja farm covered the different renewable energy production technologies piloted at the site. The presentation also covered the synergies of the different solutions.



**Picture:** Marko Niskanen (QPower) introduced the current work and future plans related to QPower's biological methanation technology.



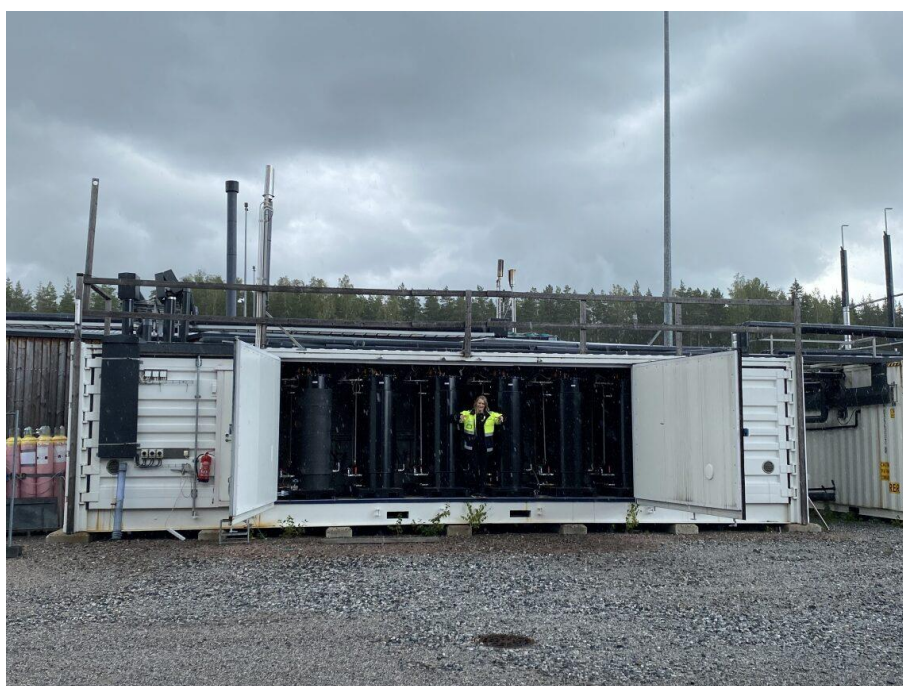
**Picture:** Visiting the experimental biogas plant. The plant utilizes cow manure and grass as a feedstock.



**Picture:** Wood gasification experimental facility. The process gained a lot of interest among the participants and contact information were exchanged for potential cooperation in the future related to oxygen-enhanced gasification process.



**Picture:** Pilot-scale biomethanation unit.



**Picture:** Reactors of the pilot-scale biomethanation unit in which the biomethanation takes place.



**Picture:** CHP units are used to generate heat and electricity for the premises located at the farm.



**Picture:** The tour also included a visit to a site in which different soil amendments have been tested to improve the structure of soil.



**Picture:** The participants were also given a chance to visit the historical Qvidja castle built in 1400s.



Tämä hanke on saanut rahoitusta Euroopan Unionin tutkimuksen ja innovoinnin puiteohjelmasta Horisontti 2020 avustussopimuksen nro 101000375 – BRANCHES mukaisesti.



## Maatilaympäristön energiaratkaisut - vierailu Qvidjan tilalla

**Torstai 24.8.2023 klo 10:00-15:00, Qvidjan tila (Kuitiantie 337, 21630 Parainen)**

Tervetuloa vierailulle Qvidjan kokeilutilalle tutustumaan ilmastoviisaan ruoan- ja energiantuotannon kehitystyöhön! Vierailupäivä tarjoaa mahdollisuuden oppia lisää Qvidjan tilan energialaitoskokonaisuudesta ja pilotointityöstä liittyen maaseudun kestävään energiantuotantoon, sekä bioenergia-yhtiö Q-Powerin toimintaan esitysten ja tutustumiskierroksen muodossa. Mukana myös historian havinaa – vierailupäivän aikana on mahdollisuus tutustua Qvidjan pihamaalla seisovaan, 1400-luvulta peräisin olevaan kivilinnaan. Tilaisuus on suomenkielinen ja maksuton. Rekisteröidy mukaan ohessa olevasta linkistä. Mainitse ilmoittautumisen yhteydessä, mikäli tarvitset kyydin Turusta Qvidjan tilalle ja takaisin. Tervetuloa!

### Ohjelma:

**10:00** Päivän avaus Kivilinnassa

- Tarjolla kahvia ja pientä suolaista
- BRANCHES –hankkeen esittely
- Qvidjan tila ja kartanon toiminnot
- Energiaratkaisut Qvidjan tilalla
- Q-Power: biometaania hiilidioksidista ja vedystä

**12:00** Keittolounas ja jälkiruokakahvit

- Mahdollisuus tutustua 1400-luvulta peräisin olevaan kivilinnaan

**13:00** Tutustumiskierros Qvidjan tilan energiaratkaisujen pilotointiympäristöön

**15:00** Kotiinlähtö

Tilaisuuden järjestää [BRANCHES](#) -hanke

### Lisätietoja:

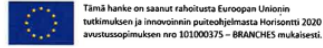
Kirsikka Kiviranta  
[kirsikka.kiviranta@vtt.fi](mailto:kirsikka.kiviranta@vtt.fi)  
 puh. 040 671 9516

Kirsi Korpijärvi  
[kirsi.korpjarvi@vtt.fi](mailto:kirsi.korpjarvi@vtt.fi)  
 puh. 040 529 8464

**Picture:** The invitation letter to the event which was shared through the Finnish BRANCHES channels.

## Maatila ympäristön energiaratkaisut - vierailu Qvidjan tilalla 24.8.2023

Qvidjan tila, Kuitiantie 337, 21630 Lielahdi



## Osallistujat:

-	Etinimi	Sukunimi	Organisaatio	Olen alkutuottaja (maa- ja metsätalous)	Allekirjoitus
1	Nina	Honkala	LUKE		Nina Honkala
2	Timo	Huhtanen	LUKE		Timo Huhtanen
3	Jyrki	Rautila	VTT		Jyrki Rautila
4	Nam	Berglund	MTK		Nam Berglund
5	Kirsi	Korpijärvi	VTT		Kirsi Korpijärvi
6	Mariina	Havijä	JAMK		Mariina Havijä
7	Kirsi	Kiviranta	VTT		Kirsi Kiviranta
8	Marko Niskanen		Q Power	X	Marko Niskanen
11	Pella	Hellman	Qwayk	X	Pella Hellman
10					
11					
12					
13					
14					
15					

Picture: Participant information.



## B. Annex 2 – Showcase day report “Second Showcase day Finland”

### Name of the Showcase Day:

Maatila ympäristön energiaratkaisut - vierailu Volterilla ja Viskaalin tilalla  
Farm-scale energy solutions - a visit to Volter and Viskaali farm

### Description of the Showcase Day:

The second Showcase Day for BRANCHES WP3 in Finland was organized on 21.11.2023 to increase the interest and user acceptance and facilitate knowledge transfer of the companies' solutions. The Showcase Day included a visit to Volter Ltd. and presentations and discussion on Viskaali farm biogas plant.

Volter Ltd. designs and manufactures miniature power plants producing heat and power. Volter plants produce power through gasification. Dried wood chips are led into a hot, about 1000 °C gasifier, where they are heated and gasified with very little oxygen. This produced wood gas functions as fuel in an engine that runs a generator to produce power. Warm water is produced as a by-product, which can be used for example for floor heating or industrial drying processes. Volter's concept suits well for example for farms and small industrial areas, wanting to be more self-sufficient on energy. The technology was introduced during the visit. The participants also learned that in addition to being a technology provider, one business aspect of Volter is to assist other companies turn their ideas and pilots into new products and businesses. While doing this they have increased their own product portfolio and become partners of other small and medium-sized companies.

According to the original Showcase day plan, the participants were supposed to visit the Viskaali farm in Muhos in which a biogas plant is being built. Unfortunately, the farmers had to cancel the actual visit at the last minute. Therefore, this part of the Showcase event was changed to a classroom-style presentation by Ilkka Kovalainen, a consultant and partner of the Viskaali ekokylä (Viskaali Eco village), at VTT premises in Oulu. On the other hand, this made possible to extensively discuss and present the development of a new biogas plant at the farm. Because the plant is still very much under construction without any meeting facilities, it would not have been possible to do any visual presentations at the farm site.

The Showcase Day was primarily conducted in Finnish and the number of participants was 16. Some parts of the event were summarized in English for one German student participating the Showcase day. Most participants were agricultural students from the University of Applied Sciences of Oulu, having however, a background of practical agriculture by being grown up in farms. The rest of the participants represented the R&D sector. The Showcase Day was planned and organized by Finnish partner VTT.

Showcase day type  online  physical  hybrid  other, please specify:

Showcase day organization  stand-alone  
 in connection with another event (xxx)  
 other

BRANCHES working package:  WP1  WP2  WP3  WP4

**Goal of the Showcase Day:**

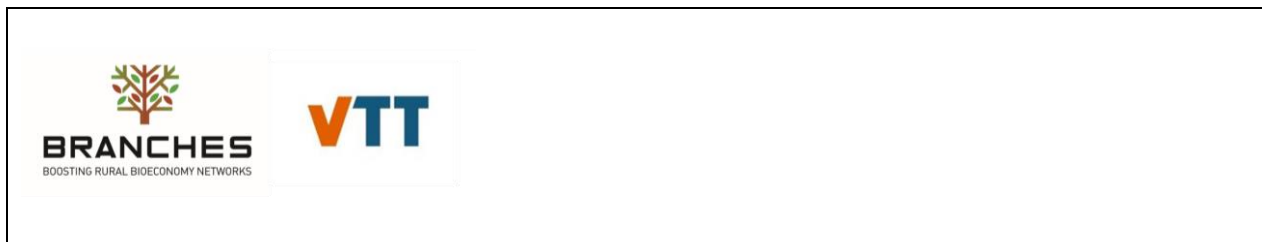
The goal of the Showcase Day was to increase the interest and user acceptance and facilitate knowledge transfer of the different renewable energy solutions presented by Volter and Viskaali farm.

**Place & region of Showcase Day:**

Volter Oy, Rytiniementie 1, 91910 Tupos  
VTT, Kaitoväylä 1, 90570 Oulu

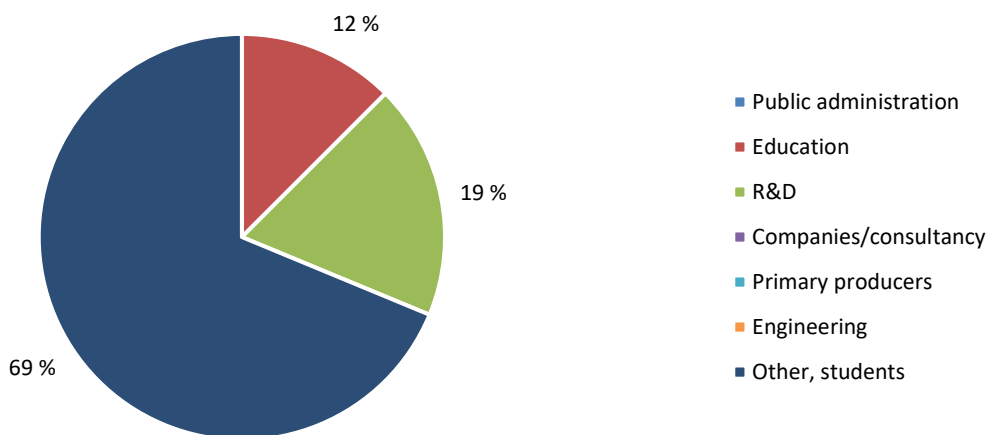
**Date of Showcase Day:** Tuesday Now 21, 2023 (9:00-13:00 EET)

**Organizers:**



**Number of attendees:** 16

**Profile of Finnish Showcase Day participants**



Audience breakdown (n° of attendees)	Count
Companies/Consultancy	0
Public Administration	0
Primary Producers	0
R&D	3
Education	2
Other, students	11

**Moderator's summary of practitioners' feedback:**

Mr. Jarno Haapakoski, CEO of Volter, warmly welcomed us to Volter Ltd. in Tupos, less than half an hour drive from Oulu, and introduced his company in a meeting room with a slide presentation. He described the history and development of Volter, as well as the business idea and concept evolution. He openly explained the challenges of a start-up company, focusing on a single product, in this case, a CHP plant, but also how they found their strengths in engineering and product development. This has led to a broader product portfolio and partnership with other companies. After the introduction Mr. Haapakoski gave a factory tour, which provided a nice hands-on experience of the company's main products and technologies.

Considering the background of the participants, the tour stimulated the group into active discussion. Machines and the practical solutions of Volter were clearly of high interest to everybody, and hopefully made the participants ponder over how to apply such ideas into practice.

The next session at VTT started with a BRANCHES presentation by Kirsikka Kiviranta (VTT) describing the overall objectives of BRANCHES project and information of where material produced during the project can be found. During her presentation, a BRANCHES-video filmed at the Qvidja farm was also viewed. It was also shared that the BRANCHES project has produced a lot of useful material for students.

The second presentation was held by Ilkka Kovalainen, a biogas consultant and partner of Viskaali ekokylä, where the Viskaali biogas plant is being constructed. He gave an overall presentation of the plant development, as well as the business concept of Viskaali farm and companies affiliated to it. It was particularly interesting to hear the size of the anticipated biogas production, and how they intend to combine other farm activities, for example meat production to it. As a large cattle raising farm, the Viskaali farm can supply most of the biogas feedstock by themselves. Other interesting technical solutions include gas and feedstock transport through pipes.

The conversation was vivid during the entire Showcase Day. The participants were especially interested practical solutions and technologies under construction. They also discussed the size and impact of such a large biogas plant.

Overall, the participants found the event interesting and based on feedback, they received new information of the presented solutions. However, to our slight disappointment, it was not possible to attract more local farmers. Greetings to Volter Oy, that so willingly received the participants for a tour, and to the regional rural advisory organization ProAgria, who significantly contributed to the organization of this event and advertised the event in their webpage.

**Images:**

**Picture:** The Showcase day started in a cold November morning in the premises of Volter Oy where the CEO of the company described the history and development of Volter, as well as the business idea and concept evolution.



**Picture:** After the presentation, the Showcase day continued with a factory tour in which the products of Volter are produced.



**Picture:** The factory tour included a visit to an operating pilot, in which wood chips are converted to electricity.



**Picture:** Visiting the Showroom of Volter.



**Picture:** Wood-gas-fired vehicle in Volter Showroom.



Picture: The Showcase Day continued in the premises of VTT where BRANCHES project and the concept of biogas production under construction at a local farm was presented.

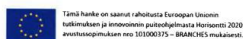
Maatila- ja ympäristön energiaratkaisut - vierailu Volter ja Viskaali 21.10.2023



Osallistujat:

-	Etinimi	Sukunimi	Organisaatio	Olen alkutuottaja (maa- ja metsätalous)	Allekirjoitus
1	Mattias	Ervasti	OAMK		<i>[Signature]</i>
2	Taija	Hämeenkorpi	OAMK		
3	Kirsikka	Kiviranta	VTT		
4	Rauli	Koskela	OAMK		<i>Rauli Koskela</i>
5	Taru	Koskinen	ProAgria		
6	Lauri	Kytökorpi	OAMK		<i>Lauri Kytökorpi</i>
7	Petri	Luukkonen	OAMK		<i>[Signature]</i>
8	Kerttu	Ojala	OAMK		
11	Markku	Paananen	JAMK		
10	Jyrki	Raitila	VTT		<i>[Signature]</i>
11	Jenni	Räsänen	OAMK		<i>Jenni Räsänen</i>
12	Teemu	Sangi	OAMK		<i>Teemu Sangi</i>
13	Henry	Jämsä	OAMK		<i>Henry Jämsä</i>
14	Elina	Virkkunen	Luke		
15	<i>[Handwritten]</i>	<i>[Handwritten]</i>	<i>[Handwritten]</i>		<i>[Handwritten]</i>

Maatila- ja ympäristön energiaratkaisut - vierailu Volter ja Viskaali 21.10.2023



Osallistujat:

-	Etinimi	Sukunimi	Organisaatio	Olen alkutuottaja (maa- ja metsätalous)	Allekirjoitus
1	Joni	Kosamo	Oamk Oy		<i>[Signature]</i>
2	Konsta	Pirkola	Oamk		<i>[Signature]</i>
3	Kerttu	Ojala	Oamk		<i>[Signature]</i>
4	<i>[Handwritten]</i>	<i>[Handwritten]</i>	<i>[Handwritten]</i>		<i>[Signature]</i>
5					
6					
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15					

Picture: A total of 16 participants joined the event, all though not all individuals who signed up attended. Additionally, some attendees who had not previously registered did join the event



Tämä hanke on saanut rahoitusta Euroopan Unionin tutkimuksen ja innovoinnin puiteohjelmasta Horizonntti 2020 avustussopimuksen nro 101000375 – BRANCHES mukaisesti.



## Maatilaympäristön energiaratkaisut - vierailu Volterilla ja Viskaalin tilalla

Tiistai 21.11.2023 klo 9:00-14:00

Tervetuloa tutustumaan Volterin ja Viskaalin tilan uusiin energiaratkaisuihin. Volter on uudistanut pienvoimalakonseptinsa ja valmistaa nykyään teholtaan parempia Walter sähkön- ja lämmöntuotantomoduuleja. Vierailemme yrityksessä ja tutustumme uusiin laitteisiin.

Tilakäynnillä Viskaalin tilan yrittäjät kertovat maatilansa toiminnasta ja sekä Viskaalin ekokylän biokaasulaitoksesta. Vierailulla on mukana myös hankkeen tekninen asiantuntija vastaamassa teknisempiin kysymyksiin ja kertomassa mm. siitä, mitkä asiat tilalla vaikuttivat valittavaan teknologiaratkaisuun ja mitä erityispiirteitä tilalla tulisi huomioida biokaasulaitokseen liittyen. Biokaasulaitoksen rakennustyömaa sijaitsee tilakeskuksen yhteydessä. Tilaisuus päättyy kahvitukseen Viskaalin tilakaupalla. Tilakäynti on ulkona, joten on syytä varautua sään mukaan.

### Ohjelma:

9:00 Vierailu Volterilla (Rytiniementie 1, 91910 [Tuupos](#))  
 10:30 Siirtyminen Viskaaliin omilla autoilla, Viskaalintie 54, 91510 [Muhos](#), ajoaika n. 45 min  
 11:30 aloitus Viskaalissa, esitykset ja esittely ulkona  
 14:00 Vierailu loppuu

Tilaisuuden järjestää [BRANCHES](#) -hanke

### Lisätietoja:

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 puh. 040 671 9516

Jyrki Raitila  
[jyrki.raitila@vtt.fi](mailto:jyrki.raitila@vtt.fi)  
 puh. 040 7195117

**Picture:** The invitation letter to the event which was shared through the Finnish BRANCHES channels.

### C. Annex 3. – Showcase day report “Showcase day Poland”

#### Name of the Showcase Day:

Good agricultural practices – workshop and study visit

#### Description of the Showcase Day:

The final national workshop and the Showcase day entitled: “Good agricultural practices – workshop and study visit” was organized on 06.09.2023 by The Warmia and Mazury Agricultural Advisory Center located in Olsztyn and The Centre for Bioeconomy and Renewable Energies (CBEO) of the University of Warmia and Mazury and NBN-PI, in a hybrid form.

The following subjects were presented and discussed:

- Innovative technology for the energy wood supply chain – a focus on young or unmanaged thinning stands typical in Finnish forestry conditions
- A complete pruning residue value chain for Southern Italy
- Biomass logistics from self-propagating trees and shrubs
- Good agricultural practices on application of technologies in bioeconomy of rural areas – technologies
- Strategy for development of bioeconomy in Warmia and Mazury region, biogas plant case
- Results on prioritization of enabling factors for the regional bioeconomy
- Biogas production from raw materials such as manure and self-grown corn from own pig farm and from other local farmers – study visit

Showcase day type  online  physical  hybrid  other, please specify:

Showcase day organization  stand-alone  
 in connection with another event (xxx)  
 other (please specify \_\_\_\_\_.)

BRANCHES working package:  WP1  WP2  WP3  WP4  
 other, please specify: \_\_\_\_\_



**Goal of the Showcase Day:**

The main goals of the workshop and Showcase day were:

- To show three practices demonstrated during the showcase days in Finland, Italy and Poland that use similar advanced technology for different activities in rural areas, i.e. in energy wood supply chain in Finnish forestry, for pruning residue value chain in Italian olive groves and to present biomass logistics related to areas with self-propagating trees and shrubs in Poland
- To summarize the agricultural practices collected in the Polish Practice Abstracts (PAs)
- To provide information on development of Polish bioeconomy network
- To present a strategy for development of bioeconomy in the Warmia and Mazury region (as a result of discussion on the previous national workshop).

The event concluded with a study field trip to BIOGAL – a demonstration on biogas production from raw materials such as manure and self-grown corn from own pig farm and from other local farmers.

**Place & region of Showcase Day:**

Olsztyn & Boleszyn, Poland

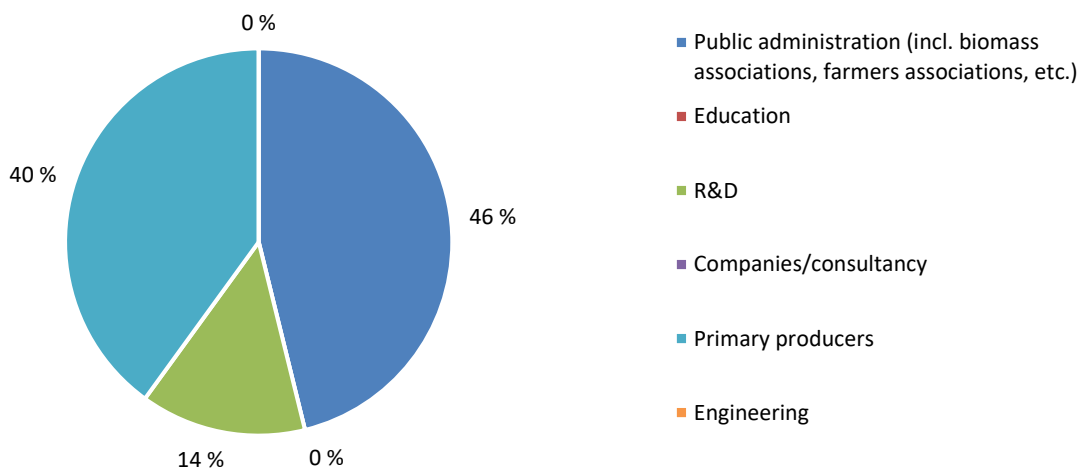
**Date of Showcase Day:** Wednesday 6<sup>th</sup> September 2023

**Organizers:**



**Number of attendees:** 65

**Profile of Polish Showcase Day participants**



Audience breakdown	Companies	0
(n° of attendees)	Public Agencies	30
	Primary producers	26
	Engineering	0
	R&D	9
	Other	0

#### **Moderator's summary of practitioners' feedback:**

The first session focused on the international synergy effect of comparison between the Finnish, Italian and Polish good agricultural practices related to large scale residual biomass utilization. Later session focused on good agricultural practices on application of technologies in bioeconomy of rural areas from which value chains and technologies were presented, followed by Lithuanian-Polish partner presentation on using fast-growing energy plants for biofuel and emerging problems in Lithuania. The workshop part was summarized by the presentation on the strategy for development of bioeconomy in Warmia and Mazury region focusing on the biogas plant case and on the results on prioritization of enabling factors for the regional bioeconomy.

The Showcase day event concluded with a study field trip to BIOGAL – a demonstration on biogas production from raw materials such as manure and self-grown corn from own pig farm and from other local farmers.

The Polish network (NTN) is quite efficient in connecting actors from different sectors of bioeconomy during the seminars, workshops and showcase days that allow them to share their knowledge and experience and give access to the newest innovations and good practices. During these events, stakeholders can identify and discuss strengths and weaknesses of the existing practices and technologies.

**Photos:**

## Presentation of good agricultural practices – workshop and study visit 06.09.2023

BY MICHAŁ PYZEL · 2023-07-19



On behalf of the organizers: **The University of Warmia and Mazury in Olsztyn** and **The Warmia and Mazury Agricultural Advisory Center Located in Olsztyn**, we cordially invite you to join us during our event:

Presentation of good agricultural practices – workshop and study visit which will take place **September 6, 2023** in Olsztyn and in Boleszyn

The first part will be “Good agricultural practices – technologies, value chains, policies” workshop (in-person and on-line participation) which will be held September, 2023 in WMODR (10-356 Olsztyn, ul. Jagiellońska 91).

Next, also September 6, 2023 a study visit to **BIOGAL** ecological biogas plant will be held.

The event is held within the scope of BRANCHES (Boosting Rural Bioeconomy Networks following multi-actor approaches) – the EU-funded research project.

The event is addressed to practitioners running their business on rural areas, economic activities, associations, R&D units and local self government.

The aim of the event is to disseminate knowledge on local innovative solutions in the field of biomass value chains and renewable energy sources of high implementation potential on rural areas. The meeting will also facilitate determination of drivers and barriers of innovations implementation on rural areas.

The workshop part is hybrid, with both in-person and on-line participation. We particularly encourage you to join us in person and if this is not possible – to participate on-line. Regardless of form, please register your participation in the event.

[Event registration form](#)

**Attention!** Study visit attendance list is limited – order of registration decides.

We also encourage you to join National BIOECONOMY Network Poland – NBN PL established within the scope of BRANCHES project: <http://nbnpl.uwm.edu.pl/>

**NBN PL** aims at cooperation with entities implementing innovative activities on rural areas, promotion and dissemination of best practices in the field of bioeconomy implemented on rural areas through:

- Supporting knowledge transfer and encouraging innovations
- Sharing knowledge
- Networking and facilitating engagement as well as increasing project opportunities for participants

Download:

Agenda

[Presentation of good agricultural practices 28-29.03.2023 - video](#)

[Presentation of good agricultural practices 06.09.2023 - video](#)

**Picture:** The invitation letter to the event.



Picture: Workshop introduction.



Picture: International guests during workshop.



**Picture:** Study field trip to Biogal, Boleszyn.



**Picture:** Study field trip to Biogal, Boleszyn once again.



BRANCHES: Boosting rural bioeconomy networks following multi-actors approaches  
 Dobre praktyki rolnicze – technologie, polityki  
 (Good agricultural practices – technologies, policies)  
 Olsztyn, 6 września 2023

Lista obecności

Lp.	Imię i nazwisko	Instytucja/branża	Podpis
1	Tomasz Władysław	ULM	
2	VITO PIETRELLI	ITABIA	
3	Ewelina Olbajska	ULM	
4	Tomasz Byskupa	Rolnik	
5	Krzysztof Komar	Rolnik	
6	Dariusz Kąkol		
7	Kamil Górnik	Usługi Rolnicze	
8	Dawid Fduwisk	Usługi Rolnicze	
9	Aneta Wilczyńska	Rolnik	
10	Anna Malczak	Poradca	
11	Budka Olga	Poradca	
12	Edyta Jastrzębska	HMOPR	
13	Maria Chojas	Rolnik	
14	Małgorzata Łankoszka	Rolnik	
15	Martyna Łabaworska	Rolnik	
16	Anna Fajfaj - Kozłowska	HMOPR	

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 10100375



17	Marii Knygda	UWM	
18	Szymon Kopyński	ZD SZYMA	
19	Młd Jurek	Gmin Lina	
20	Artur Janębek	Gm Lubawa	
21	Anna Rembowska	Gm. Janowiec Kosz.	
22	Tajski Jan	g. Janowiec Kosz.	
23	Claraana Chakiora	Nana Wios Drosy	
24	Mikołaj Kubiński	ZD TRON	
25	Silvan Anna	ZD Białowieża	
26	Algirdas Jasinskis	VMIU AA, Lithuania	
27	Stanisław Dolik	HMOPR	
28	Urode Sieducha	Rolnik	
29	Justyna Biedańska	USH	
30	ANASTAS KISZCZYŃSKI	LECHOWO	
31	Michał Pyskar	ULM	
32	Anna Kubińska	NML II HMOPR	
33	Paweł Pura	HMOPR	
34	Piotr Jędrzejowski	Rolnik	
35	Marek Śliwka	Rolnik	
36	Juliana Drobny	Rolnik	
37	Przemysław Kowalski	W.G. Tolococh	



BRANCHES: Boosting rural bioeconomy networks following multi-actors approaches  
 Dobre praktyki rolnicze – technologie, polityki  
 (Good agricultural practices – technologies, policies)  
 Olsztyn, 6 września 2023

Lista obecności

Lp.	Imię i nazwisko	Instytucja/branża	Podpis
38	Adam Twardy	Rolnik	
39	Krzysztof Kubiński	rolnik	
40	Mikołaj Kubiński	rolnik	
41	Mateusz Paweł	rolnik	
42	Anna Pura	HMOPR	
43	Anna Kubińska	ULM	
44	Marta Dudek	HMOPR	

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 10100375

Picture: Attendance list.

Imię i Nazwisko (First Name and Surname)	E-mail	Nazwa Firmy/Instytucji/Organizacji (Institution Name)	Branża (Stakeholder category)	Skąd dowiedzieli się Państwo o wydarzeniu? (How did you find out about this event?)
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**Picture:** Attendance list (online).

#### D. Annex 4. – Showcase day report “Showcase day Spain”

##### Name of the Showcase Day:

Vineyards pruning valorisation for energy purposes as local strategy to promote circular economy

##### Description of the Showcase Day:

The Showcase was organized in two separate dates.

On the one hand the video recording needed to take place during the pre-pruning period, therefore it was performed the last week of February 2022 (end of the pre-pruning season). For this activity all actors involved in the value chain were contacted to record all steps of the value chain and compile valuable information (technical and economic characteristics) of this case.

The steps that were recorded included the collection of the shoots that have been disposed by the farmer in between rows and then pilling at the field side next to the road. Loading in the truck that transports the biomass to the storage site. Recording at the storage site which includes the area where the shoots are stored, the chipping process and the storage under shed of the chipped material. Also, the unloading of the chipped material into the silo and the combustion equipment was recorded. Additionally, representatives from the entities engaged in the value chain were interviewed to summarize the main findings and most relevant barriers that could be key to enhance the replicability of this innovative practice.

On the other hand, once the covid situation improved and events organization was again possible and taking advantage of the workshop organized in the framework of the FIMA fair to present different innovative practices associated to WP2 and WP3, this innovation was also presented. The FIMA fair is a very important event not only at national level but also European level in which large number of international exhibitors attend the fair to showcase their latest products and developments in the field of agricultural equipment that takes place biennially.

In this regard, and previous to the workshop, several specific contacts were made to invite stakeholders that have commented their interest to have more information regarding this value chain or regions that account with a very high potential to replicate this initiative. Questions were collected and transferred to the speaker to address these issues during the presentation. Nevertheless, after the presentation there was time allocated to solve doubts regarding the value chain and how they managed to successfully implement it. Additionally, during the round table organized different key aspects were discussed to provide hints on how this innovative practice could be replicated and how to overcome possible barriers. Additionally, it was mentioned that the video recorded will be uploaded in the corresponding section of the network webpage and project webpage after the event.



Showcase day type  online  physical  hybrid  
 other, please specify: Two separate events (see above)

Showcase day organization  stand-alone  
 in connection with another event (FIMA)  
 other

BRANCHES working package:  WP1  WP2  WP3  WP4  
 other, please specify: \_\_\_\_\_

### Goal of the Showcase Day:

The goal of the Showcase Day was to demonstrate the feasibility of the value chain based on vineyard shoots collected during the pre-pruning operation of the vineyard and valorization for energy purposes.

### Place & region of Showcase Day:

- 1) The video was recorded on site Vilafranca del Penedès and surrounding area (fields from which the vineyard shoots are collected)
- 2) The workshop was organized in the framework of the FIMA fair at the end of April 2022 once the Covid situation was improved enough to organize an event.

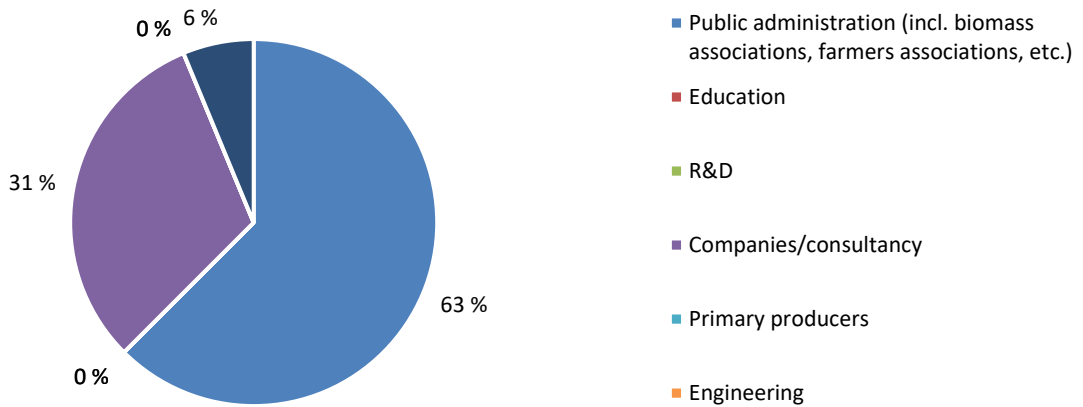
**Date of Showcase Day:** The video was recorded in 23<sup>rd</sup> -24<sup>th</sup> February 2022 according to the collection period and the event was organized the 27<sup>th</sup> April 2022.

### Organizers:



**Number of attendees:** 16 + organizers

**Profile of Spanish Showcase Day participants**



Audience breakdown (n° of attendees)	Category	Count
	Companies/Consultancy	5
	Public Administration	10
	Primary Producers	0
	R&D	0
	Education	0
	Other	1

**Moderator’s summary of practitioners’ feedback:**

The most relevant aspects that were highlighted involved the entrepreneur’s involvement and willingness, that would act as driver to mobilize the implementation of the initiative and the public sector. Is important therefore to have entrepreneurs in the region interested to implement this type of initiative.

Another relevant aspect highlighted concerned the need for and importance of cooperation among private and public sectors. Making these sectors work together will turn in a successful implementation, however if they do not cooperate it is really challenging to successfully implement it. If both sectors are committed and aligned barriers can be overcome.

A third aspect was linked to the assessment of the available resources in the specific region. Of course, this type of value chain based on vineyard shoots does not make sense in all regions. Each region needs to assess what are the potential biomass resources available in the region. In this sense, the first starting point for local authorities is to realize and give the right answer to the question: what can I do in my territory? (since each territory has different characteristics). This must be the starting point.

In order to promote and implement the initiative it is key to reach an alignment among all actors involved in the value chain. In this sense their experience is that it is time consuming and sometimes difficult to mobilize them so effort should be allocated in this sense.

When designing the project, it is essential to set realistic objectives in the short and midterm based on the assessment previously mentioned. This aspect is closely related to the importance of the economic suitability of the initiative that should not depend on subsidies in the long term and should look for economic profitability on its own.

Also, scenarios should be analyzed. For instance, the vineyard pruning yield widely varies among dry and rainy years (0.7 to 1.2 t/ha) which of course greatly affects the economic profitability of the value chain and has been difficult to make it work with low biomass yields. In this regard, the importance to integrate in the working team with professional with the specific expertise required was pointed as essential to correctly dimension the value chain and assess its suitability and profitability.

It was also emphasized that the economic viability of this value chain needs that the farmers participate in the economics, paying a small fee per hectare, in order that a third company performs the service. It is crucial they understand they are not paying, but saving money, as the fee is much lower in cost than the costs incurred to much or to dispose the pruning in open fires.

As final comment, one of the participants also propose to work on the legislation to allow the same type of distribution infrastructures (natural gas through pipe) with renewable resources.

Images of the value chain:







**Images:**



**Picture:** Recording video



**Picture:** Recording video



Picture: The value chain and technology was presented in a workshop.



## E. Annex 5. – Showcase day Report “Showcase day Italy”

### Description of the Showcase Day:

The Showcase day was organized by CNR and Itabia, with the purpose of demonstrating the entire value chain of microchips used as natural mulch for weed control.

The Showcase day therefore included three stops at as many nodes in the mentioned value chain. The journey began at the Vannucci Nursery - where the microchips are used – and proceeded upstream to reach the centralized sorting yard where the wood is separated and processed according to quality, then the landing where it gets delivered by a cable yarder from the forest, where the wood grows in the form of a healthy chestnut coppice.

Below the detailed programme:

08:00 Depart from Florence

09:30 Arrival at Vannucci Piante main centre

10:30 Depart from Vannucci Piante main centre (after quick refreshment and bathroom stop)

10:45 Arrival at Vannucci Piante Nursery 300

11:30 Depart from Vannucci Piante Nursery 300

12:15 Arrival at Centralized sorting yard – Pontepetri

14:00 Depart from Centralized sorting yard – Pontepetri (after lunch and bathroom stop)

14:30 Arrival at Mountain harvesting – Macchia Antonini (yarder + processor)

16:00 Leave Mountain harvesting operation – Macchia Antonini

17:15 Arrival in Florence

**Stop 1 – Vannucci Piante.** Vannucci is one of the largest and most important plant nurseries in Europe. Established in 1938 by Vannino Vannucci Sr. on a plot that measured less than a hectare, this nursery has become a global company that produces over 3000 plant varieties, for a total surface of 590 ha. Vannucci Piante operates under a double environmental and ethics certification scheme. For that reason, Vannucci has dramatically reduced chemical inputs by replacing herbicides with chip mulch. Weed control is now obtained by applying a thick layer of microchips to the top of each pot, in order to build a durable and effective mechanical barrier to weed growth.

**Stop 2 – Centralized sort yard.** This is owned and managed by Orlandini Agricola Forestale, a small privately-owned forest company, who has pioneered both cable yarding and chipping. Orlandini were among the first to resort to whole-tree chipping, which has now grown into a very common business model all around Tuscany, and beyond. As competition became fiercer, Orlandini realized that once again you have to start a new game if you want to stay ahead: therefore, he changed his fuel chip business into an innovative microchip business, geared to produce ecological mulch. Being the first to offer such a product, Orlandini acquired the leading customer in the Province – Vannucci Piante. While tops and branches are too bulky for efficient transportation and they are chipped at the forest landing whenever possible, logs are moved to the sort yard and chipped after air drying. Orlandini separates different log sorts by size and species, and they have their special recipes for mixing those woody ingredients to obtain the ideal product specifically suited to each individual user. By introducing chestnut in the mix, they increase the proportion of tannin, in order to obtain better durability for the mulch.

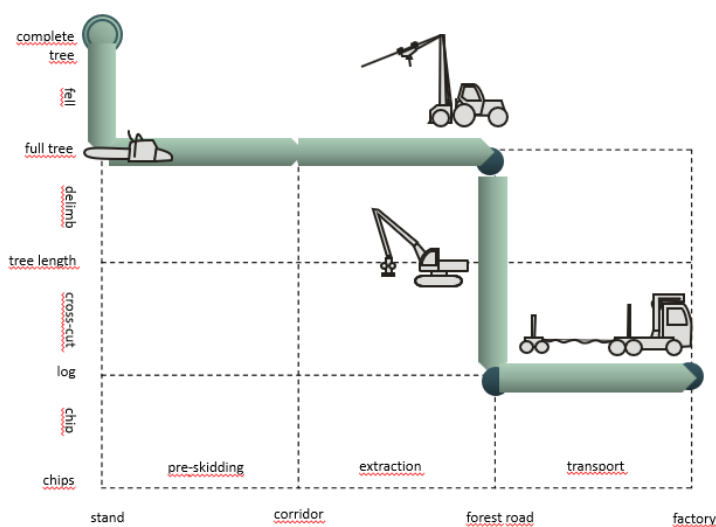
**Stop 3 – Forest site.** Few kilometers away was a mixed chestnut coppice, being harvested by Santini Legnami, a small-scale logging enterprise owned and managed by Mr. L. Santini. Mr. Santini currently runs two main crews. He learned yarding from Mr. Orlandini, but then he added his own innovation to

the new trade by introducing a processor, in order to speed up production and alleviate the burden on the chaser. After careful study, Mr. Santini selected the most suitable machine for the wood size and type available in the area. His light Arbro stroke processor is mounted on a small tracked excavator and can easily deal with the most branchy wood, while still being light and cheap enough to be within reach for most small-scale loggers. Its small size and light construction is not a synonym for poor durability, since the same machine has now been in operation for many years. If you give a well-designed, skillfully built machine to a professional logger, durability is not an issue. Such an affordable machine allows a small company to spare enough capital to purchase additional equipment and increase its task-versatility. Besides his tower yarder and processor, Santini also owns forwarding trailers, spare tractors and a mobile chipper, for reaching those constrained landings that are outside the reach of a heavy industrial machine or completing those urgent jobs, when an industrial chipping contractor is not available.

The harvesting operation visited during the Showcase day included the following work steps:

1. Motor-manual felling by chainsaw
2. Dragging to the skyline corridor and extracting to the landing with a light tower yarder
3. Mechanized processing with a light excavator-based processor

When the site is accessible by truck, logs are loaded directly at the yarder pad and taken to the mill. Otherwise, a farm tractor equipped with a forwarding trailer will move them from the yarder pad to a proper roadside landing. Below a schematic description of the harvesting process:



The Showcase day was attended by 130 participants, from all over the world. During the bus trip back to Florence, CNR and Itabia conducted quick informal interviews with members of the audience, recording feedback from 35 of them.

Showcase day type  online  physical  hybrid  
 other, please specify: \_\_\_\_\_

Showcase day organization  stand-alone  
 in connection with another event (FORMEC/FEC 2023)  
 other (please specify \_\_\_\_\_.)

BRANCHES working package:  WP1  WP2  WP3  WP4  
 other, please specify: \_\_\_\_\_

### Goal of the Showcase Day:

The goal of the Showcase Day was to demonstrate an innovative and effective process for turning low-quality forest materials into a high-value product, which can effectively replace non-renewable toxic chemicals. The new value chain also maintains a larger share of the added value to the rural area where it is installed, contributing to economic and social development.

In particular, the Showcase Day tool participants along the whole conversion process, from forest to final products used by the nursery. In particular, the visit included a visit to the new Nursery 300. This is a new project launched by Vannucci Piante in 2021 on a pilot site measuring 15 ha, located at La Ferruccia, just outside Pistoia. The innovation is radical (no pun intended!). Even if the new nursery is designed for potted-plant production, its surface has received minimum treatment to maximize water infiltration rate during rain events. Pots are lined on bands of permeable geotextile fabric, which only cover the area right under the potted-plant lines. Access and service roads are only metaled on the two 40 cm-wide strips corresponding to the vehicle wheel tracks. These measures maintain full soil permeability to the point where no surge ponds are necessary. And that is only the start...Plant supports are made of locally sourced chestnut posts, which receive no preservative treatment, given the high natural durability of untreated chestnut wood. Chestnut also provides the microchips used for weed control. To that purpose, a thick layer of microchips is applied to the top of each pot, constituting a durable and effective mechanical barrier to weed growth. With that measure alone, herbicide use has been cut by over 50%, while creating a new market for local forest companies, such as Orlandini, a leading agroforestry business just few kilometers uphill. Vannucci Piante currently uses 8000 m<sup>3</sup> of microchips per year, but that amount is rapidly expanding, as the new weed control technique becomes generalized: microchip is far superior in environmental, social and financial terms.

This a new bioeconomy chain, designed to: significantly increase the value of local forest resources, remove toxic chemical from traditional agriculture and maintain most of the benefits within the local community, in a rural mountain area where business opportunities are limited.

### Place & region of Showcase Day:

Quarrata (Pistoia), Central Italy

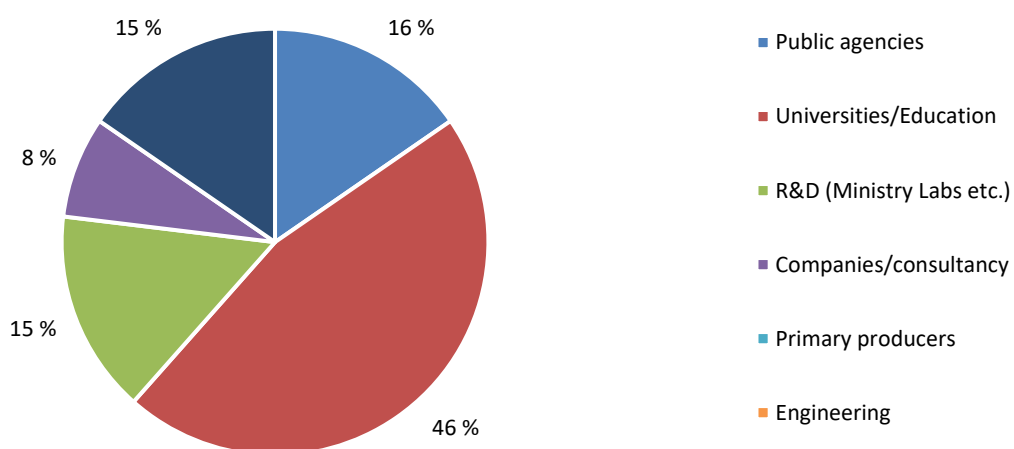
**Date of Showcase Day:** Tuesday 19<sup>th</sup> September 2023

**Organizers:**

CNR IBE - <https://www.ibe.cnr.it/en/>  
 ITABIA - <http://www.itabia.it/>  
 Vannucci Piante - <https://www.vannucciante.it/en/>  
 Orlandini - <https://www.legnadaardere.net/>  
 Santini - <https://www.facebook.com/santinilambertoaz.agr.forestale/>

**Number of attendees:** 130

**Profile of Italian Showcase Day participants**



Audience breakdown (n° of attendees)	Category	Count
	Companies	10
	Public Agencies	20
	Universities/Education	60
	R&D (Ministry Labs etc.)	20
	Other	20 (Associations, farmers, stakeholders etc.)

**Moderator’s summary of practitioners’ feedback:**

An informal survey was conducted among the public attending the demonstrations: overall 23 interviews were released.

Generally, respondents found it very interesting to see such a large nursery (and the other nurseries around), which is a very important local employer and economy driver. They appreciated the direct connection between horticulture and forestry, which may help broadening one’s mindset.

Another subject of interest was the use of a yarder with relatively small trees, on a slope that could have been harvested with ground-based systems – although with some difficulty. The capacity to apply cable yarding to borderline conditions (for tree size and slope gradient) is crucial in minimizing site impacts.

Some delegates also reported that microchips are occasionally used as mulch in their countries, but not on the industrial scale that was witnessed during the showcase day.

Most appreciated the professional management of all the operations visited on occasion of the Showcase Day, as well as the strong experience of the operators. The use of low-cost machinery was also noted and favorably assessed, and so was the ability to maintain profitability when dealing with small sales and light removal, both of which represent severe challenges to financial sustainability.

**Images:**

**Picture:** Nursery 300 – the new pilot nursery installed by Vannucci Piante in Ferruccio (PT).



**Picture:** Turning chestnut residue logs into microchip mulch.



**Picture:** A pile of microchip mulch near the potting station at the Vannucci Piante main nursery.



**Picture:** Microchip mulch spread as a top layer on plant pots, to prevent or suppress weed growth.



**Picture:** Showcase participants.

## F. Annex 5. – Showcase day report “Showcase day Germany”

### Name of the Showcase Day:

From hemp to composite material  
Vom Hanf zum Composite-Material

### Description of the Showcase Day:

The Showcase for Germany was organized between DBFZ and the start-up FUSE Composites to depict the innovative processing of hemp for bio-based composites, in particular the process achieved by FUSE to produce their UD-Tape. The Showcase was organized as a one-day event on the 11.10.2023. The whole process was depicted during the day, starting with the visit to the hemp fields, in the town of Mausitz, close to the city of Leipzig and managed by a regional agriculture cooperative (Agrarprodukte Kitzen e.G. SM). The second part of the process was presented in the Fraunhofer-Pilot Plant Center for Polymer Synthesis and Processing (PAZ) in Schkopau, where the production process for the final composite was detailed. At the end of the day, the showcase video produced in the framework of BRANCHES was presented to all participants, which summarizes information of the Showcase visit, as well as provides a look into the utilization of the reinforced UD Tapes from FUSE in diverse type of products, such as snowboards.

The participants gained an insight in each step that allows a sustainable and regional production of hemp-based composite materials. The CEO of FUSE (Kay Klotzig) accompanied the whole visit and explained to the assistants the key aspects to assure the appropriate and necessary characteristics of the plant for their process. This includes the harvesting methods to retrieve a good quality fibre, machinery utilized in the field and other know-how they have acquired working in a strong cooperation with the farmers. We learned that several conditions of the plant influence the functionality of the UD-Tape, therefore it has to fulfil certain requirements that have to be followed closely.

Afterwards, in the Fraunhofer PAZ, the process to weave the natural fibre and combined with other products in order to achieve a resistant, yet light tape with multiple functionalities was described. In this section of the Showcase, attendants had also introductory information about the technological research of Fraunhofer PAZ and type of material analysis and design in which they specialize. The machine used by FUSE is currently located in this installation, until they finalize the manufacturing plant closer to the hemp plantation.

The Showcase Day was organised in German, although in some explanations were delivered in English, with a total of 15 participants, mostly from the region. Three participants were from outside Germany, one from BRANCHES partners and two from a company in Austria.

Showcase day type  online  physical  hybrid  other, please specify:



Showcase day organization  stand-alone  
 in connection with another event  
 other

BRANCHES working package:  WP1  WP2  WP3  WP4  
 other, please specify: \_\_\_\_\_

**Goal of the Showcase Day:**

The goal of the Showcase Day was to demonstrate the innovative and regional processing of hemp for bio-based composites.

**Place & region of Showcase Day:**

Saxony and Saxony-Anhalt, Germany

**Date of Showcase Day:** Wednesday 11<sup>th</sup> October 2023

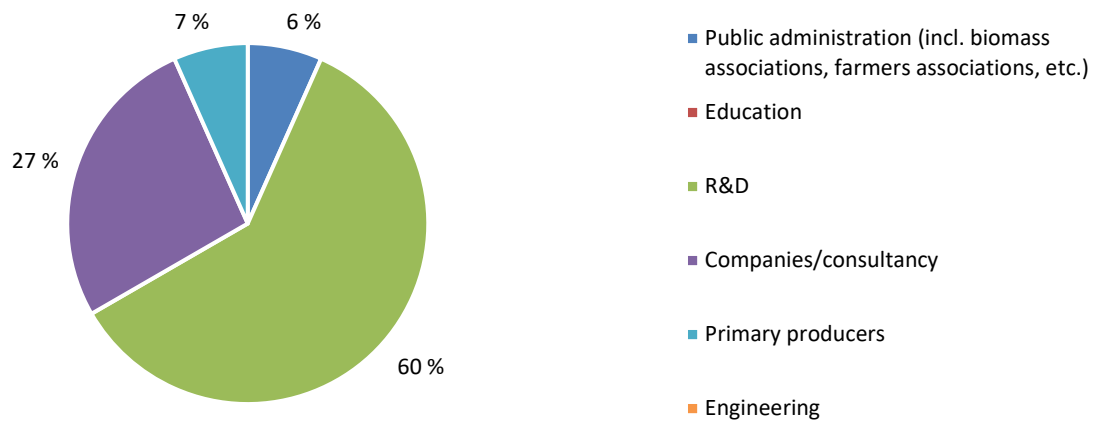
**Organizers:**



DBFZ and FUSE – Composite

**Number of attendees: 15**

**Profile of German Showcase Day participants**



Audience breakdown		
	R&D	9
	Companies	4
(% of attendees)	Cluster	1
	Farmers	1
	Forest owners	0
	Engineering	0
	Students	0
	Other	0

**Moderator’s summary of practitioners’ feedback:**

The showcase started with a brief introduction about the day from Laura García (DBFZ), about the objective of the day. Then in an informal setting and beginning with the hemp plantation, the CEO of FUSE Composite started his presentation about the history of the hemp plantation in Saxony and the current efforts to boost its current utilization. Then, he focalized on the characteristics of the plant, different types of hemp that have been tested for the FUSE UD-Tape, walking around the field and discussing about the required fibre properties and the role of the microorganisms in the soil in aiding this process.

The importance of the height of the plant for fibre length as well as to be able to use the machinery for harvest, which at the moment is not available in Germany as in many other EU countries and has to be brought from Belgium was highlighted.

A special machine is also used to move the hemp already harvested on the field. This is a necessary process (retting process) to build up the fibre development in the plant, which consist of leaving the cut hemp stems in the field to receive rain, sun and more importantly to be enhanced by the soil microorganisms. This allows the cellular tissues and pectins surrounding bast-fibre bundles to rot, facilitating the separation of the fibre from the stem. The explanation continued by looking at different samples of fibre collected, the final UD tape as well as other composite products that can be produced with the reinforcement of hemp.

On the facilities of Fraunhofer-Pilot Plant Center for Polymer Synthesis and Processing (PAZ) in Schkopau, we were not allowed to take pictures. However, the explanation of the Engineer leading the department in charge of composite products was very interesting, with the possibility to look and understand the machinery in use for handling the raw fibres as a preparation step and secondly the machine used for weaving them with other structure forming substances, such as polymers to produce the tapes.

After this tour around the Fraunhofer PAZ installations, and lunch, the participants watched the showcase video recorded at the end of August on the harvest day. In this way, they could also visualize the hemp plantation, machinery used for the harvest, and hear from the second CEO of FUSE Composite the wide areas of application for this product.

A few questions were still asked, about the future activities of FUSE Composite and we returned to Leipzig per Bus.

The agenda of the Showcase day is below:

09:00 – 10:00	<b>Beginning of the visit Agrarprodukte Kitzen e.G. SM (in Mausitz , Zwenkau)</b> <ul style="list-style-type: none"> <li>- Welcoming of the group</li> <li>- Short explanation of the facility</li> <li>- Field excursion: Visit of hemp in retting process and nettle plants</li> <li>- Visit of harvesting and handling machines</li> <li>- Presentation of sample material and possible product applications</li> <li>- Q&amp;A</li> </ul>
11:00 – 12:30	Drive to Schkopau  Lunch
12:30 – 14:00	Fraunhofer PAZ <ul style="list-style-type: none"> <li>- Welcome and tour (40 min)</li> <li>- Stop at UD-Tape-Machine (10 min)</li> <li>- Presentation of two collaborative R&amp;D projects (30 min)</li> <li>- Presentation of the showcase video</li> <li>- Q&amp;A</li> </ul>
14:00 – 15:00	Drive back to Leipzig

**Photos:**



**Picture:** Explanation about hemp plant and plant characteristics.



**Picture:** Explanation about hemp plant and plant characteristics.



**Picture:** Machinery to turn the hemp stems on the field.



**Picture:** Reinforced UD Tapes from FUSE can be used in diverse type of products, such as snowboards.