Alps4GreenC
Novice | News
Feb 2024

Projekt Alps4GreenC, ki ga pod koordinacijo Kemijskega inštituta [KI] izvajajo partnerji iz Slovenije, Avstrije in Italije v okviru programa Interreg Alpine Space, se zaključuje s koncem februarja 2024.

Glavni cilj projektnih aktivnosti je bilo ustvariti **transnacionalno vrednostno verigo biooglja**, ki do sedaj v Alpski regiji še ni obstajala in pokazati potenciale zelenega ogljika za doseganje podnebno-energetske odpornosti območja. Izvedeni so bili trije sklopi projektnih aktivnosti:
1| Izvedba **kampanje množičnega zbiranja ostankov biomase**, ki je bila namenjena tudi osveščanju o projektu in biooglju, čemur so sledila **laboratorijska in pilotna testiranja biomasnih ostankov in proizvodnja biooglja**;
2| Prepoznane deležnike iz vseh treh držav smo umestili na **interaktivni zemljevid**, namenjen povezovanju proizvajalcev, ponudnikov in uporabnikov biooglja;
3| **Oblikovanje političnih priporočil** za izvajanje celovitih predpisov v podporo gospodarski preobrazbi v zeleno biogospodarstvo.

The Alps4GreenC project, which is coordinated by the National Institute of Chemistry [NIC] from Slovenia and implemented by partners from Slovenia, Austria, and Italy as part of the Interreg Alpine Space Programme, ends at the end of February 2024.

The main objective of the project activities was to create a **transnational biochar value chain**, which did not exist in the Alpine Space so far, and to demonstrate the potential of green carbon to achieve climate-energy resilience in the region. Three groups of project activities were carried out:
1| A **crowd-sourcing campaign for biomass residues** was conducted to raise awareness of the project and biochar, followed by **laboratory and pilot tests with biomass residues and biochar production**;
2| Identified stakeholders from all three countries were included in an **interactive map** to connect producers, suppliers, and users of biobased products;
3| **Developed policy recommendations** for the implementation of comprehensive regulations to support the economic transition towards a green bioeconomy.

Interreg Alpine Space | Co-funded by the European Union | Alps4GreenC

Zaključna konferenca projekta Alps4GreenC | Final conference of Alps4GreenC project

25 JAN 2024, BEST GmbH, AT

KARTIRANJE DELEŽNIKOV IN VIROV | MAPPING STAKEHOLDERS & RESOURCES

Projekt Alps4GreenC je razvil **interaktivni zemljevid** za kategorizacijo gospodarskih dejavnosti, povezanih z **dobavnimi verigami biomasnih ostankov v regiji Interreg Alpine Space in Evropi.** Ta celovita metodologija je uporabila statistične podatke Eurostata za identifikacijo in določitev ustreznih podjetij in gospodarskih dejavnosti. Prepoznani so bili deležniki v dobavni verigi, kar je omogočilo razvrščanje gospodarskih dejavnosti na nacionalnih in regionalnih ravneh.

Alps4GreenC project developed an **interactive map** to categorize economic activities related to **biomass residue supply chains across Interreg Alpine Space countries and Europe**. This comprehensive methodology utilized statistical data from Eurostat to identify and weigh relevant companies and economic activities. Stakeholders in the supply chain were recognized, facilitating the classification of economic activities at national and regional levels.

Alps4GreenC INTERACTIVE MAP

Diego Rossi [Italian Agroforestry Energy Association - AIEL] predstavlja interaktivni zemljevid Alps4GreenC | presenting the Alps4GreenC interactive map

TESTIRANJE IN PILOTNA PROIZVODNJA ZELENEGA OGLJIKA | PRACTICAL TESTING AND PILOT PRODUCTION OF GREEN CARBON

Projekt Alps4GreenC se je ukvarjal z izrabo ostankov biomase kot surovinskega vira za proizvodnjo biooglja. Za izvedbo laboratorijskih in pilotnih raziskav je bila v vseh treh državah izvedena **kampanja zbiranja trdnih ostankov biomase** (Dec22-Feb23) namenjena različnim proizvajalcem, ki bi želeli ostanke koristno uporabiti. Pozivu se je odzvalo skupno **22 organizacij**, deset iz Italije, osem iz Avstrije in štiri iz

The Alps4GreenC uses biomass residues as a raw material source for biochar production. In order to carry out laboratory and pilot studies, **a crowdsourcing campaign** (Dec22-Feb23) was conducted in all three countries **to collect solid biomass residues** from producers that would like to valorize the residues. A total of **22 organizations** responded to the call, 10 from Italy, eight from Austria, and four from Slovenia. Based

Slovenije. Na podlagi določenih karakteristik ostankov biomase sta projektna partnerja Free University of Bolzano [UNIBZ] in BEST - Bioenergy and Sustainable Technologies GmbH izbrala surovine, primerne za izvedbo **piroliznih oziroma uplinjevalnih postopkov.**

V sklepnih meseceih projekta je bilo deset različnih vrst biomasnih ostankov **testiranih in karakteriziranih** v laboratorijih sodelujočih raziskovalnih centrov, dve vrsti pa sta bili **termokemično pretvorjeni v bioogljе s tehnološkim postopkom uplinjanja oziroma pirolize.**
Kot surovina za pilotno proizvodnjo bioogljа z uplinjanjem so bili izbrani ostanki lesa, ki ga je poškodoval lubadar. Pilotna proizvodnja bioogljа z uplinjanjem je potekala v **laboratoriju za bioenergijo in biogoriva Univerze v Bolzanu -** UNIBZ. Podjetje BEST GmbH je s postopkom pirolize pilotno proizvedlo bioogljе iz ostankov orehovih lupin.

Podrobne analize so potrdile primernost za proizvodnjo bioogljа iz izbranih biomasnih ostankov:

- Orehove lupine [Nussland Gmbh]
- Otrobi (škrob) [AGRANA Research & Innovation Center]
- Presejalni prestrežki pri kompostiranju [Brantner Green Solutions / Brantner Österreich GmbH]
- Pirine lupine [Organic farmer from Lower Austria]
- Obreznine trte [Azienda Agricola Corte Arano]
- Leseni sekanci [Biomass Green Energy SRL]
- Kostanjev les brez taninov [Ledoga]
- Les, ki ga je napadel lubadar [Log-Power]
- Kavne pleve [Barcaffé]
- Rečne naplavine [DEM – Dravske elektrarne Maribor]

Rezultati analiz proizvedenega zelenega ogljika so objavljeni v prosto-dostopnem repozitoriju.

on the identified characteristics of the biomass residues project partners Free University of Bolzano [UNIBZ] and BEST - Bioenergy and Sustainable Technologies GmbH selected the raw materials suitable for the **pyrolysis or gasification processes of biochar**.

In the last month of the project, ten types of biomass residues were **characterized and tested** in the laboratories of the participating research institutions. Two types of residues were **thermochemically converted** into biochar through the **technological process of gasification and pyrolysis**. Wood residues damaged by the bark beetle were selected as feedstock for the gasification pilot tests. The pilot production of biochar by gasification was carried out at the **Bioenergy and Biofuels Laboratory of the University of Bolzano**- UNIBZ. BEST GmbH carried out a pilot production of biochar from walnut shell residues by pyrolysis.

The analyses confirmed the suitability for the production of biochar from selected biomass residues:

- Walnut shells [Nussland Gmbh]
- Bran-starch [AGRANA Research & Innovation Center]
- Compost screenings [Brantner Green Solutions / Brantner Österreich GmbH]
- Spelt husks [Organic farmer from Lower Austria]
- Vine prunings [Azienda Agricola Corte Arano]
- Wood chips from broadleaf forestry sites [Biomass Green Energy SRL]
- Chestnut wood without tannins [Ledoga]
- Wood affected by bark beetle [Log-Power]
- Coffee chafs [Barcaffé]
- River woody debris [DEM – Dravske elektrarne Maribor]

The performances of produced green carbon are presented in an open-access platform repository.

PROSTO-DOSTOPNI REPOZITORIJ | OPEN-ACCESS PLATFORM REPOSITORY

Biooglje proizvedeno iz izbranih biomasnih ostankov | Biochar produced from selected biomass residues

PRILOŽNOSTI PRETVORBE BIOMASE: Analiza konteksta & vrzeli | BIOMASS CONVERSION OPPORTUNITIES: Context & Gap Analyis

Kaj je potrebno za povečanje obsega proizvodnje biooglja? Kaj je potrebno za promocijo biooglja kot podnebju prijazne alternative fosilnim gorivom ali gnojilom? V okviru analize kontekstov in vrzeli je projektni partner Štajerska gospodarska zbornica [ŠGZ] analiziral pravni okvir za uporabo biomase ter nacionalnim in regionalnim organom podal predloge za izboljšave (npr. sheme podpore). Ocenjene so bile tudi priložnosti in ovire za pretvorbo biomase v Italiji, Avstriji in Sloveniji, pri čemer se je osredotočil na oskrbo z zelenim ogljikom. Pripravljeno je bilo Pismo podpore na področju proizvodnje in uporabe biooglja za bolj trajnostno prihodnost Alpske regije.

Politična priporočila so bila deležnikom predstavljena na nacionalnih delavnicah.

What is needed to increase biochar production volumes and promote biochar as a climate-friendly alternative to fossil fuels or fertilizers? As part of the context and gap analysis, the project partner Chamber of Commerce and Industry of Štajerska [CCIS] analysed the legal framework for biomass and provided proposals for improvements (e.g. support schemes) to the national and regional authorities. It also assessed the opportunities and barriers for biomass conversion in Italy, Austria and Slovenia, focussing on the supply of green carbon. A Letter of Interest was prepared to gain support for the implementation of the recommendations to promote the use of biochar and thus foster a more sustainable future in the Interreg Alpine Space region.

Policy recommendations were disseminated at national workshops.

ZAKLJUČNA KONFERENCA | FINAL CONFERENCE Alps4GreenC PROJECT

Wieselburg, Austria

Na zaključni konferenci Alps4GreenC v Wieselburgu v Avstriji so bili predstavljeni doseženi projektni rezultati. Dogodek je gostil projektni partner BEST GmbH in organiziral BioBASE GmbH.

Dan je bil namenjen številnim temam, med drugim predstavitvi rezultatov projekta s strani vseh partnerjev, nagovoru skrbnika pogodbe pri **skupnem sekretariatu** Programa Interreg Alpine Space **Rainerja Steindlerja** ter predstavitvam podjetij **Sonnenerde, NAWARO ENERGIE Betrieb GmbH** in številnih drugih. **Slovenski veleposlanik v Avstriji Aleksander Geržina**, je spregovoril o pomenu regionalnega sodelovanja pri pobudah krožnega gospodarstva in razvoju zelenih tehnologij. **Florian Kamleitner iz podjetja Bioeconomy Austria** je govoril o pomenu biooglja za biogospodarstvo, **Josef Galdberger z zveznega ministrstva za podnebje** pa je predstavil avstrijsko strategijo krožnega gospodarstva. **V okviru dogodka je potekala tudi razprava z deležniki na temo političnih priporočil Alps4GreenC.**

Deležnikom iz različnih sektorjev so se predstavila podjetja, ki so sodelovala v kampanji množičnega zbiranja biomasnih ostankov (Nussland, Brantner, Karl Brader, Agrana in Barcaffe), vsi pa so prejeli tudi priznanja za svoje prispeve k projektu Alps4GreenC.

At the final conference in Wieselburg, Austria, the Alps4GreenC project presented the results achieved. The project partner BEST GmbH hosted the final conference and BioBASE_GmbH organised the event.

The day was dedicated to a series of sessions, including the presentation of the project results by all project partners, a message from the **project officer Rainer Steindler** from Join Secretariat Interreg Alpine Space; and presentations by **Sonnenerde**, **NAWARO ENERGIE Betrieb GmbH** and many others. The **Slovenian Ambassador in Austria, Mr Aleksander Geržina,** spoke about the importance of regional cooperation in circular economy initiatives and the development of green technologies. **Florian Kamleitner from Bioeconomy Austria** spoke about the importance of biochar for the bioeconomy and **Josef Galdberger from the Federal Ministry for Climate** presented the Austrian circular economy strategy. **The event also included a discussion with stakeholders on the topic of the Alps4GreenC Policy Recommendations.**

The companies involved in the crowdsourcing campaign (Nussland, Brantner, Karl Brader, Agrana and Barcaffe) presented themselves to the participants from different sectors, and all received awards for their contributions to the Alps4GreenC project.

Zaključna konferenca Alps4GreenC | Final conference of Alps4GreenC project

25 JAN 2024, BEST GmbH, AT

Dan prej so slovenski in italijanski predstavniki obiskali podjetje Sonnenerde GmbH - svetilnik inovacij z novim, desetkrat večjim proizvodnim obratom, ki naj bi letno proizvedel 2.000 ton biooglja. **Gerald Dunst**, ki je znan po svojem inovativnem postopku proizvodnje biooglja, nas je sprejel in popeljal na informativni ogled svojih proizvodnih obratov. Obisk smo nadaljevali z

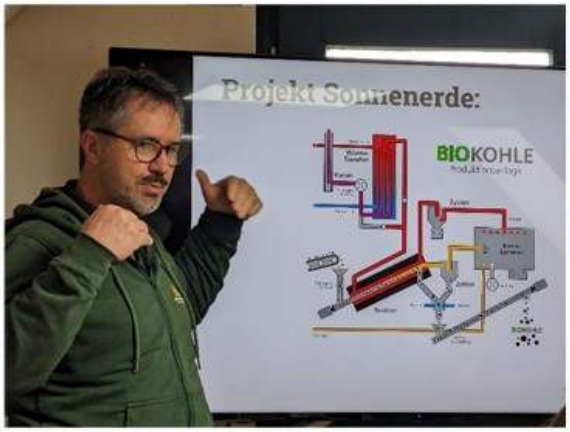
The day before, the Slovenian and Italian partner team visited Sonnenerde GmbH — a beacon of innovation with a new, 10 times larger production plant that is expected to produce 2,000 tonnes of biochar annually. **Gerald Dunst**, who is known for his innovative charring process, welcomed us and gave us an informative tour of his production facilities. The visit continued

ogledom laboratorija GreenCarbon v podjetju BEST GmbH.

Zahvaljujemo se **Bartu Stegemanu iz Climate-KIC**, **Barbari Čeh iz Inštituta za hmeljarstvo in pivovarstvo Slovenije**, **Iliji Gasanu Osojniku Črnivcu iz Kemijskega inštituta**, **Tei Knap iz podjetja Barcaffè** in **Mihi Škrokovu iz podjetja ANTEJA ECG** za njihovo aktivno sodelovanje!

with a tour of the GreenCarbon Lab at BEST GmbH.

Many thanks to **Bart Stegeman from Climate-KIC, Barbara Čeh from the Slovenian Institute for Hop Research and Brewing, Ilja Gasan Osojnik Črnivec from Kemijski inštitut - National Institute of Chemistry, Tea Knap from Barcaffè, Miha Škrokov from ANTEJA ECG** for their active participation!



Strokovna ekskurzija Alps4GreenC | Professional tour Alps4GreenC

24 JAN 2024, Sonnenerde GmbH and BEST GmbH, AT

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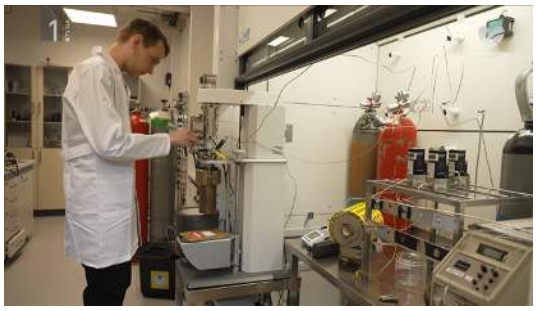
VEČ O PROJEKTU | MORE ABOUT THE PROJECT



Dr. Jure Voglar o projektu Alps4GreenC v oddaji Ljudje in zemlja na RTV Slovenija v okviru projekta Zelena kohezija za mlade (od 11:14 min)

Dr. Jure Voglar on the Alps4GreenC project in Ljudje in zemlja on RTV Slovenia as part of the Green Cohesion for Youth project (from 11:14 min) >>>

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