Interreg CENTRAL EUROPE
European Union European Regional Development Fund
CHAIN REACTIONS

WPT4
D.T4.1.17

Industrial innovation workshop for the Energy and Environment sector in the region of Styria (SI)

Version 1
9.2021

Project information	
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1 INTRODUCTION

Following the regional IGAs' actions of the support and implementation of transnational pilots aiming at supporting value chain innovation (WPT3) and establishment of transnational networks of innovations stakeholders as the kick-off activity to develop transregional innovation networks and agendas (WPT4) in selected industrial sectors (WPT4), the main activity of project partners is to regionally contribute to the project outputs O.T4.1 Thematic industrial innovation roadmaps (TIIR) and O.T4.2 Thematic innovation agendas (TIIA).

For the purposes of TIIR and TIIA development regional analyses for defined priority target sectors will be elaborated and presented (discussed) at the integral regional workshop, with the main objective to collect relevant inputs for elaboration of sectoral TIIRs and TIIAs. Each of the TIIR shall be turned into TIIA, which provide an overview of the developments and innovation support activities necessary on regional as well as transnational level in order to enable the developments identified in the roadmaps to happen in the project regions and thus contribute to increase their industrial leadership in the selected sectors.

2 WORKSHOP SUMMARY

Ref.:	☐	Meeting / workshop	☐	WPT2
	☒	Online meeting / workshop	☐	WPT3
	☐	Other	☒	WPT4
Date:	27.05.2021			
Place:	Online, MSTeams			
Attachments:	Screenshots			

2.1 Agenda

The agenda of the workshop is as follows:

- Presentation of Chain Reaction project
- How to reach progress?
- Who is who in the region and beyond?
- DIH online HUB, the online platform
- Joint development of possible project approaches
- Next steps

A single event was organised, with 3 separate WS sessions that took place on May 27th, 2021.

2.2 Summary of the event

Short introduction of the priority sector status in the region & the WS purpose.

General trends and developments in the field of energy and environment are highly important to the Styria region. The technologies that aid implementing the energy transition and boost efficient use and resource management are foreseen to become drivers of future change.

In addition, regional advantages, challenges, resources, competences and ongoing activities upon which future development can be based were highlighted during workshops.

The key for future Smart City projects, including the integration of e-mobility, are already set on the declarative level, but regional authorities supporting the project, with other stakeholders implementing pilot activities further developing specific segments. However, the independent implementation of Smart City activities is still lagging behind. Especially small and medium-sized enterprises (SMEs) and other organisations provide innovative technology and technologies, knowledge and tools for implementation of Smart City.

2.2.1 WS1: Identifying breakthrough opportunities for progress in the sector for energy and environment

Within Styria and also in a broader Slovenian context, we have identified that a transition towards smart cities has the highest potential of providing breakthrough opportunities for both energy and environment.

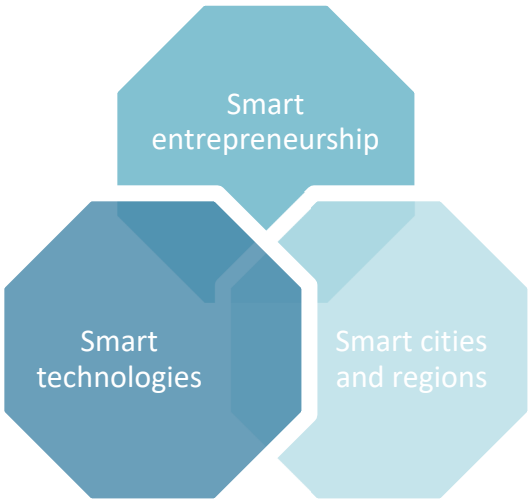
Furthermore, the following areas should be especially focused upon:

- Circular economy,
- E-mobility,
- Energy efficiency, and
- Digitalisation.

AREA	OPPORTUNITIES
Circular economy	Waste management: waste with potential to be reused as a resource. Waste reduction: design that presupposes minimum waste created at the end of product lifecycle.
e-mobility	Public transport: transition to hybrid or fully electrical vehicles used in the public transport network. Utility vehicles: limitation of fossil fuel for utility vehicles inside certain city areas. Personal transport: supporting the transition from fossil fuels for vehicles in personal use.
Resource efficiency	Resource efficiency: adaptation of existing public buildings to reduce their impact on environment (reuse of water, reduction of energy losses). Optimisation: monitoring energy usage in e-vehicles in order to optimise their usage (e.g.: setting routes for public transport to reduce energy usage).
Digitalisation	Implementation of digital solutions for improved monitoring and optimisation of efficiency in various industrial and social areas.

2.2.2 WS2: DIH platform as the main tool for driving development forward

Digital Innovation Hub is a **one-stop-shop** that connects various key actors withint the region supporting digitalisation or digital transformation, which represents a great potential for growth, as it is estimated that a digitally oriented and functioning society can use its potentials and resources more than ten times more efficiently, faster and more environmentally friendly.
Furthermore, DIH provides innovation services, such as financing advice, training and skills development that are needed for a successful digital transformation.
Considering environmental issues, DIH is supporting efficient energy consumption and low carbon emissions. As proximity is considered crucial, they act as a first regional point of contact, a doorway, and strengthen the innovation ecosystem. A DIH is a regional multi-partner cooperation connecting research, production, governance and other key areas (figure 1).



In this context the DIH will not only connect the key stakeholders, but also support them in implementation of their joined activities to achieve the common goals in the fields of Energy and Environment.
The key advantage of the DIH is that it is also supported by IGA members and other importaint drivers of change within the region, including the public authorities and research institutes, along with technologically advanced SMEs.

2.2.3 WS3: Joint development of possible project approaches

Field of development	Potential partnership	Description of activity
Circular economy	ŠTP, d.o.o. Institute Wcycle Maribor RRA Podravje-Maribor Snaga, d.o.o. Nigrad, d.o.o. Municipality of Maribor	1) Reuse of construction waste as building materials – scale up of pilot project conducted by IWM. 2) Supporting reduction of packaging with agri-food products, by supporting shorter supply chains and responsible shopping.
e-mobility	ŠTP, d.o.o. RRA Podravje-Maribor Municipality of Maribor Snaga, d.o.o. Nigrad, d.o.o. Petrol, d.d. Pošta Slovenije, d.o.o.	1) Increasing the usage of e-vehicles, especially for mobility within the city centre (for public transport, utility services, deliveries, etc.). 2) Expanding the net of charging station in the city and beyond, for different types of e-

	Marprom, d.o.o.	vehicles (from e-scooters and e-bikes; to e-cars). 3) Changes in city ordinance – prohibiting vehicles that use fossil fuels in various parts of the city.
Resurce efficiency	ŠTP, d.o.o. Institute Wcycle Maribor RRA Podravje-Maribor EMSISO, d.o.o. Tushek Cars, d.o.o. Petrol, d.d. Pošta Slovenije, d.o.o. Marprom, d.o.o. Snaga, d.o.o. Municipality of Maribor	1) Installing equipment for monitoring energy efficiency on e-vehicles to determine its usage and calculate for optimi-sation. 2) Adaptation of public build-ings and support to private buildings to reuse communal water (reuse of clean water used for personal hygiene, to be used for toilet flushing). 3) Installing sensors on public lighting (diming the lights if there are no pedestrians)
Digitalisation	ŠTP, d.o.o. Institute Wcycle Maribor RRA Podravje-Maribor Municipality of Maribor Snaga, d.o.o. Nigrad, d.o.o. Marprom, d.o.o.	1) Installing equipment on waste containers, to follow their real time filling in order to optimise the time for collection them (reduction of needless transports). 2) Upgrading the city grid of open internet WiFi access.

2.3 Participants

PP no.	Name of organisation	Name of person, position
1	Styria Technology Park	Matjaž Fras, CEO
2	Styria Technology Park	Rok Haložan, project manager
3	Styria Technology Park	Tanja Berglez Krivec, assistant manager
4	Regional Development Agency Maribor Podravje	Borut Jurišić, project manager

5	Regional Development Agency Maribor Podravje	Niver Roter, public relationship
6	Regional Development Agency Maribor Podravje	Klara Kulovec, project assistant
7	Regional Development Agency Maribor Podravje	Edita Gorjup, administration
8	Regional Development Agency Posavje	Nataša Šerbec, CEO
9	Regional Development Agency Posavje	Nataša Šterban Bezjak, project manager
10	Tehnocenter, University of Maribor	Mateja Geder, researcher
11	E-Institute	Barbara Kobale, project manager
12	Institute Wcycle Maribor	Igor Kos, project manager

2.4 Summary of discussions

Sector	**Suggestions, proposed actions, remarks**
Priority sector: Energy and environment	In the sector of Energy and Environment the following activities are proposed: 1) Reuse of construction waste as building materials – scale up of pilot project conducted by IWM. 2) Supporting reduction of packaging with agri-food products, by supporting shorter supply chains and responsible shopping. 3) Increasing the usage of e-vehicles, especially for mobility within the city centre (for public transport, utility services, deliveries, etc.). 4) Expanding the net of charging station in the city and beyond, for different types of e-vehicles (from e-scooters and e-bikes; to e-cars). 5) Changes in city ordinance – prohibiting vehicles that use fossil fuels in various parts of the city. 6) Installing equipment for monitoring energy efficiency on e-vehicles to determine its usage and calculate for optimisation. 7) Adaptation of public buildings and support to private buildings to reuse communal water (reuse of clean water used for personal hygiene, to be used for toilet flushing). 8) Installing sensors on public lighting (diming the lights if there are no pedestrians) 9) Installing equipment on waste containers, to follow their real time filling in order to optimise the time for collection them (reduction of needless transports). 10) Upgrading the city grid of open internet WiFi access.

	These activities further link with the 3 sectors: Digitalization, Energy Efficiency, and e-mobility.
Interlink sector no. 1 Digitalization	*Installing equipment for monitoring energy efficiency on e-vehicles to determine its usage and calculate for optimisation.* **Remarks:** This project will be based on technology developed by EMSISO and will contribute to digitalisation of e-vehicles in order to provide better monitoring of energy usage, allowing for optimisation of the energy usage. The users of e-vehicles will need to be aware of the technology and willing to install it. An initial demonstration of how the technology works and what are the benefits of its usage is needed.
	Installing equipment on waste containers, to follow their real time filling in order to optimise the time for collection them (reduction of needless transports). **Remarks:** This project is based on the pilot activities proposed by IWM. They will include the cooperation of the city communal company Snaga d.o.o. and other stakeholders. The benefits would be the reduced need for waste collection; however, single private households (houses, not buildings) do not use containers for collecting trash anymore (yellow bags), therefore additional adaptation would be needed. In the initial phase the project could be applied for larger users of services, such as schools).
Interlink sector no. 2 Energy Efficiency	*Reuse of construction waste as building materials – scale up of pilot project conducted by IWM.* **Remarks:** The pilot project is already implemented by IWM, however, it is difficult to apply this on everyday basis, as construction waste material is not homogeneous and not available on demand, if compared to regular building material. The results of pilot activity should be used to further analyse this possibility.
	Supporting reduction of packaging with agri-food products, by supporting shorter supply chains and responsible shopping. **Remarks:** It is a small-scale project, closely connected to awareness raising of consumers. It is applicable mostly on markets, where the logic is already present and the waste connected to the activity is mostly due

	to transportation of goods and is mostly linked to unprocessed agri-food products.
	Adaptation of public buildings and support to private buildings to reuse communal water. **Remarks:** The project was already suggested, but with very little details provided. It would use the waste water from households to be collected within the building and reused for other purposes within the household (water collected after showering to be used for flushing toilets).
	Installing sensors on public lighting (diming the lights if there are no pedestrians) **Remarks:** The city is already considering replacements of existing lightning systems and upgrading it to a smarter system. Local producers of lightning systems can be involved (e.g. Elcosun)
Interlink sector no. 3 E-mobility	*Increasing the usage of e-vehicles, especially for mobility within the city centre (for public transport, utility services, deliveries, etc.).* **Remarks:** The city transport system is constantly upgrading its pool of vehicles, replacing them with more eco-friendly options. Similarly, the postal delivery service and maintenance services. These activities need better visibility and a boost to speed up the upgrade.
	Expanding the net of charging station in the city and beyond, for different types of e-vehicles (from e-scooters and e-bikes; to e-cars). **Remarks:** The city has already started expanding the initial network of e-charging station for cars and setting up parking/charging spaces for car sharing e-vehicles. However, as e-scooters and e-bicycles are becoming increasingly popular and a possible alternative to other forms of mobility in the city centre, an increase of charging stations for these types of mobilities is also required.
	Changes in city ordinance – prohibiting vehicles that use fossil fuels in various parts of the city. **Remarks:** The city has already passed temporary ordinance of forbiting certain types of vehicles to enter a broader city centre area (at least ECO5 engines). This could be adopted to certain areas and to prohibit all fossil fuel-based vehicles. Special attention has to be placed with the residents within those areas and their usage of private vehicles.

2.5 Conclusions and next steps

Throughout the 3 workshops various opportunities for cooperation were identified.

Especially those, already based on previous pilot activities have the tendency to be best examples to be used. All proposed activities will be evaluated based on the following criteria: feasibility of the idea, readiness for implementation, impact on the environment, and funding opportunities.

Based on these criteria ŠTP as the project partner of Chain Reactions will prepare roadmaps for the implementation of the suggested activities and how they will overall contribute to the overall aim of the ChainReactions project.

ANNEX: WORKSHOP MATERIALS

Invitation:

Spoštovani,

v okviru projekta CHAIN REACTIONS programa INTERREG EUROPE bomo v četrtek, 27. 5. 2021 ob 10.00 uri organizirali kratko spletno delavnico za naše partnerje na temo Pospeševanje pametne industrijske rasti skozi inoviranje vrednostnih verig (področja energija – okolje – digitalizacija).

Dnevni red:

1. Predstavitev projekta Chain Reactions
2. Predstavitev namena delavnice
3. Predstavitev udeležencev
4. Predstavitev DIH Pametne rešitve
5. Skupni izzivi/potencialni projekti na področju navedenih področij (energija – okolje – digitalizacija)

S pomočjo vaših inputov želimo identificirati inovacijske izzive na področju energije (e-mobilnosti), okolja in digitalizacije. S tem namenom vas prosimo, da na kratko predstavite katere aktivnosti vaša organizacija na tem področju že počne, ali jih bo pričela izvajati v bližnji prihodnosti.
V okviru delavnice bomo prepoznali potrebe za nadaljnji razvoj na dotičnih področjih.

Veseli bomo, če se nam boste lahko pridružili.

Povezava do dogodka:

https://zoom.us/j/98372974696?pwd=VVE0b1lhVFZjZmswSkFNbXNYdkpRQT09

Lep pozdrav!

Rok Haložan | Project Manager

STYRIAN TECHNOLOGY PARK
Regional Centre for Technology Development
Business Support Centre and Incubator

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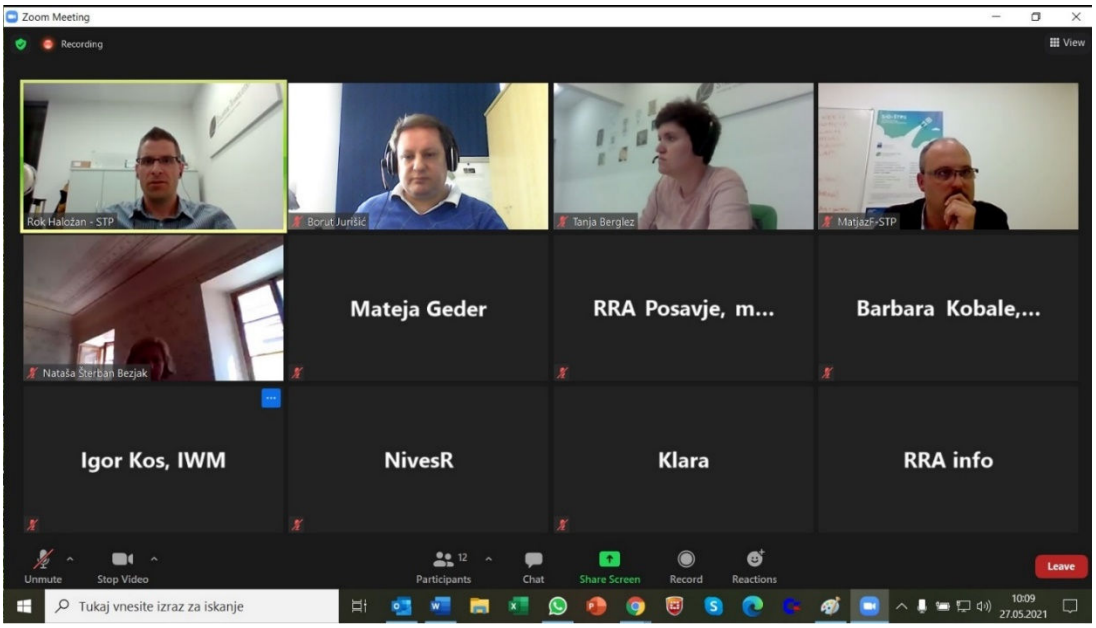
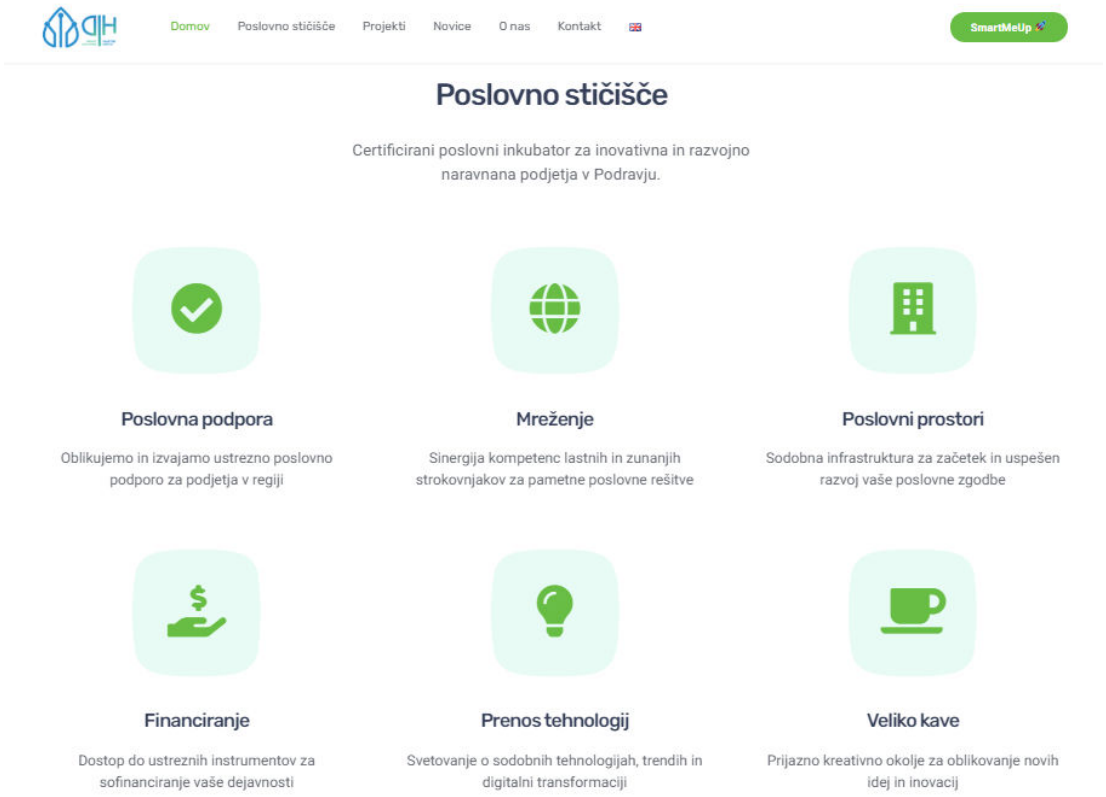
Screenshot of participants:

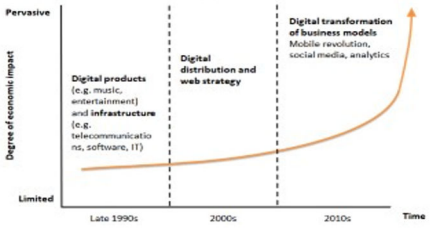


Presented materials - samples:

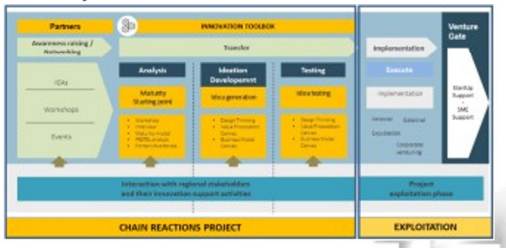


DOSEDANJE AKTIVNOSTI

- Prvi sklop delavnic:
  - Predstavitev koncepta in trend vrednostnih verig - vezano na inovacijske tehnologije :
    - Industija 4.0
    - Supply Chain 4.0
    - Big data
    - Inovativni gonilniki
    - Digitalna transformacija
    - Umetna inteligenca



  - Popis/ugotovitev obstoječih pristopov za podporo inovacijam
  - Prikaz transformacije procesa z uporabo inovativnih orodij
    - Ozaveščanje in druženje
    - Analiza > Ideja / Razvoj > Testiranje
    - Izvedba / uporaba



- Drugi sklop delavnic:
  - **Povezava s partnerji**
  - **Podpis memoranduma z IGA -ji**

NAMEN DELAVNIC

Cilj:

- Narediti analizo na regionalnem področju za omenjen sektor
- Ugotoviti trend za prihodnje načrtovanje dejavnosti
- S pomočjo podatkov izdelati načrt uporabe inovacijskih modelov
- Podlaga za 2. delavnico