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Bioeconomy strategy for the Danube Region: findings of mapping survey

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Biomass for growth: potentials and challenges of bioenergy in the Danube Region
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The Danube-INCO.NET project addresses – inter alia – sustainable energy and the development of bioeconomy in the Danube Region. WP3 “Energy Efficiency and Renewable Energy in a Bio-based Economy” aims at fostering networking and transnational cooperation including two pilot activities too.

The main scope of Pilot Activities is to support additional transnational cooperation across the Danube Region while addressing the main objectives of WP3:

- Assess and improve the potential of the Danube Region for R&I applied to sustainable energy and bio-economy
- Identify existing gaps and opportunities to overcome them by strengthening the links between the actors in R&I
- Facilitate clustering and exploit cross-border synergies
- Elaborate recommendations for strengthening R&I cooperation in the Danube Region

In order to help stakeholders in the Danube Region to overcome this challenge the pilot action has double objectives:

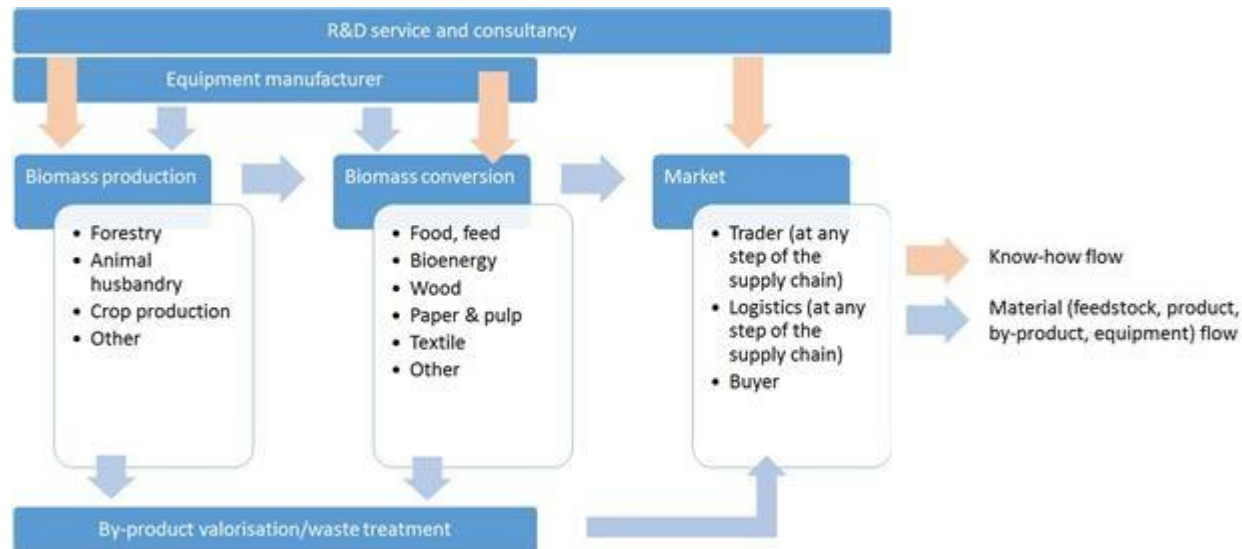
1. Map stakeholders and define their position in the supply chain
2. Facilitate cooperation and generation of new projects

In line with this the tasks are:

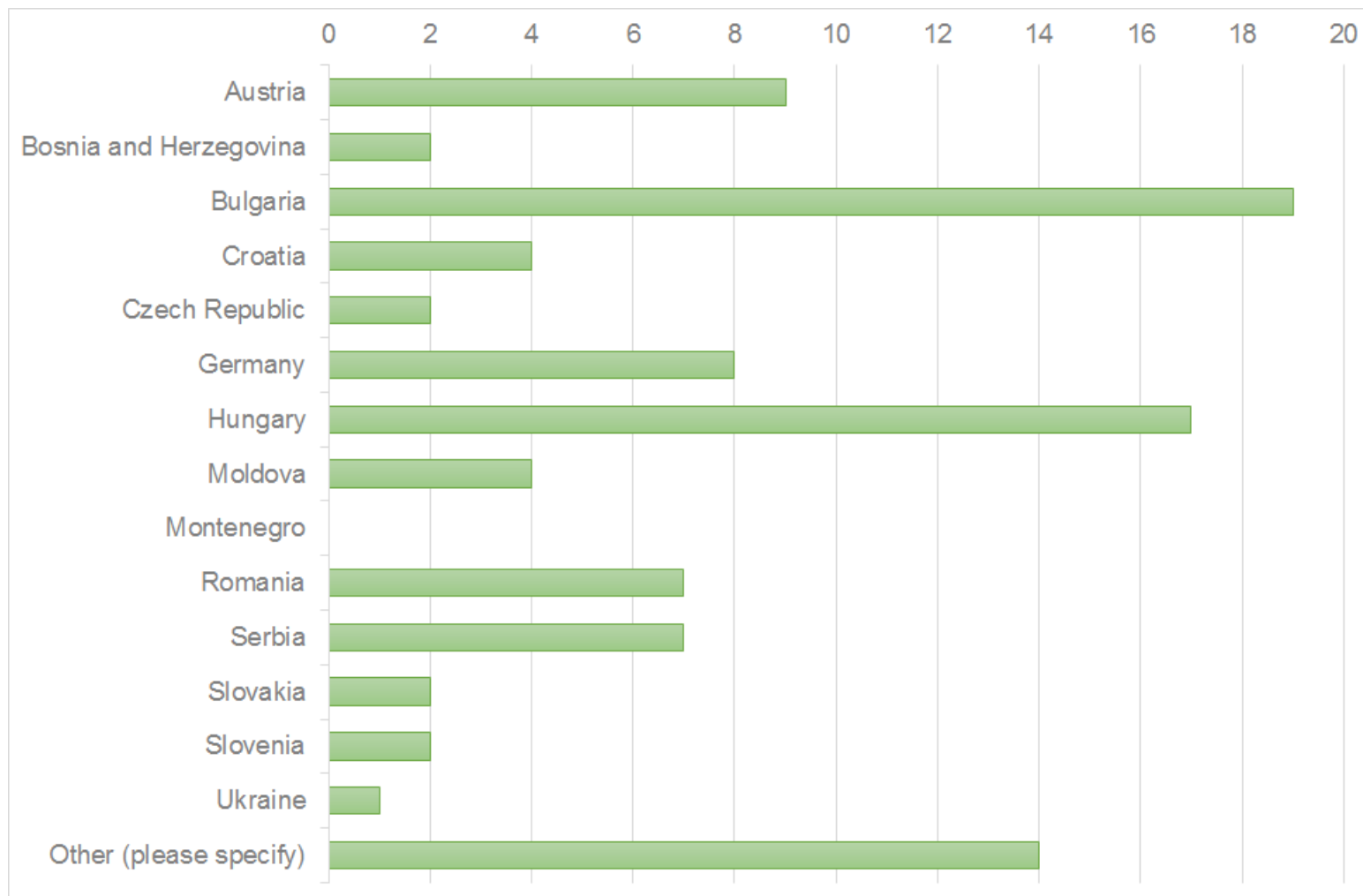
- Preparation and online promotion of the **mapping questionnaire** for the Danube Region. The target group is along the Triple Helix. The survey will facilitate matchmaking too by inquiring challenges and offers.
- Generation of new cooperation: by using **open innovation** approach to recruit solutions to real industry challenges and organizing two events for them.

Mapping questionnaire launched in April 2016 with the following sections:

1. Section I - Capacity mapping: to define activities and place in the biomass value chain
2. Section II – Networking and open innovation: to see bottlenecks, offers and solutions;
3. Section III - The Danube Region: to understand the views of different stakeholders on the Danube Region with regards to the bioeconomy;
4. Section IV – Identification of wished interventions: based on the Climate-KIC Biohorizons and the Technological Innovation System methodology



**The survey received near 100 answers:
half of them from academic, 28% public and 22% businesses.**

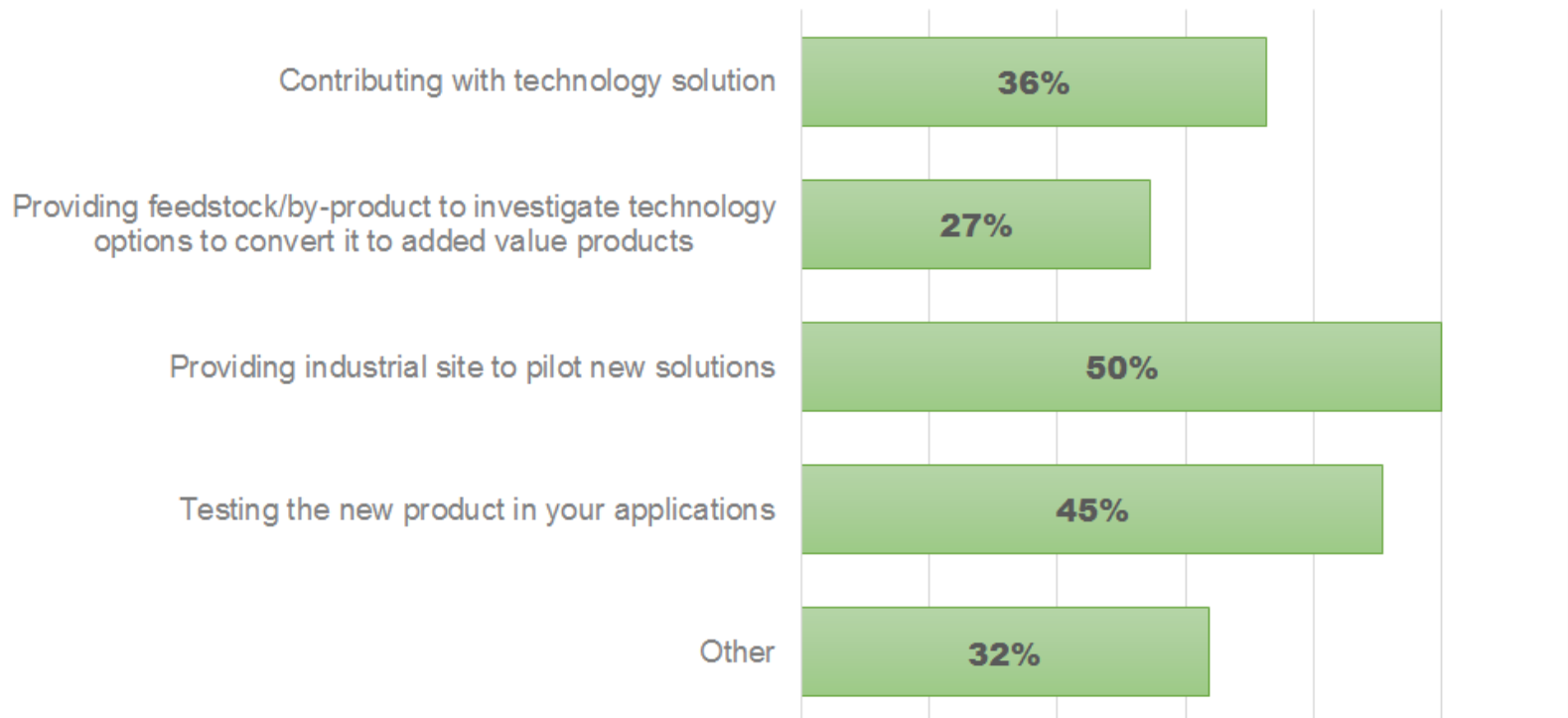


Results of section I and II provide an opportunity to draft a strategy for cooperation and see mismatches between demands of industry and focus of academia and public.

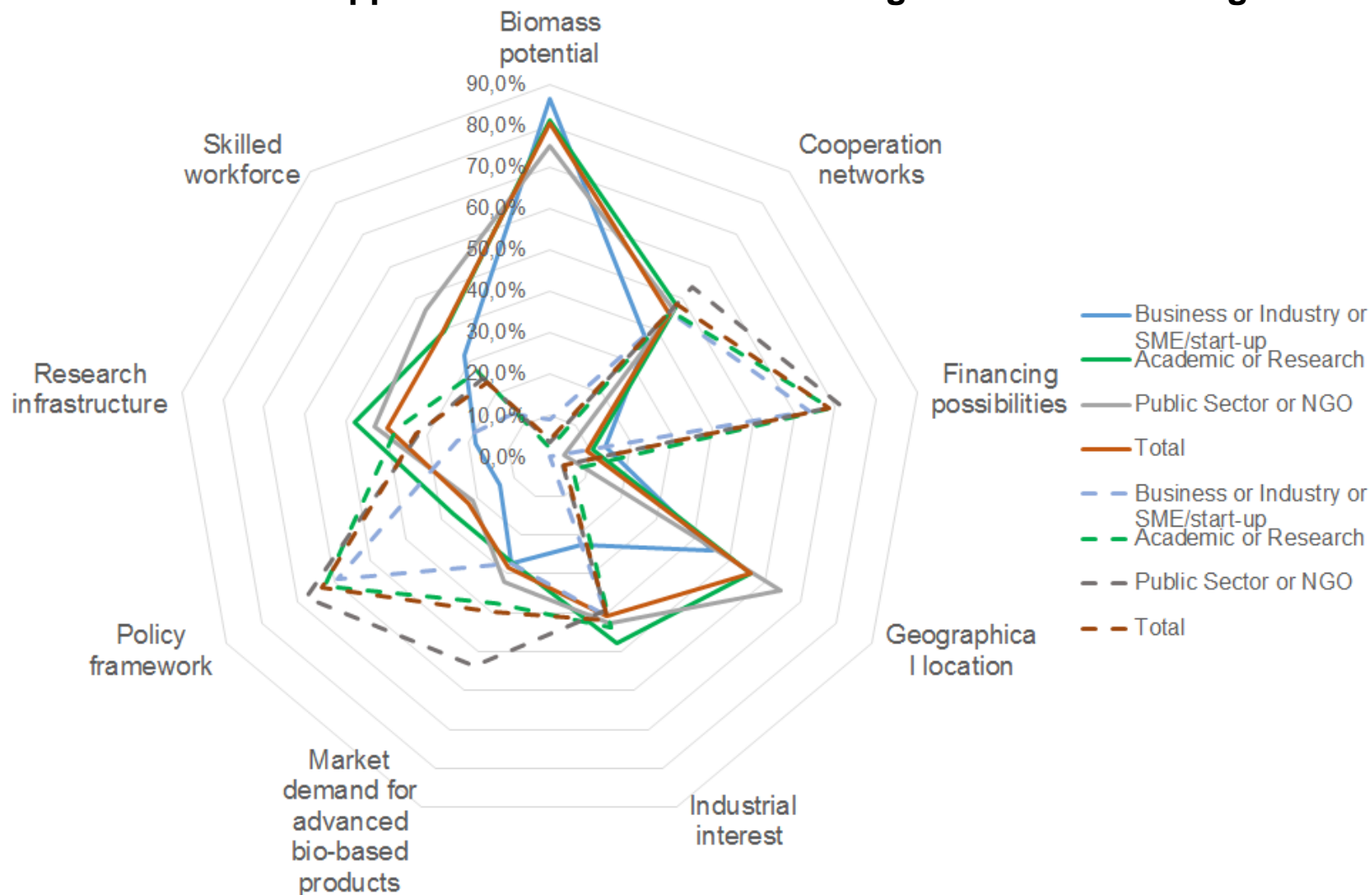
	Bottlenecks seen by businesses		Solutions by academia		Support by public sector	
	%	#	%	#	%	#
Conversion technology	50,0	1	41,7	4	35,7	4
Economics of process	40,9	2	47,9	2	21,4	9
Standardization and labelling	40,9	2	8,3	10	35,7	4
Biomass trade	27,3	4	29,2	7	21,4	9
Conversion efficiency	27,3	4	47,9	2	32,1	7
Impact assessment or LCA	22,7	6	52,1	1	39,3	2
Demand for bio-products	18,2	7	22,9	9	25,0	8
Resource efficiency	18,2	7	29,2	7	39,3	2
Biomass sourcing (availability)	9,1	9	41,7	4	75,0	1
Valorisation of by-products/	4,5	10	33,3	6	35,7	4
Other	9,0	-	8,4	-	14,3	-

Forms of cooperation – openness from all sides:

- **100% of the public sector respondents and 96% of the academic would be willing to cooperate and assist business partners**
- **52% of academia has infrastructure or pilot equipment relevant for the industry**
- **42% of academia has know-how mature to be implemented in industrial settings**



What are the main opportunities and what is missing for the Danube Region?



- Ranking interventions in a scale of 1-5 (5 = most beneficial)
- Out of 28 in 7 categories based on the Technological Innovation System (TIS)

Top 10 interventions	Rating
Resistance to change and legitimacy: Ensure continuity of policy	4,29
Resistance to change and legitimacy: Build investor confidence in the bioeconomy	4,20
Resource mobilisation: Provide access to financial support	4,13
Resource mobilisation: Stable feedstock supply	4,06
Resource mobilisation: Ensure competitive feedstock costs	4,06
Knowledge exchange: Develop regional networks or clusters	4,06
Knowledge exchange: Further academia to business collaboration	4,05
Knowledge development (R&D): Establish knowledge of best conversion routes for biomass type	4,04
Guidance of search: Boost engagement with policy makers	4,03
Market formation: Champion utilisation of local resources	4,02
Resistance to change and legitimacy: Raise public awareness of bio-based products	4,02
Resistance to change and legitimacy: Promote demonstration of technologies and products	4,02

Conclusions:

- Conversion technologies and economics of process should be demonstrated while products standardized/labelled for market
- Fields of academia – industry cooperation identified but approaches should be brought closer
- General openness for cooperation, many potential forms
- Agreement in biomass potential but stakeholders do not see financing options and policy directions in this field, however, confused about cooperation and industrial interest
- Biomass is there but stability of supply and costs may be issues
- Main areas where stakeholders see gap: policy, finance and cooperation along all sectors

Conclusions will be available in form of position paper soon including a set of recommendations – happy to distribute and discuss next steps.

Thank you for your attention.

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**Bioeconomy Capacity
Building Survey**

Climate-KIC: The future landscapes of Bioeconomy: Hungary

1. Aims of the study were:
2. to deliver general overview on the bioeconomy
3. to introduce the relevant Hungarian stakeholders
4. to map the potentials for further collaboration with special regards to Climate KIC projects
5. to provide on-hand experiences of stakeholders on the barriers and potential
6. Methodology: extensive literature/web search and online interviews

Study is available at:
<http://klimainnovacio.hu/hu/hirek/2016/06/29/the-future-landscapes-of-bioeconomy-hungary>



Expected outcomes of this activity by November 2016:

1. survey stakeholders knowledge, wished interventions and challenges about bioenergy and bioeconomy;
2. increase stakeholders' knowledge and their capacity to (co-)develop bioeconomy activities through the facilitated networking;
3. enhance capacities by promoting co-operation between universities, research institutions and industry via open innovation;
4. mobilize the stakeholders of sustainable non-food biomass supply chains through the consolidation of informal networks and challenge oriented approach.

Interventions needed to support the bioeconomy transition:

- What is the current condition of innovation within the bioeconomy?
- What are the key factors influencing success/failure?
- What are the strengths and weaknesses?
- What are regional differences?
- Are there exemplars of best practice?
- Where will business innovation have the greatest impact on climate change mitigation/adaptation and economic growth?

Between May – November 2014, 1130 times worldwide views and nearly 500 responses. However, surprising low amount of answers from the Danube Region....

Main findings published in Biofpr journal at

<http://onlinelibrary.wiley.com/doi/10.1002/bbb.1665/full>

Hodgson, E., Ruiz-Molina, M.-E., Marazza, D., Pogrebnyakova, E., Burns, C., Higson, A., Rehberger, M., Hiete, M., Gyalai-Korpos, M., Lucia, L. D., Noël, Y., Woods, J. and Gallagher, J. (2016), **Horizon scanning the European bio-based economy: a novel approach to the identification of barriers and key policy interventions from stakeholders in multiple sectors and regions**. *Biofuels, Bioprod. Bioref.*, 10: 508–522. doi:10.1002/bbb.1665