

Czech National Analysis of the cooperation opportunities of the V4 cluster organisations

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1. Current projects and existing cooperation of the V4 cluster organisations

a) Assessment of the most important projects

Total number of cluster organisations in the national V4 database: 36

Total number of responses (question No. 10 of the V4 questionnaire): 33

I. Assessment of the most important projects				
	Sector of project	Type of activity	No. of clusters	No. of projects
1.	Energy	Energy efficiency management	4	5
		Bio fuels	2	5
		Laboratory and testing	2	4
		Hydro-energy development	1	2
		Solar-power development	1	1
		R&D	1	1
2.	ICT	Communication technology	3	5
		Application development	2	3
		R&D	1	1
		Training	1	1
3.	Safety and Security Technology	R&D	2	2
		Computer networks, services	1	2
		Industrial safety and hygiene	1	1
		Medical research	1	1
		Labour safety	1	1
		Training	1	1
3.	Machinery and equipment	Automation systems, service	2	3
		Supply chain	1	3
		R&D	1	2
		Export of products	1	1
		Laboratory and testing	1	1
		Training	1	1
5.	Construction and building	Housing construction development	2	2
		Training	1	1
		Low-energy housing	1	1
6.	Automotive	Material utilisation	1	5
		Training	1	2
		R&D	1	1
7.	Tourism	Cross-border activities	1	4
		Regional products	1	1
8.	Nanotechnology	Nanofibres development	1	3
		Training	1	1

		Water-treatment	1	1
9.	Food	Cooperation activities	1	2
10.	Manufacture of paper and plastic products	Networking	1	2
		Packing development	1	1
		Facility testing	1	1
		Human resources	1	1
11.	Other transport equipments	Networking	1	2
		Aerospace research	1	1
12.	Biotechnology	R&D	1	1
		Networking	1	1
13.	Forestry and logging	Educational events	1	1
14.	Health, medicine	Laboratory and testing	1	1
15.	Manufacture of furniture	Quality testing	1	1
		R&D	1	1
16.	Manufacture of textile	Equipment	1	1
		Patented technology	1	1
17.	Stone treatment	Laboratory and testing	1	1
		Waste processing	1	1
		Training	1	1
18.	Woodworking	Woodworking research	1	1
		Training	1	1

Comments on the most important projects:

The assessment of the most important projects of cluster organisations in the Czech Republic presents a current state of aiming of the Czech clusters.

According to the assessment, the largest number of the cluster organisations refers to the projects regarding the field of energy. The most of these projects aim at energy efficiency and development of technologies for energy utilisation using renewable energy sources such as solar or hydro energy. There are also several projects focusing on bio fuel, e.g. recycling and treatment of ashes from the shaped bio fuels, pellets and other solid bio fuels certification, utilisation of new raw materials for biogas generation and improvement of the energy efficiency of biogas stations, etc.

The second most common sector of the clusters' projects is ICT. Especially a development of communication platforms and technology as well as applications development are very popular. There are also many specific projects – e.g. development of the cloud-based ICT tools to support business processes, application libraries, intelligent traffic system with the support of GPS, and others regarding research, innovation and training.

Certainly, there are plenty of other significant sectors which are specific for each of the Czech cluster organisations – from automotive, tourism and food to biotechnology, manufacture of textile and woodworking. Nevertheless, it is possible to identify several types of activities which are common for many projects within the sectors, such as:

- R&D – e.g. development of special technologies
- Education and training – e.g. creation of education program for training, contribution to human resource development
- Laboratory and testing – e.g. invention of new methods and testing

This fact shows the efforts of the Czech cluster organisations to boost their competitiveness and research potential as well as cooperation activities with the public and educational institutions in the field of training and improving general knowledge.

The complete list of the sectors and types of activities you can see in the table I. above.

b) Assessment of the existing cooperation within V4

Total number of cluster organisations in the national V4 database: 36

Total number of responses (question No. 11 of the V4 questionnaire): 11

II. Assessment of the existing cooperation within V4						
	No. of clusters	No. of responses	CZ	HU	PL	SK
Contacts with organisations within V4	10	17 contacts	////	5	6	6
Existing projects within V4	3	3 projects	////	0	1	3

Comments on the existing cooperation within V4:

The assessment of the existing cooperation of the Czech cluster organisations and other organisations and institutions within V4 countries shows that only 30,5 % of the Czech V4 clusters currently cooperate within V4. According to the responses, the cluster organisations are mainly in touch with Polish and Slovak cluster organisations (e.g. ZAICT-IKT Klastre Zilina - Slovakia, Tourism cluster "Orot" – Poland, Automotive cluster of Slovakia, etc.), institutes (e.g. Instytut Doradztwa, Krakow - Poland) and universities (e.g. University of Zilina - Slovakia). Cooperation with the Hungarian institutions and organisation is lower. It could be caused by bigger language gap and larger geographical distance than in case of Slovak and Polish organisations.

A number of existing cooperation projects within V4 is minimal but the Czech cluster organisations are often involved in consortium exceeding the V4 borders (e.g. EU-ASEAN projects, BEAWARE consortium). Within V4, the Czech cluster organisations have projects mainly with Slovak partners, e.g.: Automotive cluster of Slovakia and Moravian-Silesian Automotive Cluster implements the project "Automotive Without Borders" to ensure correct orientation and increase the skills of the workforce in order to extend its application in the automotive industry, support economic development, increase employment within partner regions.

Generally, there is really low level of existing cooperation within V4.

2. Assessment of areas of possible cooperation within V4 in the future

Total number of cluster organisations in the national V4 database: 36

Total number of responses (question No. 12 of the V4 questionnaire): 36

III. Assessment of areas of possible cooperation within V4 in the future				
	Sector of possible cooperation	Type of activity	No. of clusters	No. of topics
1.	Energy	Energy efficiency	3	4
		Bio fuels	2	3
		Material treatment	2	2
		R&D	2	2
		Energy generating	2	2
		Hydro-energy development	1	2
		Waste management	1	2
		Certification	1	1
		International research	1	1
		International conferences	1	1
		Promotion	1	1
		Renewable energy	1	1
2.	ICT	Applications development	2	3
		R&D	2	3
		Software management	2	3
		Cloud computing	2	2
		Data entry, collection	2	2
		Communication technology	1	2
		Geo-information technology	1	1
		Training	1	1
3.	Machinery and engineering	Fabrication of material	2	3
		R&D	1	3
		Automation, manipulation	1	2
		Conferences, workshops	1	2
		Designing	1	1
		Metallurgy	1	1
		Products deliveries	1	1
		Simulation and modelling	1	1
		Surface treatment	1	1
		Tool data management	1	1
4.	Nanotechnology	Health service	2	2

		Environmental sanitation	1	1
		Nanofibres development	1	1
		Nanotechnology	1	1
5.	Construction	Low-energy passive housing	2	3
6.	Logistic	Electro-mobility	1	1
		Logistic	1	1
7.	Manufacture of paper and plastic	Prototyping, analyses	2	2
		Packing automation	1	1
		R&D	1	1
		Testing	1	1
		Waste management	1	1
8.	Manufacture of furniture	Interiors	1	2
		Components	1	1
9.	Manufacture of textile	International research	1	1
		International conferences	1	1
10.	Biotechnology	R&D	1	1
		Pharmacy preparations	1	1
		Testing and analyses	1	1
11.	Tourism	Manufacturers for tourism	1	1
		Suppliers for tourism	1	1
12.	Stone treatment	Cutting, shaping	1	1
13.	Mechatronics	Automation	1	2
		Design	1	1
		R&D	1	1
		Robotics	1	1
		Testing	1	1
		Smart, green technology	1	1
14.	Automotive	Laboratory and testing	1	3
15.	Forestry	Environmental research	1	1
		Trade of wood	1	1
		Training	1	1
16.	Medicine, health	International research	1	1
		R&D	1	1
17.	Woodworking	Wood processing	1	1
		Renewable energy	1	1
18.	Food	Food processing	1	1
		Food retail	1	1
19.	Aerospace	R&D	1	1

20.	City development	City planning	1	1
21.	Manufacture of glass	Glass and jewellery business	1	1

Comments on areas of possible cooperation:

The analysis of the areas of possible cooperation of the Czech cluster organisations tried to answer the question of future heading of the V4 clusters.

Needless to say, each of the cluster originations would like to cooperate in the field of its interest. Alike the most important projects, the most popular sector of possible cooperation is energy. The Czech cluster organisations incline to the V4 cooperation in the field of energy efficiency, bio fuels development, promotion, certification and R&D. ICT sector is represented by applications development, cloud computing, software management and R&D activities. Machinery and engineering sector aims at automation, simulation and modelling and fabrication of equipments (cranes, steel structures, heating radiators) for power engineering, mechanical and chemical industry. All the sectors of possible cooperation are illustrated in the table III. above.

Nevertheless, it is necessary to highlight a need of the Czech clusters to cooperate in several types of activities demonstrated across all the sectors:

- international research
- laboratory and testing
- development activities
- joint marketing and promotion
- international conferences

Common research activities are highlighted mostly.

Conclusions:

The Czech national analysis of the cooperation opportunities of the V4 cluster organisations should have present a current state and future heading of the Czech V4 clusters organisations.

The first part of the analysis focuses on the assessment of the most important projects and existing cooperation within V4 cluster organisations. Regarding the results, it is possible to mention the strong potential of the Czech cluster organisations for their growth and development especially in the field of their current activities. Predominant types of activities emerged within the projects demonstrate the effort of the Czech clusters to improve their competitiveness and innovation potential by R&D activities and training. However, despite of the development potential of the Czech cluster organisation there is identified very low level of existing cooperation within V4. Only 30,5% of the Czech cluster organisations are in touch or have a project with another V4 partner. The relative low percentage should be increased by boosting common cooperation activities, interactions and networking within V4, which is the main goal of the V4Clusters project.

The second part of the analysis focuses on the assessment of the area of possible cooperation within V4 in the future. According to the analysis, the Czech clusters would be pleased to collaborate on the common research and development activities, laboratory testing and analyses. Cooperation activities should include joint promotion, marketing and international conferences but research activities are highlighted mostly.

Generally, it is seen as a crucial to help the Czech cluster organisations to boost their growth and potential, which is evident, by supporting international cooperation activities within V4 countries. The findings of the international V4Clusters project could give an impulse to national governments to support the V4 clusters development.