



KEY HIGHLIGHTS

Bulgaria experienced relatively unsatisfactory participation in European Partnerships under Horizon 2020. A lack of national funding and an inefficient mechanism for collaboration with industry are identified as the key challenges/factors which have led to this situation. National-level budgetary and re-prioritisation processes, as well as ad hoc factors also contributed toward an inability to use allocated resources. Bulgarian higher education institutions, research performing organisations, and in particular SMEs, also seem to be little interested and/or unable to participate in European Partnerships mainly due to the challenges stated above.

Bulgaria has an ambition to allocate significant resources from the Programme for R&I and Digitalisation for Smart Growth (under ESIF) for national co-funding and other relevant support schemes to address these challenges, as well as establish an adequate coordination mechanism between sectoral ministries and industry stakeholders. National resources will also be leveraged. Bulgaria hopes to significantly boost its participation and performance.

23 H2020
public
partnerships (*)

Or
23.23%
of total
(99 partnerships)

23 H2020
public
partnerships (*)
participations

Or
1.07%
of total

0 H2020
public
partnerships (*)
coordinations

Or
0%
of total

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020) excluding EIT-KICs, EuroHPC and ECSEL

(*) Horizon 2020 public-public partnerships include ERA-NET Cofund, EJPs, Art 185 initiatives and JPIs. Partnership participations: number of partnerships a specific country takes part as participant – for certain countries more than one national organisation may take part. Thus the participations may be more than the number of partnerships a country is part of. Total partnership participations: number of partners from a specific country participating with any role (i.e. coordinator, participant, observer, other) in partnerships. Partnership coordinations: number of partnerships a specific country coordinates.

€4.8 million

in actual national contributions in public partnerships
during H2020 (2014-2020)

Or **0.22%** of total

€307

per researcher FTE (average between 2014-2019 based
on EUROSTAT data)

Source: ERA-LEARN database (cut-off date June 2021), H2020 period (2014-2020)

Actual national contributions is the funding given by each country to cover the participation of national science and technology groups in the funded projects of the joint transnational calls launched by the public partnerships. Actual contributions for each researcher are the total actual contributions by a country divided by the number of researchers in the country estimated in full-time equivalents (FTE) average between 2014-2019 based on EUROSTAT data.



TABLE 1: Distribution of funding under the different H2020 instruments (P2Ps, JUs, cPPPs and other H2020 projects, i.e. CSAs, RIAs, IAs, etc.) across thematic priorities

THEMATIC PRIORITIES	P2Ps PROJECTS	JUs PROJECTS	cPPPs PROJECTS	OTHER H2020 PROJECTS
Nanotechnologies, Advanced Materials, Advanced Manufacturing and Processing, Biotechnology	22.11 %	1.94 %	0.00 %	7.25 %
Climate action, environment, resource efficiency and raw materials	25.32 %	0.00 %	0.00 %	6.15 %
Europe in a changing world - inclusive, innovative and reflective Societies	0.00 %		32.54 %	19.69 %
Food security, sustainable agriculture and forestry, marine and maritime and inland water research	23.67 %	13.41 %		10.67 %
Future and Emerging Technologies	28.89 %		2.47 %	3.83 %
Health, demographic change and wellbeing	0.00 %	0.00 %		5.05 %
Information and Communication Technologies		20.46 %	64.99 %	13.50 %
Secure, clean and efficient energy	0.00 %	14.33 %	0.00 %	29.68 %
Smart, green and integrated transport	0.00 %	49.86 %		4.18 %
	100,00%	100,00%	100,00%	100,00%

Source: ERA-LEARN database (cut-off date June 2021) based on actual national contributions for P2Ps; eCORDA based on net EU contribution; values are calculated as the share of investments of the specific instrument in the specific theme in the total investments under the specific instrument.

FIGURE 1: Eligible proposals, projects and success rates

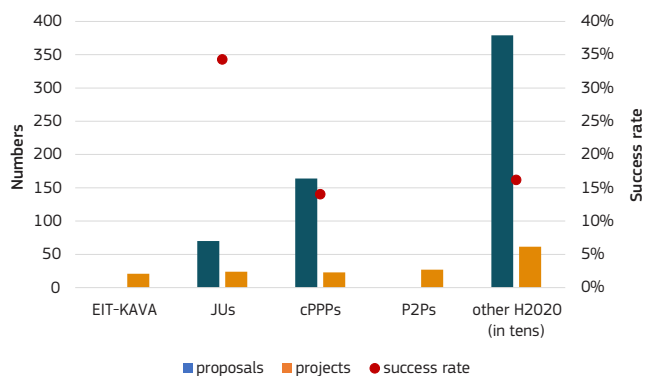
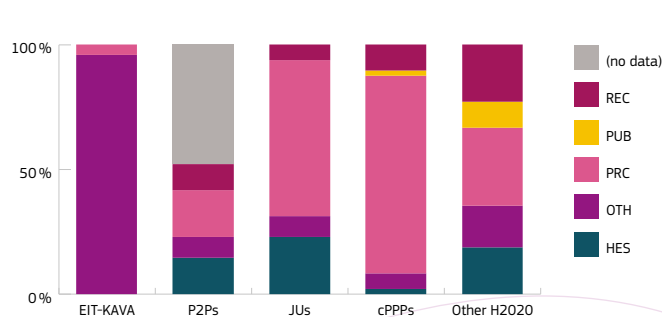


FIGURE 2: Types of project beneficiaries (%)



Source: ERA-LEARN database for P2Ps (cut-off date June 2021); eCORDA for EIT-KAVA. JUs. cPPPs. other H2020 projects (RIAs. CSAs. etc.)

No proposal data for P2Ps. EIT-KICs (Figure 1). EIT-KAVA: KIC Added Value Activities; HES: higher education; OTH: other; PRC: private for-profit companies; PUB: public bodies; REC: research organisations (Figure 2)

It is well observed that Bulgarian participation in European Partnerships achieves higher success rates than the average rates for Bulgaria in Horizon 2020, especially in JUs, which is not unusual per se, but can be seen as a major reason to step-up national efforts in supporting and encouraging participation in all partnerships under Horizon Europe, including EIT-KICs.



ADDITIONAL INVESTMENTS AND QUALITATIVE IMPACTS

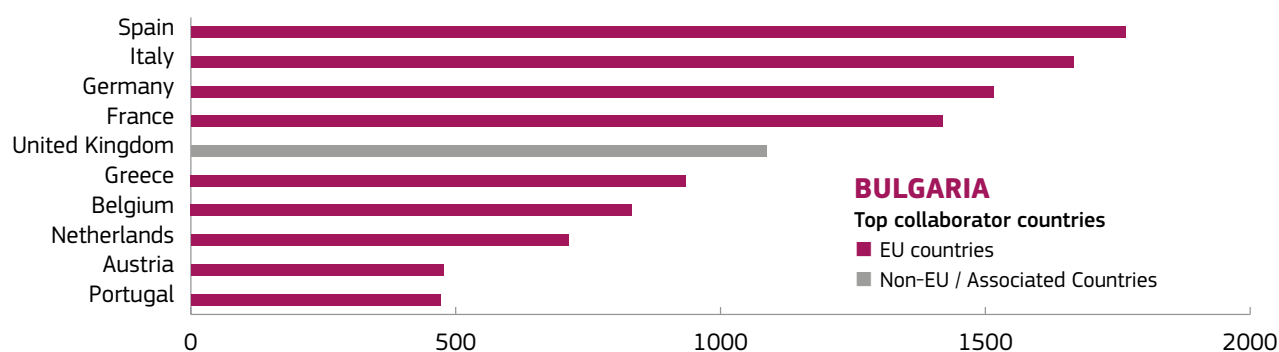
There is very little data and analysis on triggered additional investments. National investments under EuroHPC to acquire a petascale HPC system can be pointed out as an exception.

Increasing the post-project internationalisation (international collaboration) of research teams and organisations can be identified as a qualitative impact. This is increasingly important for the Bulgarian national R&I system.

COMPLEMENTARY AND CUMULATIVE FUNDING

Complementary and cumulative funding from the national budget was made available for partnerships and other calls under H2020 that require such – e.g. Teaming using ESIF, despite the gaps in coordination, allocation and execution of such resources throughout the years. Inconsistent performance by national funding bodies makes it difficult to assess the processes and the impact.

FIGURE 3: Top collaborators of Bulgarian researchers under Horizon 2020 projects (including JUs, cPPPs, P2Ps and other H2020 projects)



Source: eCorda (showing top-10 collaborator countries)



SUCCESS STORIES

- ✦ Bulgarian participation in EuroHPC JU, despite challenges of the national budgeting and coordination processes related to European Partnerships, can be seen as a success story. The Bulgarian petascale supercomputer, among the five petascale supercomputers that were developed with support from EuroHPC (35% of the procurement was funded by the EU), leveraged significant national resources and high-level political engagement. The supercomputer, named Discoverer, currently ranks 91st among the global top 500.
- ✦ The project is implemented by the consortium Petascale Supercomputer Bulgaria, which consists of Sofia Tech Park JSC, the association National Center for Computer Applications, and the Strategic Center for Artificial Intelligence. The supercomputer itself was delivered by Atos.
- ✦ Discoverer was officially inaugurated on 21 October 2021. The special high-level event was attended by the Minister of Education and Science, Nikolay Denkov; the Minister of Economy, Krasimir Kiryakov; the Deputy-Mayor of Sofia, Doncho Barbalov; Commissioner Mariya Gabriel; EuroHPC Executive Director Ander Jensen and others.