

Contractual public-private partnerships in research

The first three contractual public-private partnerships in research were established as a tool to address the 2008 financial crisis. Their main feature is prior consultation of industry in defining the topics of the calls in the framework programme for research. This allows better alignment of the topics with industry needs, especially regarding demonstration projects, increasing the participation of private actors in the programme. The scheme, easier to establish than institutional public-private partnerships such as the joint technology initiatives, was extended under Horizon 2020 with a budget of €7.15 billion ring-fenced for 10 of these partnerships (almost 10 % of the programme's budget).

Policy context

In October 2008, the European Commission reacted to the financial crisis by proposing a European [framework](#) for action which included increased investment in research and innovation. A month later, the Commission proposed the adoption of a European economic recovery [plan](#) (EERP). The first pillar of this plan focused on economic measures, while the second pillar aimed at improving Europe's competitiveness in the long term with smart investments. These investments would support ten actions in four Lisbon [Strategy](#) priority areas: people; businesses; infrastructures and energy; and research and innovation. They were intended to promote the establishment of the knowledge society and speed up the shift towards a low carbon economy.

The Commission proposed to set up major research [public-private partnerships](#) (PPP) in three sectors: automobile, with the European green cars initiative ([EGCI](#)); construction, with the European energy-efficient buildings initiative ([EeB](#)); and manufacturing, with the factories of the future initiative ([FoF](#)). These key industrial sectors in the European economy in terms of employment were vulnerable to the crisis due to their dependence on consumer credit. They were also important sectors for the future competitiveness of Europe in a low carbon economy. The European Council [approved](#) the EERP in December 2008, and the European Parliament supported the scheme in its [resolution](#) on the EERP in March 2009.

A quickly established instrument to support private investment in research

One key objective of the Commission when proposing the EERP was to implement the priority actions swiftly. The setting up of European institutional PPPs in research, such as the [joint technology initiatives](#) (JTI), had taken about four years between the first steps in 2004 and their becoming operational in 2008. To avoid such delays a new type of PPP was required. The research PPPs under the EERP would be implemented as contractual PPPs (cPPPs) – between the private sector and the European Commission.

The contractual arrangement between the parties would secure EU funding for the long-term on a given topic under the seventh framework programme for research (FP7), to be matched by the private sector. Industry was given the leading role in setting up the programme's research priorities in the defined areas. Under the contractual arrangement, the private sector would produce multi-annual roadmaps of research priorities that would be taken up by the Commission when preparing the first draft of the annual work programme for FP7. After this first step, the standard FP7 procedure would apply to adopting the work programme, including the discussion with the Member States under the comitology procedure. Following the adoption of the work programme, the calls for research projects would be open and follow normal FP7 rules.

Ad-hoc industrial advisory groups were set up on each topic to provide a link between the private sector and the Commission and to prepare the industry input. The existing [European technology platforms](#) (ETPs) in the different sectors helped define the roadmaps, based on their strategic research agendas. Associations set up by EeB and FoF partnerships represented the private side, respectively the Energy efficient Buildings Association (E2BA) and the European Factories of the Future Research Association (EFFRA).



The three contractual PPPs were [launched](#) in March 2009, following a meeting between the Commission and high level representatives of industry in the three sectors concerned. The EU contribution under FP7 to 2013 was defined for each cPPP (Table 1) and was supposed to represent half of the budget of the partnerships with the private sector providing the other half. The first calls under the cPPP scheme [opened](#) in July 2009.

Table 1 – EU funding for the cPPPs under FP7 and Horizon 2020 (in € million)

FP7	FoF	EeB	EGCI								Total
EU planned	600	500	500								1600
EU effective	661	548	439								1648
Horizon 2020	FoF	EeB	EGVI	SPIRE	5G	HPC	Photo.	Robot.	Data	Cyber.	Total
EU planned	1150	600	750	900	700	700	700	700	500	450	7150

Data source: European Commission.

High industrial involvement but low private contribution

An [interim evaluation](#) of the scheme under FP7 was conducted in 2011 and a [final assessment](#) in 2013. The evaluations were generally positive, and the cPPPs were considered a useful scheme to be further developed in the next framework programme, Horizon 2020. The cPPPs benefited from top industrial company and SME engagement. More than 70 % of the participants in the selected projects were not members of the industry associations (EFFRA and E2BA). This showed that the cPPP process remained open and fair to all potential participants. The cPPPs boosted industrial participation in FP7 projects (57 % versus 34 % in other FP7 cooperation projects), but failed to reach the objective of equal co-financing from the private sector, the financial contribution of the EU representing 65 % of the total cost of the projects. The success rates for the calls prepared jointly with the cPPPs was noticeably higher than the average FP7 calls (21.7 % against 14 %). The delay to grant projects under the cPPPs was also slightly shorter than for other FP7 calls.

While the cPPPs were considered an effective response to the crisis, a potential impact on Europe industrial competitiveness would require increased financial support and a longer term commitment. The flexibility of the cPPPs as informal structures compared to JTIs was seen as a positive aspect to setting up the scheme quickly, but the evaluators required the governance of the cPPPs to be formalised and made more transparent. The procedures should be further streamlined and simplified under Horizon 2020 to ease private actor, especially SME, participation.

The focus on demonstration projects addressing medium technology readiness levels (TRLs) rather than low TRLs corresponding to exploratory research projects was seen as a key feature of the cPPPs. The evaluators also pointed out the need to improve awareness of the cPPPs, the dissemination of their activities, and reach out better to SMEs and the private sector in new Member States.

Development of contractual public-private partnerships under Horizon 2020

The cPPP scheme was integrated in the Horizon 2020 [regulation](#) adopted in December 2013 (Article 25). The first three cPPPs were continued (with a slight evolution on green vehicles instead of green cars) and five additional cPPPs were [announced](#) on: a sustainable process industry ([SPIRE](#)); 5G infrastructures ([5G](#)); high performance computing ([HPC](#)); [photonics](#); and [robotics](#). Two additional cPPPs were introduced in [big data](#) in October 2014; and in [cybersecurity](#) in July 2016. Almost 10 % of the Horizon 2020 budget, mainly under Pillar II – Industrial leadership, is ring-fenced for the cPPPs (Table 1).

Industry associations were established for all cPPPs, to clarify the governance of the partnerships. These produce and update the multi-annual roadmap of research priorities that serves as a recommendation for the work programme; interact with the Commission to improve the wording of the calls in the work programme; promote the calls when published; support the projects when selected; and help monitor the projects, increasing dissemination of the results as well as awareness about cPPPs. They are also involved in monitoring the impact of cPPPs and the leverage effect on private investment.

The cPPPs have proven a useful tool for improving private sector participation – both large industries and SMEs – in framework programme calls. Their impact on European industry competitiveness is yet to be demonstrated. They allow stakeholders to interact in a structured way, to produce and share knowledge. The flexibility of the scheme is adapted to the different industrial sectors. The impact of the roadmaps and cPPP activities at the national and regional level vary from one partnership to another and could also be improved.