



**ECTRI POSITION PAPER
ON MISSIONS IN
FRAMEWORK PROGRAMME 9
(FP9)
March 2018**

The European Conference of Transport Research Institutes (ECTRI) is an international non-profit association that was officially founded in April 2003. It is the first attempt to unite the forces of the foremost multimodal transport research centres across Europe and to thereby promote the excellence of European transport research.

Today, it includes 27 major transport research institutes or universities from 20 European countries. Together, they account for more than 4,000 European scientific and research staff in the field of transport. ECTRI as the leading European research association for sustainable and multimodal mobility is committed to provide the scientifically based competence, knowledge and advice to move towards a green, safe, efficient, and inclusive transport for people and goods.

European Conference of Transport Research Institutes | ECTRI aisbl

Rue du Trône 98 | 1050 BRUSSELS | Belgium

Tel: + 32 (0)2 500 56 87/88 | Fax: + 32 (0)2 500 56 89

Number: 831 370 370

Website: www.ectri.org

Contact: Caroline Alméras, Secretary-General

E-mail: caroline.almeras@ectri.org

TABLE OF CONTENT

1. Introduction.....	3
2. Scope of missions in a research and innovation program	3
3. Missions can provide the foundation for implementation.....	4
4. Impact of missions on the Framework Programme	5
5. Selecting adequate missions for research and innovation	6
6. Example mission for the future: “100 carbon neutral cities by 2030”	6

1. Introduction

Both, the Interim Evaluation of Horizon 2020¹ and the report of the high-level group chaired by Pascal Lamy² express a high demand to maximise the impact in the next framework programme for research and innovation (FP9). Their key motivation is to address the overserved shortcoming in the last stages of research and bring more development to commercialisation.

In consideration of the pressing global challenges and the political need for research to prove its purpose, effectiveness and added value to society, the concept of mission was introduced as a key feature of the future framework programme to address these goals while promoting impact and commercialisation of research. The concept of “mission” is described in the report by Professor Mariana Mazzucato³. This document is a reflection of the current plan of missions in FP9 and in particular on the coarse outline of mission as drafted by the report.

2. Scope of missions in a research and innovation program

The central objective of mission is to spur economic growth while addressing grand (societal) challenges e.g. as expressed in 17 Sustainable Development Goals (SDGs). Missions are supposed to link these broad global challenges with specific projects while keeping a clearly defined and measurable target to be achieved through a portfolio of research and innovation actions within a set timeframe.

ECTRI welcomes the intention to address grand challenges and ask for an EU-wide holistic approach that implements mission on an overarching level to activate a portfolio of instruments working towards the achievement of the challenges. The research and innovation framework programme can serve as the key contributor of enabling know-how and technology to substantiate the implementation of appropriate means.

ECTRI doubts that discrete missions embedded in a research and innovation programme alone are capable of achieving a significant and measurable impact in terms of realizing the necessary actions. ECTRI doubts that isolated single missions within a research programme are the right tool to pursue such a task.

The report outlines missions using two key examples for missions: “Man on the moon” and “Energiewende”. These examples ideally demonstrate the issues with missions targeted towards holistic grand challenges in a research context:

- The Apollo programme alone consumed roughly 4% of the federal spending (USA) over a 10-year period. In relation to research funding that is currently still below the 2% GDP

¹ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Horizon 2020 interim evaluation: maximising the impact of EU research and innovation, COM(2018) 2 final, 11/01/2018.

² LAB – FAB – APP Investing in the European future we want. Report of the independent High Level Group on maximising the impact of EU Research & Innovation Programmes, July 2017

³ Mission-oriented research & innovation in the European Union. A problem-solving approach to fuel innovation-led growth, by Mariana Mazzucato, February 2018

target and the fractional share that an individual mission might have in the overall budget, expectations towards the significance of such a mission must be considerably limited.

- The German “Energiewende” is largely focussed on implementation (e.g. the installation of greener technology). The long-term structural shift from fossil fuels to renewable energy sources is driven by the Renewable Energy Sources Act that is an implementation plan and is virtually devoid of research or innovation. In this regard Energiewende can serve as a successful example to implement a political motivated shift with good citizen support and participation, but it is not applicable as a blue print for a research and innovation mission embedded within FP9.

Both examples do rely heavily on research as the Apollo programme was building on previous experience of human spaceflight and the technology that fuels Energiewende is direct result of the previous research in technologies that enable the shift. Both examples exceed the scope of a research and innovation programme significantly in budget and implementation of change (realisation).

In our view **missions in a research and innovation programme can be understood as building blocks** that contribute to overarching EU-goals. The latter needs to be defined at the highest policy level to provide a holistic approach that is implemented in virtually all major instruments (not just research and innovation). FP9 should inherit those goals and derive missions within FP9 to support those overarching EU-goals. The essential role of missions in FP9 is to develop the foundations by means of research and innovation to address these high-level goals. Their **implementation is clearly not part of this building block** as there are dedicated tools at the EU-level for this purpose, e.g. Structural and Investment Funds. ECTRI sees orchestration, governance and steering of these building blocks across the different instruments, executive bodies and agencies as important at highest EU-level.

3. Missions can provide the foundation for implementation

ECTRI appreciates the idea of missions driving the research and development with FP9 towards a specific goal. As this will indeed increase the knowledge of society, foster mature technologies or services and drive innovation to commercialisation on a specific topic.

Once the results of research and innovation reach the maturity of commercialisation the focus can shift to implementation of measures to pursue the goals of a mission. This could be the broad scaling up of technologies or services, e.g. the implementation of photovoltaic installations as pursued and achieved in the context of Energiewende.

ECTRI asks for a clear distinction between the role of research to provide knowledge, concepts, technologies, solutions and governance towards market maturity and implementation as exemplified above, which is not part of this role.

With this distinction in mind, it is clear, that **implementation is not part of a framework programme** for research and innovation. Hence, missions embedded in such a framework need to be flanked by implementation programmes that take the burden of scaling up technologies or services to a degree that their outcome is measurable.

4. Impact of missions on the Framework Programme

Missions as outlined in the report need to have a clear focus on producing a specific goal while fostering commercialisation and pursuing economic growth. This leads to an increased effort regarding higher-TRL research and innovation. With missions embedded into a framework programme it is **crucial to keep an adequate balance throughout the full research and innovation chain.**

Future innovation is based on today's upstream research. If this stream of research is pruned and the effort is focused on the higher TRLs, there will be a short-term increase in innovation noticeable, but in a long-term perspective the lack of low-TRL foundations will diminish future innovation and strangle developments in this segment.

Missions clearly focus on a specific topic and prioritise efforts on this development. This may not lead to a deferral or demotion of other more generic and transversal research topics. This would consequent into a new silos approach of solving grand challenges which is not acceptable for society. Hence, **ECTRI asks to design missions as an additional effort to strengthen the work towards specific challenges without demoting others.**

From a budget standpoint the implementation aspect of a mission can be considered as the more significant part. This may depend greatly on the nature of the mission and the means by which it pursues its target. It also depends on the degree of commercialisation in the implementation. For example, there might be a commercial drive to sell private cars but industry might not see a commercial benefit to pursue a zero emission, zero accident efficient transport system.

With the clear distinction between the role of research and innovation to provide the technological means and implementation that rolls out this technology or this service **ECTRI asks for an upper limit of 15% of the overall research and innovation budget** within FP9 to maintain the broad spectrum of topics and the balance with the research chain (TRLs).

Instruments directed towards implementation should dedicate a higher proportion of the budget for missions to pursue a measurable impact on a grand challenge.

With regard to the intent of missions to target fuel innovation-led growth **ECTRI asks to implement missions as a key part of the European Innovation Council (EIC) within the framework programme (third pillar).** The EIC could facilitate missions by driving the outcome of collaborative research (mid-level TRLs) and even low-TRL research conducted in the context of the European Research Council (ERC) towards maturity and innovation. By linking these activities across ERC (first pillar), collaborative research (second pillar) and EIC within the framework programme **ECTRI suggests an appropriate budget share among these pillars of 15% in the first, 70% in the second and 15% budget in the third pillar.** This should facilitate the "new conversation" between fundamental and applied research in a balanced manner.

5. Selecting adequate missions for research and innovation

Despite doubts that discrete missions regarding grand challenges should be defined exclusively within the research and innovation framework **ECTRI generally agrees with the five key criteria for selecting missions.**

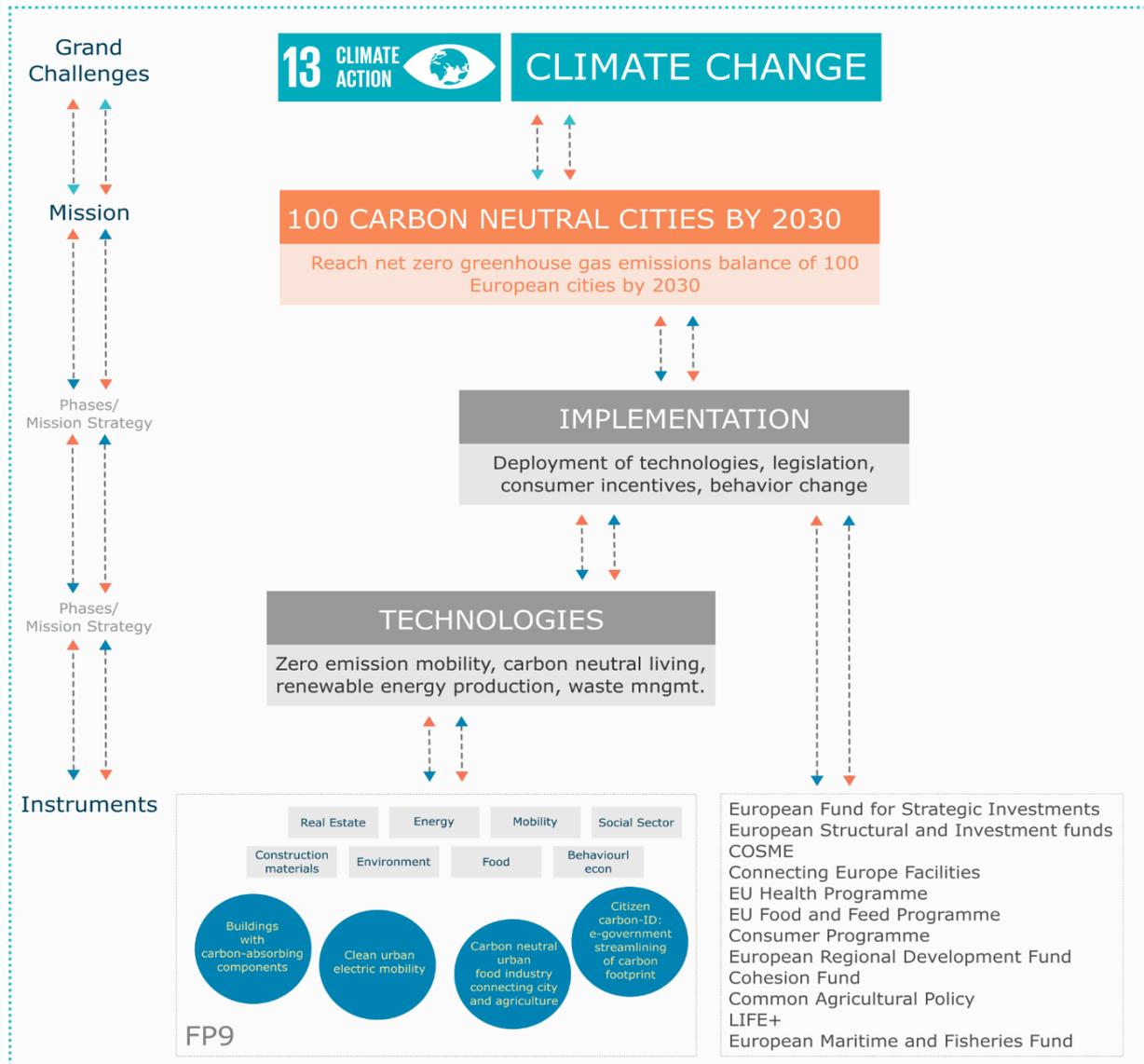
However, ECTRI does not agree to design missions that target implementation within the framework programme. This needs to be considered in the second rule. A binary or quantifiable key performance indicator within the scope of research and innovation is only acceptable, if it can be reached within this scope. For example, it is possible to define a mission to develop a battery electric vehicle (BEV) that conforms to crucial requirements in terms of price, range and market maturity. A mission cannot pursue a penetration of 10% with BEV on public roads all the more so as to achieve this objective, it would be necessary to have a network of adapted charging stations. This target goes beyond the scope of a framework programme for research and innovation and needs to be achieved by dedicated external EU-instruments.

6. Example mission for the future: “100 carbon neutral cities by 2030”

The figure below shows the example mission “100 carbon neutral cities by 2030” that has been described in Mariana Mazzucato’s report and has been modified in a way to exemplify the statements of this paper.

Assuming that fighting climate change (13th SDG) is one of the EU’s top priorities and hence has been implemented in the core EU-strategies, missions can be the cornerstone of these strategies, here exemplified by the “100 carbon neutral cities by 2030”-mission:

Such a mission can consist of different phases, like those in Energiewende. The phases could be comprised out of “Technologies”, in which the enabling technologies are developed, and “Implementation”, targeting the market-uptake and large-scale deployment of these technologies.



Modelled from M. Mazzucato's report

Missions are implemented overarching the executive instruments and, thus allow a synergistic orchestration of their contributions to achieve substantial impact with combined forces. In this example FP9 is depicted as key contributor to the technology development. Other complementary instruments might contribute as well, e.g. COSME promoting the translation of high-TRL innovation into commercialisation.

Implementation is significantly supported by the instruments that are dedicated for this purpose, such as EFSI or ESIF, as well as the instruments that can support this process on a thematic level. In the example of carbon neutral urban food industry, EU Food and Feed Programme, CAP and EMFF could take their stake to drive contributions.

This example shows that the orchestration of EU-instruments overcomes the limited scope of a research programme and larger dimensions in missions can be achieved. It also shows a clear distinction between the role of research in a mission and offers a solution how to overcome the lack of implementation of otherwise discrete research and innovation mission that is confined by technology or services development.