Horizon Europe
#HorizonEU

How did we get there? AND
Where do we go next?

Structure of the Programme: Evolution not Revolution

94.1bn

= 10 per cent of government research funding across EU
= more than Horizon 2020 (77 bn)
= without a "membership fee" from UK

25.8bn

52.7bn

13.5bn

Pillar 1
Open Science

European Research Council

Marie Skłodowska-Curie Actions

Infrastructures

Pillar 2
Global Challenges and Industrial Competitiveness

Clusters
- Health
- Inclusive and Secure Society
- Digital and Industry
- Climate, Energy and Mobility
- Food and natural resources

Joint Research Centre

Pillar 3
Open Innovation

European Innovation Council

European innovation ecosystems

European Institute of Innovation and Technology

Strengthening the European Research Area

Sharing excellence

Reforming and Enhancing the European R&I system

Pillar 1: Open Science

- **European Research Council** (bottom-up, excellence), €16.6 billion
- **Marie Sklodowska-Curie Actions** fellowships for training programmes, postdocs, and staff exchanges (bottom-up, mobility across borders, sectors and disciplines; may set foci on missions, types of institutions, geography); Seal of Excellence for ESF+, €6.8 billion
- **Research infrastructures** (ESFRI, EOSC+EDI, various networks, reinforced international dimension), €2.4 billion

25.8bn

Pillar 2: Global Challenges and Industrial Competitiveness

Clusters

SDGs as part of the key drivers, co-designed and co-created with end-users, producers, STI, educators, civil society, citizens; use of KETs, etc.

- **Health**, €7.7 billion
- **Inclusive and secure societies**, €2.8 billion
- **Digital and industry**, €15 billion
- **Climate, energy and mobility**, €15 billion
- **Food and natural resources**, €10 billion

JRC

- €2.2 billion

SSH included in all clusters (incl. specific and dedicated activities), embedded non-technological innovation, communication/dissemination/exploitation / likewise: maritime and maritime

Existing FET Flagships to be continued

52.7bn

Cluster „inclusive and secure societies"

- **Democracy** (digitalisation effects, education and youth, citizenship, transparency, populism, terrorism, marginalised citizens, journalistic standards, combating disinformation, identities, impact of S&T (big data, online networks, AI) on democracy, inequality and participation
- **Cultural heritage** (heritage studies, digital technologies, access and sharing, creative sectors, conservation, regeneration, heritage-based innovation, cultural tourism, languages, traditions, values, sense of belonging)
- **Social and Economic Transformations** (education and training, sustainability beyond GDP, new business models and financial technologies, understanding of growth and innovation, work and labour markets, income distributions, tax and benefit systems, mobility and migration, online risks, modernisation of public authorities, efficiency of justice systems)
- **Disaster-resilience** (emergency response, interoperability)
- **Protection and security**
- **Cybersecurity**

Overview of cluster topics

Table 1: Clusters and intervention areas

Health	Inclusive and Secure Society	Digital and Industry	Climate, Energy and Mobility	Food and Natural Resources
– Health throughout the life course – Environmental and social health determinants – Non-communicable and rare diseases – Infectious diseases – Tools, technologies and digital solutions for health – Health care systems	– Democracy – Cultural heritage – Social and economic transformations – Disaster-resilient societies – Protection and Security – Cybersecurity	– Manufacturing technologies – Key digital technologies – Advanced materials – Artificial intelligence and robotics – Next generation internet – Advanced computing and Big Data – Circular industries – Low-carbon and clean industries – Space	– Climate science and solutions – Energy supply – Energy systems and grids – Buildings and industrial facilities in energy transition – Communities and cities – Industrial competitiveness in transport – Clean transport and mobility – Smart mobility – Energy storage	– Environmental observation – Biodiversity and natural capital – Agriculture, forestry and rural areas – Sea and oceans – Food systems – Bio-based innovation systems – Circular systems

„Missions"

- Communication / marketing: connection to the citizen

- Missions are not specified in the programme (only criteria and characteristics); will get somewhere between €5 - €10 billion, Moedas: "*It's very difficult to create missions today for 2021-2027. So we are just going to set down criteria*"

- Mission boards: 10-15 experts, Member States, stakeholders, citizens (e.g. including patient representatives, etc.) - in place beginning 2019 to define the first missions, management of a portfolio of projects

Some of the almost 100 examples: finding a cure for Alzheimer's disease, creating zero-carbon boats
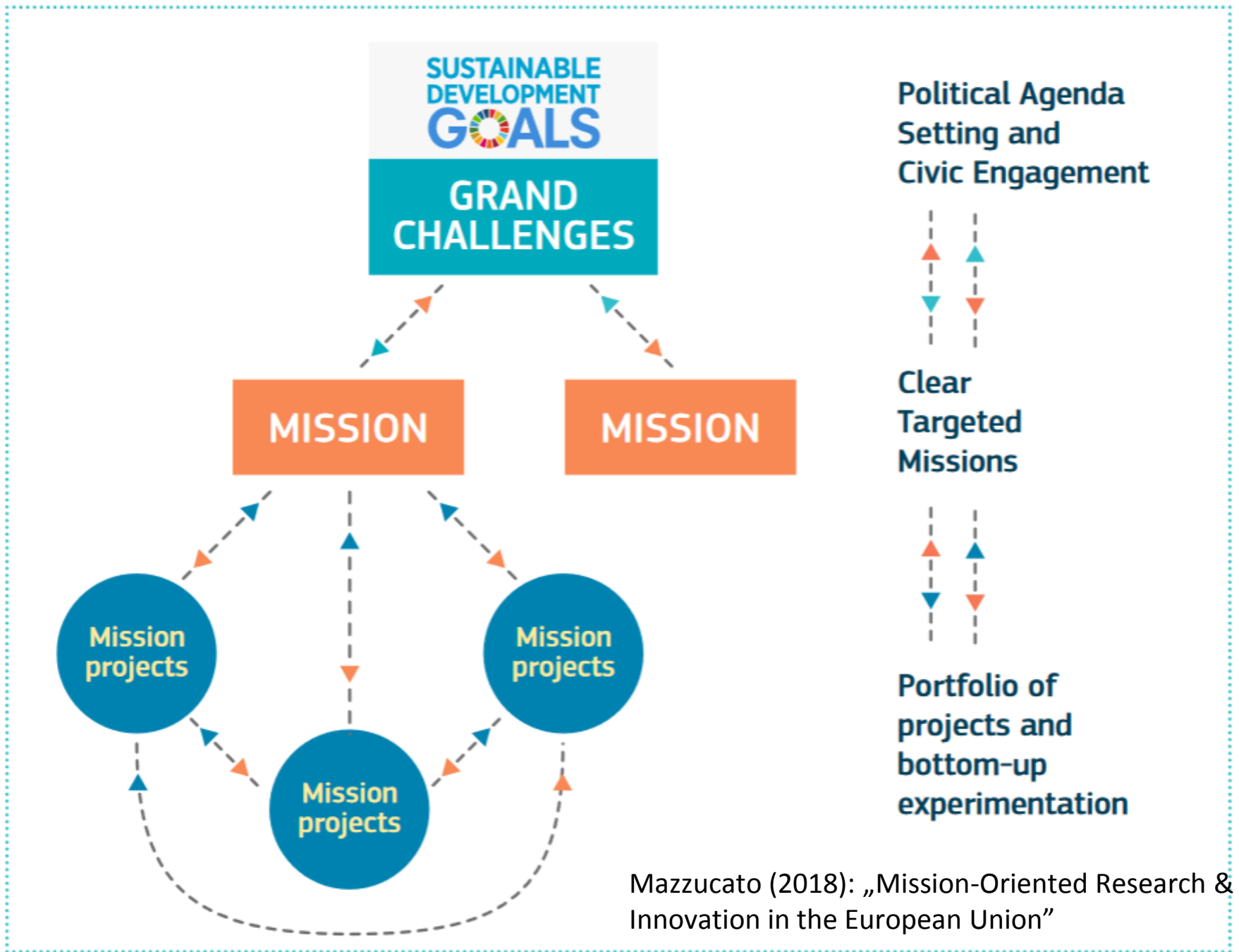
Mazzucato (2018): „Mission-Oriented Research & Innovation in the European Union"

Pillar 3: Open Innovation

- **European Innovation Council** (EIC), €10.5 billion (includes €500 million for 'European innovation ecosystems') – <u>pathfinder</u> grants for early stage high-risk innovation, open to individuals and companies; <u>accelerator</u> funding: larger to get innovations to market

- **European Institute of Innovation and Technology** (EIT), €3 billion

Today: SME Instrument, Fast Track to Innovation, FET Open

13.5bn

Strengthening the ERA

- '**Sharing excellence**', €1.7 billion (Teaming, Twinning, ERA Chairs, COST)

- '**Reforming and enhancing the European R&I system**', €0.4 billion (Scientific evidence and foresight, monitoring and evaluation, supporting open science initiatives, Policy Support Facility, attractive researcher careers, supporting enhanced international cooperation, citizen science, RRI, gender equality)

2.1bn

Open access, open data, dissemination

- Provide dedicated support for open access, knowledge repositories, mandatory Data Management Plans & technical standards (persistent and unique identifiers, certified repositories, „as open as possible, as closed as necessary", labelling for good practices, research integrity

- Commission support to identify results and disseminate in a non-discriminatory fashion, support to beneficiearies for communication of their work and ist impact

- Support to Citizen Science

WHAT'S NEW?

⚡ Support breakthrough innovation →	European Innovation Council
🎯 Create more impact through mission-orientation and citizens' involvement →	EU-wide R&I missions
🔓 Reinforce openness →	Open science policy
✅ Rationalise the funding landscape →	New approach to Partnerships
✂ Reduce administrative burden →	Simpler rules

What's still the same?

- Main funding types (RIA, IA, ERC, training and mobility, programme co-fund, pre-commercial procurement, coordination and support action, inducement / recognition price, …) New: mix of grant-type funding and private financing

- Mix of bottom-up and top-down topics but: further emphasis on non-prescriptive calls

- Same award criteria (excellence, impact, quality and efficiency of implementation) – except ERC/EIC

- Same funding rates (100%/70% for IA, 25% indirect costs), some simplifications on reimbursement schemes

- Same eligibility rules

- Same time to grant (5+3)

- Certificate on financial statements mandatory from 325.000 euro

- +/- 5% for a „Mutual Insurance Mechanism"

Strategic Planning

- Possibility to react to unforeseen events, crisis situations, policy needs, etc.
- With stakeholder involvement, inclusion of foresight studies and scientific evidence
- Fewer Programme Committees

Programme Committee configurations

List of configurations of the Programme Committee in accordance with Article 12(2):

1. Strategic configuration: Strategic overview of the implementation of the whole programme, coherence across the different parts of the programme, missions and Strengthening the European Research Area
2. European Research Council (ERC) and Marie Skłodowska-Curie Actions (MSCA)
3. Research Infrastructures
4. Health
5. Inclusive and Secure Society
6. Digital and Industry
7. Climate, Energy and Mobility
8. Food and Natural Resources
9. The European Innovation Council (EIC) and European Innovation ecosystems

3 types of „European Partnerships“

1. **co-programmed European Partnerships**, based on memoranda of understanding or contractual arrangements, private-public partnerships: supporting coordination, without funding research (upon suggestion)
2. **co-funded European Partnerships**, based on a single, flexible co-fund action, encourage Co-funding based on HorizonEU rules (fitting to missions)
3. **institutionalised European Partnerships** (based on Article 185 or 187 of the Treaty on the Functioning of the European Union)

Criteria set for selecting, implementing, monitoring, evaluation and phasing out (mandatory exit clauses)

No more P2Ps, PPPs, ERA-NETs, FET Flagships, cPPPs

International cooperation

- Association: European Economic Area countries, acceding/candidate/potential candidate, Neighbourhood Policy

- **Pay as you go:** for non-EU "third countries", such as Canada, Japan and South Africa (countries with good STI capacity, "rules-based open market economy, including fair and equitable dealing with intellectual property rights, backed by democratic Institutions", „ active promotion of policies to improve the economic and social wellbeing of citizens" - a free trade agreement with the EU and a programme-specific agreement) – parts of the programme may be excluded, reciprocity desired

Horizon Europe will significantly **strengthen international cooperation** which is crucial to ensure access to talent, knowledge, know-how, facilities and markets worldwide, to effectively tackle global challenges and to implement global commitments. The Framework Programme will intensify cooperation and extend association agreements to include countries with excellent science, technology and innovation capacities. The Programme will continue to fund entities from low-to-mid income countries, and to fund entities from industrialised and emerging economies only if they possess essential competence or facilities.

Science and Technology Cooperation dialogues with the EU's international partners and policy dialogues with the main world regions will make important contributions to the systematic identification of opportunities for cooperation which, when combined with differentiation by country/region, will support priority setting.
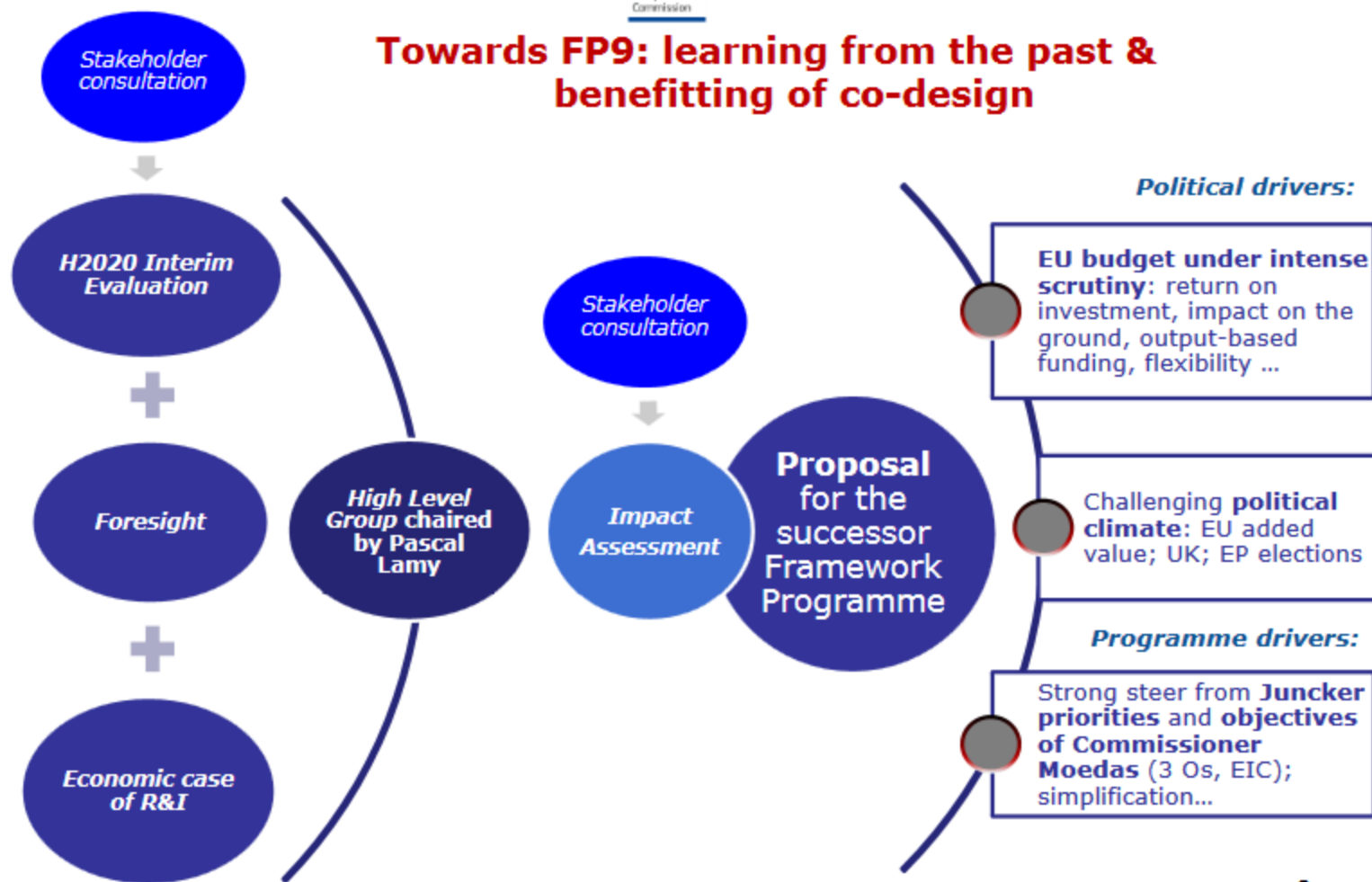
Social innovation and societal impact

- Mentioned in the proposal as part of a balanced and broad approach
- EU as a model for inclusive and sustainable growth with a focus on human rights, democratic governance, etc. „empowering citizens through social innovation", acknowledging the role of SSH
- Societal impact (one of three impact pathways):

1. Scientific impact: knowledge, skills, technologies, solutions
2. Societal impact: impact on Union policies, solutions for global challenges
3. Economic impact: innovation, market deployment

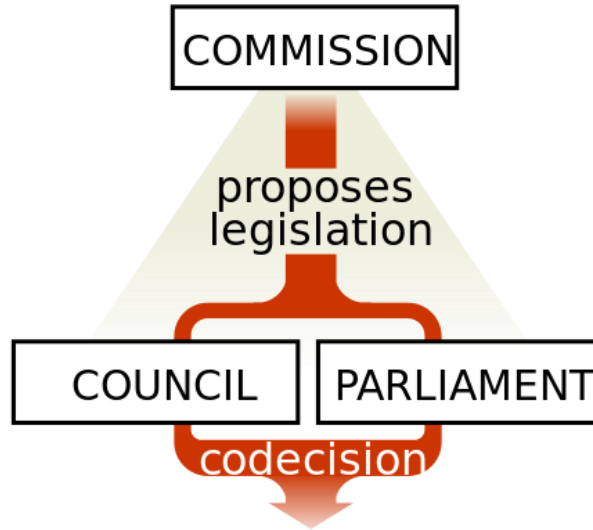| Towards societal impact	Short-term	Medium-term	Longer-term
Addressing EU policy priorities through R&I	Outputs - Number and share of outputs aimed at addressing specific EU policy priorities	Solutions - Number and share of innovations and scientific results addressing specific EU policy priorities	Benefits - Aggregated estimated effects from use of FP-funded results, on tackling specific EU policy priorities, including contribution to the policy and law-making cycle
Delivering benefits and impact through R&I missions	R&I mission outputs - Outputs in specific R&I missions	R&I mission results - Results in specific R&I missions	R&I mission targets met - Targets achieved in specific R&I missions
Strengthening the uptake of innovation in society	Co-creation - Number and share of FP projects where EU citizens and end-users contribute to the co-creation of R&I content	Engagement - Number and share of FP beneficiary entities with citizen and end-users engagement mechanisms after FP project	Societal R&I uptake Uptake and outreach of FP co-created scientific results and innovative solutions

http://uas4europe.eu/files/UAS4EUROPE-EC-Hawdon-2017-15-03.pdf

Co-decision procedure

Finland 2019

COMMISSION
proposes legislation
COUNCIL PARLIAMENT
codecision

Rapporteurs: Ehler & Nica

Stakeholder comments:
https://era.gv.at/directory/238

NEXT STEPS

02/05 2018	07/06 2018	28-29/ 06/2018	12/09 2018	18-19/ 10/2018	13-14/ 12/2018	21-22/ 03/2019	09/05 2019
Multiannual Financial Framework beyond 2020 package	Legislative sectoral proposals for spending programmes	European Council	President Juncker's State of the Union Address	European Council	European Council	European Council	Sibiu Summit

03/19 Brexit

05/19 EP elections

2019 Vote MFF/FP9 Adoption

2020 Programming/ Calls

Expenditure for actions may be eligible from 1 January 2021

Compared to the past: Horizon 2020 timeline

Heads of Estate agree MFF (2) budget

European Parliament's Industry and Research Committee (ITRE) conclude their discussions and preparatory work ready for Council and Parliament adoption in Autumn 2013.

Programme officially starts

Nov 2011: Commission published proposal for H2020 (1)

3rd December 2013 : Adoption by EU Council (3)

Parliament rejects February's resolution

Ireland Presidency ends. Lithuania Presidency starts

H2020 national launch events

Draft Work Programmes emerge

2011/12	Jan	Feb	March	April	May	June	July	August	Sept	Oct	Nov	Dec	January 2014

2013

26/06/2013 - _Agreement reached on Horizon 2020,_ based on the following:
→ **Flat rates**: Research activities to be reimbursed at 100% direct costs and 25% for indirect costs. For 'Innovation actions' (previously called close-to-market activities) 70%, but 100% for HEs, non-for-profit and ROs.
→ **Time-to-grant to be reduced** to 8 months (5 months evaluation + 3 months negotiation)
→ **Spreading Excellence and Widening Participation**: will be addressed as separate parts of the programme with 1.66% of budget, instead of being embedded across the programme.
→ **Budget distribution**: 85% of the Energy Societal Challenge earmarked for non-fossil energy research; 40% of Future Emerging Technologies (FET) earmarked for FET Open (bottom up early stage joint science and Technology research exploring the foundations of radically new future technologies).
→ **Target for SME participation**: set at 20% (indicative)
→ **Fast Track To Innovation** a pilot to be launched in 2015, likely to have open calls with several cut-off deadlines per year. There will be fast time to grant, innovation actions with up to 5 partners and a budget of EUR 3mill per project.

12 Nov 2013: EU institutions reach political agreement on overall EU budget for 2014, which should ensure start of Horizon as planned

Publication of first calls for proposals 11 December 2013

19 Nov 2013: Multiannual Financial Framework (MFF) approved by EU parliament (3)

(1) Official documents (Rules for Participation) available here: http://ec.europa.eu/research/horizon2020/index_en.cfm?pg=h2020-documents
(2) MFF: Multiannual Financial Framework, which sets the overall budget for Europe 2020. The MFF must be agreed before Horizon 2020 can be adopted.
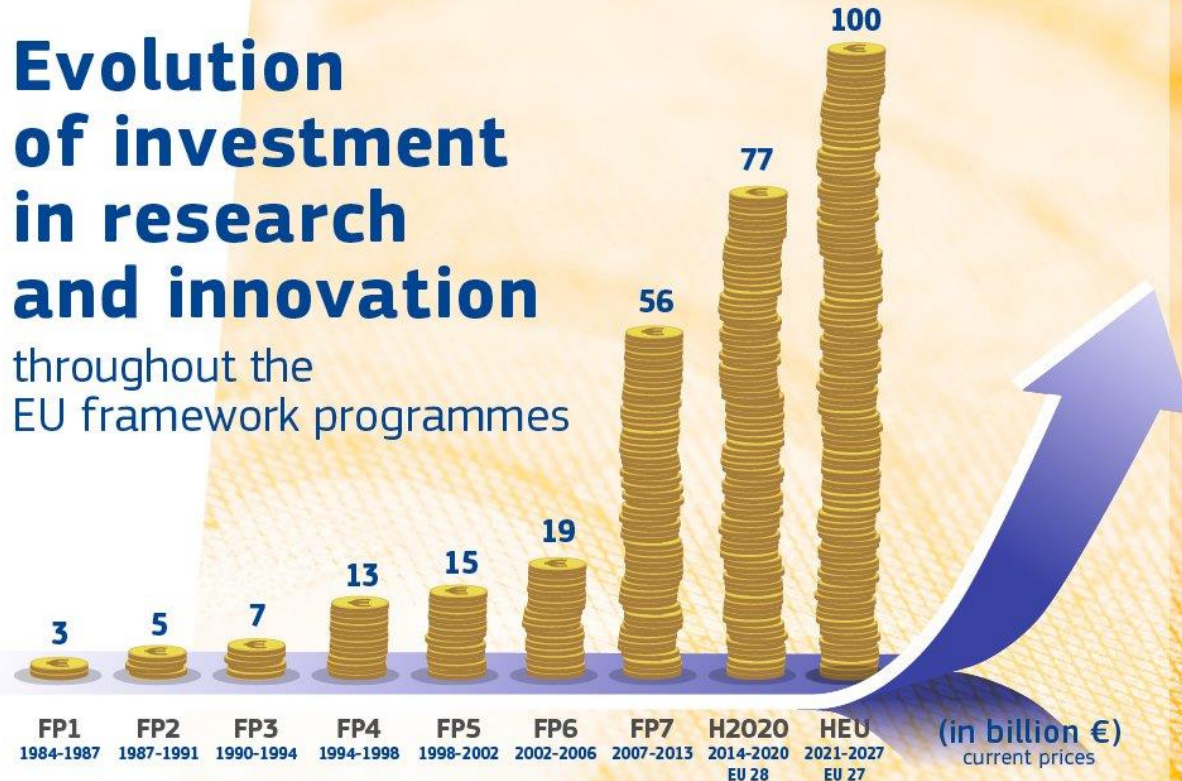(3) Part of the 'Ordinary legislative procedure' (formerly known as "co-decision"): Click here for an explanatory diagram.
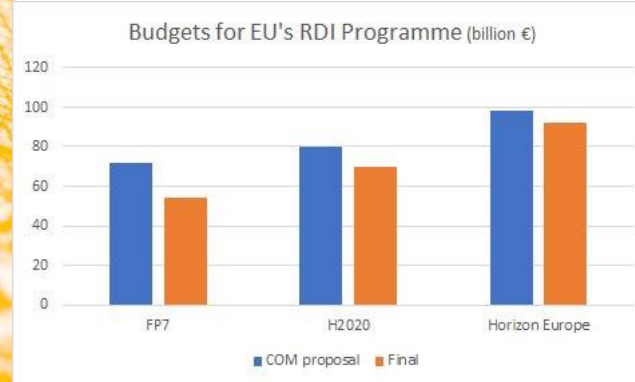
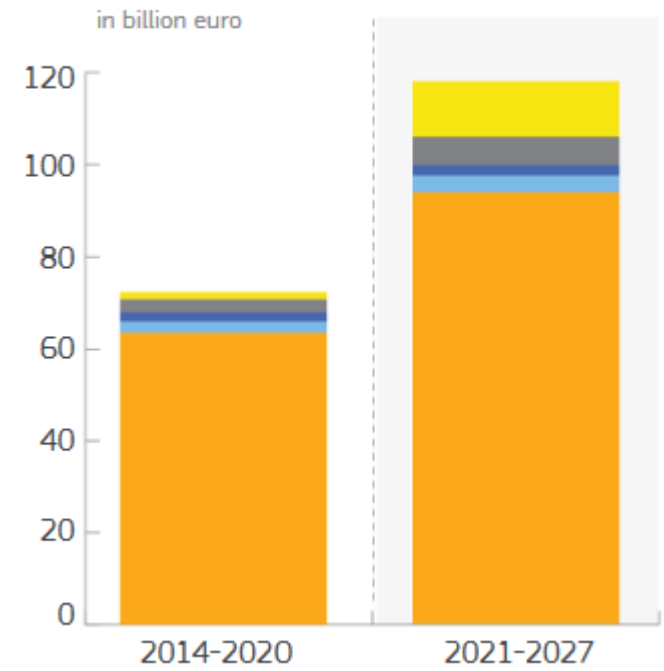*"[The cake is bigger, and the guy that was eating most of the cake is no longer at the table](#)"*.

Budgets for R&I

- increase investment in research and innovation by allocating €114.8 billion from the future long-term EU budget

- Synergies with other programmes (e.g. Erasmus, External Instruments, InvestEU etc.)

Investing in the future

in billion euro

Digital Europe Programme & Connecting Europe Facility - Digital ▮ (yellow)

International Thermonuclear Experimental Reactor (ITER) ▮ (grey)

Euratom Research and Training Programme ▮ (dark blue)

Innovation Window InvestEU Fund ▮ (light blue)

Horizon Europe ▮ (orange)

Source: European Commission

Note: Compared to the Multiannual Financial Framework 2014-2020 at EU-27 (estimate)