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# Horizon 2020 Work Programme for Research & Innovation 2018-2020

## Open to the World

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Research and Innovation

# What is Horizon 2020?

- **Horizon 2020** is the EU Framework Programme for **Research & Innovation** and the **biggest multinational** programme of its kind with a budget of almost € 80 billion

- **Horizon 2020** is focused on 3 pillars: **Excellent Science**, **Industrial Leadership** and **Societal Challenges**

## Horizon 2020 is Open to the World!

- **Researchers & institutions**, public or private, **from all over the world**, regardless of nationality or residence, **can take part in Horizon 2020**

- **Horizon 2020 is** extremely **popular across the globe**: so far, 7750 applications from **152 countries**

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# Horizon 2020
# After nearly 4 years of implementation

## Interim Evaluation

- ✓ **An attractive, simplified and well-performing € 77 billion programme**, but **underfunded** (12% success rate)
- ✓ On track to deliver **value for money** and **to meet its knowledge-creating objectives**
- ✓ Strong **EU Added Value** through unique opportunities, competition & access to new knowledge.

## Participation (Oct. 2017)

- ✓ 15,000 grant agreements
- ✓ with € 27 billion EU contribution
- ✓ 65,000 participations

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# Horizon 2020: Next 3 years of implementation
# Work Programme 2018-2020

**Objectives of Strategic Programming**

Provide for a coherent implementation of the **Horizon 2020 objectives** and the multiannual approach, taking account of the **Interim Evaluation and first two work programmes** (for 2014-15 and 2016-17)

Enhance relevance and impact by delivering against the **EU policy priorities** and the priorities **'Open Science - Open Innovation - Open to the World'**

Prepare for a bridge in the last years of the programme to enable a **smooth transition to the successor to Horizon 2020**

## Work Programme 2018-2020

# R & I investment of € 30 billion for 3 years


- **Addressing main concerns of citizens** such as security, migration and economic situation…
- **Focus on impact** (fewer & broader topics with sharpened impact statements, better dissemination of results, open access to data…)
- **Piloting new initiatives** and **flexibility for 2020**, with 'minimum' content of calls and other actions at this stage

Video

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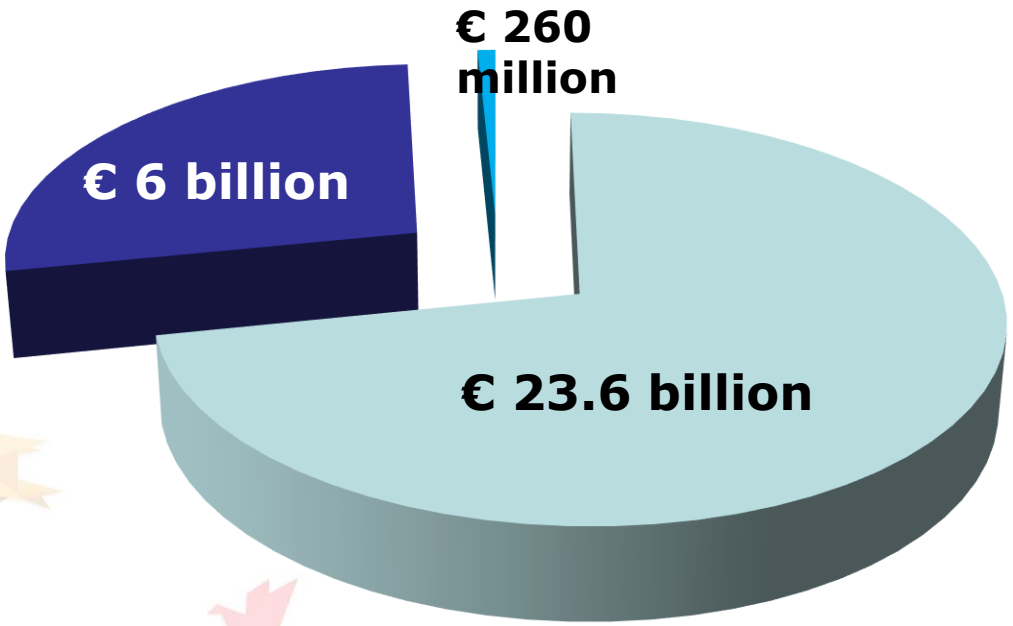
# Structure of € 30 billion R&I investment (2018-2020)




- Main Horizon 2020 Work Programme (2018-2020)
- European Research Council (2018-2020)
- Euratom, including Fusion (2018)

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**The Work Programme 2018-2020 has 4 focus areas with a total budget of approximately 7 billion euros focusing on:**

- ***'Building a low-carbon, climate resilient future'***
- **'Connecting economic and environmental gains – the Circular Economy'**
- ***'Digitising and transforming European industry and services'***
- ***'Boosting the effectiveness of the Security Union'***

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**The Work Programme 2018-2020 has several pilots including on the European Innovation Council (EIC):**

- **Focus on support for radically innovative firms and entrepreneurs with the potential to scale up their businesses rapidly at the European and global levels**
- **Fully bottom-up SME instrument to find the most innovative ideas**

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# Excellent science

**Over 3000 grants from the European Research Council**

(2018-2020: €6 billion)


**Over 30 000 Marie Skłodowska-Curie fellows**

(2018-2020: €2.9 billion)

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## Open Science

- ✓ Over **€ 2 billion** to support for Open Science
- ✓ **European Open Science Cloud** and European Data Infrastructure (€ 600 million)
- ✓ New: Open Research Europe platform for Horizon 2020 and successor framework publications

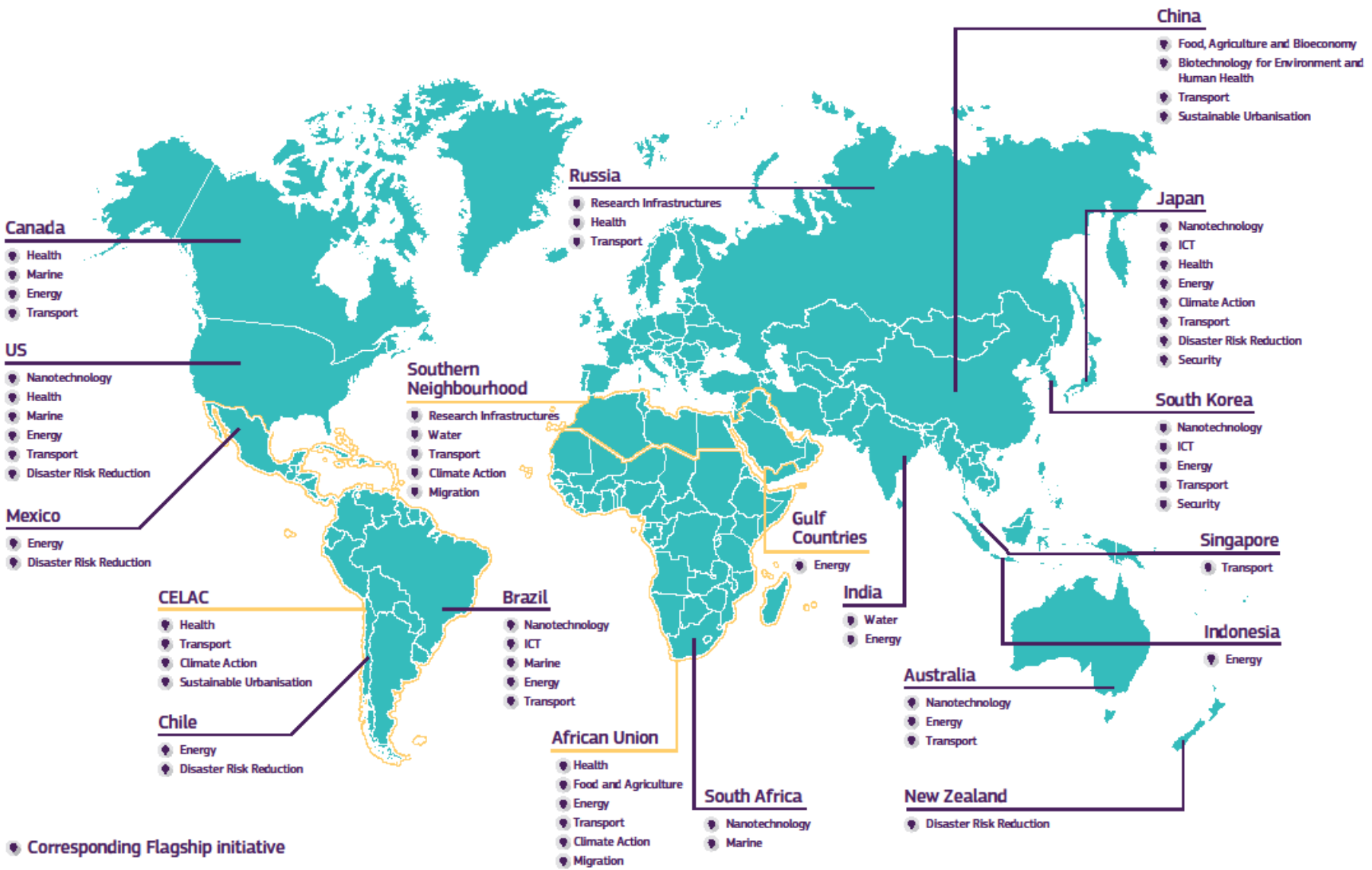
## Open Innovation

- ✓ **EIC pilot (€ 2.7 billion)**
- ✓ Open innovation test beds (€ 200 million)
- ✓ Ca. 30 topics of € 300 million budget in the Societal challenges pillar

## Open to the World

- ✓ **Over €1 billion investment for 30 international flagship initiatives:** with Canada on personalised medicine; with African countries on food security and renewable energies; with the US, Japan, South Korea, Singapore and Australia on road transport automation; with India on water challenges ....
- ✓ Strong international component in the European Research Council (ERC) and Marie Skłodowska-Curie actions, e.g. ERC expected to fund 240 more non-EU/AC nationals as Principal Investigators

# Where are the Horizon 2020 flagships?



# 14 Horizon 2020 international flagships targeting Japan in 9 thematic areas

- **ICT**: Bilateral Flagship through "*Coordinated Call on 5G communication networks, security, cloud, IoT, Big Data*". Targeted in flagship on "*Unconventional Nanoelectronics*".
- **Transport**: Targeted in Flagships on "*Greener and safer aviation*", "*Automated road transport*", "*Integrated multimodal freight transport systems and logistics*", and "*Reduction of transport impact on air quality*".
- **Energy**: Bilateral Flagship on "*Advanced biofuels*". Targeted in Flagship on "*Mission Innovation*" on clean energy in general.
- **Health**: Cooperation through several multilateral initiatives. Targeted in Flagship on "*Technologies for global health care*".
- **Disaster Risk Reduction**: Targeted in Flagship on "*Operational forecasting of earthquakes and early warning capacity for more resilient cities*".
- **Security**: Targeted in Flagship on "*Technologies for first responders*".
- **Nanotechnologies**: Targeted in Flagship on "*Nanosafety*".
- **Climate Action**: Targeted in Flagship on "*Changing cryosphere/Arctic research*".
- **Research Infrastructures**: Targeted in Flagship "*Integrating and Opening activities".*

# Horizon 2020 – Work Programme 2018-20
# 22 Call topics encouraging cooperation with Japan

| Year | Call identifier | Call topics |
|---|---|---|
| 2018 | DT-ART-01-2018 | Testing, validation and certification procedures for highly automated driving functions under various traffic scenarios based on pilot test data |
| | DT-ART-02-2018 | Support for networking activities and impact assessment for road automation |
| | EUJ-01-2018 | Advanced technologies (Security/Cloud/IoT/BigData) for a hyper-connected society in the context of Smart City |
| | EUJ-02-2018 | 5G and beyond |
| | INFRAIA-01-2018-2019 | Integrating Activities for Advanced Communities |
| | MG-2-5-2018 | Innovative technologies for improving aviation safety and certification in icing conditions |
| | NMBP-13-2018 | Risk Governance of nanotechnology (RIA) |
| | NMBP-14-2018 | Nanoinformatics: from materials models to predictive toxicology and ecotoxicology (RIA) |
| | SC1-HCC-03-2018 | Support to further development of international cooperation in digital transformation of health and care |
| | SC5-17-2018 | Towards operational forecasting of earthquakes and early warning capacity for more resilient societies |
| | SU-DRS01-2018-2019-2020 | Human factors, and social, societal, and organisational aspects for disaster-resilient societies |
| | SU-DRS02-2018-2019-2020 | Technologies for first responders |
| 2019 | DT-ART-03-2019 | Human centred design for the new driver role in highly automated vehicles |
| | DT-ART-04-2019 | Developing and testing shared, connected and cooperative automated vehicle fleets in urban areas for the mobility of all |
| | ICT-06-2019 | Unconventional Nanoelectronics |
| | LC-CLA-07-2019 | The changing cryosphere: uncertainties, risks and opportunities |
| | LC-MG-1-7-2019 | Future propulsion and integration: towards a hybrid/electric aircraft |
| | MG-2-9-2019 | Integrated multimodal, low-emission freight transport systems and logistics (Inco Flagship) |
| | NMBP-15-2019 | Safe by design, from science to regulation: metrics and main sectors (RIA) |
| | SU-SPACE-22-SEC-2019 | Space Weather |
| 2020 | NMBP-16-2020 | Safe by design, from science to regulation: behaviour of multi-component nanomaterials (RIA) |
| | NMBP-17-2020 | Regulatory science for medical technology products (RIA) |

# Next steps – preparations for the next framework programme for research and innovation (FP9)

## KEY FINDINGS of the Interim Evaluation of Horizon 2020 on EFFICIENCY:

**Horizon 2020 is a major success**

**However, international cooperation** should be further increased.

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# KEY FINDINGS of the Interim Evaluation of Horizon 2020 on RELEVANCE:

## ROOM FOR IMPROVEMENT:

- Establish an **impact-focused, mission-oriented approach.**
- The strategic challenges and objectives are **not always clearly translated in specific calls** and topics.
- Low involvement of civil society (but improved over FP7). Need to **bring R&I closer to the public.**

- "I am convinced that the core values of Horizon 2020 and its successor have to be:"

**EXCELLENCE** **OPENNESS** **IMPACT**

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**A mission-oriented approach**

"*We need to define missions that breakdown silos.*

*We have made progress in Horizon 2020 to focus resources in selected areas. But we still support too many different projects that disperse or fragment our funding.*

*We need to set our eyes on a specific target, and drive our scientific efforts towards reaching that target. And we need to be ambitious about it*."

EU-Japan cooperation could benefit from such a mission-oriented approach focusing on common challenges through missions of common interest that could be linked to the SDGs.

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# Indicative timeline

## 2018

- Next MFF Commission proposal (Q2, tbc)
- Successor Framework Programme Commission proposal (Q2, tbc)

## 2021

Start of implementation of FP9

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# Interested to know more?

## Visit our
## Horizon 2020 Participant Portal


**Useful links:**

European Commission, DG Research and Innovation:
http://ec.europa.eu/research/index.cfm

DG Research and Innovation, Japan page :
http://ec.europa.eu/research/iscp/index.cfm?pg=japan

Participant Portal:
http://ec.europa.eu/research/participants/portal/desktop/en/home.html

Participant Portal, Japan page :
http://ec.europa.eu/research/participants/data/ref/h2020/other/hi/h2020_localsupp_japan_en.pdf

Horizon 2020:
http://ec.europa.eu/programmes/horizon2020/en

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