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Horizon 2020 Work Programme for Research & Innovation 2018-2020

H2020 Transport
Virtual info day – 23/10/2018

We start at 09:30

#H2020Transport

Research and
Innovation



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Horizon 2020 Work Programme for Research & Innovation 2018-2020

H2020 Transport
Virtual info day – 23/10/2018

Welcome and opening

Clara de la Torre
Director Transport
DG RTD

#H2020Transport

Research and
Innovation

“Research and Innovation will play a crucial role in our efforts to tackle climate change and the EU will continue to lead in that domain. We must raise our ambitions in combating climate change in line with the outcome of this report (IPCC), and turn today's challenges into opportunities.”

*Carlos Moedas
Commissioner for Research, Science & Innovation*



Commission européenne
European Commission

Transport R&I policy orientations (1)

1. DECARBONISATION

- An “*immediate and ambitious greenhouse gas reduction action that leads to net zero emissions by 2050*” is needed more than ever - **Paris Agreement**, recent **IPCC Special Report** and **SDGs**
- **Increased focus in the Transport WP 2019**
 - **#EUBatteryAlliance** : new cross-cutting call “*Building a Low-Carbon, Climate Resilient Future: Next-Generation Batteries*” - EUR 114 Mio total budget / EUR 70 Mio for transport-related topics;
 - **Green Vehicle call** : 3 topics in 2019 => preparing the ground for the massive increase of electrified vehicles on our roads
 - **MG call**: 7 topics on low carbon transport solutions in aviation, waterborne and logistics

Horizon 2020 investment targets:

- ✓ 35% climate actions
- ✓ 60 % sustainable development

Transport Challenge total budget 2019

- ✓ EUR 386 M

Transport R&I policy orientations (2)

2. DIGITISATION

- **Connected and automated driving** continues to play a major role and to contribute to road safety, better traffic flow, less congestion, fuel efficiency and ultimately to reduce carbon emissions
- **Focus on the socio-economic dimension of the ART call:** user behaviour and acceptance, users' mobility needs, innovative door-to-door solutions in urban areas

3. SAFETY in all transport modes

- Waterborne freight, road mobility, drones and logistics

4. INTERNATIONAL COOPERATION

- **Three Flagships topics in 2019** addressing global challenges in aviation, logistics and urban mobility and 4 more topics open to InCo



The Future of Transport R&I

- **The Transport WP 2020:** in preparation – adoption expected in June 2019
- **Horizon Europe :** in preparation - EC proposal adopted on 7 June 2018 – ongoing negotiations with Council and EP
- Transport R&I in **Cluster 4** on «**Climate, Energy and Mobility**» - main features:
 - more than the sum of the respective H2020 parts;
 - more **impact-focused R&I** – supporting the implementation of EU policy goals and links between fuels/electricity (supply-side) and transport (demand-side)
 - **new holistic / system-wide / integrated view** – e.g. focus on citizens, industry and user needs
 - **more synergies** across R&I areas, along the full innovation cycle, within the FP and with other EU funding instruments (CEF, Life)
 - **mainstreaming** and thus more impact of Social Sciences & Humanities, citizen & consumer empowerment, economic & behavioural aspects, standardisation and innovation-friendly frameworks



Thank you!

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www.ec.europa.eu/research

Funding & tender opportunities

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/home>



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Welcome and opening

Herald Ruijters

Director Investment, Innovative
and Sustainable Transport

DG MOVE

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Dirk Beckers
Director
INEA

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H2020 Transport - Virtual info day

Mobility for Growth (MG) Calls

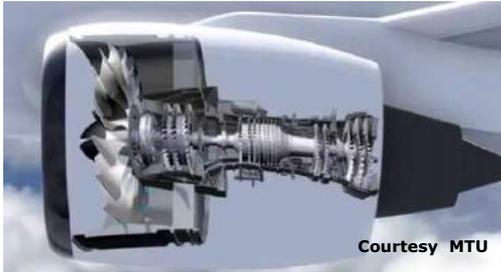
Low carbon & sustainable transport

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LC-MG-1-5-2019



TRL 1 to 4
RIA

EU contribution:
€ 3-5 million

Expected Impact:
Faster contribution to
the ACARE 2050
goals.

Advancements in aerodynamics and innovative propulsion systems for quieter and greener aircrafts

Specific Challenge:

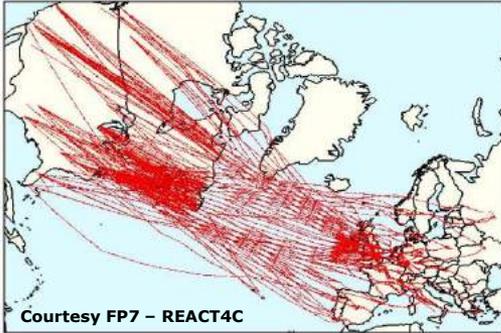
Contribute to further reducing emissions and noise.

Scope: Address at least two of the following areas:

- Compatibility between thrust effectors and higher degree of integration in new configurations.
- Noise source mechanisms for high bypass ratio turbofan.
- Noise source mechanisms associated with laminar-to-turbulent flow transitions and fully turbulent flow engines.
- Leading/trailing edge noise generated at landing by high-lift devices and undercarriage.
- Innovative propulsion technologies to address topics related to further increase of overall pressure ratio and gas temperatures.
- Develop further multi-physics modelling, numerical simulation and optimisation using HPC capabilities



LC-MG-1-6-2019



TRL 2 to 4
RIA

EU contribution:
€ 2-3 million

Expected Impact:

Contribute to globally harmonised policies, regulations and operational improvements.

Aviation operations impact on climate change (InCo flagship)

Specific Challenge:

Mitigation strategies that will minimise adverse environment and climate effects of aviation.

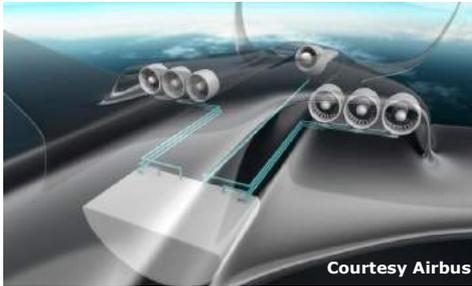
Scope: Address one or more of the following areas:

- Advance further the international state-of-the-art through better understanding of aviation emissions.
- Propose and evaluate mitigation strategies towards **operational improvements**.
- Propose and evaluate mitigation strategies towards **greener flight trajectories**.
- Propose and evaluate mitigation strategies based on the use of **alternative fuels** (ASTM D7566 approval standard). The proposal has to include a detailed Life Cycle Analysis (LCA).

International cooperation is encouraged. In particular bilateral international cooperation with China is encouraged for C & D.



LC-MG-1-7-2019



Future propulsion and integration towards a hybrid/electric aircraft (InCo flagship)

Specific Challenge:

Develop further aviation propulsion and integration technologies with emphasis on hybrid-electric and full-electric propulsion.

Scope: address one or several of the following areas:

- Development of tools for tightly coupled inter-disciplinary new architectural feasibility assessment
- Explore concepts of energy harvesting technologies
- Explore emerging storage technologies
- Advance further Electro-Magnetic Interference solutions as well as thermal management trade-offs at system level.

EASA may be involved. Multilateral international cooperation in particular with Japan, Russia, USA and Canada is encouraged.

TRL 1 to 4
RIA

EU contribution:
€ 3-5 million

Expected Impact:

- New paradigm towards emission-free aviation
- Strengthen the European aeronautics competitiveness



**LC-MG-1-8-
2019**
(RIA/IA)



Indicative cost per
proposal:

Topic A €4-8M

Topic B €3-5M

Budget:

Topic A: €8M

Topic B: €15m

Retrofit Solutions and Next Generation Propulsion for Waterborne Transport - 1

Challenge:

Retrofit solutions and next generation new builds (including fuel cells) to substantially reduce air pollution from shipping.

Scope (*one of the following sub topics*):

RIA:

- *Concept passenger ship primarily powered by fuel cells of at least 5MW.*
- *Combined cycle OK for improved efficiency, using LNG, LBG, CPG or synthetic fuels with additional consideration of full H2.*

**LC-MG-1-8-
2019**
(RIA/IA)



Retrofit Solutions and Next Generation Propulsion for Waterborne Transport - 2

IA - *One or more of:*

- To TRL 5 Highly efficient next gen electrified, clean fuel, or renewable energy propulsion system
- To TRL 5 very innovative large area high efficiency or renewable energy assisted propulsion such as novel wind power, whale tale, bio mimic, considering all aspects.
- To TRL6 Cost effective retrofits for marine shipping that substantially reduce emissions and exceed current legislative requirements.
- As above for inland shipping

Expected impact:

Reduce air pollution from shipping, for retrofits particularly in coastal and port areas. Increase take up. Next gen solutions >10% reduction in CO2 emissions.

Indicative cost per proposal:

Topic A €4-8M

Topic B €3-5M

Budget:

Topic A: €8M

Topic B: €15m

**LC-MG-1.9-
2019 (RIA)**



Upgrading Transport Infrastructure in order to monitor noise and emissions - 1

Challenge:

- Noise and emissions effect on people's health and environment
- Current applications and methodologies do not allow for comparison of data.
- Harmonised measurement methodologies, systems embedded within the transport infrastructure can help to identify environmental deficiencies of vehicle and can help authorities to identify and mitigate their effects.

Estimated EC
Contribution per
proposal:
€4-7M

InCo-related:
Encouraged.
Twinning with US
DoT funded
projects should be
foreseen.

LC-MG-1.9-2019 (RIA)



Upgrading Transport Infrastructure in order to monitor noise and emissions - 2

Scope: *proposals should address **all** of the following:*

- Develop equipment to integrate into infrastructure that is able to detect and identify in real-time vehicles exceeding the limits of noise (Db(A)) and emissions (CO₂, Nox,PM)
- Develop related I2V systems to inform transgressor of limits exceeded and preventing access to low-emission zones
- Develop automated tolling systems that take into account level of emissions from individual vehicles
- Develop new materials & negative-emissions solutions for infrastructure, apt to mitigate noise and emissions

Road and rail networks are primary focus. Potential negative effects of sensors on health to be considered.

Expected impact:

Develop measures, technologies, solutions to bring a reduction of at least 30% in emissions and 20% in noise in targeted zones on measured level at the beginning of project.

Estimated EC Contribution per proposal:
€4-7M

InCo-related:
Encouraged.
Twinning with US DoT funded projects should be foreseen.

**LC-MG-
1.10-2019
(RIA)**



Logistics solutions that deal with requirements of the 'on demand economy' and for shared-connected and low-emission logistics operations - 1

Challenge:

- Urban, metropolitan and peri-urban areas are experiencing a huge increase in demand for new logistics solutions that deal with the requirements of the 'on demand economy' and incorporate opportunities for shared, connected and low-emission logistics operations.
- Research needed on how to prioritise and combine competing interests from private and public (policy) side.

Scope: *proposals should address **all** of the following:*

- Develop value cases for integrated systems of logistics/freight operations in urban, metropolitan and peri-urban areas - such as TEN-T urban nodes and consolidation centres in urban areas.
- Address (and plan for) the integration of low-emission, and possibly connected (automated) delivery vehicles (eg. cargobikes, drones) in urban logistics.

Estimated EC
Contribution per
proposal:
€2-4M

InCo-related:
Encouraged.

**LC-MG-
1.10-2019
(RIA)**



Logistics solutions that deal with requirements of the 'on demand economy' and for shared-connected and low-emission logistics operations - 2

Estimated EC
Contribution per
proposal:
€2-4M

InCo-related:
Encouraged.

Expected impact:

- Clear understanding of cost effective (non-vehicle technology-based) strategies, measures and tools to achieve essentially zero emission city logistics in major urban centres by 2030.
- Delivery of new tested, demonstrated practices and solutions for better cooperation between suppliers, shippers and urban/regions policy makers (planners).
- Inputs to preparation of SULPs and/or SUMP's and other planning tools, such as big data and real-time traffic management.

Structuring R&I towards zero emission waterborne transport - 1

**LC-MG-1-
11-2019
(CSA)**



Challenge:

- Need a structured approach towards R&I to decarbonise waterborne transports as well as reducing other pollutants such as SOX, NOX and PMs.
- All stakeholders need to be engaged.
- Priorities need to be established and widely communicated so that they can become a focus for the greening of waterborne transport as a whole.

Indicative cost per
proposal:

€1M

Topic Budget

€1M

Structuring R&I towards zero emission waterborne transport - 2

**LC-MG-1-
11-2019
(CSA)**



Proposals should address:

- Establish a comprehensive “green shipping stake holder group which should cooperate with waterborne TP and take into account other activities such as ESSF, STRIA, CEF TEN-T.
- Establish a quantified vision considering all pollutants and a strategic research agenda with the steps to achieve it.
- Support take up, including the establishment and implementation of a strong communications strategy.
- Some related activities concerning digitalisation, safety and competitiveness may also be included.

Expected impact:

- Towards zero-emission goal
- Increase competitiveness
- Better targeting and synergies
- Wider awareness and "buy in" to a European zero emission strategy

Indicative cost per proposal:

€1M

Topic Budget

€1M



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Horizon 2020 Work Programme for Research & Innovation 2018-2020

H2020 Transport - Virtual info day

Mobility for Growth (MG) Calls

Safe, integrated & resilient transport systems

#H2020Transport

Research and
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MG-2-6-2019 (RIA)



Moving freight by Water: Sustainable Infrastructure and Innovative Vessels - 1

Challenge:

Find innovative solutions to move more European freight by water using inland waterways or short sea shipping.

Scope

Proposals should focus on either (a) Inland waterways, or (b) maritime transport. Proposals should indicate which is being addressed.

Those projects addressing:

- a) Inland Waterways** must address solutions for infrastructure maintenance and operations (4th bullet), plus at least 4 of the other bullets.
- b) Marine Transport** must address the development of innovative vessel(s) for more effective intermodal integration and with a focus of the TEN-T network, plus at least 4 of the other bullets.

Indicative cost per proposal:

€5M to €10M

Topic Budget:

€30M

To ensure balance, at least the highest ranked proposal addressing (a) and b) will be selected



MG-2-6-2019 (RIA)



Moving freight by Water: Sustainable Infrastructure and Innovative Vessels - 2

Expected impact:

- Decongest land transport.
- Reduce CO2 and air pollution from intra-European freight transport.
- Improve performance of TEN-T network.
- Substantially increase waterborne freight fed from intercontinental ports.
- Modernise and increase reliability.
- Demonstrate that the proposed solution increases the quantity of waterborne freight carried.

Indicative cost per proposal:

€5M to €10M

Topic Budget:

€30M

To ensure balance, at least the highest ranked proposal addressing (a) and b) will be selected

MG-2.7- 2019 (RIA)



Safety in an Evolving Road Mobility Environment - 1

Challenge:

- Evolving traffic environment: conventional, automated, new vehicle types & users
- Additional "vulnerability" (non-connected & IT averse road users)
- Safety systems must be adapted to future collision types

Scope:

- Develop robust solutions with drastic improvement in users' & workers' safety
- Define safety characteristics for road system with increasing automation
- Update accident risk assessment: consider long term disability

Estimated EC
contribution per
proposal:
€4M to €8M

InCo-related:
Yes



MG-2.7- 2019 (RIA)



Safety in an Evolving Road Mobility Environment - 2

And at least one of the following sub topics:

- Tools & models simulating changing environment
- Human Body Models for future collision scenarios.
- Protection systems for future collisions: new interiors → new postures: new body types
- Infrastructure/safety solutions & education/training for new environment

Estimated EC
contribution per
proposal:
€4M to €8M

InCo-related:
Yes

Expected impact:

- At least 10% reduction in injuries and fatalities contributing to UN Sustainable Development goals
- Innovative protection systems for new seating positions
- Harmonised safety assessment methods for real world & future mobility scenarios

MG-2-8-2019



Innovative applications of drones for ensuring safety in transport - 1

Specific Challenge:

- Drones, fastest growing market in aerospace.
- Potential threat but also enabler of transport safety.
- Beyond safe & secure integration of drones in airspace (SESAR).

Scope - address both of the following areas:

- Develop and test technologies, operational and business models for the application of drones **or drone swarms** and other emerging technologies. Objective: to increase the **safety, security, public acceptance and overall efficiency** of **air, waterborne and surface** transport, both **passenger and cargo**, including **search and rescue** applications.
- Explore and develop innovative technologies and sustainable business models for pilot **services**, such as **large vehicles/vessels/aircraft inspections**, transport management (including **emergencies**), transport **infrastructure condition monitoring and maintenance**, logistics, **on-demand cargo** and/or **personal mobility** using drones and other emerging technologies safely.

TRL 3 to 5
RIA

EU contribution:

€ 3-5 million

MG-2-8-2019



Innovative applications of drones for ensuring safety in transport - 2

Including: cybersecurity, privacy rights/personal data, law enforcement agencies and insurance.

Synergies with other EU actors:

- Satellite-based systems as EGNOS/Galileo and Copernicus.
- Transport Safety Agencies e.g. EASA can be involved.

Expected impact:

- Contribute to increase safety and security of the overall civil transport system.
- Contribute to enhance safe and seamless mobility.
- Contribute to economic growth.
- Building knowledge and acceptance within society.

TRL 3 to 5
RIA

EU contribution:

€ 3-5 million



MG-2.9-2019 (RIA)

Estimated EC contribution per proposal:

€3M to €7M

InCo-related:

Encouraged. Proposals should consider cooperation with entities from US, Japan, Canada, China, Latin America. Twinning with US DoT funded projects to be foreseen.

InCO Flagship on Integrated multimodal, low-emission freight transport systems and logistics - 1

Challenge:

- New players, new logistics concepts and disruptive technologies, new business models, new trade routes to and from Europe
- Sustainable development of least developed / landlocked countries / islands and outermost regions = International cooperation

Scope - *proposals should address **one or more** of the following:*

- Understand how new concepts in logistics impact global freight transport.
- Speed up process & transition towards the Physical Internet paradigm.
- Research new issues and questions emerging with the new trade routes to and from Europe.
- Understand new disruptive trends (e.g. on-demand logistics solutions).

MG-2.9-2019 (RIA)

Estimated EC
contribution per
proposal:
€3M to €7M

InCo-related:
Encouraged.
Proposals should
consider
cooperation with
entities from US,
Japan, Canada,
China, Latin
America. Twinning
with US DoT
funded projects to
be foreseen.

InCO Flagship on Integrated multimodal, low-emission freight transport systems and logistics - 2

- Assess impact of emerging technologies in other sectors than freight.
- Collect best case models and develop decision support systems.
- Consider aspects of governance, privacy and cybersecurity of cargo.

Expected impact:

- Improved integration of the European transport network with global network.
- Better understanding of impact of emerging technologies and subsequent guidelines.
- Facilitate development of disadvantaged regions and their inclusion into the international trading system.
- Better understanding of links between technological development, trade and geopolitics.
- Validation of research in a selected number of case studies through pilot demonstrations, trials and testing involving service providers and end-users.



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H2020 Transport - Virtual info day

Mobility for Growth (MG) Calls

Accounting for the people

#H2020Transport

Research and
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MG-4-5-2019
(RIA)



An inclusive digitally interconnected transport system meeting citizens' needs

Challenge:

- Ensure that all members of society can benefit from digitisation in the transport system

Scope:

- Specific demands placed on the users, required passenger skills and strategies
- Needs and attitudes of various social strata, obstacles to the adoption
- Gender related differences
- Differences across member states, recommendations for policy making and practical applications

Estimated EC contribution per proposal:

€1M to €3M

Expected impact:

Creating conditions for an inclusive, user friendly digital transport system

MG-4.6-2019
(ERA-NET
Cofund)



Supporting Joint Actions on sustainable urban accessibility and connectivity - 1

Challenge:

Sustainable urban accessibility and connectivity is defined as the ease with which activities and opportunities may be reached in an urban transport system, with lower negative environmental impacts.

Scope:

Address the potential impact and possibilities for deployment of new mobility services and initiatives by analysing behavioural responses and estimating effects on the various aspects of sustainability for both passenger and freight transport.

Estimated EC contribution per proposal:

€4M to €5M

InCo-related:

Link with Chinese actions.

MG-4.6-2019
(ERA-NET
Cofund)



Estimated EC
contribution per
proposal:
€4M to €5M

InCo-related:
Link with Chinese
actions.

Supporting Joint Actions on sustainable urban accessibility and connectivity - 2

Expected impact:

- Trans-national, pan-EU research networking and synergies among national/regional and EU research programmes in sustainable urban accessibility and connectivity
- Increasing the evidence base for urban mobility policies at local, regional, national and European level, as well as global level (Chinese organisations)
- Results of the funded projects are expected to make a clear contribution EU Transport Policy objectives (including TEN-T). This shall be achieved by delivering a set instruments, approaches and tools (e.g. SUMP and SULP). Links will be made with existing initiatives (CIVITAS, EIP SCC, etc).

**MG-4.4-
2018-19
(CSA)**



Estimated EC
contribution per
proposal:
€0,5M to €0,7M

InCo-related:
No.

Support for dissemination events in the field of Transport Research - 1

Challenge:

To organise events of major strategic nature with a European dimension (i.e. TRA) to help promoting and disseminating Transport Research activities in Europe

Scope: Support for the organisation of the Transport Research Arena 2022 conference

- Address latest developments in transport with a multi-modal and future-oriented perspective (policy, industry, research issues)
- High level of continuity with previous editions through cooperation with key transport stakeholders (ETPs) and previous organisers
- Define the planning of the conference, structure sessions, IT support, and support the organisation of demonstration activities
- Commitment of the national authorities via a written endorsement of the relevant Ministry of the proposed hosting country → eligibility criterion
- Overall financial plan to be included in the proposal

**MG-4.4-
2018-19
(CSA)**



Support for dissemination events in the field of Transport Research - 2

Estimated EC contribution per proposal:

€0,5M to €0,7M

InCo-related:

No.

Expected impact:

- Contributing to a **wide dissemination of the results** of European transport research
- Raising the visibility and weight of the EU policy in the field
- **Increasing the attractiveness of transport related studies** and reinforce the pursuit of excellence in European transport research and innovation, by giving recognition and visibility to the best achievements





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Blue Growth

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**MG-BG-02-
2019 (RIA)**



Ship Emission Control scenarios, marine environmental impact and mitigation - 1

Challenge:

- Increasingly strict emission limits apply to ships around coastlines of most developed countries.
- Now focussed on SOX but a focus on NOX and PM may follow.
- Some compliant solutions impacts and new waste streams. The effects and scenarios in the short and long term are not well understood.

Proposals should address:

- Assessment of the range of emission reduction technologies, considering their costs benefits.
- Experimentally characterise waste streams,
- Considering several scenarios model discernment around the European coast, considering main ship routes and real data, hydrological and weather as well as the constituents discharged

Indicative cost per
proposal:

€8M

Topic Budget

€8M



**MG-BG-02-
2019 (RIA)**



Indicative cost per
proposal:

€8M

Topic Budget

€8M

Ship Emission Control scenarios, marine environmental impact and mitigation - 2

- Environmental impact in the medium and long term including bio accumulation.
- Propose sustainable cost effective solutions.
- Recommended to provide open source access to dispersion model data.

Expected impact:

- Comprehensive understanding of dispersion and any long term environmental impacts.
- Identify most affected regions.
- Provide sound basis for future policies.



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Automated Road Transport (ART) Calls

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Automated Road Transport (ART)

2019 Total EU contribution: **EUR 38 Mio**

Topic	Title	Action type	Stages	Budget		
				2018	2019	2020
DT-ART-01 <i>InCo flagship 4</i>	Testing, validation and certification procedures for highly automated driving functions under various traffic scenarios based on pilot test data	RIA	1	6.00		
DT-ART-02 <i>InCo flagship 4</i>	Support for networking activities and impact assessment for road automation	RIA	1	6.00		
		CSA	1	3.00		
DT-ART-03 <i>InCo flagship 4</i>	Human centred design for the new driver role in highly automated vehicles	RIA	1		8.00	
DT-ART-04 <i>InCo flagship 4</i>	Developing and testing shared, connected and cooperative automated vehicles fleets in urban areas for the mobility of all	IA	1		30.00	
DT-ART-05	Efficient and safe connected and automated heavy-duty vehicles in real logistics operations					
DT-ART-06	Large-scale, cross-border demonstration of highly automated driving functions for passenger cars					

ART-03- 2019 (RIA)



Estimated EC
contribution per
proposal:

€4M to €8M

InCo-related:
Yes.

Human centred design for the new driver role in highly AV

Challenge:

- How to ensure a safe interaction between driver and the system in highly automated driving situations?

Scope:

- Research on driver behaviour and awareness, and monitoring of drivers while using highly AD functions
- Methods to assess the effectiveness and safety of different HMI solutions
- Design and demonstrate innovative HMI solutions for vehicles with highly automated driving functions

Expected impact:

- Reduction of risks for driver behaviour related incidents



ART-04- 2019 (IA)



Estimated EC
contribution per
proposal:

€15M to €30M

InCo-related:
Yes.

Shared, connected and cooperative AV fleets in urban areas

Challenge:

- How to develop shared automated vehicle fleets in urban areas which are widely accepted by all types of users?

Scope:

- Test shared highly automated fleets at larger scale in different environments and for different services, integrated into existing Public Transport systems
- Develop new business and operating models, addressing the needs of different users groups
- Use connectivity technologies to allow communication/ cooperation between vehicles, infrastructure and road users

Expected impact:

- Accelerate the uptake of high quality and user oriented mobility services, based on shared automated vehicles



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H2020 Transport - Virtual info day

Green Vehicles (GV) Calls

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Research and
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Transport Work Programme 2018-2020

Main features in 2019

- Contribution to 2 key **Focus Areas** addressing global challenges cutting across sectors and programmes:
 1. Building a low-carbon, climate resilient future (LC)
 2. Digitising and transforming European industry and services (DT)
- **New call on Next-Generation Batteries (BAT)** cutting across different WP parts
- **3 International Cooperation flagship initiatives** of large scale and scope addressing global challenges in aviation and logistics and 4 more topics encouraging InCo

Transport Work Programme 2018-2020

Main features in 2019

- **Budget 2019:** € 386.01M out of a total of € 945M in 2018-2020
- **4 main calls for proposals** and 24 topics open in 2019 / **3 types of action:** RIA, IA, CSA/Era-Net
- **Other actions:** Prizes, SME Instrument, FTI, experts and procurements
- Transport relevant topics in **other parts of the H2020WP:** NMPB, ICT, ENERGY, SECURITY, CROSS-CUTTING ACTIVITIES
- **Complementarities** with CleanSky, SESAR, Shift2Rail, FCH2



Green Vehicles (GV)

Overall objectives:

- Bring forward the activities of the EU Green Vehicle Initiative and prepare the ground for a potential massive introduction of electrified vehicles
- Improve the charging experience from the view point of end-users (access, time, cost, payment systems, etc.)
- Develop new concepts to reduce energy consumption & emissions of long-distance vehicles
- Cooperate with developing and emerging economies for demonstration activities and pilots in large urban areas

**LC-GV-03-
2019 (IA)**



User centric charging infrastructure

Challenge

Estimated EC
contribution :
€8M to €15M

The market share of full electric vehicles is still low in many European member states.

Innovative solutions need to be evaluated and developed to allow EV drivers to have better mobility experience.

The challenge is to support the accelerated deployment of recharging infrastructure – slow charging for cities and occasional ultrafast charging for long range travel.

**LC-GV-03-
2019 (IA)**



User centric charging infrastructures

Scope – Proposals should address all the following activities:

All technical areas including demonstration of the final solutions and their interoperability in multiple cities and TEN-T:

- Analysis of subjective perception of charging options and identification of decision influences and concerns of users
- Attractive and convenient charging infrastructure access with connected vehicle systems avoiding waiting times
- Transparent, flexible and interconnected payment systems
- User survey about parking habits
- Improvement of the currently deployed or planned superfast charging systems
- Scalable charging infrastructure for ramp-up of expected needs – power levels and charging posts, managing the impact on the grid

Estimated EC contribution :
€8M to €15M

**LC-GV-03-
2019 (IA)**



User centric charging infrastructures

Scope – Specific references to e-roads

Estimated EC
contribution :
€8M to €15M

- Automated conductive or wireless solutions are expected with highly reliable and interoperable devices
- Test methods need to be further optimised, for instance to assess interoperability.
- Optionally, further extension of the developed stationary wireless charging technology towards urban and periurban "electric road" applications, with the aim of creating an installed base of wireless-ready vehicles to provide the critical mass needed for the deployment of electrified roads at a later stage.

**LC-GV-03-
2019 (IA)**



User centric charging infrastructures

Scope – Proposals should address all the following activities:

Estimated EC
contribution :
€8M to €15M

All technical areas including demonstration of the final solutions and their interoperability in multiple cities and TEN-T:

- Low power DC-charging for LEV's in combination with theft-proof parking for two-wheelers
- Analysis of market models, regulatory and harmonisation recommendations
- Development of planning methods to optimise the location of charging sites, taking in consideration user needs, habits, time and costs
- Analysis and cost effective solutions for specific cases (e.g. isolated mountain or seaside locations), or special events

**LC-GV-03-
2019 (IA)**



User centric charging infrastructures

Expected Impact

Estimated EC
contribution :
€8M to €15M

- Wide user acceptance beyond early adopters
- Foster investments in charging infrastructure
- Determine legal gaps and propose solutions
- Develop test methods and procedures to improve interoperability
- Facilitate grid integration of high-power chargers
- Improve and standardise charging solutions and payment systems.

**LC-GV-04-
2019 (IA)**



Low-emissions propulsion for long-distance trucks and coaches

Challenge

Estimated EC contribution :
€20M - 25M

- Heavy duty vehicles greatly contribute to CO2 and air pollutant emissions, while being more difficult to electrify, particularly over long distances.
- Technology needs to be developed to minimise these impacts through a mix of engine technology, renewable fuels as well as recuperated heat and regenerated and externally supplied electricity.

**LC-GV-04-
2019 (IA)**



Low-emissions propulsion for long-distance trucks and coaches (2)

Scope – Proposals should address all the following technical areas :

Estimated EC
contribution :
€20M - 25M

- Sub-systems and component concepts including electro-hybrid drives, optimised ICEs and after-treatment systems for alternative and renewable fuels, electric motors, smart auxiliaries, renewable energy production and storage and power electronics, suitable for real life operation under different mission conditions
- Concepts for connected and digitalised fleet management, predictive maintenance and operation in relation to electrification where appropriate to maximise the emissions reduction potential
- Implementation of required adaptations in VECTO accordingly to facilitate early take-up of the innovations.

**LC-GV-04-
2019 (IA)**



Low-emissions propulsion for long-distance trucks and coaches (3)

Expected Impact

Estimated EC
contribution :
€20M - 25M

- Minimum 50% combustion engine peak thermal efficiency
- Additional CO₂ emissions reductions by heat recuperation or plug-in hybrid for a total energy saving of at least 10% with respect to the best in class conventional vehicle of 2018, validated by propulsion system measurements
- Such improvement will exclude the effect of alternative fuels and plug-in electricity and will include other high GWP emissions
- 30% reduction of NO_x, CO and hydrocarbons in an extended range of environmental conditions
- Reduction of unregulated components (NO₂, N₂O, NH₃, CH₄ for NG powertrains, PN measured with a lower threshold of 10nm
- Reduction of noise in environmental zones in electric modes
- Shorter time to market thanks to VECTO modelling availability

**LC-GV-05-
2019 (IA)**



InCo Flagship on Urban mobility and sustainable electrification in large urban areas in developing and emerging economies (1)

Estimated EC
contribution :
€15M – €18M

Multi international
cooperation
encouraged, in
particular **Asia** (e.g.
China, India,...),
CELAC (e.g. Brazil)
and **Africa**

Challenge

Climate change, energy security and local air pollution are some of the key questions for the 21st century. Urban areas are major driving factors in growing global energy demand and GHG emissions.

Urbanisation requires integrated mobility solutions that bring together technology opportunities with local and national policy, including land use and mobility planning.



**LC-GV-05-
2019 (IA)**



InCo Flagship on Urban mobility and sustainable electrification in large urban areas in developing and emerging economies (2)

Estimated EC contribution :
€15M – €18M

Multi international cooperation encouraged, in particular **Asia** (e.g. China, India,...), **CELAC** (e.g. Brazil) and **Africa**

Scope – Proposals should address all the following activities:

- Develop tool box for advanced management strategies towards private and public electric mobility to facilitate sustainable transport and mobility solutions in cities (management of vehicles, charging infrastructure, integration of operations)
- Comparative demonstration activities and pilots in the field of electro mobility in cities in Europe, Asia, Africa and CELAC (min. 4 demonstrators); road public transport for both passenger and freight
- Implementation concepts to scale up the demonstration activities (sustainable planning, financing plans, replication in other cities)



**LC-GV-05-
2019 (IA)**



InCo Flagship on Urban mobility and sustainable electrification in large urban areas in developing and emerging economies (3)

Estimated EC contribution :
€15M – €18M

Multi international cooperation encouraged, in particular **Asia** (e.g. China, India,...), **CELAC** (e.g. Brazil) and **Africa**

Expected Impact

- Quantify the potential reduction of GHG and pollutant emissions as well as traffic congestion
- UN's Sustainable Development Goals 11 and 13
- Reference models of the mobility system for short and long term benefits contributing to EU policy goals (climate, competitiveness)
- A basis for strengthening the collaboration of the EU with Asia, CELAC and Africa.



GV: Topics and budget

Total EU contribution in 2018: € 78 million

Topic	Title	Action type	Stages	Budget (M€)
				2019
LC-GV-03	User centric charging infrastructure	IA	1	35.00
LC-GV-04	Low-emissions propulsion for long-distance trucks and coaches	IA	1	25.00
LC-GV-05	Urban mobility and sustainable electrification in large urban areas in developing and emerging economies	IA	1	18.00



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Break

We will be back at 11:40

#H2020Transport

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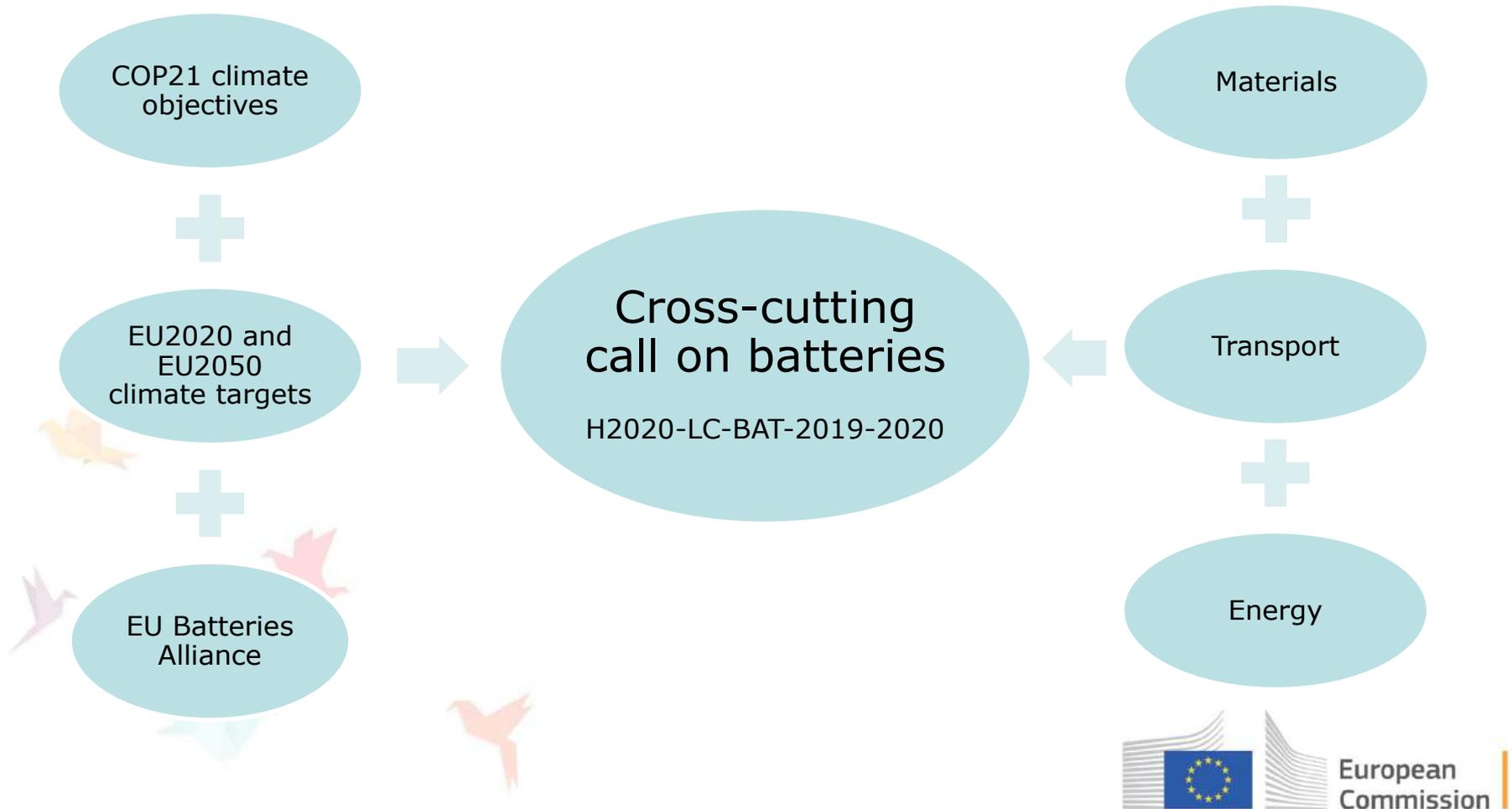
The Horizon 2020 Cross-cutting activities

The Next-Generation Batteries (BAT) Call

#H2020Transport

Research and
Innovation

Cross-cutting activities: Building a Low-Carbon, Climate Resilient Future: Next-Generation Batteries



Topic overview

2019

LC-BAT-1-2019	Strongly improved, highly performant and safe all solid state batteries for electric vehicles (generation 4)	NMBP	€ 25 M
LC-BAT-2-2019	Strengthening EU materials technologies for non-automotive battery storage	NMBP	€ 24 M
LC-BAT-3-2019	Modelling and simulation for Redox Flow Battery development	Energy	€ 5 M
LC-BAT-4-2019	Advanced Redox Flow Batteries for stationary energy storage	Energy	€ 15 M
LC-BAT-5-2019	Research and innovation for advanced Li-ion cells (generation 3b)	Transport	€ 30 M
LC-BAT-6-2019	Li-ion Cell Materials & Transport Modelling	Transport	€ 13 M
LC-BAT-7-2019	Network of Li-ion cell pilot lines (CSA)	Transport	€ 2 M

In 2019 in total 7 topics, € 114 M, of which

Transport: 3 topics, € 45 M

NMBP: 2 topics, € 49 M

Energy: 2 topics, € 20 M

2020

LC-BAT-8-2020	Next-generation batteries for stationary energy storage	Energy	For both
LC-BAT-9-2020	Hybridisation of battery systems for stationary energy storage	Energy	€ 30 M
LC-BAT-10-2020	Next generation and realisation of battery packs for BEV and HEV	Transport	€ 40 M

In 2020 in total 3 topics, € 70 M, of which

Transport: 1 topic, € 40 M

Energy: 2 topics € 30 M

In addition foreseen:

- support battery **future emerging technologies** from Transport
- one topic to support batteries for **waterborne applications** in Transport

LC-BAT-1-2019
(RIA)

Materials

Estimated EC
contribution per
proposal:
€6M – €8M

Strongly improved, highly performant and safe all solid state batteries for electric vehicles

Challenge:

New chemistries, materials and production technologies have to be developed to strengthen the European industrial base

Scope:

Further development of the current solid state battery technology and present solutions beyond the current state-of-the-art of solid state electrolytes

Expected impact:

Reaching ambitious cost and energy density targets, enabled fast charge rates, proven safety, guaranteed and demonstrated IPR protection, increased European materials modelling capacity and ecosystem, The European battery value chain towards cell production in Europe should be strengthened.

**LC-BAT-5-2019
(RIA)**

Transport

Estimated EC
contribution per
proposal:
€5M – €12M

Research and innovation for advanced Li-ion cells (generation 3b)

Challenge:

To be competitive the European industry and researchers need to improve system knowledge in next generation lithium-ion battery technology covering the full value chain.

Scope:

Multidisciplinary activities shall include the whole system knowledge for the most promising electrochemistries to achieve possible production-readiness. Customer acceptance, environmental sustainability and aspects for large scale manufacturing solutions have to be considered.

Expected impact:

Cell-level energy densities >750 Wh/l, costs <90€/kWh at pack level, 2,5C fast charging capability while keeping a useful life of at least 2000 deep cycles (with 10% fast charging) to 80% residual capacity, > 20% reduction of CRM

LC-BAT-6-2019
(RIA)

Transport

Estimated EC
contribution per
proposal:
€3M – €6M

Li-ion Cell Materials & Transport Modelling

Challenge:

Advanced modelling and simulation tools are required that specifically target the electrode and cell level and addressing the fundamental understanding of materials and cell behavior

Scope:

- Multidisciplinary approach for the development of advanced modelling methods based on different physical domains;
- systematic measuring of basic input parameters for modelling;
- manufacturing of prototype cells or cell components;
- demonstration of correlation between cell measurements and simulation

Expected impact:

Reduce the development time and costs by 30%, better optimum for design, decrease the number of experiments by x3.

Reduce R&I costs by 20%

LC-BAT-7-2019
(CSA)

Transport

Estimated EC
contribution per
proposal:
€1M – €2M

Network of Li-ion cell pilot lines

Challenge:

In order to maximise the benefits of the related investments of European pilot lines for cell manufacturing, mutual exchange of data, expertise, and access rights between pilot lines would be desirable in view of international competition and standardisation.

Scope:

- Make a repository of European battery cell pilot lines
- Analyse skill and equipment gaps
- Outline a standardised data exchange platform
- Develop models for shared access to the pilot lines
- Ensure cooperation and networking activities
- Prepare reports and roadmaps of joint strategies

Expected impact:

Advance European competences towards industrial scale cell manufacturing through utilisation of synergies and cooperation

Topics foreseen for 2020

✓ **LC-BAT-8-2020:**

Next-generation batteries for stationary energy storage

✓ **LC-BAT-9-2020:**

Hybridisation of battery systems for stationary energy storage

✓ **LC-BAT-10-2020:**

Next generation and realisation of battery packs for BEV and HEV

✓ **+ topic on marine batteries**

✓ **+future emerging technologies on batteries**



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The selection process

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**All you need to know about
the selection process**

Anita Kucharska
Deputy Head of Unit
INEA R.1 - Programme Support, Coordination and
Communication

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5 steps of the selection process





Calendar of the calls

2019 activities	Budget	Opening	Deadline
Mobility for Growth <i>two-stage topics</i>	€122 M	05/09/2018	16 Jan 2019 <i>(1st stage)</i> 12 Sept 2019 <i>(2nd stage)</i>
Mobility for Growth <i>single-stage topics</i>	€46.7 M	04/12/2018	25/04/2019
Green Vehicles <i>single-stage topics</i>	€78 M		
Automated Road Transport <i>single-stage topics</i>	€38 M		
Batteries <i>Single stage topics</i>	€70 M	24/01/2019	25/04/2019

EU Participant Portal

RESEARCH & INNOVATION
Participant Portal

European Commission Research & Innovation > Participant Portal > Home

HOME **FUNDING OPPORTUNITIES** HOW TO PARTICIPATE EXPERTS SUPPORT Search LOGIN REGISTER

Horizon 2020 Funding

Starting from 1/1/2014

On this site you can find and secure **funding** for projects under the following EU programmes:

- **2014-2020** Horizon 2020 - research and innovation framework programme
- **2007-2013** 7th research framework programme (FP7) and Competitiveness & Innovation Programme (CIP)
- 3rd Health Programme, Asylum, Migration and Integration Fund, Consumer Programme, COSME, Internal Security Fund Borders, Internal Security Fund Police, Justice Programme, Promotion of Agricultural Products Programme, Rights, Equality and Citizenship Programme and Research Fund for Coal & Steel

Non-registered users

- search for funding
- read the H2020 Online Manual & download the legal documents
- check if an organisation is already registered
- contact our support services or check our FAQs

Registered users

- submit your proposal
- sign the grant
- manage your project throughout its lifecycle
- register as expert advising the Commission

WHAT'S NEW? FUNDING OPPORTUNITIES HOW TO PARTICIPATE WORK AS AN EXPERT MY PERSONAL AREA INFORMATION AND SUPPORT

1

Submission of proposals

- Still functional, but to be phased out by the end of 2018

Info on funding

1

Submission of proposals

Funding & Tender Opportunities portal

- Just released:
- <https://ec.europa.eu/info/funding-tenders/opportunities/portal/>
- To replace the current Participant Portal
- Covering various EU funding programmes

Funding & tender opportunities
Single Electronic Data Interchange Area (SEDIA)

English Register Login

SEARCH FUNDING & TENDERS HOW TO PARTICIPATE PROJECTS & RESULTS WORK AS AN EXPERT SUPPORT

The Funding & Tenders Portal is the single entry point (the Single Electronic Data Interchange Area) for applicants, contractors and experts in funding programmes and procurements managed by the European Commission.

Find calls for proposals and tenders

Search calls for proposals and tenders by keywords, programmes...

What are calls for proposals? What are calls for tenders? How to participate in 5 steps

Calls for proposals by EU Programme

News Other funding and data

"Search funding & tenders"

1

Submission of proposals

Where to look for partners?

The screenshot displays the European Commission's 'Funding & tender opportunities' website. The 'HOW TO PARTICIPATE' menu is highlighted in yellow, and the 'Partner search' option is circled in orange. A red arrow points from the 'Partner search' option to a red callout box. Below the search bar, there are three white boxes with blue arrows: 'How to participate in 5 steps', 'What are calls for tenders?', and 'Calls for proposals by EU Programme'. A red callout box points to the 'How to participate in 5 steps' box.

European Commission | Funding & tender opportunities
Single Electronic Data Interchange Area (SEDIA)

English EN
Register Login

SEARCH FUNDING & TENDERS HOW TO PARTICIPATE PROJECTS & RESULTS WORK AS AN EXPERT SUPPORT

The Funding & Tenders Point (the Single Electronic Data Interchange Area) for applicants, contractors and experts in funding programmes and procurements managed by the Commission.

Find calls for proposals and tenders

Search calls for proposals and tenders by keywords, programmes... Search

How to participate in 5 steps

What are calls for tenders?

Calls for proposals by EU Programme

News

and data

2. Partner search tool

1. 'How to participate' tab



Where to look for partners?

2. Eligibility and admissibility conditions: described in Annex B and Annex C of the Work Programme.

[show more...](#)

[Go to top](#)

[Partner Search](#)

18 Organisations are looking for collaborating partners for this topic

[View / Edit](#)

LEARs, Account Administrators or self-registrants can publish partner requests for open and forthcoming topics after logging into this Portal.

[Go to top](#)

Shows in every topic



Submission of proposals

- **Submission via the Research & Innovation Participant Portal or the Funding & Tender Opportunities portal** (electronic submission only)
- **Registered user:** Submit proposals, sign grant agreements, manage lifecycle etc.
- **Very important:** Start preparing the proposal as early as possible and submit on time

2

Admissibility & eligibility check

Admissibility & eligibility check

Are all forms submitted?



YES



NO



Are all call conditions met?



YES



NO



ATTENTION! Only admissible and eligible proposals will be evaluated

2

Admissibility &
eligibility check

Admissibility & eligibility check

- **Specificity for the MG 4.4 2019 call :**

- In order to ensure the involvement of the hosting country, proposals must be accompanied by a written endorsement from the relevant ministry of the country where the conference will take place.

The General annexes of the Work Programme list all eligibility & admissibility criteria

3

Evaluation by
external
experts

External experts

EU database of over 80,000 evaluators

- 1. High-level expertise**
- 2. Independence**
- 3. Impartiality**

Balanced composition

Regular rotations & new experts

3

Evaluation by
external
experts

Evaluation by external experts

Min. 3 experts, up to 5

Proposals evaluated as submitted

Lower score if shortcomings are identified

Rejecting proposal if weaknesses are identified

3

Evaluation by
external
experts

What do the external experts do?

**Understand
call text**

**Evaluate
individually
- remotely**

**Meet to
reach
consensus**

3

Evaluation by
external
experts

Against what do they evaluate?

Excellence

Impact

**Quality &
efficiency**

3

Evaluation by
external
experts

We're looking for new experts!

**Not
applying?**

**Become an
evaluator!**

Sign up now

3

Evaluation by external experts

How to become an expert?

The screenshot shows the website for 'Funding & tender opportunities' by the European Commission. The page title is 'Funding & tender opportunities' and the subtitle is 'Single Electronic Data Interchange Area (SEDIA)'. The language is set to 'English'. The navigation menu includes 'SEARCH FUNDING & TENDERS', 'HOW TO PARTICIPATE', 'PROJECTS & RESULTS', 'WORK AS AN EXPERT' (circled in red), and 'SUPPORT'. A red arrow points from the 'WORK AS AN EXPERT' menu item to a red 'Register' button in the bottom right corner. The main content area includes a search bar for 'Find calls for proposals and tenders' and several navigation buttons: 'What are calls for proposals?', 'What are calls for tenders?', 'How to participate in 5 steps', 'Calls for proposals by EU Programme', 'News', and 'Other funding and data'. A 'Feedback' button is visible on the right side.

4

Decision on
funding

Outcome of evaluation



Deadline to inform: 3 or 5 months

5

Signing a
grant
agreement

Grant agreement

Successful proposals invited to start a
Grant Agreement Preparation

Very tight deadline: max. **8 months from
call deadline to signing the contract**

No negotiation phase = no substantial changes

Thank you!

#H2020Transport

@inea_eu

inea@ec.europa.eu

www.ec.europa.eu/inea

More info:

 **EU Funding & tender opportunities portal**

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/>



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How to prepare a good proposal

#H2020Transport

Marcel Rommerts
Head of Transport Research Unit
INEA

Research and
Innovation



Tip 1: Have a strong concept

1 Calls are very competitive

2 Success rate for a first stage call is around 30% and 30% for a second stage call

3 Success rate for a single stage call is around 15%

4 Have a strong concept:

- Be clear on what do you want to achieve
- Explain well how will you meet the requirements of the topic

Tip 2: Understand call conditions and text

Check if
need to
address all
issues in
the call or
not

Should =
won't get
good score if
you don't

Must & shall
= "have to"

Consult **FAQ's** in good time –
or ask your own **question!**

Tip 3: Impact

Identify and substantiate the impacts

Dissemination and exploitation plan

Tip 4: Sound budget construction & good project team*

Budget is reasonable

Resource allocation is balanced

All partners have a clear and justified role in the project

All partners are committed to implement the results

→ The team should share a common **vision/ambition**

*Only for single stage and second stage calls

Tip 5: Simple to digest

SIMPLE LANGUAGE

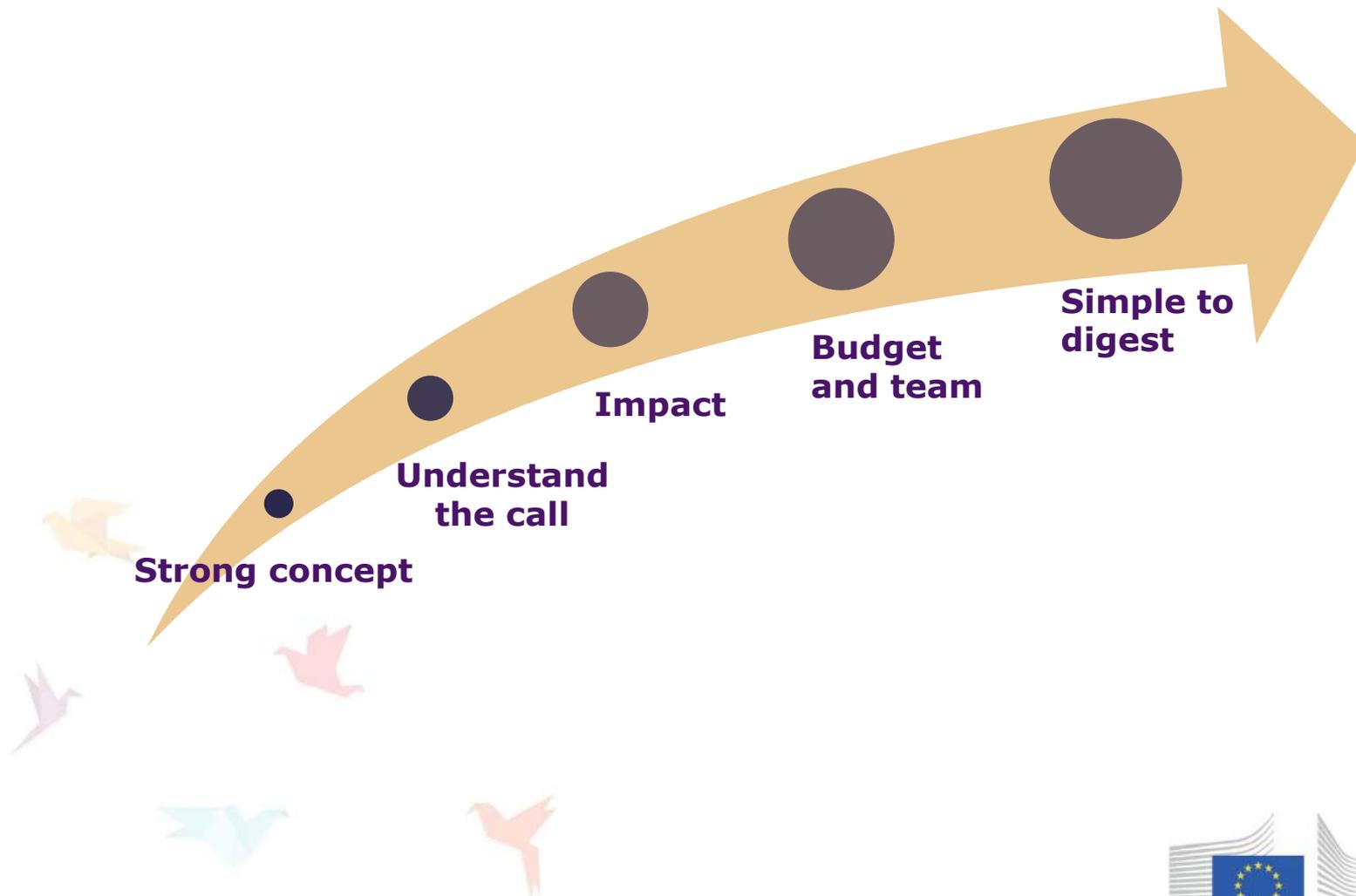
(MAJORITY OF EXPERTS ARE NON-NATIVE SPEAKERS)

MAKE INFORMATION EASY TO FIND

**RELEVANT SUMMARY TABLES,
GRAPHS & IMAGES**

RESPECT PAGE LIMIT

5 steps to success



Thank you!

#H2020Transport

@inea_eu

inea@ec.europa.eu

www.ec.europa.eu/inea

More info:

 **EU Funding & tender opportunities portal**

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/>



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Q&A session

Ask your question on [sli.do](#)

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*Thank you for following the
H2020 transport virtual info day!*

*Please fill in the evaluation survey
at ec.europa.eu/inea*

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