Parallel Session III B

Horizon 2020
Work Programme for Research & Innovation 2018-2020

H2020 Transport info day – 7 October 2019

Green Vehicle (GV) and Blue Growth (BG) Calls

#H2020Transport
Horizon 2020 Work Programme for Research & Innovation 2018-2020

H2020 Transport info day – 07 October 2019

Under water noise mitigation and environmental impact

Agnieszka Zaplatka
European Commission – DG RTD

#H2020Transport
Challenge:

• Underwater noise from shipping and boats impacts upon the behaviour and health of water organisms in rivers and at sea, including marine mammals.

• Despite previous research, the environmental impacts from effects and the propagation of underwater noise at different amplitudes and frequencies remain poorly understood and largely unquantified.

• Few studies to better understand the potential noise reduction measures that could be applied to both existing and future vessels.

Note:

As a Blue Growth topic the scope cuts across several disciplines.
MG-BG-03-2020
Under water noise mitigation and environmental impact

Address all of the following:

• Develop standardised methods to measure and assess the impacts from underwater noise generated by shipping and boats. Consider both acute and cumulative effects different water species in rivers and at sea including marine mammals.

• Establish a stakeholder group of researchers together with other relevant actors including for example NGO’s, marine and waterway authorities, industry, ship owners, naval industry etc and use to support methodology and standards development as well as its wide take up.

• Identify, quantify and validate any negative impacts from different types and amplitudes of underwater noise from shipping and boats.

• Propose the most effective feasible solutions to mitigate the effects of underwater noise and establish appropriate limits.

IA: Suggested contribution of up EUR 8 million
Total topic budget EUR 8 million
Impact:

• To enable appropriate mitigation measures,
• Increase understanding of the short and long term environmental impacts.
• Identification of most harmful underwater noise characteristics and the acute and longer term impacts on different organisms including marine mammals.
• Establishment of standards which can be widely adopted for underwater noise measurement to increase the comparability of data between research programs.
• Develop cost effective solutions to measure underwater radiated noise from shipping.
• Identification and assessment of solutions to reduce harm from underwater noise.
• Provide a foundation for policy. Support implementation of the marine strategy framework directive

MG-BG-03-2020
Under water noise mitigation and environmental impact
Thank you!

#InvestEUresearch

www.ec.europa.eu/research

Funding & tender opportunities portal

https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/home
Horizon 2020
Work Programme
for Research & Innovation
2018-2020

H2020 Transport info day – 07 October 2019

Advanced light materials and their production processes for automotive applications

Guido Sacchetto
European Commission – DG RTD

#H2020Transport
Challenge:

• continuous research and innovation for the deployment of advanced light materials is needed to improve efficiency and range of EVs.

• weight reduction is possible through the application of eco-design principles and the use of hybrid, multi-material solutions with integrated multiple functionality, maintaining all other performance (crashworthiness, reliability, durability etc.).

• future developments must adopt the circular-economy principle, including innovative options for end-of-life recovery, reuse, recycling and the optimised use of recycled materials and efficient remanufacturing

Primary focus is on light-duty electric vehicles; proposals can investigate and exploit (where appropriate) the potential benefits to other road vehicles including heavy-duty.

Proposals to address at least one of the two following areas.

EU contribution EUR 3-5 million.
Scope: Lightweight materials and design

- Economically-viable lightweight materials (both metallic and reinforced plastics) including multi-material concepts that allow cost-effective material separation, recycling and recovery – with an LCA approach;

- Manufacturing and assembly methods and tools to guarantee structural integrity, reliability and long service life by design for lightweight materials (e.g. failure mechanisms, ageing phenomena and the effects on a microstructure level) including their experimental and model-based characterisation.

ALL bullet points must be addressed.
LC-GV-06-2020: Advanced light materials and their production processes for automotive applications

Scope: Cradle-to-cradle approach

• Methods for the adoption of the circular economy and eco-design approach (since the earliest stages), integrating product design and sustainable manufacturing, and including use of recycled and/or bio-resourced materials;

• Implementation of advanced methodologies for improved design capabilities via numerical simulation, virtual and physical testing and validation for the design of different vehicle types. Batteries shall not be included.

ALL bullet points must be addressed.
Expected Impact

• Demonstrated affordable and sustainable vehicle weight reductions (at least 10% with respect to already achieved results from previous projects);

• Reduction in vehicle development and lead times for the market introduction of new, more energy-efficient vehicles;

• Widespread deployment of procedures to ensure structural integrity and safety of components – promoting efficient repair and reuse through in-service health-monitoring and inspection;

• Effective solutions for reuse, recycling and/or energy recovery of all materials, components and sub-systems.
Thank you!

#InvestEUresearch

www.ec.europa.eu/research

Funding & tender opportunities portal

https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/home
Horizon 2020 
Work Programme for Research & Innovation 2018-2020

H2020 Transport info day – 07 October 2019

Reducing the environmental impact of hybrid light duty vehicles

Guido Sacchetto 
European Commission – DG RTD

#InvestEUresearch #H2020Transport
Challenge:

• to assess environmental impacts, real world behaviors and interactions beyond pure propulsion should be evaluated and optimised – in particular for plug-in hybridised systems

• converting engine waste heat to useful power (e.g. heating or cooling) can deliver improvements but adds significant complexity, in particular for hybrid applications, innovative solutions if justified.

• A real time optimisation of energy should be investigated under a range of specific conditions; new in-engine or after-treatment approaches can minimise real world emissions of both greenhouse and toxic substances.

Proposed solutions should reach >TRL7 at the end of the project.

EU contribution EUR 3-5 million.
LC-GV-07-2020: Reducing the environmental impact of hybrid light duty vehicles

Scope:

• Advanced energy generators in hybrid electric applications (excluding simple derivatives of existing engines) to minimise environmental impacts.

• Evaluation and optimisation of hybrid driveline technologies and topologies matching innovative systems, based on real world operation.

• Holistic management and optimisation of thermal functions of vehicles and systems in both battery- and engine-based operation, including battery thermal management, passenger comfort and safety functions, and real-world operation of after-treatment.

ALL bullet points must be addressed.
Impact:

- Technology to be implemented in existing demonstrators vehicle (no vehicle or hybrid powertrain development is foreseen except for innovative technologies for which this is impossible)

- Independently tested in real driving conditions with more stringent requirements than current legislation

- Engine peak efficiency of at least 47%, the mass of a battery with a WLTP range of at least 80km shall be included (real or simulated) for RDE testing.

- Each proposed solution shall demonstrate (in charge sustaining mode with full passenger load) real world emission consistent with emission targets used in the EC “Horizon Prize for cleanest engine of the future”.

LC-GV-07-2020: Reducing the environmental impact of hybrid light duty vehicles
Thank you!

#InvestEUresearch
www.ec.europa.eu/research

Funding & tender opportunities portal
https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/home
Next-generation electrified vehicles for urban and suburban use
Challenge:

- Specialised vehicles are needed to meet urban users’ needs (commuters, last mile delivery, etc).

- Flexibility, modularity, range, availability, charging power, ease of parking and operations, use of smart technologies, sharing concepts and usability by elderly and disabled persons are all features that might be considered and tailored to the specific applications.

- Rightsized small and light vehicles following the design principle of right-sizing vehicles for their mission. These will all satisfy performance targets such as improved efficiency during urban usage or control strategies based on data from traffic flow monitoring or prediction systems, as well as integration into the sustainable urban mobility plans (SUMPs) of the respective urban areas, with more effective use of parking spaces and possible decreased urban congestion, including demands arising for mobility and logistics across functional urban boundaries, e.g. urban to suburban.

Three subtopics, one of the subtopic per proposal except if modular covering 2 and 3

EU contribution EUR 1-2 million for sub-topic 1 and EUR 4-6 million for sub-topic 2 and 3
LC-GV-08-2020: Next generation electrified vehicles for urban and suburban use

Scope – Subtopic 1 “Urban light personal mobility”:

• The success of microvehicles (monowheels, electric scooters, hoverboards etc) suggests to explore innovative EU designs for urban/sub-urban use including sharing options where appropriate

• The aim is to decrease congestion, eliminate parking and recharging need (if small enough to take home/office) and ready to allow “last mile” transfers from urban collective transport to achieve full intermodality.

• Concepts to improve safety of users and of pedestrian, (if used on sidewalks) and to reduce vulnerability in traffic

• Solutions shall be developed up to TRL 8-9 and include a detailed exploitation strategy and a draft business plan

• Proposers should demonstrate their capacity to have a market ready product by the end of the project, addressing regulatory aspects if needed
Scope – Subtopic 2 “Light and flexible multipassenger transport ”:

- Collective or individual vehicles, owned or shared, up to M1 category
- Flexible and modular to support the ability to adapt and upgrade in order to move from one application to the next (different users and uses, shared mobility scenarios, taking into account gender, aged and disabled aspects, when relevant).

- High safety for passengers and vulnerable road users, including crash resistance providing equivalent occupant safety and vulnerable road user protection as the M1 vehicle they would replace
- If designed for shared applications, specific features such as autonomous-capable vehicles with automated relocation to charging points or areas with insufficient vehicle density.
Scope – Subtopic 3 “Rightsized vehicles for commercial uses”:

• Vehicles up to N1 category for last-/first-mile delivery, construction and maintenance support (masons, plumbers, HVAC technicians etc), specific for urban scenarios.

• Affordable both in terms of acquisition cost and significantly lower operational expenditure

• High transportation and charging efficiency and optimised land use (home base charging may be sufficient).

• Fully integrated safety, including crash resistance providing equivalent occupant safety and vulnerable road user protection as the N1 vehicle they would replace.
Impact:

• For subtopic 1, proposers should demonstrate benefits over current types on a mission/range basis in comparison to current types (monowheels, hoverboards), e-bikes or electric scooters as appropriate in the foreseen applications. Lower probability of having an accident is a desired but not mandatory outcome.

• For sub-topics 2) and 3) concepts shall demonstrate in real testing ambitious targets of up to 10% energy efficiency improvement in comparison with existing electric vehicles of the same class, and crash resistance to EURONCAP 4 Star crash performance (i.e. not including active safety criteria of new EURONCAP protocol).

• Price close to current vehicles used for similar missions (minicars, vans of similar payload for subtopic 2 and 3, while current hoverboards and scooters are the benchmark for subtopic 1).

• Local air quality and noise benefits, rapid implementation due to acceptance of single purpose concepts due to demonstration of efficiency, safety and affordability.

• **Type of Action: Innovation action**
Thank you!

#InvestEUresearch

www.ec.europa.eu/research

Funding & tender opportunities portal

https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/home
Setting up a common European research and innovation strategy for the future of road transport

Patrick Mercier-Handisyde
European Commission – DG RTD

#H2020Transport
Challenge:

• Coordination and Support Action to support ERTRAC and future partnerships relevant to road transport in view of Horizon Europe, the European Commission in defining future research needs, to achieve the targets set at EU and global level.

• International cooperation with developing and emerging economies for efficient mobility for all, to reduce local and CO2 emissions, tackle health and safety issues, increase attractiveness and competitiveness, in particular in urban areas.

EU contribution EUR 0.8-1 million.
LC-GV-09-2020: Setting up a common European research and innovation strategy for the future of road transport

Scope:

• Updating of research agendas and roadmaps developed by the European Technology Platform ERTRAC and supporting the definition of research priorities of future Horizon Europe Partnerships relevant to road transport, covering all transport research fields.

• Cooperation between cities in Europe, Asia, Latin America and Africa. Support policy and knowledge exchange and establish a peer-to-peer exchange and capacity building programme for cities. Cooperation between EU and international projects on urban mobility. Develop implementation concepts for sustainable mobility including shared private vehicles, logistics, public transport systems and new mobility services.

• Liaise with international financing institutions to foster the take-up and implementation, support the EC in international discussions and Fora related to Mobility for All, Climate Change and the New Urban Agenda. Track global progress on urban electric mobility and support UN activities (e.g. UEMI).

ALL bullet points must be addressed.
Impact:

Proposals should contribute to:

• The objective of the EU for climate action and sustainable development.
• The objectives set by the Paris Agreement (COP21) and the New Urban Agenda.
• The fulfilment of post 2020 emission targets in road transport (at least 30% by 2030 compared to 2021)
• The EU's long-term goal of moving close to zero fatalities and serious injuries by 2050 ("Vision Zero").
• UN's Sustainable Development Goals 11 "Sustainable cities and communities" (with particular attention to 11.2) and 13 "Climate Action".
• Strengthening the collaboration of the European Union with Asia, Latin America and Africa.
Thank you!

#InvestEUEresearch
www.ec.europa.eu/research

Funding & tender opportunities portal
https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/home