

General Information	
Preliminary title of the European Partnerships	Towards zero-emission road transport, “2ZERO”
Short description of the partnership	The Partnership will accelerate the transformation of road transport towards mitigating climate change, improving air quality, mobility and safety of people and goods, ensuring leadership in innovation, production and services.
Services directly involved	Lead service: RTD Other services: CLIMA, MOVE, ENER
Context and problem definition	<p>Europe is committed to delivering on the Paris Agreement, limiting climate change to well below 2°C, and making efforts towards 1.5°C, implying a fundamental change in our energy and transport systems.</p> <p>The European Commission presented a Strategy for Low Emissions Mobility (COM(2016) 501), and ‘Europe on the Move’, a set of legislative initiatives within the Mobility Packages, while the Strategic Transport Research and Innovation Agenda (STRIA) helped the definition of common priorities and the deployment of innovative solutions, in particular to support transport electrification and the use of alternative clean and renewable fuels.</p> <p>The Public Private Partnerships PPP European Green Cars Initiative (EGCI) under FP7 and its successor the European Green Vehicle Initiative cPPP under Horizon 2020 strongly supported delivering green vehicles and mobility system solutions of the future. Almost EUR 1 billion funds have been invested, leading to a profound transformation of European transport research and innovation priorities, covering all aspects of vehicle improvement as well as the development of batteries for electric vehicles.</p> <p>Transport industries and services are essential for EU’s economy, enabling growth, prosperity and employment, but transport environmental performance is still below the commitments. Over 70% of passenger journeys are made by car, while road freight transport delivers 75% of all goods carried over land in Europe. Passenger and freight road mobility has been constantly on the rise and is expected to still grow by 2030 (+10/20%); transport represents almost 25% of Europe's GHG emissions and also causes air pollution and premature deaths.</p> <p>Zero- and low-emission road mobility is the key pathway to decarbonise and depollute substantial parts of demand side sectors; sustainability shall become a key factor of competitiveness. EU global leadership is strongly disputed by Asia and USA, also with new contenders from digital sector entering the arena with disruptive innovations.</p> <p>In order to reach full mainstream mass production, further efforts are needed on different types of vehicles and on charging infrastructure and system integration, also including innovative mobility offers (Mobility-as-a-Service, servitisation).</p>
Objectives and expected impacts	<p>The mobility of people and goods are the lifeblood of an integrated European single market, territorial cohesion, and an open and inclusive society. The transformation towards zero- and low-emission road mobility delivers tangible benefits including clean air, reduced noise and more liveable urban spaces, generating major benefits for citizens’ health and quality of life as well as new business opportunities and new skills.</p> <p>The partnership shall make a major contribution to the cost-effective achievement of legislations for 2025, 2030 and beyond (e.g. CO2 standards emissions, Real Driving Emissions), including substantial penetration of both battery electric vehicles and plug-in hybrid electric vehicles, low-cost and pervasive slow and high charging infrastructures. The widespread adoptions of technological solutions shall maintain and strengthen the European</p>

	<p>industrial leadership, and support the dynamic developments of the market following the ambitious announcements of European automakers on their electrification strategies.</p> <p>To achieve these short and medium-term objectives, the Partnership will support the development of a competitive new generation of lightweight, energy efficient and affordable zero- and near-zero emission road transport vehicles and their recharging infrastructures, together with support measures to facilitate their rapid deployment.</p> <p>he Partnership will address technologies, which are specific to: 1) clean road vehicles and their infrastructures (including their interfaces) and 2) technologies of more systemic nature, addressing the integration of clean vehicles into the transport system and new system services.</p> <p>1) Road vehicles technologies will address aspects such as the use of lightweight materials, drive trains, battery packaging and the related power electronics, battery and vehicle management systems as well as advanced and digital manufacturing technologies for such vehicles; electrified vehicles will include both battery electric (long term objective) and plug-in hybrid electric technologies (short-medium term objective). Wider range of alternative fuels solutions for Heavy Duty Vehicles shall be included.</p> <p>2) Technologies for a better integration of clean vehicles will look at accelerating the deployment of innovative mobility solutions based on alternative and renewable energies that will support the move towards zero emissions mobility. Aspects of recharging infrastructure solutions, alongside solutions for grid integration and management, vehicle use for mobile storage and innovative, interoperable and open access system services will be covered, as well as real-world commercial cases for both logistics operations in urban and suburban areas and for public transport system services.</p> <p>All types of road transport vehicles shall be included (e.g. two-wheeler, passenger cars, vans, trucks and buses) as well as system integration with infrastructures and services.</p> <p>This partnership addresses programme objectives stated in the proposed framework programme (Article 3) of Horizon Europe:</p> <p>a) to support the creation and diffusion of high-quality new knowledge, skills, technologies and solutions to global challenges;</p> <p>(b) to strengthen the impact of research and innovation in developing, supporting and implementing Union policies, and support the uptake of innovative solutions in industry and society to address global challenges;</p> <p>(c) to foster all forms of innovation, including breakthrough innovation, and strengthen market deployment of innovative solution.</p>
Necessity test: rationale for a European Partnership	<p>Building on previous cPPPs under FP7 and Horizon 2020, the new partnership shall build consensus on research and innovation roadmap and priorities among the many different stakeholders of the road transport (such as OEMs, energy, telecom and IT industries, equipment supplier, research centres, universities, SMEs and start-ups).</p> <p>It shall allow the development of the needed synergies to support disruptive and incremental innovation, and the better exploitation of all innovative solutions across the entire value chain.</p> <p>While traditional calls would not ensure the needed additionality of all the partners' contribution, the proposed partnership approach also allows to act as a catalyst to support commitments from the private side, leveraging effect, supporting clustering and technology transfer, disseminating knowledge and leveraging new skills for the uptake of the technologies.</p> <p>This partnership will bring together all Horizon Europe R&I activities so to develop a coherent and strategic programme, in cooperation with industrial</p>

	<p>players, the research community and other relevant stakeholders. Member States need to be actively involved, to bring knowledge and support on the deployment of the needed infrastructures, in line with Directive 2014/94/EU on the deployment of Alternative Fuels Infrastructure.</p>
Relevant for the following parts of Horizon Europe	<p>Pillar II 'Global Challenges and European Industrial Competitiveness'</p> <p><input type="checkbox"/> Cluster Health</p> <p><input type="checkbox"/> Cluster Culture, creativity and inclusive society</p> <p><input type="checkbox"/> Cluster Civil Security for Society</p> <p><input checked="" type="checkbox"/> Cluster Digital, Industry and Space</p> <p><input checked="" type="checkbox"/> Cluster Climate, Energy and Mobility</p> <p><input type="checkbox"/> Cluster Food, Bioeconomy Natural Resources, Agriculture and Environment</p> <p><input type="checkbox"/> Cross-cluster</p> <p><input type="checkbox"/> Pillar III 'Innovative Europe'</p>
Currently identified links with other partnership candidates / Union programmes	<p>The foreseen development of a competitive new generation zero- and near-zero emission road transport vehicles and their recharging infrastructures has strong links with other Partnerships.</p> <p>In particular, links and involvement are already foreseen with:</p> <ul style="list-style-type: none"> • Other proposed partnerships directly related to zero and low-emissions vehicles (in particular Batteries, MOSART, Clean Hydrogen); • Cluster Digital, Industry and Space, linking vehicle manufacturing with Key Enabling Technologies, technological and industrial capacities for industrial competitiveness, digitised, circular, low-carbon and low-emission economy; • Cluster Health, analysing and reducing the impacts of existing and new transport emissions and in the environment, such as air polluting transport emissions and noise emissions, also influencing virtuous vehicle and users' behaviour. • Other research areas in Horizon Europe such as innovative materials, advanced manufacturing, and circular economy. <p>Depending on the scope of the mission in the area of 'Climate-Neutral and Smart Cities', the 2ZERO partnership shall be able to strongly contribute.</p> <p>Further synergies shall also be enabled with CEF and InvestEU to promote synergies between transport, energy and digital sectors, and for the needed deployment of the recharging infrastructure and to leverage private investment.</p>
Does the proposed partnership build on currently active ones?	<p>The envisaged Partnership builds on successful EGVI (European Green Vehicle Initiative) cPPP's activities, impact, assessment and mid-term review.</p> <ul style="list-style-type: none"> • Widening the operating areas of EGVI, the new partnership shall further improve its efficiency and effectiveness, in particular: • More efficient exchanges and collaboration between the envisaged Partnership and national and regional authorities (e.g. via NCPs and the CoR); • Improved links with standardization, professional training and legislation; • Facilitated common approaches and cross-disciplinary integration through co-design and the involvement of different DGs ; • Increased emphasis to dissemination activities, exploring and widely using all possible communication channels to attract and inform stakeholders.

	Building on experience of previous cPPPs EGCI and EGVI, and thanks to the strong involvement of all the different stakeholders, 2ZERO shall assure avoiding overlapping and supporting cross-cutting initiatives, support the needed synergies to speed up the market uptake of the developed solutions.
Expected type and composition of partners	<p>To achieve the needed objectives, the partnership shall build on a broad stakeholders' base so to stimulate synergies across the sectors and the technologies (e.g. OEMs, equipment and electronic suppliers, academia, telecoms, energy suppliers, data suppliers, etc.).</p> <p>The open membership policy, its inclusiveness and transparency shall act as catalyst for the complete value chain. A frequent review of the technological roadmaps (biannually) shall increase the needed dynamic ecosystem, support effectiveness and efficiency, and the partnership openness to disruptive newcomers.</p> <p>Representatives from other relevant partnerships (e.g. Batteries, MOSART, Clean Hydrogen) will be involved.</p>
Contributions and commitments expected from partners	<p>Partners expected to contribute to further deploy and transfer successful concepts into industrial products and services, impacting on the R&D&I industrial spending of the involved sectors with high leverage factor (5 to 10). Thanks to the involvement of different stakeholders (from industry to R&I, Member States and local authorities), the partnership shall support training, skill and reskill of workers; shall support to standardisation activities to enable development of innovative infrastructures and shall support new business models and services.</p> <p>The partners will define specific objectives on transferability in the Calls for Proposals facilitating a common approaches and the needed cross-disciplinary integration, and widely disseminate activities. The common sets of KPIs for review and assessment shall guarantee the impact-driven approach, also via the involvement in its activities of the Horizon Europe project coordinators.</p>
Currently envisaged implementation mode(s).	<input checked="" type="checkbox"/> Co-programmed European Partnership <input type="checkbox"/> Co-funded European Partnership <input type="checkbox"/> Institutionalised European Partnership <ul style="list-style-type: none"> <input type="checkbox"/> Article 185 <input type="checkbox"/> Article 187 <input type="checkbox"/> EIT-KIC
Justification of the implementation mode	<p>Given the complexity of the partnership, the number and the spread of the technologies involved, a lean, simple and flexible structure will be required: a Co-programmed Partnership is therefore the preferred option.</p> <p>A co-funded partnership is not suitable for industry partners, and the institutionalised approach is not deemed appropriate to be able to adapt to a flexible and fast changing sector.</p> <p>Governance shall guarantee positive and constructive dialogue with the wider community of industrial and R&I stakeholders, with strong involvement in the Board of Member States, regional/local authorities, and standardisation bodies.</p>
Proposed starting year	2021 for first calls launched under Horizon Europe, with contribution to WP preparation starting in 2020