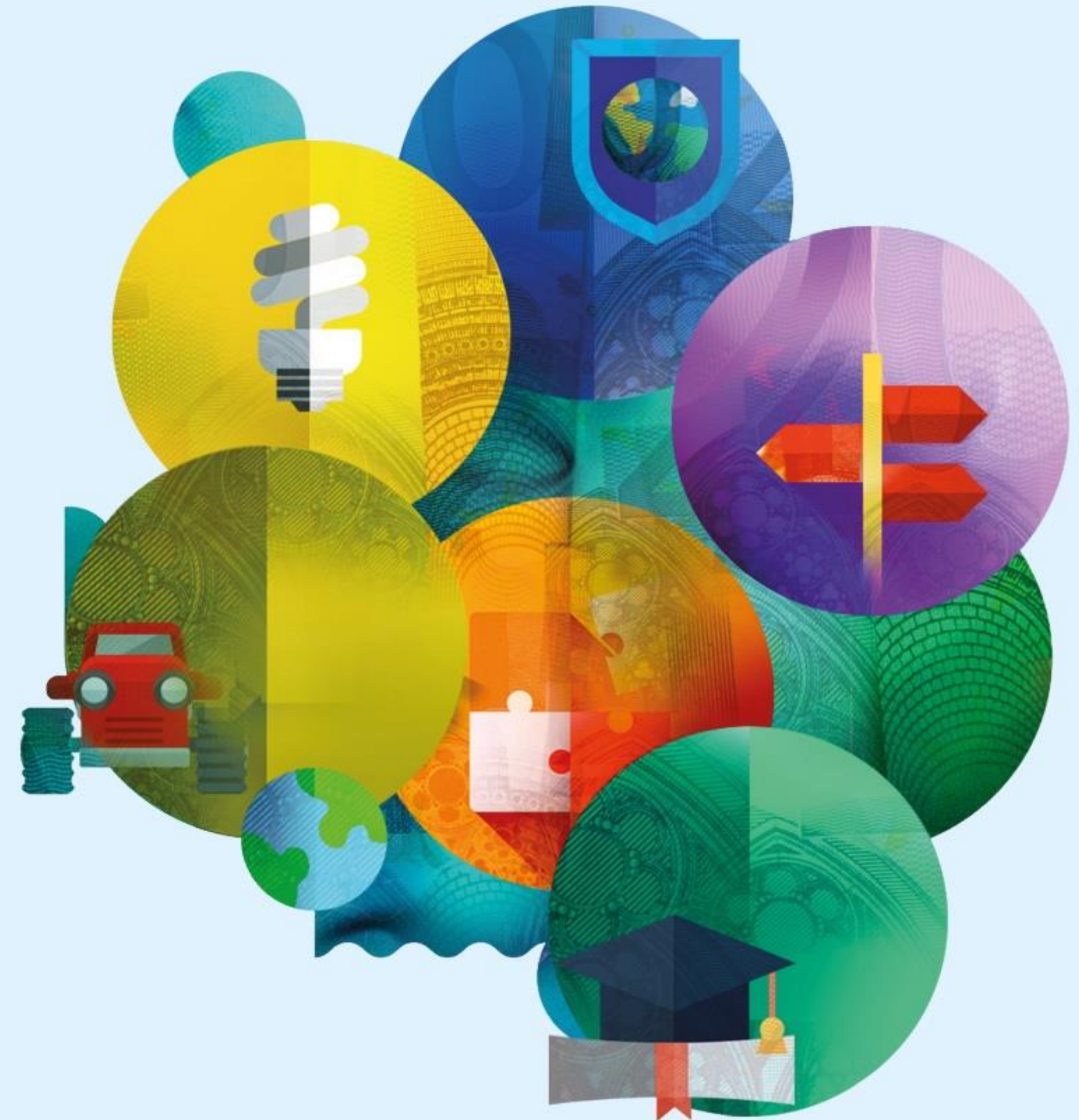


# EU:n tutkimus- ja innovaatio-ohjelmat ja Suomen meriklusteri

Työpaja ja seminaari: Helsinki 27.1.2020





**BUSINESS  
FINLAND**

# **Horizon 2020 calls for the maritime sector The last round of calls**

Tom Warras, National Contact for the H2020 Transport Programme  
Helsinki, 27 Jan 2020





# CALL TYPES AND REQUIREMENTS



# Call Types CSA – RIA – IA

## Coordination and Support Action CSA

- 100% grant
- Accompanying measures such as standardisation, dissemination, awareness-raising and communication, networking

## Research and Innovation Action RIA (~[AoF](#)+[VTT](#))

- Commercial time horizon ~5-8 yr, TRL ~4-6, 100% grant for profit and non-profit organisations
- Activities aiming to establish new knowledge / to explore the feasibility of a new or improved technology, product, process, service or solution

## Innovation Action IA – (~BF [Co-Innovation](#))

- Commercial Time Horizon ~3-5 yr, TRL ~6-8, 70% grant for profit organis.(100% for non-profit)
- Activities directly aiming at producing plans and arrangements or designs for new, altered or improved products, processes or services.
- May include prototyping, testing, demonstrating, piloting, large-scale product validation and market replication.

# Horizon 2020 calls

## Project consortium requirements      Schedule

- At least three legal entities, each established in a different EU Member State or [Horizon 2020 associated country](#)
  - All three legal entities must be independent of each other
  - In addition, [some third countries](#) may participate
  - **In practice, a larger consortium will be needed**
- Information on the outcome of evaluation: max 5 months from the deadline for submission
  - Signature of grant agreements: max 8 months from the deadline for submission
  - Costs eligible from signature of grant agreement





# MARITIME IN H2020 TRANSPORT



# Structure of Horizon 2020 - 77 billion€

I Excellent Science	II Industrial Leadership	III Societal Challenges
<ol style="list-style-type: none"> <li>1. European Research Council (ERC): frontier research</li> <li>2. Future and Emerging Technologies (FET). <ol style="list-style-type: none"> <li>a) Open</li> <li>b) Proactive</li> <li>c) Flagships</li> </ol> </li> <li>3. Marie Skłodowska-Curie (MSCA) – actions: training, career development and mobility for researchers</li> <li>4. Research Infrastructures</li> </ol>	<ol style="list-style-type: none"> <li>1. Leadership in Enabling and Industrial Technologies <ul style="list-style-type: none"> <li>– 1.1. ICT</li> <li>– 1.2. nanotechnology</li> <li>– 1.3. materials</li> <li>– 1.4. biotechnology</li> <li>– 1.5. manufacturing and processing</li> <li>– 1.6. space</li> </ul> </li> <li>2. Risk finance: loans &amp; equity funding</li> <li>3. Innovation in SMEs</li> </ol>	<ol style="list-style-type: none"> <li>1. Health, demographic change and wellbeing</li> <li>2. Food security, sustainable agriculture and forestry, marine, maritime and inland water research and bioeconomy</li> <li>3. Secure, clean and efficient energy</li> <li>4. Smart, green and integrated transport</li> <li>5. Climate action, resource efficiency and raw materials</li> <li>6. Europe in a changing world: inclusive, innovative and reflective societies</li> <li>7. Secure societies – protecting freedom and security of Europe and its citizens</li> </ol>
<p>Also: European institute of innovation and technology, Science with and for society, Spreading excellence and widening participation</p>		
IV Joint Research Center JRC, excl. nuclear		
Nuclear research: EURATOM		

20% of the budget or pillars II + III to SMEs  
- SME Instrument (1/3)  
- Collaborative projects (2/3)

# Call topics presented here (calls 2020)

- LC-MG-1-13-2020: Decarbonising long distance shipping (RIA, 20 M€)
- MG-2-13-2020: CSA for an integrated freight transport and logistics system (CSA, 1 M€)
- MG-3-7-2020: Improved Production and Maintenance Processes in Shipyards (IA, 15 M€)
- MG-BG-03-2020: Under water noise mitigation and environmental impact (RIA, 8 M€)
- LC-BAT-11-2020: Reducing the cost of large batteries for waterborne transport (RIA, topic published in CC activities list under Next Generation Batteries, 20 M€)

## Timeline:

- LC-MG-1-13-2020 is a two-phase call, and the 1<sup>st</sup> phase closed on 9 Jan 2020. Those who will be selected have a deadline for 2<sup>nd</sup> phase proposal: 8 Sep 2020.
- The other calls mentioned have opened in Dec 2019
- The other calls mentioned have a deadline for proposals: 21 Apr 2020



# LC-MG-1-13-2020: Decarbonising long distance shipping

- RIA - Research and Innovation action
- Call opening date 03 September 2019
- Two-stage proposal
  - 1<sup>st</sup> stage deadline 09 January 2020 (past)
  - 2<sup>nd</sup> stage deadline 08 September 2020
- Funding rate 100 %
- Call budget EUR 20 million
- Expected project budget EUR 5-10 million
  - ~ 2-4 proposals will be funded



# Decarbonising long distance shipping: Scope

- **All following aspects should be addressed:**

- Working together with e.g. operators, ship builders, marine equipment manufacturers, fuel and energy suppliers and others, research will address the **development of technologies combined with operational practices** to substantially reduce GHG emissions from long distance shipping in line with the IMO target and without increasing other forms of pollution
- **Excluding fuel development**, a wide range of potential solutions can be proposed including the use of wind and solar assistance combined with efficiency improvements and other alternate energies. Solutions can be proposed in combination and should take into account the likely availability of infrastructure (including bunkering) on long distance routes.
- Solutions should also take into account the CO<sub>2</sub> equivalent from any **reduction of black carbon emissions**
- Costs, GHG reductions and any other potential waste streams shall be convincingly analysed using real data and testing programmes in addition to theoretical analysis
- Implications for the provision of new infrastructures shall be quantified and assessed
- To at least [TRL5](#), technologies, systems and practices shall be **tested at full scale on operational shipping**. The differences between predicted and measured data should be identified.
- Any reduction in GHG emissions that are founded upon innovative operational practices must be robustly benchmarked against the current state of the art, for example concerning ship routings and speeds through the use of “big” AIS “data” and/or other satellite data
- A robust communication strategy should be developed and implemented so as to ensure wider public engagement as well as a strong engagement with the global shipping sector and its customers
- Cooperation with IMO and EU activities and fora concerning the decarbonisation of shipping is encouraged. Build upon and cooperate with any related activities and research.



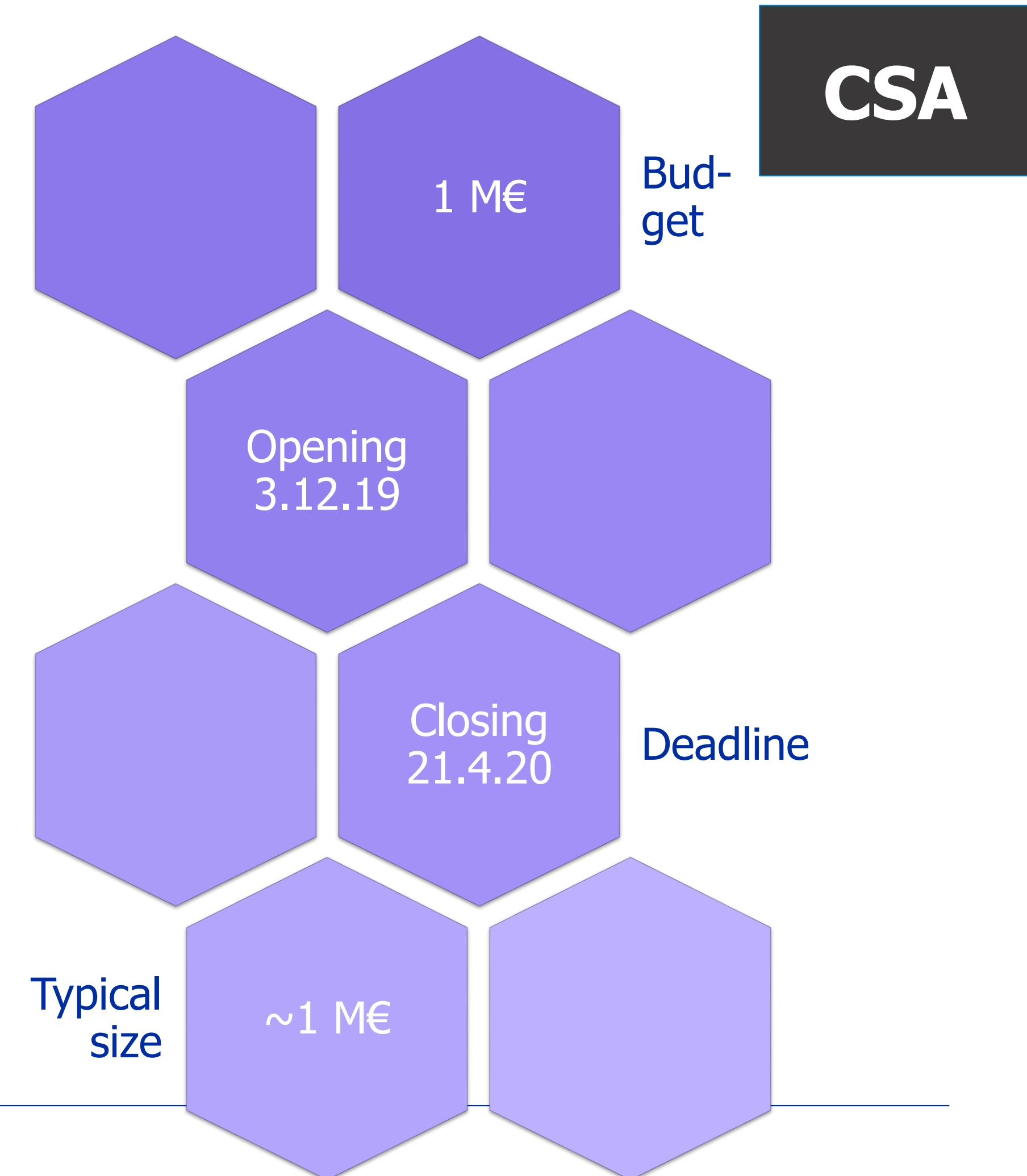
# Decarbonising long distance shipping: Expected impacts

- Development of innovative solutions to decarbonise shipping which
  - exceed the IMO's 2050 target to decarbonise by 50 %
  - are applicable to ship types that are the largest emitters of GHGs such as:
    - bulk carriers
    - tankers
    - container ships
    - cruise ships
    - passenger liners
- Establishment of robust benchmarks and methods which will provide wide confidence of the "real world" impacts from any specific GHG reduction measure including potential scalability and any secondary environmental impacts
- Improve the competitiveness of European maritime industries and shipping companies within the field of green shipping
- Increase the awareness and take up by end users
- Provide evidence to policy makers within EU and globally concerning infrastructure requirements necessary to meet the 2050 decarbonisation target



# MG-2-13-2020: Coordination & support for an integrated freight transport and logistics system

- Specific Challenge: Ensuring the seamless integration and harmonisation of transport modes.....freight transport decarbonisation and competitiveness. To this purpose, the assessment of progress, gaps and barriers is necessary. It is also key to involve .end users and ...key actors in charge of developing the business cases.
- Scope:  
Proposals shall address all of the following areas:
  - Perform ..analysis of the products, services, solutions ..and other value added results generated by EU-funded projects.
  - Identify and prioritise gaps in the research landscape and market needs to be tackled by future R&I actions
  - Support the wider engagement of the freight transport and logistics stakeholders
  - Engage with relevant sectors beyond freight transport and logistics to support crossfertilisation



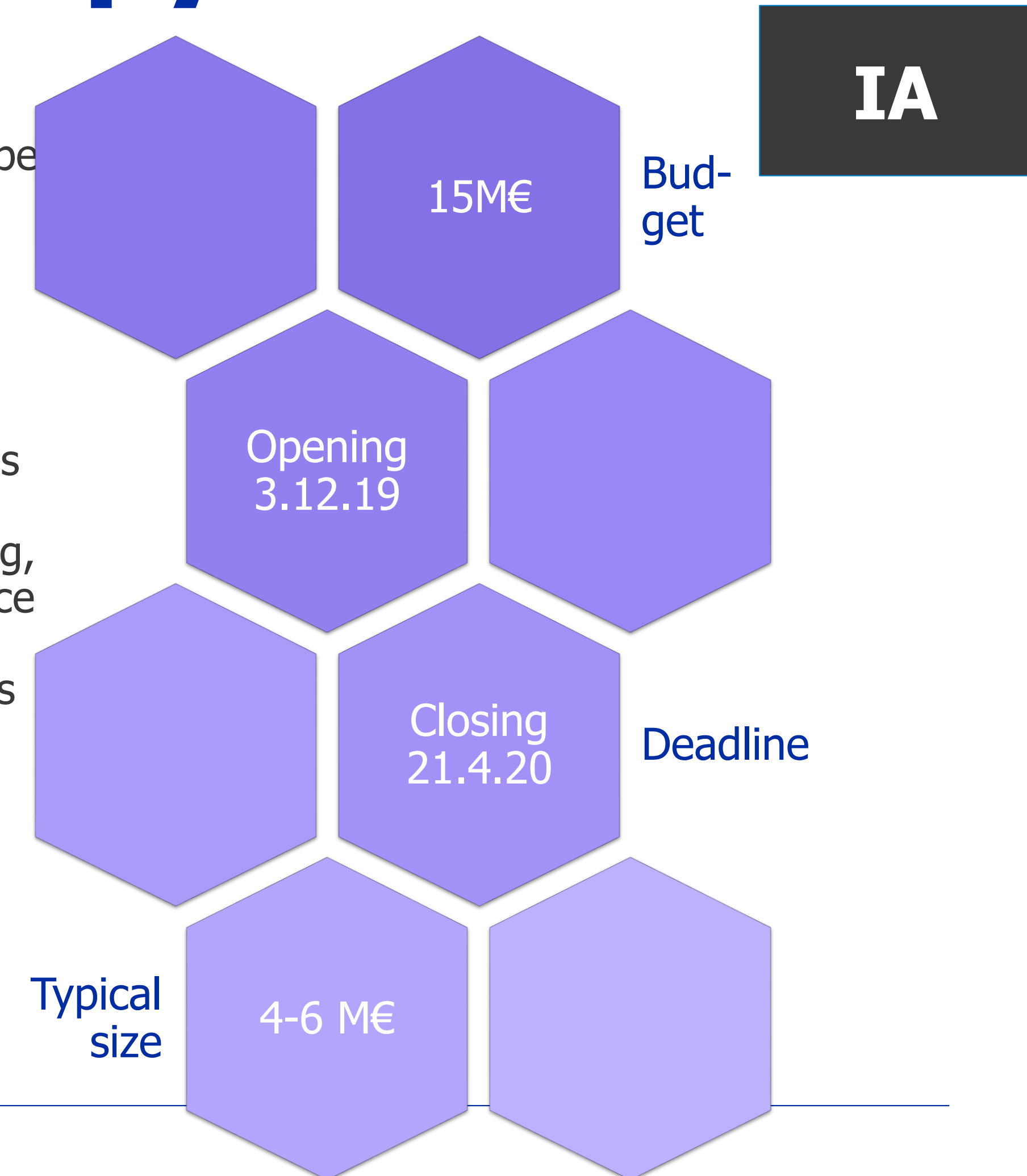


# MG-3-7-2020: Improved Production and Maintenance Processes in Shipyards

- Specific Challenge: Competitors are.. becoming more advanced and seeking to enter European high technology markets. The market is particularly challenging for smaller shipyards across Europe who can be agile to develop and maintain niche products or to be integrated within smart supply chains yet do not have significant resources to undertake research and innovation....taking advantage of the latest developments within digital production, advanced robotics and co-bots, machine vision, internet of things, flexible production systems, 3D printing, supply chain integration...

Scope: Proposals shall address all of the following areas:

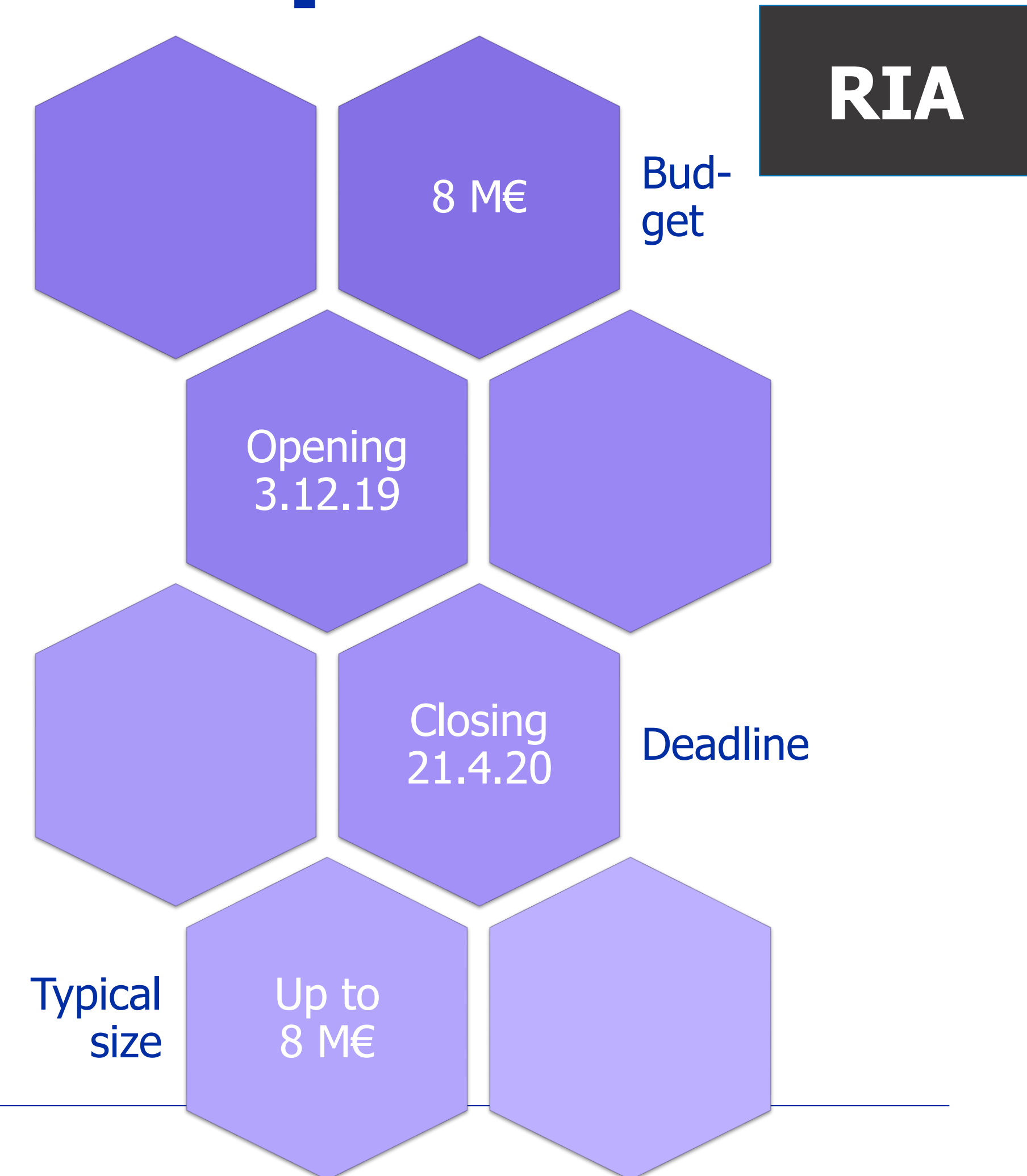
- The development of innovative technologies and systems to enhance the competitiveness of production and maintenance processes within European shipbuilders and ship yards. Where appropriate, technologies transfer from outside of the marine industry shipbuilding, ship maintenance and ship modification sectors, particularly those with potential to reduce CO<sub>2</sub> and/or other polluting emissions.
- Identification of the necessary related skills development needs and strategies to address these in order to maximise the value from innovative production technologies and practices.
- Testing and physical demonstration of the developed technologies to at least TRL 5, including the benchmarking of existing practices, consideration of the environmental impacts and quantification of the additional value from the technology and/or system developed.
- Development of business plans and roll out strategies.
- IPR and or other measures to reduce leakage of the developed innovations outside of Europe.





# MG-BG-03-2020: Under water noise mitigation and environmental impact

- Specific Challenge: environmental impacts from effects and the propagation of underwater noise at different amplitudes and frequencies remain poorly understood and largely unquantified.
- Scope: Proposals shall address all of the following areas:
- Develop standardised methods to measure and assess the impacts from underwater noise generated by shipping and boats. Consideration should be given to the acute and cumulative effects on different water species in rivers and at sea including marine mammals.
- Establish a stakeholder group of researchers within the domain of underwater noise assessment and mitigation together with other relevant actors including for example NGO's, marine and waterway authorities, industry, ship owners, naval industry etc. Use this group to support methodology and standards development as well as its wide spread 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 to establish appropriate limits.





# LC-BAT-11-2020: Reducing the cost of large batteries for waterborne transport

- RIA - Research and Innovation action
- Call opening date 03 December 2019
- Deadline 21 April 2020
- Single-stage proposal
- Funding rate 100 %
- Call budget EUR 20 million
- Expected project budget EUR 8-12 million
  - ~ 2 proposals will be funded
- The challenge is to **substantially reduce the cost of large waterborne transport battery systems** and cells for both marine and inland waterway transport applications



# Reducing the cost of large batteries for waterborne transport: Scope

- Proposals can address **either the battery cell or the battery system** (racks, battery management system, fault detection and any integrated fire suppression) **or both** the cell and battery system
- **All of the following aspects should be addressed:**
  - With respect to waterborne transport, research and develop a large battery system and/or specific battery cells that are substantially cheaper on a total cost basis with respect to existing system
  - Work should be applicable to battery systems of at least 1 MWh capacity
  - Prove the technology and manufacturing processes through system trials and testing
  - Address production process efficiency
  - Address the requirements for type approval from relevant authorities including a comprehensive risk-based safety assessment
  - Development of a marine battery certification methodology with the objective of validating and verifying safety (with consideration of air, liquid or passive cooling), including the standardization of test methods and tools for certification cost reduction
  - Considering of different vessel types, address the integration of battery systems into Energy/Power management system of vessel
  - Undertake a cost benefit analysis to convincingly demonstrate the cost savings in comparison to current state of the art waterborne battery technology
  - Assess end of life and disposal strategies
  - Develop a convincing business case and consider potential financing models



# Reducing the cost of large batteries for waterborne transport: Expected impacts

- Substantially reduce the lifetime cost of large waterborne battery systems
- Enhance the competitiveness of European industry within the waterborne battery market
- Cut greenhouse gas emissions from waterborne transport
- Increase the European skills base in large battery technology and manufacturing processes
- Support European jobs and growth
- Increase confidence in waterborne battery technology investment
- Speed up the transition of most short-range freight and ferry services towards zero emission





**ADVICE AVAILABLE FROM NPC**



# What can NCPs do for you?

- NCPs provide general and specific info and guidance about calls and conditions, and offer Commission's annotated info behind calls.
- NCPs assist, advise and train eg. about project submission, budgeting and reporting. They can offer project proposal second opinion & pitching coaching.
  - Questions are welcome and the NCP has direct contacts to the European Commission for clarifications.
- Signposting and cooperation with other funding opportunities (national & international).
  - NCPs have a close national cooperation between Business Finland, Academy of Finland, VTT, Sitra, ministries and key stakeholders
  - NCPs have their colleagues in every EU country to help to find the relevant partner in different industry R&D domains.
  - Business Finland NCPs have the access to Business Finland customer portfolio (research and corporate projects) which helps to build either domestic and international consortia.
- NCPs monitor Finnish participation in H2020 in their respective theme/area
- NCP can provide call statistics, conclusions and reasons behind success rates. NCP has the access to proposal Evaluation Summary Reports which provide valuable information about different consortia and lessons to learn.
- Knows about the key technology platforms, PPPs and events in EU in advance.
- Finnish NCPs act as expert members in different thematic committees thus following where the Commission's R&D activities, funding instruments and conditions develop.
- The cooperation with other delegates and NCPs supports Finland's administration in discussions with the Commission.
- Also possibility to use national voice to foster Finnish research and innovation in the short term & in the long run (Horizon Europe and other, 2021–2027).
- NCPs : no conflicts of interest.



# Sources of information related to Horizon-2020 Transport

WP2018–2020 Smart, green and integrated transport [full text]

- [https://ec.europa.eu/research/participants/data/ref/h2020/wp/2018-2020/main/h2020-wp1820-transport\\_en.pdf](https://ec.europa.eu/research/participants/data/ref/h2020/wp/2018-2020/main/h2020-wp1820-transport_en.pdf)

WP2018–2020 Smart, green and integrated transport [topic list]

- [https://www.businessfinland.fi/globalassets/finnish-customers/horizon-2020/3-yhteiskunnalliset-haasteet/4-liikenne/hakutiivistelma-h2020-transport-vahvistettu-versio-2019\\_07\\_02.pdf](https://www.businessfinland.fi/globalassets/finnish-customers/horizon-2020/3-yhteiskunnalliset-haasteet/4-liikenne/hakutiivistelma-h2020-transport-vahvistettu-versio-2019_07_02.pdf)

Finland's pages for Horizon-2020 and for the transport programme in Finnish

- <https://www.horisontti2020.fi>
- <https://www.businessfinland.fi/suomalaisille-asiakkaille/palvelut/rahoitus/horisontti-2020/yhteiskunnalliset-haasteet/liikenne/>

European Commission's pages "Funding and tenders"

- <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/programmes/h2020>



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