Information request on your EoI to collaborate with KCI to develop a case study

First of all, the KCI would like to thank you for expressing your interest in collaborating with KCI in the development of the case study in line with the concept note (attached). In order tofor the KCI to have more clarity on your interest and to consider it to the next step, we would like to request you to kindly respond to following questions:

Questionnaire

1. If you haven't done so, please indicate which of three option you choose from the concept note to develop the case study in collaboration with KCI:

   *Option 2- **Region-specific case study***: Assessing impacts of the implementation of emissions reductions climate policies, on economies, taking into account people in vulnerable situations, as well as efforts toward economic diversification and transformation and just transition.

2. If possible, kindly provide brief description of the case study for the chosen option, e.g. the sector, the climate policy, the country/region, etc.

   Following the description in our Letter of Expression of Interest, please find below a more elaborated description of the specific Case Study and its context within the EU project ARSINOE.

   About ARSINOE: H2020 Innovation Action Project "ARSINOE - Climate-resilient regions through systemic solutions and innovations" is an EU-funded project aimed at creating climate resilient-regions through systemic solutions and innovations. ARSINOE will shape the pathways to resilience by bringing together the Systems Innovation Approach (SIA) and the Climate Innovation Window (CIW), the EU reference innovations marketplace for climate adaptation technologies, to build an ecosystem for climate change adaptation solutions. This approach is showcased in nine demonstrators or case studies (CS), as a proof-of-concept with regards to its applicability, replicability, potential and efficacy.

   ARSINOE is due to develop vulnerability indices that quantify risk resulting from the interaction of climatic hazard, vulnerability and exposure of humans, ecosystems, economic, social or cultural assets, with results being presented through geospatial maps depicting hot spots where appropriate measures that will increase resilience will be proposed. This analysis is combined with Agent-based Modelling (ABM), a form of computational social science that assesses vulnerability by including the impact of human interactions on the system as a whole on a broad range of social and ecological patterns.

   The project also will support recovery from the COVID-19 crisis and climate resilience through the implementation of the EU Next Generation Fund Recovery and Resilience Plans (RRP's) in a co-integrated way, by taking into account the 1) country-specific recommendations derived from the EC Semester Process, 2) the weaknesses on SDG's identified in the Sustainable Development Report at national level and 3) the European Green Deal Policies.

   For the KCI call, we offer to develop ARSINOE **CS2 on Mediterranean ports,** which would comprise a region-specific CS.

   Description of CS on Mediterranean Ports: Weather phenomena sharpened by climate change can cause extensive damage to coastal infrastructure, with not only immense economic consequences to the local communities, but threatening human life. Blue Economy with a turnover of €750 billion and 5 million people working in the maritime sector in 2018, is particularly important for the EU. Especially the countries of this CS have significant tourism, fishing, shipping, etc. In Greece, maritime transport is a

viability prerequisite due to its insularism. Therefore, short sea shipping is also very important. It is crucial that seaport and waterway operators will strengthen resilience and adaptation. Natural and human systems need to adjust to new conditions taking advantage of existing competitive advantages. ARSINOE directly addresses infrastructure and maritime transportation by improving their resilience, health and well-being by avoiding cascading effects of climate change on human communities, including risk of mortality and relocation, among others. This case study also considers Nature Based Solutions (e.g. blue carbon approaches such as seagrass and salt marsh restoration, etc.) as alternative or complement to conventional adaptation measures. The CIW will be used to find suitable innovators to design the adaptation pathways that will be co-created through the SIA, since active stakeholder (SH) engagement is fundamental for acquiring successful and long-lasting solutions.

This transboundary CS consists of the ports of Piraeus (Greece), Limassol (Cyprus), and Valencia (Spain). Piraeus seaport —second maritime cluster globally—is one of the leading European seaports, in terms of coastal shipping, cruise and containerized cargo. Currently, 51% of the port belongs to the Chinese company COSCO, while it is involved in 14 EU-funded projects related to its intention and target to become a "green" and financially independent seaport. Limassol seaport handles 90% of the export and import volume of Cyprus and a lively Cyprus passenger traffic, including cruise ships and ferry connections with Greece, Israel, Egypt, and Lebanon. It is managed by DP World Limassol, P&O Maritime Cyprus Limited, and Eurogate. The seaport of Valencia is managed by the Port Authority of Valencia (PAV), which trades under the name of Valenciaport. This public body is responsible for running and managing three state-owned ports along an 80 km stretch of the Mediterranean coast in Eastern Spain: Valencia, Sagunto, and Gandía. It is Spain's leading Mediterranean port in terms of commercial traffic, mostly containerized cargo, due to its dynamic area of influence and an extensive network connecting it to major world ports. Valenciaport is also the maritime gateway for various commercial activities to and from the entire Iberian Peninsula. The port of Valencia is currently involved in over 40 EU projects (partner FV), most of which focusing on environmental impact of the seaport activity. ARSINOE aims to assist seaports and adjacent communities to adapt in a changing climate by improving their resilience in a holistic manner: In particular, ARSINOE seeks to (i) conduct a holistic vulnerability assessment for seaports since it is a prerequisite for enhancing resilience and develop adaptation actions; (ii) identify adaptation priority actions and; (iii) design tailored adaptation pathways for the seaports considered. The vulnerability assessment and subsequent design of adaptation pathways require active SH involvement, effected through the SIA and BRIGAID mechanisms, while existing financial resources and suggested financial instruments will be examined. Nevertheless, policies, as well as administrative adjustments to the designed pathways will be required to support this transformation, considering that stakeholders or interested parties may find difficulty proceeding with solutions due to fragmental legislative barriers or policies. Further, the vulnerability index could be linked to an ESG rating tool, created in cooperation with the Hellenic Republic Asset Development Fund (HRADF) to perform a sustainability assessment of the ports in HRADF's portfolio. A critical aspect of the project is stakeholder behaviour and perception on adaptation. Such information can be gathered for a specified group of stakeholders, using results from behavioural economics and VR technology to project some de-biasing videos on climate change. The identification of appropriate and adequate financial resources is also necessary, such that a portfolio of financial instruments would need to be developed incorporating traditional financial instruments, such as debt issuance through bonds with sustainable characteristics, e.g., Green-Bonds, ESG Bonds, and SDG-linked Bonds, and Innovative tools such as Crowdfunding or even Charity Schemes.

Ambition after the Project: With the completion of the project, the health risks associated with extreme events including storm waves and flooding should be significantly minimized whereas the well-being of the adjacent communities should be enhanced. In addition, the change in the behavior of both the stakeholders and the members of the wider port society should also be visible. The perception of dealing

with a problem locally and isolated will be replaced by the belief that only through creative synergies can effective solutions emerge. Besides, it is expected to increase public awareness on issues related to the smooth operation and resiliency of ports, as well as a willingness by people to get engaged in the implementation of relevant actions.

Outscaling potential: The extension of the project will be based on the production of a real-time early warning system and a lifecycle smart digital support tool with applications and solutions given on environmental and socioeconomic terms that can be adopted by different ports and other sectors. Also, the project could potentially upgrade the quality of life (air & water pollution, traffic, noise) of surrounding communities and have a positive impact on the international economy, as the seaports are part of the global maritime transport system, connecting sea freight to inland freight transport modes.

3. What is the status of the assessment of impacts for the specific case study? Choose from below, and elaborate as necessary:

   The study of impact on vulnerable populations **would be initiated in collaboration with KCI**, where we would build on elements of the work already carried out within the ARSINOE CS2 on Mediterranean Ports, as detailed above. For example, there is a baseline assessment carried out for the Port of Valencia, but it does not include the host community of the port itself.

4. If the case study is already available, please provide the link to the case study.

   https://arsinoe-project.eu/case-study-2/

5. If you would like to develop or initiate a case study, or further develop your existing case study, in collaboration with the KCI, how can you contribute? (for example: by providing resources, by developing the case study itself, etc.)? Do you have adequate financial and human capital to prepare the case study in collaboration with KCI?

The Alliance of Excellence for Research and Innovation on Aeiphoria (AE4RIA) is an initiative for collaboration between research institutions, that are mostly scientifically led by Prof Phoebe Koundouri. The institutions in this initiative are the ReSEES Laboratory, led by Prof Koundouri and Stochastic Modeling and Applications Laboratory at Athens University of Economics and Business, the Sustainable Development Unit (SD.U) at ATHENA Research Center), directed by Prof Koundouri. Furthermore, within AE4RIA are several Innovation Acceleration Hubs, namely SDSN Global Climate Hub, EIT Climate KIC Hub Greece , MENA Maritime ClimAccelerator and BRIGAID Connect Association and associations and science-policy networks: UN SDSN, SDSN Europe, SDSN Greece, EAERE, NEXUS Cluster and Water Europe, focused on sustainable development. This research ecosystem, and more specifically the research team engaged in the ARSINOE project, has the human capacity to prepare the case study in collaboration with KCI, including the financial capacity, dependent on the scope and range of the study to be developed and conducted.