ANNEX I

RECOMMENDATIONS FOR OCEAN ENERGY AND OFFSHORE RENEWABLES ACCELERATED DEVELOPMENT AND DEPLOYMENT

These recommendations are actionable on voluntary basis addressing the key areas of consideration for accelerated development, deployment and commercialization of ocean and offshore renewable energy technologies, according to national circumstances. Offshore renewables include offshore wind (fixed and floating foundations), ocean energy (wave, tidal, ocean thermal energy conversion, salinity gradient) and floating PV technologies.

1. Include, as appropriate, offshore renewables in national energy and climate policies
2. Design enabling national and where appropriate regional regulatory frameworks specifically for offshore renewables, as appropriate
3. Foster international cooperation among countries with shared interests and consider investing in projects in developing countries
4. Conduct consultations in the development process
5. Quantify and communicate the expected positive impacts and benefits at economic and social level
6. Raise potential investors' awareness including through improved mapping on technical offshore renewable potential
7. Organize capacity building and joint research among G20 countries and other countries with offshore renewable expertise and those interested to adopt it
8. Engage with industry-led organizations to gain awareness of the latest technological developments
9. Increase international support for investment in RD&D public investments for offshore renewable technologies, as appropriate, in close cooperation with industry

10. Foster Investments in R&D for innovative designs take local environmental conditions into account

11. Exchange experience with the aim to develop international standards for environmental impact assessments and technological competitiveness valuations

12. private investments in enabling technologies, in hybrid renewable floating platforms, in new power transmission lines, adapting existent grid codes to take offshore renewables into account

13. Consider adequate sites for placing offshore renewables technologies, based on resources, but also grid connection potential

14. Encourage the reduction of risks for lenders through bankability of projects, improved technical due diligence of projects and innovative financing mechanisms and criteria

15. Share the risk of early-movers through private-public partnerships as appropriate

16. Facilitate cross-sectoral knowledge and skill transfer among offshore industries

17. Encourage voluntary data collection

ANNEX II

Energy Poverty Eradication – Voluntary Actions

Building on G20 Energy Ministers' communiqué in 2020, emphasizing "our collective effort to eradicate energy poverty", the G20 worked to provide a more detailed scope of the G20 energy poverty policy agenda, as an integral part of the G20 efforts to ensure universal energy access. Only after surpassing minimum access thresholds will modern energy systems generate positive impacts to improve health, well-being and productivity. Energy systems have positive impact when they enable the health and well-being of their target populations.
Recognizing that energy poverty affects both developing as well as developed countries and, in both cases, represents an obstacle to achieving the SDG7 goal of ensuring access to affordable, reliable, sustainable and modern energy for all, it is proposed a set of **voluntary actions**.
The proposed voluntary actions also includes moving towards energy poverty indicators that can be adapted to the needs of national and local decision-makers in both developing country and developed country contexts, as well as integrated policy solutions coordinated across different levels of government. It proposes exploring the opportunity for G20 countries to coordinate further energy poverty analytics and lessons with the EU Energy Poverty Observatory & Advisory Hub as a way of encouraging cross-regional learning.
A voluntary action plan framework will be helpful for all G20 countries to continuously monitor, diagnose, and target public policies that address emerging risks in their energy systems.

This **Voluntary Actions for Energy Poverty Eradication** consists of the following recommendations:

1) Based on the latest concepts and perspectives documented in global energy poverty literature the G20 Countries concur on **a voluntary, non-binding definition of energy poverty** that is inclusive of developed and developing country challenges. A G20 definition of energy poverty will help raising awareness on the importance of energy poverty in order to better target public policies that build resilience of economies and societies. The proposed G20 voluntary definition of energy poverty below is an important step in outlining the parameters of the challenge to help clarify future policy objectives:

   "Energy poverty occurs when households or territorial units cannot fulfill all of their domestic energy needs (lighting, cooking, heating, cooling, information-communication) as a result of lack of access to energy services, an inability to afford them, or their poor quality or unreliability in order to, at minimum, safeguard their health and provide for opportunities to enhance their well-being. Energy poverty affects, to a greater or lesser extent, every country (both developing and mature

economies) and requires addressing constantly changing risks while targeting support to populations most vulnerable to these risks. For developing economies energy poverty should also take into consideration energy services needed by public services and productive uses."

2) Move towards a **minimum set of standard energy poverty indicators** that can be adapted for the use of national and local decision-makers which embody the main dimensions of households most at risk of energy poverty in developed and developing countries, including systematic gender disaggregation in recognition of the higher exposure to energy poverty experienced by women and households led by women. This move towards a minimum standard set of energy poverty indicators would need to be adjusted, disaggregated or expanded to meet the specific needs of different local contexts.
   In developing economies, in recognition of lack of physical infrastructure or availability of different energy markets, the minimum set of standard energy poverty indicators would be centered around the availability of supply and the affordability of the service for each of the household energy needs.
   In developed economies, the movement towards a minimum set of standard energy poverty indicators would focus on the different dimensions of household energy services as well as socio-economic parameters to better identify vulnerable households and energy efficiency of dwellings.

3) **Identify integrated policy solutions as part of energy and social policy as well as coordinate between all levels of government**
   These should include social policy measures and energy efficiency improvements that reinforce each other, especially in housing, and often require local government implementation. Where there is a poverty issue specifically associated with energy – that is, one not arising solely out of general poverty – it is necessary to add structural measures to the existing social policy measures designed to mitigate the social consequences of energy poverty. Structural measures may be regulatory, designed to improve the functioning of the markets or infrastructure-related, designed to cut energy costs through renovations to improve the energy performance of buildings.

4) **Explore the opportunity for G20 countries to develop on the findings of the just transition initiatives, notably EU Energy Poverty Advisory Hub, and establish future collaboration.**
   In order to make best use of existing platforms and initiatives the EU Energy Poverty Advisory Hub would offer G20 countries a broader set of tools through its repository for energy poverty metrics and academic research, an indicator dashboard, policy best practices and will soon offer technical assistance to municipal actors aimed at improving local governments' energy poverty strategies. The EU Energy Poverty Advisory Hub would become a focal point for G20 members' access to best practices and lessons learned. Links across regions of G20 countries will contribute to facilitate lesson sharing that will be helpful to policy makers as they address the eradication of energy poverty in their own country contexts.

ANNEX III

2021 Naples principles on Energy cooperation complementing the 2014 G20 Brisbane principles on Energy collaboration

1. Prioritise efficiency for immediate emission reductions.

2. Secure integration of variable renewables in the power system, making best use of existing flexibilities, with a key role for regional interconnections and smart grids and digitalization.

3. Develop and deploy a portfolio of clean energy technologies to increase diversity of supply and hedge against technology risks.

4. Modernise oil security systems and continue to boost transparency and open and competitive energy markets to address traditional energy security concerns during the transition.

5. Ensure the cost-effective use and future proofing of existing energy infrastructures.

6. Boost the resilience of global supply chains and critical minerals availability, and foster digital security and climate resilience of energy infrastructure.

7. Promote a just and inclusive approach for secure transitions that puts individuals and society at the center to ensure energy access, poverty reduction and the greater diversification of producer economies.

ANNEX IV

SMART, RESILIENT AND SUSTAINABLE CITIES ACTION PLAN

This Action Plan sets out general principles as a specific menu of options to help guide voluntary actions and measures for more inclusive and sustainable cities. These could be implemented taking into account differences in governance systems, development levels, financing access and financial flows, local context, national circumstances, needs and priorities, including geographical, social, environmental and climatic conditions, while ensuring meaningful participation of local communities, Indigenous peoples, women and youth, the private sector, as well as science and academia.

ENERGY

1. Improve policy integration across the national, regional and city levels to stimulate a sustainable energy transitions, acknowledging that responsibilities are often shared.

2. Enhanced collaboration with subnational actors in view of their role as key partners in the implementation of NDCs and long-term strategies through enhanced communication, coordination and cooperation across government levels and access to finance.

3. Support efforts to integrate a clean energy transitions and climate action objectives into existing and future city-level planning procedures and instruments.

4. Facilitate capacity building at all levels to develop skill sets needed to take advantage of the opportunities that digitalization and the clean energy transition can unlock, including access to international best practices, and peer to peer knowledge exchange.

5. Support the sharing of best practices also through voluntary sharing of available data.

6. Encourage energy efficiency measures at the local level also promoting public and private building renovations. Recognizing the guiding role of the public sector.

7. Promote citizens active involvement towards a sustainable consumption and production. In particular, by initiating or supporting measures to elicit or reinforce digitally enabled energy demand monitoring and management, sustainable

behavior changes to foster local actions toward transition including energy efficiency, demand response, sustainable mobility.

8. Promote urban energy infrastructure upgrade and modernization.

9. Sensitize and involve citizens towards a behavioral change.

NATURE BASED SOLUTIONS OR ECOSYSTEM-BASED APPROACHES

10. Encourage the set-up of appropriate processes and steps, or refine existing ones, that bring together the different administrative levels, to scale up the integration of nature-based solutions or ecosystem-based approaches into urban and peri-urban infrastructure, planning and design, with the view of strengthening asset management capacity and practices to enhance adaptation and resilience.

11. Support incentives to facilitate the scaling up of nature-based solutions or ecosystem-based approaches, particularly, considering, where relevant:

a) further improvement of ways to strengthen the capacity of cities to act on and monitor their impacts and effectiveness;

b) identification of mechanisms that spur investment at the local level, particularly reinforcing a sustainable financial framework to facilitate cities' access to bilateral, multilateral and private sources of capital to implement them, and empower cities to review and reform their fiscal policies and budgets and to strengthen the provision of ecosystem services and investments across all sectors;

c) development or improvement of standards for sustainable infrastructure;

d) the need for social and environmental safeguards to create win-win solutions and prevent negative impacts on societies and ecosystems;

e) inclusion of criteria that promote infrastructure in public procurement processes.

12. Develop and design locally relevant nature-based solutions or ecosystem-based approaches that recognize and safeguard the value of biodiversity, ecosystem functions and services for urban communities and considering existing or past natural ecosystems and land- and seascapes including, but not limited to drainage patterns, habitat integrity and connectivity.

13. Foster cross-border cooperation and collaboration in light of the boundary-spanning nature of interconnected ecosystems, particularly through city-region cooperation, including but not limited to watershed management and peri-urban farming, and planning of ecological corridors between and within cities.

14. Support efforts that–harness the multiple benefits of nature-based solutions or ecosystem-based approaches in cities for achieving among others climate mitigation, ecosystem-based adaptation disaster risk reduction, flood prevention, combatting the urban heat island effect and overall resilience, as well as biodiversity, health, economic, employment and well-being objectives, by proactively deploying, conserving, protecting, restoring and valuing, inter alia and where relevant:

a) mangroves, dunes, seagrass beds and healthy reef systems that protect coastal cities from storm surges;

b) wetlands that provide habitat for biodiversity, increase water infiltration as well as raise groundwater levels and thereby reduce flood risks as well as urban heat island effects linked to climate change and the risk of droughts;

c) forested catchment areas that naturally filter, provide clean water and store carbon among other benefits;

d) parks, tree-lined streets, green roofs and building facades that mitigate the urban heat effect while reducing noise pollution, air pollution, and energy demand for cooling and provide habitat for animal and plant species, among other benefits;

e) planned and interconnected systems of biodiversity rich city parks and green belts, that connect people to nature, provide recreational space for health and well-being, ensure fresh air flow to reduce air pollution and urban heat island effects;

f) Tree-shaded walking and cycling paths that are designed as combined ecosystem and mobility corridors, particularly when linked to city-wide public space networks;

g) River re-naturalization that addresses flood risk, the loss of river ecosystems and provides green space for citizens;

h) Urban and peri-urban farms that make use of sustainable food production practices and approaches to reduce food miles and promote other co-benefits of connecting people to the food they eat.

15. Promote ambitious actions for further integration of nature-based solutions or ecosystem-based approaches, such as:

a) Converting public space and suitable roofs of public buildings into green roofs and green spaces, using native species and water consumption responsible patterns.

b) Defining a local-context specific green plot ratio to promote the inclusion of greenery in cities and buildings and, where relevant, reclaim unused land for urban nature.

c) Setting goals for resilient and diverse urban forests and other vegetation types; including, significantly increasing current urban tree canopy, and enhance natural areas and their integrity and connectivity.

d) Significantly increasing the percentage of urban forest canopy cover, and other forms of greening urban space, and promoting combined ecosystem and non-motorized transport corridors.

Make efforts to quantify and track locally, as appropriate, the multiple benefits of nature-based solutions or ecosystem-based approaches for climate mitigation and adaptation, as well as for biodiversity conservation, human health and well-being, with the view also of informing, as appropriate, planning decisions and build ~~new~~ sustainable businesses and finance models, while taking into account existing methodologies and accounting approaches.

16. Strive to report progress on scale up nature-based solutions or ecosystem-based approaches implementation as a contribution towards the achievement of the Sustainable Development Goals and under the UNFCCC, CBD and UNCCD, in the context of these Conventions as established in the different reporting obligations.

17. Engage non-state actors, particularly local communities, Indigenous peoples, women and youth, the private sector, as well as science and academia, to:

a) Build sustainable business models for increased investment in nature-based solutions or ecosystem-based approaches at the local level;

b) Build knowledge on locally appropriate and gender- and vulnerable group-sensitive solutions and thereby support local governments' capacity, with a focus on long-term and sustainable implementation.

18. Promote international cooperation to facilitate the deployment of nature-based solutions or ecosystem-based approaches, encouraging knowledge and best practice sharing, particularly through:

a) Collecting and sharing of business models and experiences of integration of efforts between the different levels of government;

b) Building, where applicable, on existing initiatives and networks including but not limited to the Global Covenant of Mayors for Climate and Energy, ICLEI, C40, Cities with Nature, the Coalition for Disaster Resilient Infrastructure, as well as regular exchanges with U20.