SDG7 Energy Compact of the International Renewable Energy Agency (IRENA) and the Global Wind Energy Council (GWEC)
A next Decade Action Agenda to advance SDG7 on sustainable energy for all, in line with the goals of the Paris Agreement on Climate Change

SECTION 1: AMBITION

1.1. Ambitions to achieve SDG7 by 2030. *[Please select all that apply, and make sure to state the baseline of each target]*
(Member States targets could be based on their NDCs, energy policies, national five-year plans etc. targets for companies/organizations could be based on their corporate strategy)

☐ **7.1.** By 2030, ensure universal access to affordable, reliable and modern energy services.	Target(s): Time frame: Context for the ambition(s):
☒ **7.2. By 2030, increase substantially the share of renewable energy in the global energy mix.**	**Target(s):** 380 GW of offshore wind, including fixed-bottom and floating offshore wind, installed worldwide by 2030. **Time frame**: 2021-2030. **Context for the ambition(s):** The IRENA World Energy Transition Outlook (2021) outlines the global energy system conditions to achieve net zero emissions by 2050 and sustain a 1.5-degree warming scenario by 2100. These system conditions include widescale electrification, grid and infrastructure buildout and large-scale growth of renewable energy shares in national energy matrices worldwide. They also include the acceleration of offshore wind development in every region of the world, as a source of large-scale, reliable, indigenous and affordable energy. 380 GW of cumulative installed capacity for offshore wind will be needed by 2030 to meet the net zero conditions outlined in this outlook. Currently, GWEC Market Intelligence calculates 35 GW of installed capacity as of the end of 2020, and market growth is on-track to deliver 270 GW cumulative installed capacity by 2030. This leaves a gap of 110 GW of offshore wind to maintain a net zero-compliant pathway, requiring urgent actions to raise national/regional offshore wind ambitions and improve the policy and investment environment for offshore wind in this decade. Given the project development and construction timelines for offshore wind, these interventions are urgently needed in the first few years of this decade.
☐ **7.3.** By 2030, double the global rate of improvement in energy efficiency.	Target(s): Time frame: Context for the ambition(s):
☐ **7.a.** By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology.	Target(s): Time frame: Context for the ambition(s):
☐ **7.b.** By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least	Target(s): Time frame: Context for the ambition(s):

developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programs of support.	

1.2. Other ambitions in support of SDG7 by 2030 and net-zero emissions by 2050. ***[Please describe below e.g., coal phase out or reforming fossil fuel subsidies etc.]***

Target(s): 2,000 GW of offshore wind, including fixed-bottom and floating offshore wind, installed worldwide by 2050.
Time frame: 2021-2050.
Context for the ambition(s): The IRENA World Energy Transition Outlook (2021) outlines the global energy system conditions to achieve net zero emissions by 2050 and sustain a 1.5-degree warming scenario by 2100. These system conditions include widescale electrification, grid and infrastructure buildout and large-scale growth of renewable energy shares in energy matrices worldwide. They also include the acceleration of offshore wind development in the world to exceed 2,000 GW of cumulative installed capacity by 2050. Currently, GWEC Market Intelligence calculates 35 GW of installed capacity as of the end of 2020. Building on the 380 GW by 2030 target of this Energy Compact, this Compact further aims to intensify global offshore wind growth in the decades beyond.
This leaves a gap of 1,620 GW of offshore wind to be built over the next two decades to 2050 to maintain a net zero-compliant pathway. The combination of ongoing innovations and technology enhancement towards larger capacity turbines, deployment of floating wind foundations permitting access to better wind resources and the emergence of green hydrogen production using offshore wind electricity are key in bridging this gap.

Offshore wind is a source of large-scale, reliable, indigenous and affordable energy, which can accelerate national clean energy transitions and support fossil fuels phaseout while safeguarding energy security. As such, it can be a critical technology to ensuring a just and inclusive energy transition, which also offers economies of scale to provide a range of socioeconomic benefits and job creation opportunities (particularly for displaced labour in the energy transition, such as in the offshore oil and gas sector). There is 71,000 GW of offshore wind resource potential globally, according the World Bank Group, the vast majority of which remains unexplored and untapped. Much of this technical resource potential will be suitable for floating wind applications, expected to reach commercialization by the end of this decade. This Compact aims to reach 2,000 GW of cumulative global installed capacity by activating offshore wind ambitions in and sector planning in every region of the world. Based on technical potential, current policy targets and market activity, an estimated preliminary breakdown of this 2,000 GW by 2050 could look like: Asia (760 GW, or 38%); Europe (640 GW, or 32%); North America (360 GW, or 18%); Latin America and the Caribbean (120 GW, or 6%); Pacific (80 GW, or 4%); and Africa and the Middle East (40 GW, or 2%).

Current government targets, NDCs and policy ambitions fall far short of what will be required for offshore wind to scale up and fulfill its role as a protagonist of the global energy transition. Greater collaboration across stakeholders, knowledge-sharing, capacity-building and technical assistance will be required to enable this volume of offshore wind growth, in addition to targeted financing and investment in grid and infrastructure buildout.

SECTION 2: ACTIONS TO ACHIEVE THE AMBITION

2.1. Please add at least one key action for each of the elaborated ambition(s) from section 1. *[Please add rows as needed].*

Description of action (please specify for which ambition from Section 1)	*Start and end date*
Action 1 (Ambition 1.1): Intensify government understanding and ambitions for offshore wind development in this decade, including as reflected in country NDCs, through the IRENA Collaborative Framework on Ocean Energy/Offshore Renewables ("Collaborative Framework"). The Collaborative Framework provides opportunities for peer-to-peer knowledge-sharing on offshore wind good practices and sector planning between governments, as well as dialogue between governments, the private sector, investment community and civil society. IRENA, GWEC and future signatories of this Compact will work together to expand membership of the Collaborative Framework and socialize the ambitions of the Energy Compact to governments interested in offshore wind.	January 2022 – 2030
Description of action (please specify for which ambition from Section 1)	*Start and end date*
Action 2 (Ambitions 1.1 and 1.2): IRENA and GWEC will assess the current institutional and resource gaps for offshore wind capacity-building and technical assistance to reach the 2030 and 2050 targets. This includes public-private partnerships in emerging offshore wind markets, as well as needs-	September 2021 – December 2022

based technical assistance which can support governments in creating offshore wind roadmaps, tender frameworks, cost reduction studies, and other issues.	
Description of action (please specify for which ambition from Section 1) **Action 3 (Ambition 1.2): IRENA and GWEC will collectively work to increase outreach and dialogue with policymakers in countries new to offshore wind, in order to increase the geographical coverage of the sector in line with global targets to 2050.** This includes building a greater understanding of offshore wind feasibility in LDCs and SIDS, where regional grid interconnection and cross-border power trading channels may be needed to support the economics of offshore wind, socioeconomic benefits of offshore wind and opportunities for sector coupling with green hydrogen production and export. This may include outreach through the Collaborative Framework, outreach through other channels available to IRENA and GWEC, joint studies on research topics which can expand offshore wind's reach and other modalities. GWEC will also join the IRENA Collaborative Framework on Green Hydrogen to discuss the role of offshore wind in hydrogen production.	*Start and end date* January 2022 – 2030
Description of action (please specify for which ambition from Section 1)	*Start and end date*

SECTION 3: OUTCOMES

3.1. Please add at least one measurable and time-based outcome for **each** of the actions from section 2. *[Please add rows as needed].*

Outcome	*Date*
- Increased membership of governments within IRENA's Collaborative Framework on Ocean Energy/Offshore Renewables, as well as the formation of at least one working group within the framework. Concrete actions for this working group will be defined through discussion with members of the Collaborative Framework.	End of 2022
- Establishment of a mechanism or initiative with a minimum 5-year timeline to accelerate offshore wind policy and regulatory capacity-building and technical assistance on a global scale.	End of 2022
- Collaboration on at least one joint study or report which can catalyse large-scale action on offshore wind, building on the G20 Offshore Renewables Action Agenda report (2021) where recommendations were endorsed by G20 Ministers. This study or report can be topic-focused (e.g. offshore wind and interconnection, offshore wind and green hydrogen) or geography-focused (e.g. offshore wind and LDCs, offshore wind in Africa and the Middle East).	2022-2025

SECTION 4: REQUIRED RESOURCES AND SUPPORT

4.1. Please specify required finance and investments for **each** of the actions in section 2.

For Action 1: No additional finance required for enhancement of the Collaborative Framework.
For Action 2: A global capacity-building and technical assistance initiative will require investment, likely from multiple sources including governments and public-sector climate finance, economic development funding and philanthropic funding. The investment is currently estimated as at least €20 million over a five-year tenure for the initiative.
For Action 3: TBC, joint studies will require additional funding dependent on scope.

4.2. [For countries only] In case support is required for the actions in section 2, please select from below and describe the required support and specify for which action.

[Examples of support for Member States could include: Access to low-cost affordable debt through strategic de-risking instruments, capacity building in data collection; development of integrated energy plans and energy transition pathways; technical assistance, etc.]

☐Financing	*Description*
☐ In-Kind contribution	*Description*
☐ Technical Support	*Description*

☐ Other/Please specify	*Description*

SECTION 5: IMPACT

5.1. Countries planned for implementation including number of people potentially impacted.

The Energy Compact has a global scope to 2030 and 2050.

5.2. Alignment with the 2030 Agenda for Sustainable Development – Please describe how **each** of the actions from section 2 impact advancing the SDGs by 2030.
[up to 500 words, please upload supporting strategy documents as needed]

Action 1: The enhancement of the IRENA Collaborative Framework will improve knowledge and understanding of the significant role offshore wind can play in a sustainable energy transition. Offshore wind offers a wide variety of socioeconomic benefits, including: **affordable electricity**, as enormous cost reduction has been achieved over the last decade and new fixed-bottom offshore wind capacity is forecast to become cheaper than new fossil fuel capacity early this decade, according to BloombergNEF; **clean power** to millions of homes**; reducing carbon emissions; boosting economic growth**, as a 500 MW projects can create 2.1 million days of work over its 25-year project lifetime; **supporting energy security** by reducing reliance on imported energy and fossil fuels, along with operating at high capacity factors and lower variability compared to other renewable energy sources; **reducing air pollution** by replacing fossil fuel sources which can create smog, asthma and other health issues; and **saving water** as a displacement of water-consuming fossil fuel-based generation. Increasing policymakers' awareness of these benefits, and practical advice on how to initiate sector development, will support **SDG 7** on advancing affordable and clean energy. The industrial development opportunities and inward capital investment brought by large-scale offshore wind projects can help governments to achieve **SDG 8** on decent work and economic growth, as well as **SDG 9** on industry, innovation and infrastructure. Many of the jobs in the offshore wind value chain, including in transport, logistics, installation, grid connection and operations and maintenance (O&M) will need to be locally deployed, allowing governments to harness offshore wind for sustainable economic development. Offshore wind also offers lower friction for technology and skills transfer from sunset industries like offshore oil and gas, and can support continued economic growth while countries phase out fossil fuels.
Action 2: Assessing the institutional and resource gaps for offshore wind capacity-building and technical assistance, and then formulating a global initiative which can support countries in raising their offshore wind ambitions, will be critical for **SDG 7** and **SDG 13** on climate action. Without the understanding, resource and support for policy and regulatory frameworks which can create an enabling environment for offshore wind, governments will face increasing pressure to deliver higher net zero-compliant targets with no practical changes on the ground.
Action 3: In addition to the SDGs referenced above, targeted outreach to certain groups of countries or studies which can address specific needs (green hydrogen complementarity, interconnections, marine spatial planning) can support more sustainable and ecologically responsible development by harnessing the lessons learned in the offshore wind sector to date. Depending on the topic of study, this could have positive impacts on **SDG 12** for responsible consumption and production or **SDG 14** on life below water.

5.3. Alignment with Paris Agreement and net-zero by 2050 - Please describe how **each** of the actions from section 2 align with the Paris Agreement and national NDCs (if applicable) and support the net-zero emissions by 2050.
[up to 500 words, please upload supporting strategy documents as needed]

Action 1: Increase of ambitions for offshore wind development in this decade is in line with the "ratcheting up" mechanism of the Paris Agreement, encouraging countries to expand upon their decarbonization goals by incorporating offshore wind targets into national energy system planning and updated NDCs within this decade. National NDCs with enhanced renewable energy capacity targets will be required within the next few years to have a chance of closing the 110 GW gap between current market outlook to 2030 and the required milestone to sustain a net zero-compliant pathway.
Action 2: The formation of a collaborative mechanism which focuses on capacity-building and technical assistance for offshore wind adopts a practical approach to ensuring implementation of renewable energy targets. Beyond target-setting, enabling policy and regulatory frameworks are required for investable market conditions and bankable offshore wind projects. Focusing on the practical aspect of policy and regulatory support ensures the generation of a sustainable pipeline of offshore wind projects that can progress through project development and construction stages expeditiously, and deliver on their climate change mitigation potential.

Action 3: Targeted outreach can support individual countries in understanding the socioeconomic benefits, system integration factors and economics of offshore wind, on top of the support for their decarbonisation goals. It is also necessary to ensure no country or region is “left behind” in the global expansion of the offshore wind sector, which has its legacy markets in Europe and China but holds untapped resource potential in every region of the world. As the sector expands, new areas of research and understanding will emerge to explore offshore wind installation in deeper waters, harsher climatic conditions, challenging financing environments and requirements for harmonious co-existence with other ocean users.

SECTION 6: MONITORING AND REPORTING

6.1. Please describe how you intend to track the progress of the proposed outcomes in section 3. Please also describe if you intend to use other existing reporting frameworks to track progress on the proposed outcomes.

IRENA and GWEC will monitor progress of outcomes on a biannual basis, including: in formulation of the Collaborative Framework strategy and agenda for the subsequent year; in performing a global stock-take of offshore wind capacity growth and market outlook for the IRENA World Energy Transition Outlook, future Regional Energy Transition Outlooks and the annual GWEC Global Offshore Wind Report.

SECTION 7: GUIDING PRINCIPLES CHECKLIST

Please use the checklist below to validate that the proposed Energy Compact is aligned with the guiding principles.

I. Stepping up ambition and accelerating action - Increase contribution of and accelerate the implementation of the SDG7 targets in support of the 2030 Agenda for Sustainable Development for Paris Agreement

I. 1. Does the Energy Compact strengthen and/or add a target, commitment, policy, action related to SDG7 and its linkages to the other SDGs that results in a higher cumulative impact compared to existing frameworks?

☒Yes ☐No

I.2. Does the Energy Compact increase the geographical and/or sectoral coverage of SDG7 related efforts? ☒Yes ☐No

I.3. Does the Energy Compact consider inclusion of key priority issues towards achieving SDG7 by 2030 and the net-zero emission goal of the Paris Agreement by 2050 - as defied by latest global analysis and data including the outcome of the Technical Working Groups? ☒Yes ☐No

II. Alignment with the 2030 agenda on Sustainable Development Goals – Ensure coherence and alignment with SDG implementation plans and strategies by 2030 as well as national development plans and priorities.

II.1. Has the Energy Compact considered enabling actions of SDG7 to reach the other sustainable development goals by 2030? ☒Yes ☐No

II.2. Does the Energy Compact align with national, sectoral, and/or sub-national sustainable development strategies/plans, including SDG implementation plans/roadmaps? ☒Yes ☐No

II.3. Has the Energy Compact considered a timeframe in line with the Decade of Action? ☒Yes ☐No

III. Alignment with Paris Agreement and net-zero by 2050 - Ensure coherence and alignment with the Nationally Determined Contributions, long term net zero emission strategies.

III.1. Has the Energy Compact considered a timeframe in line with the net-zero goal of the Paris Agreement by 2050? ☒Yes ☐No

III.2. Has the Energy Compact considered energy-related targets and information in the updated/enhanced NDCs? ☒Yes ☐No

III.3. Has the Energy Compact considered alignment with reaching the net-zero emissions goal set by many countries by 2050? ☒Yes ☐No

IV. Leaving no one behind, strengthening inclusion, interlinkages, and synergies - Enabling the achievement of SDGs and just transition by reflecting interlinkages with other SDGs.

IV.1. Does the Energy Compact include socio-economic impacts of measures being considered? ☒Yes ☐No

IV.2. Does the Energy Compact identify steps towards an inclusive, just energy transition? ☒Yes ☐No

IV.3. Does the Energy Compact consider measures that address the needs of the most vulnerable groups (e.g. those impacted the most by energy transitions, lack of energy access)? ☒Yes ☐No

V. Feasibility and Robustness - Commitments and measures are technically sound, feasible, and verifiable based a set of objectives with specific performance indicators, baselines, targets and data sources as needed.

V.1. Is the information included in the Energy Compact based on updated quality data and sectoral assessments, with clear and transparent methodologies related to the proposed measures? ☒Yes ☐No

V.2. Has the Energy Compact considered inclusion of a set of SMART (specific, measurable, achievable, resource-based and time based) objectives? ☒Yes ☐No

V.3. Has the Energy Compact considered issues related to means of implementation to ensure feasibility of measures proposed (e.g. cost and financing strategy, technical assistant needs and partnerships, policy and regulatory gaps, data and technology)? ☒Yes ☐No

SECTION 8: ENERGY COMPACT GENERAL INFORMATION

8.1. Title/name of the Energy Compact

Global Offshore Wind Energy Compact

8.2. Lead entity name (for joint Energy Compacts please list all parties and include, in parenthesis, its entity type, using entity type from below)

IRENA (Multilateral body / IGO) and GWEC (Private Sector/NGO)

8.3. Lead entity type

☐ Government
☐ Local/Regional Government
☒ Multilateral body /Intergovernmental Organization
☒ Non-Governmental Organization (NGO)
☐ Civil Society organization/Youth
☐ Academic Institution /Scientific Community
☒ Private Sector
☐ Philanthropic Organization
☐ Other relevant actor

8.4. Contact Information

IRENA – Roland Roesch, Deputy Director of the Innovation and Technology Center, RRoesch@irena.org; GWEC – Joyce Lee, Head of Policy and Projects, joyce.lee@gwec.net

8.5. Please select the geographical coverage of the Energy Compact

☐Africa ☐Asia and Pacific ☐Europe ☐Latin America and Caribbean ☐North America ☐West Asia ☒Global

8.6. Please select the Energy Compact thematic focus area(s)

☐ Energy Access ☒ Energy Transition ☐ Enabling SDGs through inclusive just Energy Transitions ☒ Innovation, Technology and Data ☐ Finance and Investment.

SECTION 9: ADDITIONAL INFORMATION (IF REQUIRED)

Please provide additional website link(s) on your Energy Compact, which may contain relevant key documents, photos, short video clips etc.

- IRENA World Energy Transitions Outlook: 1.5°C Pathway (2021): https://www.irena.org/publications/2021/Jun/World-Energy-Transitions-Outlook
- IRENA Future of Wind report (2019): https://www.irena.org/publications/2019/Oct/Future-of-wind
- IRENA Renewable Energy Benefits: Leveraging local capacity for offshore wind (2018): https://www.irena.org/publications/2018/May/Leveraging-Local-Capacity-for-Offshore-Wind

- IRENA Offshore Renewables: An Action Agenda for Deployment for G20 (2021): https://irena.org/publications/2021/Jul/Offshore-Renewables-An-Action-Agenda-for-Deployment
- IRENA Collaborative Framework on Ocean Energy/Offshore Renewables: https://www.irena.org/collaborativeframeworks/Offshore-Renewables
- GWEC – Global Offshore Wind Report 2021 (https://gwec.net/global-offshore-wind-report-2021/)
- Data on global offshore wind technical resource potential: https://datacatalog.worldbank.org/dataset/global-offshore-wind-technical-potential
- Resource maps for nearly 100 countries worldwide: https://gwec.net/offshore-wind/
- "The Power of Our Ocean" report on offshore wind sector development for policymakers, on behalf of the Ocean Renewable Energy Action Coalition: https://gwec.net/oreac/