FOR THE DEVELOPMENT OF BERMUDA'S BLUE ECONOMY DRAFT STRATEGY – PHASE 1 REPORT:

OCEAN RENEWABLE ENERGY

Global Market Assessment + Local Economic Assessment + Industry Expert Analysis

EXECUTIVE SUMMARY

As Bermuda explores opportunities to address the island's energy needs, it is imperative to explore ocean renewable energy in addition to options on land. This chapter reviews ocean renewable energy first through a broad global assessment of available technologies, and then in the specific context of Bermuda, in order to consider which options best meet the island's priorities while being both technically and commercially viable today.

This assessment and analysis have resulted in the following recommended near-term actions for Bermuda:

1. **Implement a Feasibility Study for Offshore Wind:** In line with its 2019 Integrated Resource Plan, Bermuda should proceed with the initial implementation steps for a 60+ megawatt offshore wind farm, which includes conducting a detailed feasibility study containing technical, environmental, economic, and political components.
2. **Floating Solar PV Over the Next Decade:** Bermuda should next consider floating solar photovoltaics (PV) as the highest potential resource option after offshore wind, and with potential to be implemented together in the same location. Cost and technology developments should be monitored prior to adoption.
3. **Maintain Stakeholder Engagement in Monitoring Developing Technologies:** Bermuda can further capitalize on local marine energy resources by considering wave power, tidal power, and ocean thermal energy conversion (OTEC) power as components of the long-term energy mix. Maintain active stakeholder engagement as designated agencies monitor technological milestones and collect environmental data in the short-term to confirm potential viability would be the first step as these technologies are improving rapidly.

Offshore wind is likely the most near-term viable option for ocean renewable energy in Bermuda, given its well-established record globally and the opportunity to tailor a specific solution to meet Bermuda's local conditions. For example, a floating option is likely better suited to Bermuda than an option that is fixed to the sea floor. The resilience of the equipment itself is also an important consideration so that it contributes to a more resilient overall electricity system in Bermuda, able to withstand and recover quickly from external shocks.

Floating solar PV is also likely to be a good near-term option, as more projects are being deployed globally in the marine environment (compared to the majority of floating solar projects today that are located in freshwater locations). As costs continue to come down and the ability of marine-based

floating solar is further demonstrated to be able to withstand regular saltwater conditions as well as storm situations, this technology could provide a significant electricity resource in Bermuda.

Finally, other options such as wave power, tidal power, and ocean thermal energy conversion (OTEC) have been tested so far in demonstration projects, but have very limited or no commercial deployment. It is worth keeping a pulse on these technologies as they may continue to mature and see their costs become more certain and competitive; the recommendation is for Bermuda to establish a diverse committee to monitor these and any other potential options for ocean renewable energy that may become good options for Bermuda in the future.