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Seaweed Generation's response to Information note on Removal activities under the Article 6.4 mechanism (Version 04.0)

Dear Supervisory Body Members:

Seaweed Generation deeply appreciates the opportunity to provide feedback to the Article 6.4 Supervisory Body on the critical importance of scaling durable, measurable, and economically and environmentally beneficial carbon removal in the coming decades to meet both Paris Agreement and net-zero targets.

Our company is a UK-based climate tech start-up developing solar-powered autonomous robots that deliver long-lasting CDR, as well as critical environmental mitigation benefits through the sinking of Sargassum, a form of macroalgae, into the deep ocean. Sargassum is a growing threat to the ecosystems and economies of coastal communities all over the world, and in particular, frontline communities throughout the global south. The environmental and human impacts of Sargassum inundations are huge, and the majority of Island Nations States do not have the necessary resources to deal with the accumulations. That's why we are focusing the deployment of our technology and resources in the Caribbean, Mexico and West Africa.

Ocean-based CDR is so effective that 80% of any carbon dioxide entering the deep oceans from the atmosphere is permanently stored. This remains the case even at 550ppm (double pre-industrial levels). The remaining 20% will leak back into the atmosphere at a rate determined by location and depth. The deeper it moves, the longer the time to return. It is accepted that CO₂ directly placed in the deep ocean will equilibrate with the atmosphere over a period ranging from 300-1000 years. For our seaweed, these times will be even longer: the carbon is initially locked away in an organic form (the seaweed biomass) and needs to be re-mineralised through biological activity before it is respired and emitted as CO₂ into the deep ocean waters, whereupon it can begin its 300-1000 year journey back to the surface.

We welcome the note's agreement with the IPCC that if we are to limit global temperature rise to 2°C (IPCC AR6 Synthesis Report) then carbon removal is a critical and necessary complement to significant and sustained emission mitigation. With CDR an industry in its infancy, and given the scale of the challenge, we feel it critical that an objective, evidence-based process is undertaken as technologically, economically and socially feasible CDR pathways are identified.

It is with this in mind that we put forward our main concerns with the Supervisory Body's note:

A. The framing of CDR as either "engineering-based activities" or "land-based activities" is problematic given virtually every CDR approach is a hybrid of nature and engineering. Seaweed Generation's approach is a perfect example of this. We capture a naturally occurring problematic biomass - Sargassum seaweed which grows in abundance in the Great Atlantic Sargassum Belt. This Macroalgae grows photosynthetically, utilising the CO₂ in the ocean. As it grows the pCO₂ of the water around it lowers, causing more CO₂ to enter the sea from the atmosphere. This seaweed is sent to the deep ocean seabed (at depths of 4000m or more), using our solar powered autonomous robots, where the carbon it has naturally absorbed is essentially removed from the surface carbon cycle for 100s of years. Our approach is a simple displacement of a natural biomass within the ocean's vertical water column using an engineered process.

We feel that accurate language is essential, as this note is likely to inform an umbrella framework for carbon removal that will have ripple effects across the industry. We would suggest that the Supervisory Body follow the IPCC's lead to define CDR as "anthropogenic activities removing carbon dioxide (CO₂) from the atmosphere and durably storing it in geological, terrestrial, or ocean reservoirs, or in products" (IPCC AR6 WGIII Report p1,796)

B. The info note presents an unbalanced representation of the benefits of different carbon removal activities within the mechanism. There is no single CDR approach that can be conclusively shown to be 'better'. Each has its own strengths and weaknesses which need to be taken into account. To state that engineering solutions 'pose unknown environmental and social risks' (Table 3 p18) is a sweeping statement that could inhibit the development of engineered pathways, that in fact, do the very opposite.

The IPCC outlines five key criteria for high-quality CDR: additionality, durability, net-negativity, verification, and equity and community engagement. We would urge the Supervisory Body to adopt a similar method- neutral, criteria-based approach to determine a CDR project's eligibility under the Article 6.4 mechanism.

In addition to the concerns expressed above, Seaweed Generation would like to bring to the Supervisory Body's attention another key regulatory need that is broadly relevant to a large number of ocean-based carbon removal pathways, including our own. **More specific guidance and clarity on legal jurisdictional matters for ocean CDR projects in international waters is needed.** Seaweed Generation is working on gigatonne-scale CDR approach using ocean biomass. Our current trials are conducted in the Exclusive Economic Zones of countries. In the longer term, the international waters will be an essential area of operation, in order to allow scale. The legal jurisdiction of these credits is an essential question for which legal guidance must be developed, and we'd look to the Supervisory Body to develop legal frameworks for operations in international waters moving forward.

One third of the world's ocean is in international waters, and as the ocean contains 93% of the carbon on Earth, an effective legal framework that can be applied to activities in these waters, will be important to scale of removals. We look to the UN to engage with the global community and set the tone for removals in international waters, taking lessons from legislation of international fishing and other existing activities.

We thank you for your consideration and trust that our response can be of use to the Supervisory Body as it moves forward with its work.

Sincerely,

A handwritten signature in black ink that reads "PEstridge". The letters are cursive and somewhat stylized, with the "P" and "E" being particularly prominent.

Patricia Estridge

CEO

Seaweed Generation