

## Conceptual Design of the Offshore Mega-structure for Seaweed Biomass Production

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The algae biomass is considered as one of the potential sources of ocean renewable energy because it can be easily mass-produced with abundant sunshine in the vast ocean space. However, the practical use of the biomass has been hindered by the lack of efficient and cost-effective harvesting and maintenance system so far. The algae biomass aquaculture systems are installed in far offshore locations in much larger scales compared to the conventional aquaculture systems so that the automatic seaweed planting and harvesting system needs to operate in heavy sea conditions in far offshore location. In this research, we develop a concept design of a mega-scaled aquaculture system and an automatic seaweed planting and harvesting system, which can operate in heavy seas and mass-produce the algae biomass.