GLOBAL CARBON NEUTRALITY VISION & STRATEGY

The Stockholm Model Concept

> *A next-generation initiative embarking on ultra-early carbon neutrality from Stockholm, an advanced cultural city that gave birth to the Nobel Prize. By encouraging inspection delegations from around the world to bring back pioneering initiatives and empirical data to implement in their own countries, this initiative aims to achieve global carbon neutrality by around 2040.*

Concept Overview & Objectives

The "Stockholm Model" is a blueprint designed for an advanced cultural city—the birthplace of the Nobel Prize—to achieve full carbon neutrality by as early as 2032. Rather than limiting success to national boundaries, its goal is to accelerate local initiatives globally by inviting inspection and learning from around the world, ultimately driving global carbon neutrality by around 2040.

This initiative seeks to eliminate totalitarian mega-solar systems that rely on solar panels produced through forced labor in the Uyghur region—systems that cause severe environmental destruction and societal issues. In their place, it introduces highly efficient, environmentally friendly "PTS" (Perovskite Tree-type Photovoltaic System) designed to coexist with urban areas. Furthermore, through "LUMBER", it absorbs and fixes CO2 emitted from daily life, production activities, and fossil fuel consumption, thereby realizing global carbon neutrality at an early stage.

By establishing a Carbon Neutrality Model District near Stockholm, Sweden, and welcoming delegations worldwide, visitors can take key insights back to their home regions to deploy similar initiatives. This establishes a clear, practical path toward achieving global carbon neutrality by around 2040.

1. PTS (Perovskite Tree-type Photovoltaic System: E-1 – E-5)

Instead of conventional mega-solar arrays that require vast land areas, PTS adopts a vertical 5 to 10-tier tree structure equipped with AI-controlled 2-axis tracking functionality. Utilizing bifacial perovskite panels, it enhances power generation per unit area to dozens of times higher than traditional mega-solar installations.

Feature	Details
Climate Resilience	AI controls the system based on real-time data from wind speed, wind direction, and snowfall sensors. During typhoons, heavy snow, or sandstorms, vertical panels automatically fold and retract into protective

	storage boxes. During snowfall, panels tilt horizontally to adjust operation.
Deployment Versatility (City sola / Sea sola)	City sola: Installed along urban center medians, roadsides, and railway tracks, replacing traditional utility poles and streetlights while seamlessly blending into urban scenery. Includes atmospheric water generators to supply safe, clean drinking water for citizens and pedestrians. Sea sola: Captures direct, scattered, and sea-surface reflected sunlight (both specular and diffuse) during sunrise and sunset. Can be installed directly on offshore wooden artificial islands without extensive land leveling or seabed foundation work.

2. LUMBER (Blue Carbon: Seaweed CO2 Absorption & Fixation Project)

LUMBER refers to a floating wooden artificial island supported by numerous sealed wooden crates. Its primary structure is made of timber treated with liquid glass coating, granting it a 1000-year lifespan. These wooden artificial islands serve to cultivate seaweed for CO2 absorption via photosynthesis (Blue Carbon: E-6) while hosting ultra-large community centers (E-8, E-9).

Functions & Social Structure of Ultra-Large Community Centers

Powered by Sea sola (E-5), these ultra-large community centers feature general hospitals, nursing care facilities, schools, entertainment venues, dining districts, shopping areas, saunas/hot springs, and sports facilities—offering comprehensive amenities akin to a major metropolis.

The centers also house R&D facilities for PTS (power source) and LUMBER technologies, alongside seaweed seedling cultivation plants. In surrounding marine areas, marine aquaculture (E-10) is conducted: crops/seaweed are cultivated at optimal depths and raised close to the surface during harvest, allowing workers to farm immersed only up to crotch depth without needing to dive into the sea.

Furthermore, the centers act as disaster-resilient shelters during emergencies. While not an immediate concern around Stockholm, in regions affected by global warming where habitable land shrinks or crops fail, residents can live self-sufficiently through marine aquaculture (E-10). For instance, displaced populations (such as those from the Gaza Strip) could relocate to these islands and enjoy a safer, more fulfilling life than on land.

Global Ripple Effect

With Stockholm serving as a pioneering model case, delegations visiting the site will deploy PTS and LUMBER globally. This widespread adoption will make it possible to avert further global warming, achieve carbon neutrality, prevent food crises, resolve habitat loss, and mitigate various natural disasters.

3. Supplementary Notes on the Stockholm Model

Traditional carbon neutrality approaches—such as the Kyoto Protocol framework that relies on individual national commitments—are heavily delayed by political and economic complications within each country. The correct strategy is for global collaboration to establish a high-level, standardized global technological platform in Stockholm (or other host cities) and propagate these technologies worldwide.

Moreover, previous environmental efforts sometimes accepted environmental destruction in the pursuit of carbon neutrality. Future initiatives must prioritize human living and working environments above all else.

Large-scale seaweed cultivation requires numerous workers and researchers, including divers. Creating attractive, ultra-large community centers is essential to ensure they and their families can enjoy rich, fulfilling lives while achieving self-sufficiency through marine aquaculture.

Conventional natural seaweed carbon fixation (at depths of 5–10m) offers limited impact due to rapid microbial decomposition. Under the LUMBER approach, seaweed is efficiently cultivated on wooden artificial islands (cultivated at 5–10m depth in sea areas 10–30m deep). Once the seaweed matures/withers, units are towed by ship to deep ocean zones over 100 meters deep, where the culture soil is submerged for permanent, long-term carbon storage. Scaling this methodology globally will enable early achievement of global carbon neutrality.

PTS & LUMBER Related Materials & References

https://www.garden-field.com/_files/ugd/954e39_7be0eb8d1a5e4579b30a5d400be3419c.pdf