International Joint Development and Deployment of the Perovskite Tree-Type Solar Power Generator "City Sola"

1. Background

Japan and the United Kingdom share a strong historical bond of trust, forged through modernization support during the Meiji Restoration (railways, shipbuilding, finance, and technical guidance) and the Anglo-Japanese Alliance, which enabled Japan to overcome the crisis of the Russo-Japanese War and maintain peace in East Asia. In Ukraine, Japan is respected as a nation that defeated Russia—an achievement made possible with British support.

In summit meetings between President Macron and Prime Minister Takaichi, as well as meetings with EU representatives including the Prime Minister of Canada, commitments were made to collaborate on rapidly building supply chains for rare earths and other mineral resources, as well as global warming prevention technologies. While a public-private partnership (PPP) scheme was initially explored for cooperation among Japan, the UK, France, and Canada, progress has been slow; therefore, we intend to move forward first on a private-sector basis.

(Reference: Scheme Study Materials for Five Public-Private Partnership Development Projects among Japan, the UK, France, and Canada)

https://www.garden-field.com/_files/ugd/954e39_84e06b81c3f54bd4bbbe5fbfee326ae1.pdf

2. Basic Policy and Overview

This plan centers on the development of "City Sola (Perovskite Tree-Type Solar Power Generation System)"—already patented in Japan—and related environmental systems by 15 leading companies across three countries: the United Kingdom, France, and Canada (5 companies per country). Numerous companies across the four countries (including Japan) will join as new entrants to address needs in domestic model districts as well as in Ukraine and the Gaza Strip (even if immediate delivery is not possible, hearing about this initiative will bring encouragement to the people of Ukraine and Gaza).

Next (envisioned several years later), we will open and transfer our technologies and services to companies worldwide—subject to a JPY 100 million investment and the dispatch of two personnel to Japan—to accelerate global adoption.

In areas where scenery is prioritized and in densely populated urban centers such as Manhattan, we will not force the transition to City Sola and will continue using fossil fuels.

Furthermore, existing renewable energy equipment already installed will continue to be operated safely with proper maintenance (no new installations of conventional renewables will be made).

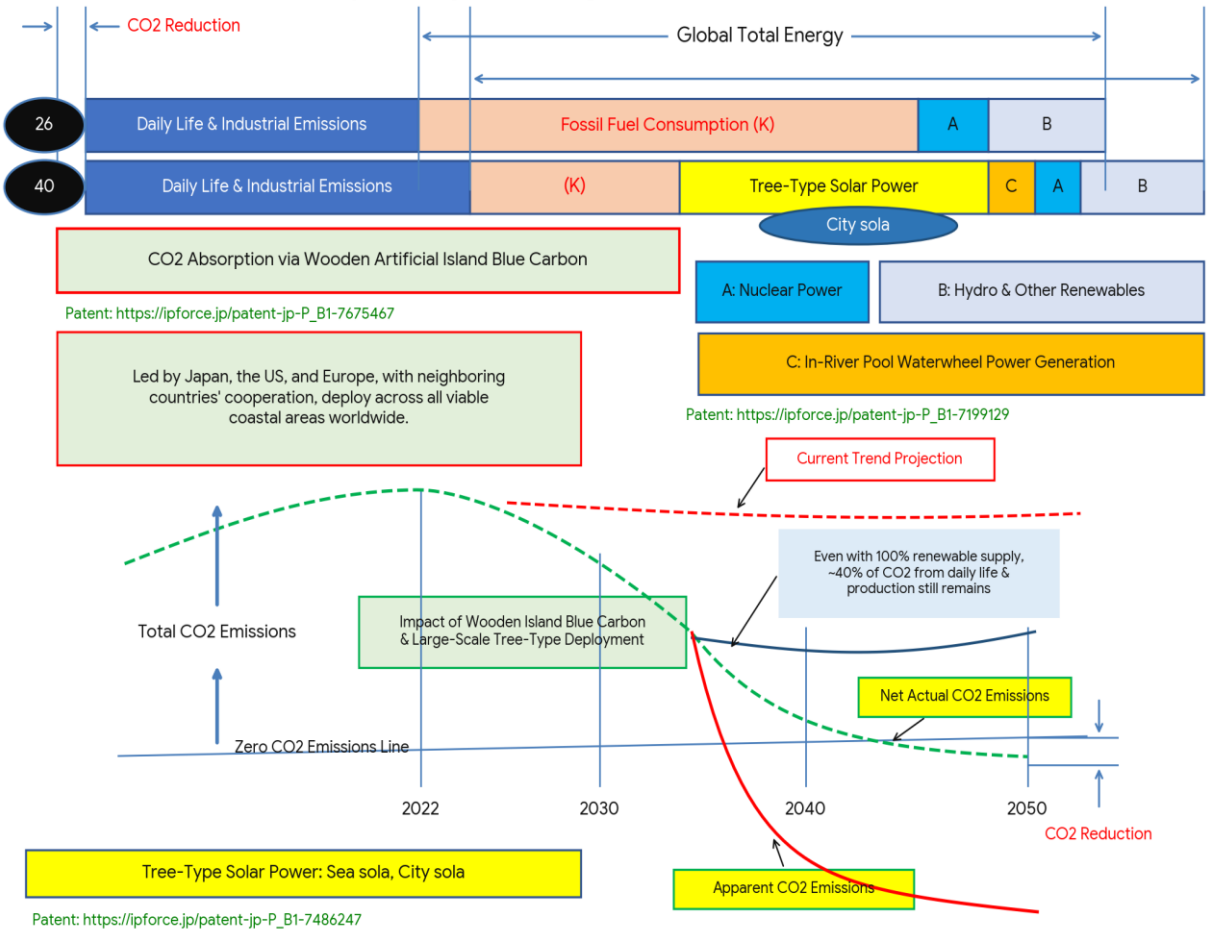
Because CO2 emitted by living organisms and various industrial production activities accounts for as much as 40% of total emissions, the primary driver of CO2 reduction will be entrusted to the large-scale expansion of "Blue Carbon via Mobile Wooden Artificial Islands" (achieving carbon neutrality without overstraining society, while continuing to use fossil fuels to a certain extent).

For details on "Blue Carbon via Mobile Wooden Artificial Islands," please refer to the following URL:
https://www.garden-field.com/_files/ugd/954e39_eec507d319ff4a7dad0c51d60c565292.pdf

The role of "City Sola" is to reduce CO2 and lower energy costs through a major reduction in fossil fuel consumption, curb competition over fossil fuels, prevent nations from using fossil fuel revenues to build up military forces and invade other countries, and halt wasteful investment in the development and deployment of other renewable energy equipment.

Most importantly, its ultimate role is to give the Japan–UK–France–Canada alliance an economic power far surpassing that of the United States and China, preventing them from imposing economic pressure, import/export restrictions, or unilateral tariffs on other nations.

<Conceptual Image of Net-Negative CO2 Emissions Around 2040>



Equipment Commonality and Standardization: Core components and structures of City Sola—such as the housing, AI tracking system, robotic water-jet nozzles, and water supply, cooling, and heating mechanisms—will have unified specifications and shared service parts so that any manufacturer in any country can perform maintenance and servicing.

Simultaneous Development of Five Models: Ultra-Large (not for commercial installation; used to pursue maximum power generation, conduct various evaluations, and verify lifespan), Large, Medium, Small, and Ultra-Small (for short-term stays: transportable by car or suitcase by ordinary individuals, who can dig a hole in the ground and assemble the unit on-site).

3. Approach from Prototypes to Production Lines

Through consultations within each country, one prototype each of the Ultra-Large, Large, Medium, Small, and Ultra-Small models will be built. Additionally, mass-production lines will be established for the four models excluding the Ultra-Large model. (A single company does not need to operate all production lines; for example, Company A can specialize in Large and Medium models, while Company B specializes in Small and Ultra-Small models.)

While collaboration among domestic companies is a prerequisite, we also believe it is desirable to partner with overseas manufacturers and research institutions to establish global standards at an early stage.



4. City Sola Specifications

1. General Operating & Safety Standards: Operates between -20°C and 60°C and generates 24 VDC. Engineered to withstand Shindo 8 earthquakes and retract panels into protective storage during anticipated typhoons and hurricanes. (Antarctic and special specifications will be developed collectively by all participating companies rather than solely by the manufacturer receiving the order. In the event of major troubles or fires, compensation, recovery measures, and recurrence prevention will also be addressed collectively by the consortium.)

2. Ultra-Large Model: Built to explore how much power output can be maximized; not for commercial sale. Features a dual-drive system (normally avoided due to panel self-shading and poor cost-performance), 20 tiers, and 5m x 10m panels to test durability. Because development and maintenance costs are expected to exceed several hundred million yen, it will be funded by national government budgets. If possible, we hope it will be installed in a fitting location to stand as a symbol of a new era.

3. Large Model: A larger unit designed for practical installation and smooth operation. During the prototype phase across the three countries, proposals for height, panel dimensions, and tier count will be submitted, and the Secretariat will evaluate the prototypes to finalize the specifications. Equipped as standard with AI robotic water-jet nozzles (using tap water or groundwater), winter heating units, and summer cooling units, though users may select whether to include each attachment. Intended for unobstructed locations such as highway medians, factories, along or above railway tracks, and renewable energy vessels.

4. Medium Model: Shares the same design philosophy as the Large Model, with lower output for easier handling. As the flagship City Sola model, it will primarily be installed along roadsides and in residential areas. Beyond power generation, it will cool roads in summer, melt snow on roads in winter, irrigate farmland, and deter wildlife intrusion.

5. Small Model: Designed for single-household use, including isolated homes, mountain huts, and remote islands.

6. Ultra-Small Model: Portable by car or suitcase; assembled from a kit and installed by digging a hole in the ground or mounting on a tripod. Intended primarily for short-term construction sites, camping, and fishing.

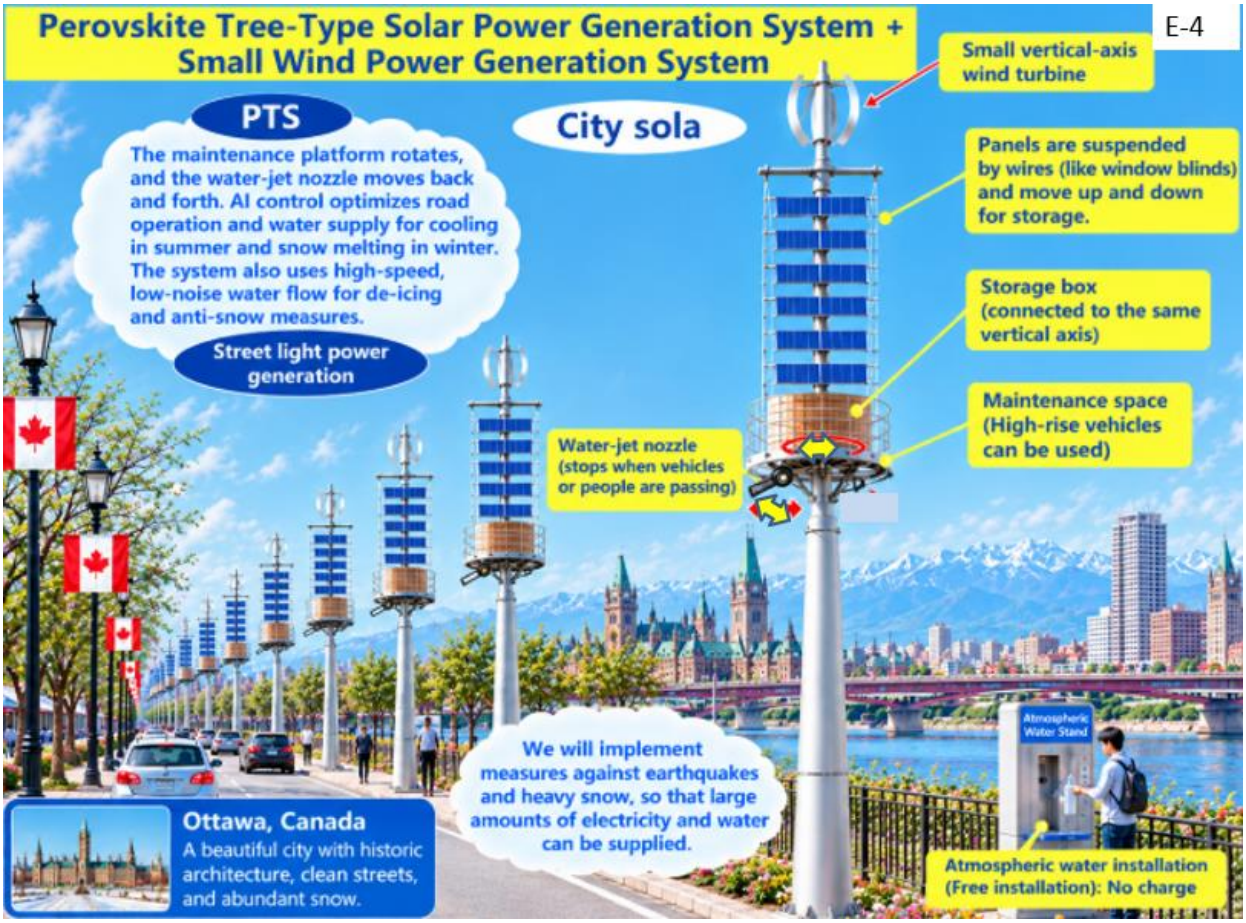
<Open Competition Policy for Panels>

Rather than restricting the core perovskite solar panels to a single supplier, we adopt an open stance allowing the free adoption of superior panels from Oxford PV, Solaires, Rayleigh, Voltec, and other leading market manufacturers. This maximizes supply chain flexibility and procurement reliability.

<Participation Scheme for Japanese and Non-Listed Manufacturers>

In Japan, we requested cooperation from major renewable energy manufacturers such as Panasonic and Sekisui Chemical, but all declined. Consequently, Japanese manufacturers will not directly participate in the initial prototype development phase, which will instead be driven by partner companies in the UK, France, and Canada.

However, to complete the deployment of City Sola in cities worldwide within a short timeframe (approximately 10 years), the initial 15-manufacturer structure will fall far short of required production and supply capacity. Therefore, starting early next year, we will reach out to expand manufacturing partners—including new entrants from other industries—to dozens of companies per country, aiming for roughly 100 companies across Japan, the UK, France, and Canada combined.



Each participating company, by contributing a JPY 100 million investment (royalty / participation slot), will be granted unrestricted rights to use the established standardized technologies for manufacturing, sales, and service operations, along with technical support from the Secretariat. All customer orders will initially be received by the Secretariat and assigned primarily to the designated delivery manufacturers, though orders will also be allocated to other manufacturers as needed to avoid long wait times.

<Compensation for New Technical Studies and Evaluations>

The investment from each manufacturer is set at a uniform JPY 100 million (subject to change depending on circumstances). Using these funds as capital, prototype development will be compensated at a multiplier ranging from 1.2x to 30x of total incurred expenses.

This multiplier will be determined through comprehensive scoring of the number of patents obtained, their technical and strategic value, cost competitiveness, and design quality, thereby maximizing development motivation and technical quality. For example, if a manufacturer proposes an idea that reduces costs, improves performance, or adds value, and the Secretariat approves it for development study, the manufacturer will receive 1.2x to 30x of the incurred expenses even if the idea is not immediately adopted.

5. Partner Participation Procedures & Launch of the Tokyo Conference Room

The specific launch process and upcoming schedule for partner companies endorsing this initiative are as follows:

Confirmation of Participation (Deadline: November 30): If your company endorses this initiative, please notify us by November 30 of your commitment to provide the "JPY 100 million investment" and dispatch two personnel to Tokyo.

Launch of the Oimachi Multinational Conference Room (Target: February 2027): Based on your responses and endorsements, the Secretariat will secure bank financing in Japan to establish a state-of-the-art multinational conference room in Oimachi, Tokyo, equipped with 30 main seats plus 30 observer workstations. We request the execution of the JPY 100 million investment and the secondment of two personnel from each company by February next year when the facility begins operations.

Determining the Framework for a New 1,000-Person Company: Subsequently, we plan to establish a new company with over 1,000 employees. Its specific structure and timeline will be decided and built through discussions among the members gathered at the Oimachi conference room, in close coordination with each partner company's headquarters.

Technical Advantages of City Sola and Game-Changing Features

Conventional mega-solar and wind power plants are built in remote locations, resulting in massive transmission costs, environmental destruction, and short lifespans, while nuclear power carries severe safety risks. In contrast, "City Sola (Perovskite Solar Tree)" leverages the universal availability of sunlight to enable local production for local consumption right next to living and industrial spaces.

Installed in urban areas, around factories, and on building rooftops, the system utilizes bifacial perovskite panels and AI-controlled multi-tier simultaneous solar tracking to achieve installation efficiency tens of times higher than conventional mega-solar plants.

Furthermore, equipped with front-and-back oscillating robotic water-jet nozzles, the AI-controlled jets scan road surfaces to provide high-speed hot water spraying for powerful snow melting in winter, and soft cold-water misting for evaporative cooling (lowering ambient temperatures) in summer. Tap or well water is used when large volumes are needed, while stored rainwater and atmospheric water (also usable as drinking water) are utilized for smaller volumes.

Requiring zero long-distance transmission cables and causing zero environmental destruction, City Sola coexists harmoniously with cities while reducing initial and replacement costs, irrigating farmland, deterring wild animals, and enabling effective use of the space beneath the structure—making it a true game-changer in the global renewable energy market.

(Detailed Technical Documentation)

https://www.garden-field.com/_files/ugd/954e39_0445520706ab4e328d34604eec799e2f.pdf

(Patent Technical Documentation: Granted in Japan)

https://www.garden-field.com/_files/ugd/954e39_b13a50ad937e417eb80212ab1b0487f0.pdf

<List of 15 Initial Candidate Partners>

Below is the list of 15 perovskite manufacturers and research institutions selected from the UK, France, and Canada as potential R&D partners for "City Sola":

Country	Company / Institution	Area of Expertise & Role
United Kingdom (UK)	**Oxford PV**	Perovskite Manufacturer / Global pioneer in tandem solar cells
United Kingdom (UK)	**Ceres Power**	Equipment Manufacturer / Clean energy systems & control technology
United Kingdom (UK)	**Power Roll**	Equipment Manufacturer / Next-generation lightweight film substrates & hardware processing
United Kingdom (UK)	**Polysolar**	Equipment Manufacturer / Building- & infrastructure-integrated photovoltaics (BIPV)

Country	Company / Institution	Area of Expertise & Role
United Kingdom (UK)	**Naked Energy**	Solar & Hybrid Equipment Manufacturer / High-efficiency solar system development
Canada	**Solaires Enterprises**	Perovskite Manufacturer / Solar ink & perovskite development
Canada	**Rayleigh Solar Tech**	Perovskite Manufacturer / Thin, lightweight perovskite PV technology development
Canada	**Silfab Solar**	Equipment & Panel Manufacturer / North American supply of high-efficiency solar modules
Canada	**Ballard Power Systems**	Equipment & Fuel Cell Manufacturer / Clean energy power generation infrastructure
Canada	**Enbridge**	Infrastructure & Energy Company / Large-scale energy grid project collaboration
France	**IPVF (Institut Photovoltaïque d'Île-de-France)**	Perovskite R&D Institution / Core hub for next-generation tandem demonstrations
France	**Voltec Solar**	Panel Manufacturer / Eco-friendly solar innovation
France	**Holosolis**	Gigafactory Developer / Large-scale next-generation solar manufacturing
France	**Urbasolar**	Equipment & System Developer / Development & operation of large-scale solar power systems
France	**Exail**	Equipment & Marine Engineering / High-precision drone & hardware integration

[Proposed Sales Territories]

During the initial years, market deployment will be exclusively led across the four countries (five regions):

Japan: Domestic market & Asia

United Kingdom: Domestic market, Africa & the Middle East

France: Europe

Canada: North & South America

The Secretariat and the planned new company will be funded by the JPY 100 million investment from each manufacturer plus 5% of City Sola sales. After deducting operating expenses, all remaining funds will be treated as shared assets of all investing manufacturers and managed collectively by majority vote.

Our core focus is determining how the four nations can far surpass the economies of the United States and China. Additionally, should any City Sola user suffer disadvantages from operating the system, we will conduct a thorough investigation and provide full compensation and recovery.

City Sola units will be installed free of charge in Ukraine and the Gaza Strip, funded within the scope of donations from multiple countries and charitable organizations.

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