



To whom it may concern

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GSI Creos Corporation
Corporate Planning Division

**From Windows to Watts: Nakafurano Town and GSI Creos Corporation to Explore a
Solar-Window Smart City Pilot
Semi-transparent solar films (ST-OPV) plus batteries to cut peak loads, boost resilience,
and power local-for-local energy; agricultural greenhouses slated for later phases**

Tokyo, July 16 —Nakafurano Town (Hokkaido; Mayor: Kiyoshi Komatsuda) and GSI Creos Corporation (Tokyo; President and CEO: Tadaaki Yoshinaga; hereafter “GSI Creos”) have signed a comprehensive partnership agreement to demonstrate semi-transparent organic thin-film photovoltaics (ST-OPV) paired with batteries, aiming to advance decarbonization and address local challenges. Together, the partners will test a practical model for a low-energy smart city by integrating power-generating window films with energy storage across municipal facilities.

As regional challenges such as population decline and aging grow more complex, public-private collaboration is increasingly vital. Nakafurano Town has actively pursued regional revitalization and technology pilots with companies and universities, including telework initiatives. This new agreement with GSI Creos marks the town’s 19th comprehensive partnership, underscoring its position as one of Japan’s most active municipalities for cross-sector collaboration.

GSI Creos and its subsidiary Uroboros Power Harvesting Co., Ltd. (hereafter “Uroboros”) will combine ST-OPV with batteries to transform the windows of Nakafurano Town’s public buildings—starting with the town hall—into sources of clean power that also mitigate solar heat gain. The demonstration treats windows as distributed, local-for-local generation assets to improve energy self-reliance without costly transmission infrastructure.

Hokkaido has a notably low adoption rate of air-conditioning, even as summer temperatures are rising. The project will therefore rigorously evaluate the heat-blocking performance of the semi-transparent solar films alongside their power output. In agriculture, where greenhouse temperature management costs are climbing, Phase 2 contemplates installing ST-OPV on local vinyl greenhouses to suppress heat buildup while charging batteries that can power circulator fans and other equipment around the clock.



Scope of collaboration:

The partners will cooperate in Nakafurano Town to:

- Conduct demonstrations of next-generation thin-film photovoltaics
- Promote local generation for local use and strengthen disaster resilience
- Scale renewables that harmonize with townscapes
- Advance environmental education and public engagement
- Support regional industry and drive smart agriculture

Roles:

Nakafurano Town: Provide demonstration sites; coordinate across departments and permitting; support data collection; communicate with residents and visitors

GSI Creos: Serve as provider and point of contact for ST-OPV supplied by Uroboros

Uroboros: Install and maintain ST-OPV; evaluate power generation and heat-shielding; provide technical documentation

Phased plan:

Phase 1: South-facing windows of the mayor's office at town hall. Demonstrate power generation and solar heat-blocking, and verify battery charging capability.

Phase 2: Expand within town hall (reception rooms and office areas) and to agricultural facilities in town. Increase installed ST-OPV area, pilot larger self-sufficient zones with storage, and validate performance in greenhouses.

Phase 3: Scale across additional municipal buildings. Substantially expand window-integrated solar to deliver everyday energy savings and off-grid capability during outages, while proving a local, distributed energy model.

Expected outcomes:

Reduced energy use and peak load at the town hall through on-site generation

Quantified heat-shielding effects and comfort assessments inside municipal offices

Reliable on-site backup power to sustain critical operations during outages

Deployment of low-impact, visually compatible infrastructure

Lower greenhouse temperatures via heat-shielding and 24/7 power for in-house equipment

Demonstration and learning opportunities for residents and visitors

A replicable pathway toward a low-energy smart city across municipal facilities

Timeline:

Phase 1 will begin in July 2026. Based on results, the project will expand to Phases 2 and 3 from 2027 onward.



Nakafurano Town Mayor Kiyoshi Komatsuda stated, “Through this comprehensive partnership with GSI Creos, we are excited to launch a locally rooted, low-energy smart city initiative starting at our town hall.” He explained, “By turning previously unused windows into an energy source with lightweight, thin, semi-transparent, and non-toxic next-generation ST-OPV—and by leveraging portable batteries provided under our separate partnership with Honda R&D Co., Ltd.—we will validate both energy savings and on-site generation that work in cold regions.” He added, “We also see strong potential for local generation for local use and ultimately aim to scale this model to neighboring cities and across Hokkaido.”

Tadaaki Yoshinaga, President and CEO of GSI Creos, commented, “Guided by our purpose to enhance quality of life by creating next-generation businesses, GSI Creos is advancing the social implementation of ST-OPV to address climate change and build a circular economy.” He noted, “This agreement with Nakafurano Town allows us to accelerate that effort and demonstrate how semi-transparent solar can deliver practical, community-level impact.”

Notes:

ST-OPV refers to semi-transparent organic thin-film photovoltaics that can be applied to windows, combining power generation with solar heat control while preserving natural light. Nakafurano Town also maintains a comprehensive partnership with Honda R&D Co., Ltd., initiated in fiscal 2022. Under that agreement, the town will utilize the Honda Mobile Power Pack e: a portable, swappable battery designed to power electric motorcycles, small mobility devices, and other electric equipment, within this demonstration.

About Nakafurano Town:

Nakafurano is a town in Hokkaido, Japan, known for its agriculture and tourism. The Town actively pursues public-private partnerships to address regional challenges and promote sustainable development.

Nakafurano Town website: <https://www.town.nakafurano.lg.jp/>

About GSI Creos:

GSI Creos (Tokyo, Japan) is a diversified company that creates new value across industrial and lifestyle sectors. Under its sustainability agenda, GSI Creos promotes the social implementation of semi-transparent organic photovoltaics (ST-OPV) and other solutions that contribute to decarbonization and resilience.

GSI Creos website <https://www.gsi.co.jp/en/index.html>



Hokkaido Nakafurano Town

GSI Creos

About Ouroboros:

Ouroboros is a GSI Creos subsidiary specializing in the deployment, evaluation, and maintenance of ST-OPV systems for building-integrated and other applications.

Ouroboros Power Harvesting website: <https://www.oph-jp.com/en/index.html>

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