# Sustainable Chemistry and Advanced Materials Trade Mission to Japan



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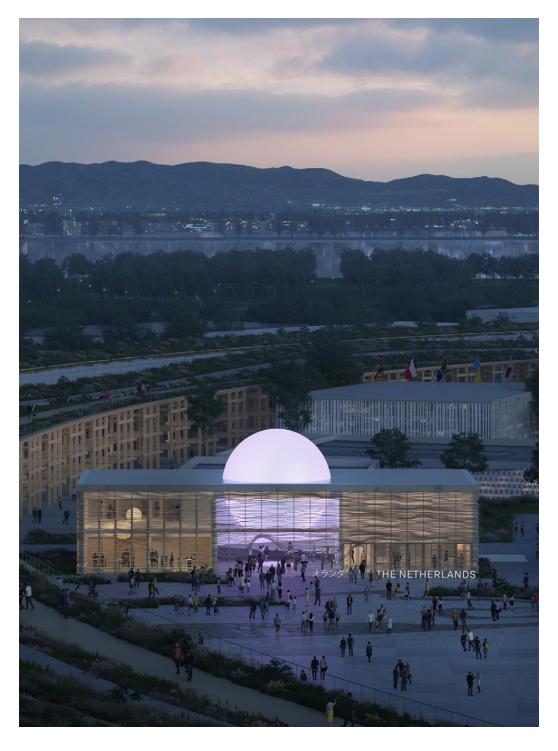
**Delegation Overview** 



**Netherlands** 



Expo Osaka 2025, Kansai, Japan



Sustainable Chemistry and Advanced Materials Trade Mission to Japan







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#### **Aduro Clean Technologies**

Aduro is a startup company that has discovered and is now industrializing a chemical pathway to upgrade complicated hydrocarbon streams like bitumen, waste plastic or rubber, by breaking those down into smaller, more valuable molecules. This invention, called Hydrochemolytic Technology, is unique because it produces stable, saturated hydrocarbons in a single step, without the use of molecular hydrogen. In the case of plastic waste, the product can be sent straight to a steam cracker and further to the manufacture of new polymer without the need for expensive upgrading. The compnay owns a portfolio of patents covering both the chemistry and the process technology. Aduro Clean Technologies is a public company listed at the Nasdaq exchange in New York (ticker ADUR).

#### **Unique Selling Points:**

- Converts polyolefin waste into steam cracker feedstock in a single step;
- · No additional hydrotreatment required;
- Can handle low quality waste with well below 90% of polyolefin and a variety of contaminants;
- · High yield of cracking-range hydrocarbons;
- · Effective removal of heteroatoms;
- · Relatively low energy consumption;
- · Patneted chemistry and process.

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#### **Brightlands Circular Space**

Brightlands Circular Space (BCS) is a €60M joint venture by Brightlands Chemelot Campus, Maastricht University, and TNO, located in Sittard-Geleen, at the heart of Europe's largest chemical cluster. As part of the Brightlands ecosystem, BCS accelerates circular plastics innovation through co creation in an openaccess R&D demonstration center. This unique facility supports scaling circular solutions out of plastic waste in packaging, automotive, electronics, and textile. BCS connects the entire plastics value chain—offering access to top-tier equipment, expertise, consortia, and feedstocks—enabling faster market entry, reduced risk, and new circular business models.

#### **Unique Selling Points:**

- Located in the heart of the Antwerp-Rotterdam-Rhine-Ruhr Area (ARRRA-cluster) chemical cluster—Europe's largest;
- Embedded in the Brightlands ecosystem: 30,000 innovators and 350+ companies;
- Strong academic, industrial, and governmental ties via founding partners (Brightlands Chemelot Campus, Maastricht University, TNO);
- €60 million investment in an open innovation and semiindustrial scale-up center;
- First-of-its-kind R&D Regional Transition Hub for circular plastics, accessible to all players in the value chain and includes integration of cuttingedge equipment, material analysis, and process infrastructure at one location;
- Facilitates collaboration between waste companies, brandowners, producers, users, recyclers, designers, and researchers;
- Supports co-creation of circular solutions and joint innovation through consortia.

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#### **ChemistryNL Topteam**

ChemistryNL is the brand name of the Top Sector Chemistry and executes the mission-driven Top Sector and Innovation Policy (MTIB) of the Ministry of Economic Affairs and Climate Policy. The policy of the ten Top Sectors in the Netherlands aims to create opportunities to address global societal challenges in the fields of climate, food, health, circularity, and safety. The Top Sector approach is typically Dutch: open, inclusive, and inventive. The Top Sectors have drawn up research agendas and objectives for the coming years. To develop the best solutions, the business community, universities, research institutes, and the government collaborate on knowledge and innovation.

The chemical sector is a key pillar of the Dutch economy. Together with the Ministry, the Top Sector faces the major task of achieving the sustainability goals for 2050, focusing on circularity and climate neutrality.

ChemistryNL is therefore looking for future economic perspectives in the defossilization of the chemical industry (for instance, bio-based materials and CO<sub>2</sub> as feedstock, plastics recycling). Circular economy is a key theme for the Top Sector as well, mainly focusing on refining and recycling critical raw materials.





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#### TKI Green Chemistry and Circularity

Within ChemistryNL, the TKI Green Chemistry and Circularity serves as the operational organization. The TKI develops research agendas and supports the objectives for the coming years, driving innovation and collaboration both nationally and internationally.

ChemistryNL seeks to strengthen bilateral relations and explore cooperation opportunities between German and Dutch companies, leading research institutes, and universities. This mission also provides a unique chance to engage with top-tier universities, industry leaders, and knowledge institutes working on bio-based projects and CCU.

#### ChemistryNL

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#### Circularise B.V.

Established in 2016, Circularise is a leading product traceability platform for the plastics and petrochemical markets, focusing on compliance, supply chain resilience and sustainability. Its platform provides end-to-end supply chain traceability, supports digital product passports (DPPs), supply chain data collection and creates audit-ready reports through secure data management. Circularise's patented technology balances transparency with data security, protecting sensitive information. It allows anyone to verify data integrity in a DPP with open-source software while maintaining confidentiality. This helps companies meet regulatory (ESPR) and mass balance certification schemes like ISCC PLUS and ISCC EU, prepare for audits, and proactively de-risk their supply chains from disruptions.

#### **Unique Selling Points:**

- Patented technology ensuring secure flow of data along the value chain with confidentiality protection and verification built in:
- First of its kind Chain-of-Custody 360 solution enabling upstream & downstream analysis of Batches in Supply Chains and within organisation's operations;
- · AI powered Chain-of-Custody analysis;
- AI powered data collection from supply chains up to any tier.

## Circularise B.V. Grote Marktstraat 49 NL 2511BH Den Haag Zuid The Netherlands circularise.com





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#### **ETB Global**

ETB Global develops breakthrough technology to produce bio-based butadiene from ethanol, enabling a shift from fossil to renewable feedstocks in the rubber and plastics industry. Our patented one-step process uses a proprietary polyfunctional catalyst to convert ethanol into butadiene with high efficiency and a significantly lower carbon footprint. This innovation paves the way for sustainable production of SBR and BR rubbers for tires, ABS plastics for consumer goods, and other key applications. Backed by strategic industry partners, ETB Global is driving the transition toward a bio-based and net-zero chemical sector.

#### **Unique Selling Points:**

- Innovative one-step technology to produce bio-based butadiene directly from ethanol;
- Proprietary polyfunctional catalyst designed for high efficiency and industrial scalability;
- Reduces carbon emissions by up to 90% vs conventional fossil-based butadiene production;
- Enables bio-based SBR, BR, and ABS, supporting sustainable tires, electronics, and mobility;
- Drop-in molecule compatible with existing supply chains in the rubber and chemical industries:
- Supports Japan's carbon neutrality and green growth strategy through practical implementation;
- Flexible for integration with local bioethanol sources and chemical production sites.

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#### **Groningen Seaports**

Groningen Seaports is the administrator, commercial operator and developer of the Port of Delfzijl and the Eemshaven and adjacent industrial estates. Groningen Seaports provides the complete port services, the complete port services, the maintenance and the development of the sites in both port areas. Groningen Seaports creates responsible and sustainable clusters and partnerships on the propositions 'circular', 'biobased chemistry' and 'energy (related)', in order to manage this for (future) customers and other results, to create value and liveability within its area of realization in North Netherlands.

#### **Unique Selling Points:**

- Strategic location in the Northern Netherlands with direct access to the North Sea;
- Two deep-sea ports: Delfzijl and Eemshaven, specialized in energy and industry;
- Strong focus on renewable energy and sustainable chemistry: hydrogen, offshore wind and circular economy;
- Home to major players in the energy, data and chemical sectors;
- Excellent multimodal infrastructure: sea, rail, road and inland shipping;
- Ample space and support for sustainable industrial development;
- Active partner in international green energy and innovation initiatives;
- Proven track record in facilitating cross-border business and investments.

#### Groningen Seaports

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#### Havenbedrijf Moerdijk N.V.

Port of Moerdijk is the fourth Dutch seaport and second container port in the Netherlands. As a driving force for the Brabant economy with direct and indirect employment for more than 19,000 people, we are determined to further grow our activities in the right balance between profit, people & planet. More than 400 companies are located in our management area. As the port authority, we operate, manage and develop the Moerdijk port and industrial estate and connect Port of Moerdijk with Europe. By road, water, rail and pipeline.

#### **Unique Selling Points:**

- · Large-scale European logistics;
- Strong industrial cluster for chemistry, energy and recycling.

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#### Netherlands Foreign Investment Agency (NFIA)

As an operational unit of the Dutch Ministry of Economic Affairs The Netherlands Foreign Investment Agency (NFIA) helps international companies to establish or expand their operations in the Netherlands. The NFIA provides tailored advice, practical support, and connects businesses with local networks and resources and focuses on key sectors like agrifood, chemical industry, life sciences & health and energy. Our free services provide you with all the information needed to understand how the Netherlands can connect your business to Europe and the world.

#### Netherlands Foreign Investment Agency (NFIA)

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#### **Perpetual Next**

Perpetual Next processes organic residual materials and transforms them into biocommodities for the highest quality applications on the market. Perpetual Next builds, owns, and operates production facilities where organic waste streams are converted into biobased raw materials on an industrial scale. The demand for biobased raw materials is driven by regulations and carbon pricing as a result of these measures. Additionally, it will be further influenced by the impending scarcity of fossil raw materials. Oil and gas are expected to run out within just 40 to 60 years (source: Milieucentraal). Currently, 80% of the world's primary energy comes from coal, oil, and gas (source: Our World in Data). To secure a sustainable future, we must therefore transition to renewable energy sources.

#### **Unique Selling Points:**

- Highly efficient scalable blueprint based on proven technology;
- · Indepth knowledge pre-treatment;
- · Proven track record.

## Perpetual Next Kraanspoor 36 NL 1033 SE Amsterdam The Netherlands perpetualnext.com





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#### Siebtechnik TEMA B.V.

Siebtechnik Tema B.V. is a global specialist in mechanical process engineering, supplying centrifuges, screeners, crushers, samplers, and lab equipment for industries like chemicals, mining, food, and pharma. With Germanengineered solutions and worldwide support, the company delivers tailored, high-performance equipment for separation, classification, and filtration. Part of the Siebtechnik Group, it combines innovation, durability, and expert service to optimize customers' industrial processes across the globe.

#### **Unique Selling Points:**

- 100+ years of expertise in solid-liquid separation and bulk-material processing;
- Tailor-made systems: fully customized centrifuges, screeners, crushers, dryers and lab systems;
- Global OEM & system provider: part of a family-owned group with 3,000-3,700 employees across 50+ locations;
- Top-tier innovation: among the top 10% in EcoVadis sustainability, with advancements like app-controlled lab equipment;
- High-performance continuous centrifuges: short-bowl design, CIP optimization, high-temperature & gas-tight variants:
- Proven wear-resistant engineering: advanced materials (tungsten carbide, ceramics, special steels) built for abrasive/process-heavy use;
- Comprehensive in-house tech center: R&D, pilot testing, and service all centralized in their Mülheim (Germany) facility;
- Global service & parts support: local production/sales/ service in Europe, North America, China, Australia; backed by a strong spare-part network.

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#### The Compound Company

The Compound Company B.V. is a leading European producer of chemically modified polymers and thermoplastic compounds. TCC has production facilities in Enschede, Roermond and Jakarta, with state-of-the-art compounding lines, QC, R&D, warehouses and logistics. TCC has two brand names: Yparex adhesive resins are maleic anhydride functionalised polyolefins, that provide bonding between polyolefins and substrates like PA, EVOH, glass and metals such as aluminium, copper, steel. Typical applications are: multilayer barrier film, multilayer pipes, solar panels, wire&cable, compounding additives, additives for recycling. EcoForte are thermoplastic compounds (glass fibre reinforced, mineral filled, natural fibre reinforced, or flame retardant). They can be made with biopolymers or recycled polymers.

#### **Unique Selling Points:**

- High added value compounds for demanding applications;
- · Excellent technical service from experienced staff;
- · Proven track record dating back to the 19-eithies;
- · Flexibility and can-do attitude;
- · Fast response time;
- · One-stop shop for mechanical recycling.

#### The Compound Company

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### THO innovation for life



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#### TNO

TNO is the largest RTO, applied research organization in the Netherlands (TRL 2-7). We represent In the unit Energy & Material Transition and the group "sustainable fuels & chemicals", TNO develops technology to produce fuels & chemicals from biomass, biogenic waste, captured CO2 and renewable hydrogen. We specialize in process intensification (combine several processes in 1 step) and process optimization (enhance carbon and energy efficiency and robustness). We have active projects on e-fuels and bio-fuels & chemicals, examples are SAF, methanol, DME, syngas, aromatics, olefins, ammonia etc.

#### **Unique Selling Points:**

- · Large government and industrial network;
- Applied research expertise and extensive infrastructure (TRL 3-7);
- Active projects on syngas, SAF, methanol, DME, aromatics, olefins and ammonia;
- Connecting energy (and carbon) carriers such as ammonia, methanol and ethanol to industry by robust and efficient new technology solutions.

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#### Publication

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