PIONEER THE POSSIBLE

Outlining the aims and progress of the Sweden-Japan sustainability platform

Team Sweden
December 2024

THE TIME IS NOW

Japan and Sweden are committed to reduce CO_2 emissions to become carbon neutral by 2050 and 2045, respectively. This calls for action from all stakeholders to combine strengths and solve shared challenges.

The time is now. We are at a critical juncture where we need to take decisive action to tackle climate change. To keep global warming to 1.5C, we need to cut emissions by half before the end of the decade. At the same time, we need to protect global ecosystems, limit pollution, and establish circular resource value chains. Sweden and Japan are long-standing partners with a joint goal in this fight – to convert our societies and reach net-zero carbon emissions.

Japan is accelerating its green transition. Since 2020, when it established its green growth strategy and set a national goal for net-zero emissions by 2050, Japan has been moving quickly to allocate resources to the transition through initiatives like the Green Innovation Fund and Green Transformation (GX) Bonds. In the private sector, both pioneering individual companies and organizations such as the Japan Climate Leaders' Partnership (JCLP) are leading the way.

Sweden is a global sustainability leader based to a large extent on the forward drive from its business sector, with initiatives such as the Fossil-free Sweden industry roadmaps. However, to affect real, large-scale change, Swedish companies need to partner up with forward-thinking partners to amplify their reach and transformative power. Given Sweden and Japan's close and long-standing relationship, Sweden and Swedish companies are eager to work together with Japan and Japanese companies to support the green transition.

By joining forces, Japan will get a knowledgeable and forward-thinking ally to boost its transition, and Sweden will gain a valuable partner with who to solve shared challenges and affect sustainable change at a large scale. Together, both will strengthen their competitiveness and sustainable leadership whilst also making a strong effort to tackle the largest global challenge of our times.

Together as Sweden and Japan, let us Pioneer the possible!

VICTORIA LI

Ambassador of Sweden to Japan

CARSTEN GRÖNBLAD

Trade Commissioner of Sweden to Japan

SWEDEN'S ROLE IN THE GREEN TRANSITION

A SMALL COUNTRY WITH BIG CLIMATE AMBITIONS

As a country, Sweden has long been a strong believer in the importance of environmental stewardship and sustainable development, with the goal of becoming the world's first fossil-free welfare state. We firmly believe that there is no conflict between economic growth and climate action, and that indeed, developing and commercializing sustainable solutions is a strong potential driver for growth.

Sweden's private sector is proactively working together with its government in driving the sustainable transition. Under the Fossil Free Sweden initiative, 22 different industries in Sweden have produced their own roadmaps showing how they can enhance competitiveness by going fossil free. The roadmaps include opportunities, obstacles, and proposals for solutions, both through the industries' own commitments and through political action. Taken together, they create an image of what a future fossil-free national industry could look like. By aligning the goals of the industry sector with national climate targets, Sweden ensures that its businesses remain competitive in the global market while also contributing to the global green transition.

Of course, Sweden is a small economy, and our ability to impact the global climate crisis through reduction of only our own emissions is very limited. Instead, we aim to punch above our weight class in the global economy through collaboration, scaling our solutions internationally through working with like-minded partners across the globe. In this way, Swedish firms are not only reducing their own climate footprints but are also supporting the global green transition through strategic partnerships, joint research and development initiatives, and supporting international green transformation projects.

JAPAN'S DRIVE TOWARDS SUSTAINABLE DEVELOPMENT

ENABLING GREEN GROWTH THROUGH INNOVATION

In recent years, Japan has intensified the focus it puts on its green transition. In 2020, it set a clear target to achieve net-zero emissions by 2050, with a -46% reduction by 2030. This commitment was underscored by the simultaneous introduction of Japan's "Green Growth Strategy" as well as the massive "Green Innovation Fund", both of which aspire to drive sustainable development and innovation across the main sectors of Japan's economy.

There are many strong incentives for Japan to accelerate its sustainable transformation – not least is for its companies to maintain competitiveness in global markets given an increasing focus on green credentials. With mechanisms such as the European Union's Carbon Border Adjustment Mechanism (CBAM) coming into play, many of Japan's companies are at risk of losing access to major global markets.

One critical aspect in Japan's green transition is the need to clean up its energy mix. Currently, over 70% of Japan's energy is derived from fossil fuels. Aside from creating embedded emissions in Japanese-made goods, heavy reliance on imported fossil fuels also creates issues in energy self-sufficiency and national security – especially salient challenges in recent years given increasing geopolitical tensions. By diversifying its energy portfolio and increasing the share of domestic renewable energy production, Japan can mitigate economic- and national security-risks whilst also closing the distance on its climate goals.

Japan's domestic resource scarcity also underscores the importance of moving towards more circular resource systems. Just like with energy, maximising the use of available materials through increased reuse and recycling will both increase Japan's economic self-reliance and broadly reduce its climate impacts, along with creating new economic opportunities and driving innovation.

A final challenge which Japan is currently addressing is to raise awareness and appreciation for sustainable values within its business community and broader society, which is still at low levels compared to in other developed nations. Businesses in Japan often struggle to clearly articulate the strategic value of a sustainable transition, in many cases leading to under-prioritization and -investment. The same is true for consumers, many of whom are still hesitant to pay a premium for more environmentally friendly products. Through strong education and promotion of sustainable values and their importance, Japan needs to continue to cultivate a sustainability mindset to further support its transition targets.

Japan is one of the world's foremost nations for science and cutting-edge research, and its strong technological capabilities give a solid foundation for developing the solutions needed to address sustainability challenges. However, this technological prowess increasingly also needs to be paired with skills in business-model innovation and cross-sectoral collaboration. By working together with like-minded international partners, Japan can leverage its existing strengths to accelerate the development and scaling of sustainable solutions.

PIONEER THE POSSIBLE

SWEDEN AND JAPAN JOINING FORCES IN THE GREEN TRANSITION

Stopping climate change and building a sustainable global society is an unprecedented and complex challenge, which cannot be solved by a single organization - or a single country - alone. Achieving our goals quickly requires collaboration at all levels – between companies, governments, startups, and academics, and also between nations and regions. Together, we need to innovate new technologies, build new value chains, find new business models, and change how we all live, work, consume, and recycle. In short, we need to pioneer the possible.

With this aim in mind, the Pioneer the possible platform was created in 2021 by Team Sweden in Japan (consisting of the Swedish Embassy in Japan, Business Sweden, and the Swedish Chamber of Commerce), alongside forward-thinking Swedish companies present in Japan and their Japanese partners. The purpose of the platform is to bring Swedish and Japanese companies and stakeholders together to collaborate, co-innovate, and find joint solutions to common sustainability challenges.

Each year, Pioneer the possible Japan focuses on a selected set of salient sustainability challenges. And each year, we call on Japanese and Swedish stakeholders relevant to each challenge to come together to share their ideas and visions for the future, and to create joint initiatives and strategies to drive real change. In years past, through working with the platform, companies have created partnerships to accelerate the EV infrastructure rollout in Japan, changed recycling guidelines to allow for increased resource re-use, and come together to jointly procure green electricity at scale, to give a few examples.

The 2024 program is focusing on two primary challenges:

- **Circularity Challenge**: Increasing the recycling rates for carton packaging
- **Healthcare Challenge**: Achieving a net-zero emissions healthcare system

The rest of this document outlines these challenges, and the actors working to drive change, in more detail.

THE PARTNERS

AstraZeneca is a global, science-led biopharmaceutical company that focuses on the discovery, development, and commercialisation of prescription medicines in Oncology, Rare Diseases, and Biopharmaceuticals, including Cardiovascular, Renal & Metabolism, and Respiratory & Immunology. Based in Cambridge, UK, AstraZeneca's innovative medicines are sold in more than 125 countries and used by millions of patients worldwide. The Japanese subsidiary AstraZeneca K.K. (hereafter AZKK) was established in the year 2000, and today employs 3 700 people in Japan.

Our future depends on the health of people, society, and the planet. With this belief, as a responsible, ethical global company, we are tackling the biggest sustainability challenges of our time, including the climate crisis, biodiversity loss, health equity, and health system resilience.

In Japan, AZKK has been leading the way in and beyond the industry in achieving zero carbon emissions, while making unprecedented progress by pioneering the use of clean energy, adoption of EVs, and Scope3 decarbonization.

Tetra Pak, founded in Sweden in 1951, is a global leader in food-processing and aseptic carton package filling systems. We provide safe and nutritious food to meet customers' needs in over 160 countries worldwide. With more than 24,000 employees globally, Tetra Pak is committed to making food safe and accessible everywhere, protecting food, people and the planet under the motto, "PROTECTS WHAT'S GOOD™."

Tetra Pak has set a net zero goal for its own businesses by 2030 and wants to reach net zero for its entire value chain by 2050. Their aim is to be the world's most sustainable packaging provider, providing packaging that is recyclable, carbon-neutral, and made with renewable resources.

In Japan, Tetra Pak is contributing to the decarbonization of the domestic food- and packaging sector. Its carton packages have been shown through life cycle analysis to have significantly lower climate impact than alternative materials, and its aseptic carton technology helps to reduce food waste as well as the need for refrigeration.

Tetra Pak Japan is currently working actively to increase the recycling rates for packaging materials through various cross-sectoral collaborative approaches together with local and international recycling companies, collectors, and local governments across Japan. Increasing circularity in the packaging value chain is key to reducing climate impacts, reducing reliance on fossil fuels, and improving resource efficiency and resilience.

THE HEALTHCARE CHALLENGE

REACHING NET-ZERO EMISSIONS IN THE HEALTHCARE SECTOR

The climate crisis is also a massive crisis of global public health, with climate-related deaths from air pollution, extreme temperatures, flooding and drought growing across the world. It is also associated with a steep rise in heart conditions, cancers, respiratory illnesses and infectious diseases linked to environmental factors.

Japan is especially exposed to many climate-related risks to human health, including increased frequency and severity of tropical storms and typhoons, flooding, intense heatwaves, and the expansion of disease vectors such as mosquitoes. Japan's rapidly aging society and high population density is also increasing its vulnerability to many of these risks, making it especially crucial to move quickly towards potential solutions.

Of course, the healthcare sector plays a vital role in managing the impact of climate change on human health. However, researching, developing, manufacturing and delivering medicines and healthcare services is energy and resource intensive. Indeed, healthcare-related activities are responsible for approximately 5% of global greenhouse gas (GHG) emissions. The share of emissions attributable to the health sector in Japan varies from 4.6% up to 7.2% depending on methodology and exact scope.

This means that currently, whilst working to keep people healthy, the healthcare sector is simultaneously contributing to the very problem it is trying to alleviate. Clearly, a decoupling of these two outcomes is needed for the continued improvement of health outcomes in the Japanese and global community. This means drastically reducing carbon emissions associated with healthcare activities, with a long-term aim to reach net-zero carbon emissions from healthcare.

The main components of healthcare sector emissions are, in order of importance:

1. **Production- and supply chain-related emissions**, including energy and raw materials used to manufacture and transport medicines, medical supplies, equipment and other products to hospitals and patients
2. **Healthcare delivery-related emissions** from hospitals and clinics (primarily energy use and other building-related emissions), ambulances and other vehicles, and the climate impacts of anaesthetic gases
3. **Patient-related emissions**, including both the use of medical products (especially inhalers) as well as emissions from the travel of patients and visitors to healthcare facilities
4. **Research and development-related emissions** from activities related to the development of new medications and medical products

These areas will all need to be properly addressed in order to achieve a long-term sustainable healthcare system. To achieve this, it is vital that all stakeholders involved — including pharmaceutical companies and other manufacturers, distributors, hospitals and healthcare providers, national and local governments, policymakers and regulatory bodies, payers and patients — take action in supporting drastic emission reductions, whilst ensuring continued positive health outcomes.

Some of the concrete actions which need to be taken by stakeholder groups include:

Pharmaceutical, med-tech and other manufacturing companies:

- **Improving emissions data availability and transparency** to enable more granular breakdown and understanding of emissions sources throughout the medical supply chain, and better evaluation of potential treatment options also based on climate impacts. This will be crucial for regulators and other decisionmakers to be able to make informed choices in driving down overall sectoral emissions.
- **Reducing embedded emissions in medical products**, both through decarbonizing own activities through e.g. purchasing of green electricity and energy, increasing efficiency in logistics and delivery, and through working with suppliers and setting standards to reduce upstream emissions from raw materials and other inputs.
- **Further investing in prevention technologies** such as early detection and diagnostics, to address problems earlier and with less resource need, reducing overall healthcare demand and improving efficiency whilst also improving patient outcomes.

Hospitals and healthcare providers:

- **Reducing healthcare delivery-related emissions** through use of green energy and lower-carbon inputs, decarbonized vehicle fleets etc., whilst maintaining healthcare quality and outcomes.
- **Consider carbon emissions during treatment choices**, prioritizing lower-carbon options which would provide similar outcomes when available, and by informing and educating healthcare professionals.
- **Implementing higher-efficiency healthcare methods** to e.g. reduce the number of necessary visits and the length of hospital stays. This could include a stronger focus on early prevention and intervention, efforts to optimize scheduling and treatment timelines as well as implementation of digital- and tele-health solutions where appropriate.

Regulators, authorities and policymakers:

- **Implementing policies and regulations** that promote the use of renewable energy healthcare, such as setting renewable energy targets or mandating a certain percentage of energy to come from renewable sources.
- **Inclusion of renewable energy criteria** in e.g. the Green Purchasing Law to explicitly consider green energy use by suppliers. This would ensure that healthcare providers consider the energy sources of their suppliers as part of their purchasing decisions.
- **Setting clear standards and regulatory criteria** to support the approval and use of lower-emission treatment options, including emissions as a metric in evaluation processes and removing hurdles to approval of novel, low-carbon options. This also includes setting clearer standards for emissions measurement and reporting.
- **Aligning incentives and support** to improving the short-term financial viability of emissions-reductions initiatives and low-carbon treatment options, including e.g. funding, targeted subsidies, carbon taxes and other measures.
- **Support further research into healthcare decarbonization** to build a stronger evidence base and enable deeper evaluation of different decarbonization approaches and their efficacy and outcomes.
- **Promote lower-carbon choices to the public**, including supporting and increasing the use of e.g. early screening and other preventative healthcare measures, digital healthcare solutions etc.

THE CIRCULARITY CHALLENGE

INCREASING RECYCLING RATES FOR PAPER CONTAINERS

The global demand for paper is on the rise, projected to reach nearly 500 million tonnes by 2032. This surge is driven by the need for environmentally friendly packaging, especially in the booming e-commerce sector. Paper packaging, being renewable, recyclable, and compostable, is increasingly favoured.

In 2023, Japan imported 814,000 tonnes of paper and paperboard to meet local demand for food packaging and sanitary paper. At the same time, it is sitting on an untapped resource of 200,000 tonnes of used paper packs annually which, if properly recycled, could go a long way towards meeting this demand. The Plastic Act, effective from April 2022, has further pressured companies to shift from plastics to paper, highlighting the urgent need to enhance recycling capacities.

The value of aseptic paper packs

Beverage cartons, primarily made of renewable plant fibre, play a crucial role in decarbonising packaging. Aseptic cartons in particular have an unparalleled ability to fully preserve beverages and liquid foods without the use preservatives or refrigeration for up to 12 months. Aside from saving energy and improving nutrition and food safety, this also helps reduce food waste. These properties make aseptic cartons essential for the food and beverage industry, and as such, they are growing increasingly popular in Japan.

Aseptic paper packs consist of about 75% paper, 25% plastic, and a very thin aluminium layer. Life Cycle Analysis indicates that carton packages have a lower climate impact compared to other materials – and the greater the share of renewable materials in the package, the lower the impact.

Recycling aseptic cartons involves a water-based pulping process that separates fibres from plastic and aluminium. Unlike milk packs, aseptic cartons do not contain wet strength agents, allowing for quicker and more efficient recycling. The long, high-quality fibres from these packs are used to make sanitary paper, while the polyethylene and aluminium are utilised as energy sources in the paper drying process.

Current challenges and opportunities

Paper recyclers which accept aseptic paper packs for recycling already exist across Japan. However, despite the growing capacity and demand for recycled cartons, lacking collection of aseptic paper packs remain a crucial issue. Many municipalities incinerate paper containers instead of recycling them due to historical practices and industry rules that restrict mixed collection, causing confusion. Currently, the recycling rate for aseptic cartons is a mere 3.4%.

Improving recycling of paper packs is vital for sustainable development and environmental conservation. Recycling one 250ml aseptic package reduces CO_2 emissions by 12g compared with incineration. Effective recycling depends on efficient collection, sorting, and processing systems, along with public awareness and participation. Collaboration between government, industries, research institutions, and local communities is essential to fully harness Japan's fibre resources.

Below are some suggested steps to be taken to accelerate the implementation of paper recycling systems and increasing resource circularity and efficiency in Japan, alongside some of the gains at stake in a successful overhaul of municipal recycling systems.

Actions to be taken to support development of paper packaging recycling systems:

- **Financial support:** Increased access to government funding and support is critical for especially smaller municipalities to be able to establish effective paper recycling ecosystems in their jurisdictions. Moreover, in a recycling value chain, financial support is required to enable investment in collection and sorting.
- **Increased communication efforts**: The Paper Recycling Promotion Center (PRPC) has updated its prohibited items list, allowing municipalities to more easily collect aseptic packs for recycling. However, this change is still not well known and requires wider dissemination. The government should support knowledge-sharing around this new development whilst encouraging municipalities to review their waste classification to avoid landfill or combustion of recyclable paper containers.
- **Legislation**: Countries with high recycling rates generally have formalised legislation to support it. The Japanese government and municipalities should consider new regulation to support rerouting collection streams of paper containers and aseptic carton packaging from combustible waste to recyclable materials, which would contribute to reducing waste and incineration volumes.
- **Stakeholder collaboration**: The collective efforts of multiple stakeholders is crucial to increasing collection volumes. While municipal collection is the most efficient at driving large volumes, adding additional collection options such as collection in grocery- and convenience stores can drive additional volumes whilst also increasing public awareness. Sharing case studies and success stories and connecting municipalities with capable recyclers are also essential steps.
- **Encourage pilot programmes**: Some municipalities are keen to develop pilot collection programmes, which can serve as best practice models for others and increase nationwide uptake in the long term.

Benefits to be gained from improved paper packaging recycling systems:

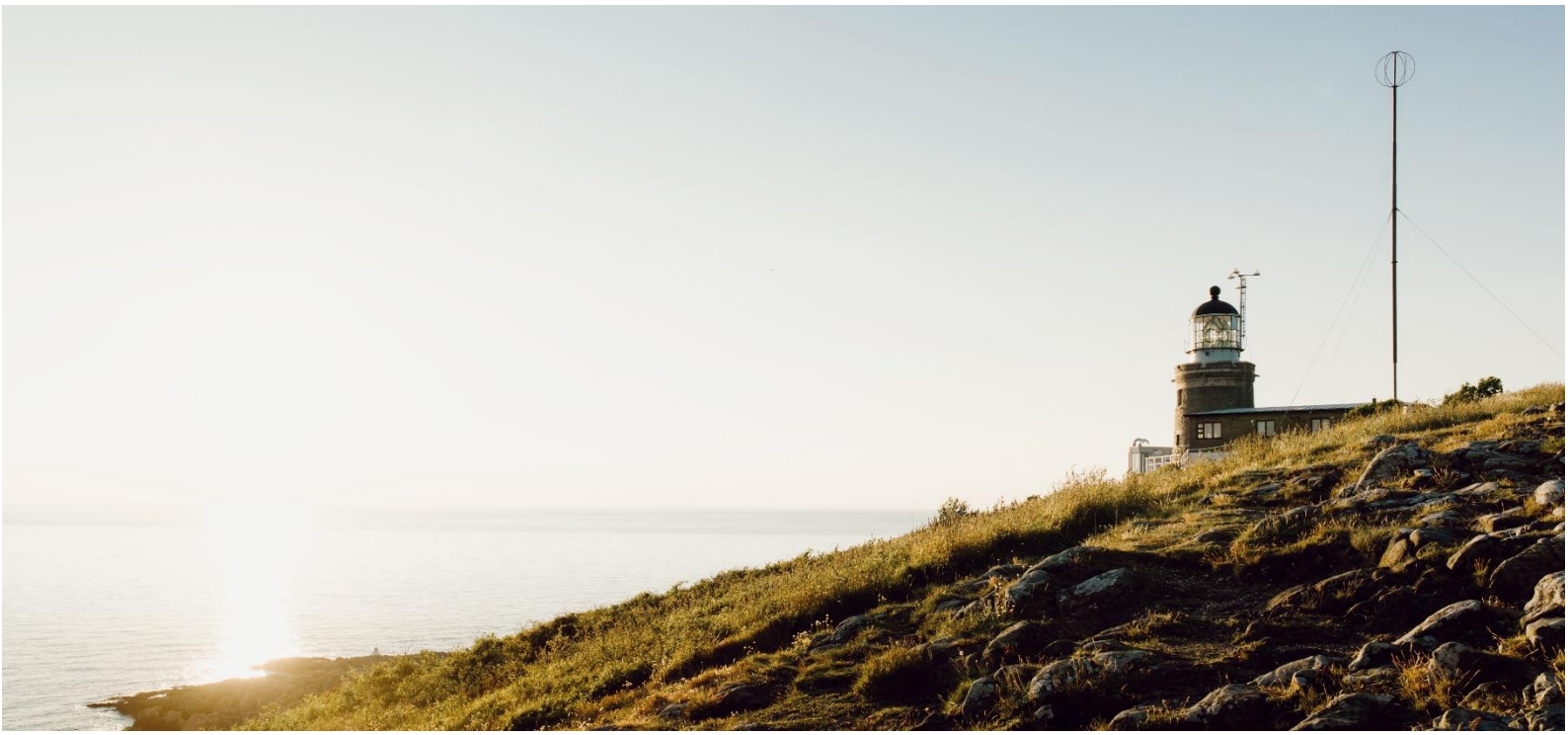
- **CO_2 reduction**: Through collection and recycling of paper packs, municipalities can significantly contribute to the reduction of CO_2 emissions. For instance, recycling a 250ml aseptic package cuts CO_2 emissions by 12g.
- **Increased revenues**: Municipalities can generate additional revenue through expanded recycling programmes. Zama City, for example, saw a 150% increase in collection volume in 2023 compared to 2022 after expanding mixed paper collection, resulting in an extra JPY 700,000 in revenue.
- **Value creation**: Increased collection and utilization of paper packs creates value from what used to be waste, stimulating economic growth and creating jobs.

CONCLUSION

TOWARDS A PROMISING FUTURE

As this paper has tried to argue, Sweden and Japan are well matched in terms of capabilities and challenges to collaborate in an impactful way on a series of pressing sustainability issues. By leveraging the strengths of both nations, there is potential to pioneer new solutions and ways forward in a way that can set a global example. The "Pioneer the Possible" platform is one attempt to realize this potential, bringing together diverse stakeholders to focus on making progress on concrete and relevant issues. The initiatives driven during 2024 - the Circularity Challenge and the Healthcare Challenge – are good examples of this approach.

By focusing on this type of practical, impactful actions, and by fostering strong partnerships and networks for change, we hope that Sweden and Japan can lead the way in creating a long-term viable future society and economic system. Through openness, creativity, collaboration, and a pioneering spirit, we look ahead towards a bright, green future.



Business Sweden is the author and sole responsible for the contents of this report

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