



Circular Economy 4-pager, March 2022

POLICY LANDSCAPE

Malaysia is a country with a federal constitutional monarchy, which has thirteen states and three federal territories. Malaysia has a King as the head of the country, while the executive power is held by the Prime Minister of the cabinet. The oil and gas, and agriculture sector led the Malaysian economy until the 1970s, which continued as a multi-sector economy in the 1980s. It has now shifted into manufacturing and service sectors as the national-leading industries.

Manufacturing is now the Malaysian core sector with several primary industries, such as electrical and electronics, petroleum products and petrochemicals, semiconductors and machinery, and equipment. Other sectors supporting the country's economy are palm oil and forestry. For foreign investors, Malaysia offers significant opportunities to develop infrastructures, digitalization, and technological improvement in high potential sectors such as aeronautics (maintenance, repair, and overhaul), biotechnology, electrical and electronic, green energy, medical devices, and pharmaceutical equipment.

Malaysia has set ambitious goals towards sustainability and a circular transition. The country targets to achieve a 40% recycling rate in 2025 and a reduction of greenhouse gas emissions by 45% in 2030. New policies that support the circular economy transition are the Twelfth Malaysian Plan 2021-2025, the Malaysia Plastics Sustainability Roadmap 2021-2030, the Green Technology Master Plan, and the National Solid Waste Management Policy. According to these ambitions, there is a new potential for The Netherlands as a niche leader in circular manufacturing.

Company-driven actions on plastic packaging also stimulate the country to have new market opportunities from design to production, usage to the collection, sorting, recycling, and applying recycle in new products. Other business opportunities to be explored are digitalization in the palm oil sector and new waste management methods in Malaysia.

FACTS & FIGURES

Economic indicators

- Population (2020): 32,79 mln
- Nominal GDP (2020): €342.442 bln
- World rank: 36th (2020)
- Import from the NL (2020): €884,6 mln
- Economic growth (2021): 3-4%
- Ease of doing business rank (2020): 24/190
- Corruption index (2021): 65/198
- Unemployment rate (2020): 4,55%
- Currency: Malaysian Ringgit
- Time difference NL: 6/7 hrs

Circular economy indicators

- Global innovation index (2020): 33/133
- Municipal waste recycling rate (2020): 30,67%
- Renewable energy consumption (2018): 5,3%

Twelfth Malaysian Plan 2021-2025

A new platform, set up by the Malaysian government, is aligned with the 2030 agenda to eradicate hardcore poverty, build a peaceful and inclusive society, and create a sustainable environment with sustainable economic growth. Transitioning towards a circular economy has become one of the key topics for protecting the country's environment and natural resources, measure efficiency, and promote shared prosperity.

National Solid Waste Management Policy

The Malaysian government established a solid waste management policy in 2007. With this regulation, they assisted local authorities to raise the standard of service quality of MSW. The later revision described the appointed companies for waste collection, categories of solid waste, and the definition of public management services. In 2016, the government added an act to develop EPR in the waste management system.

SELECTED PRIORITY AREAS

MANUFACTURING INDUSTRY

Refurbishment and remanufacturing

The Department of Statistics Malaysia reported manufacturing sales in October 2021 achieved RM 140,7 billion (€ 29,3 billion). It increased 15,3%, as compared to a year before. The sales value rising was driven by seven industries, among them are electrical and electronics, vehicle components, chemical, rubber, and plastics. Malaysia's Investment Performance Report on 2019 shows that remanufacturing as one of the strategies for transitioning towards a circular economy, these 'top 3' industries (together with printer cartridge manufacturing industries) can generate three times the current value to the Malaysian economy. Establishing refurbishment and remanufacturing for the country's top industries can be key strategies in Malaysia's transition towards a circular economy or can be key opportunities for Dutch businesses experienced with these business models.

Automotive industry

There is a new market opportunity from the automotive sector, especially on electric vehicles (EVs) as the Malaysian government announced on their 2022 National Budget to eliminate all taxes on EVs in Malaysia, including import and excise duties, as well as road tax. Malaysian National Power Agency has also signed an agreement with private players to supply charging stations along highways in Malaysia. This policy is seen as one of the strategies to reduce carbon emissions and a step towards circular businesses in the country. The support from the Malaysian government on EV industries is expected to increase the demand for sustainable batteries. This could be an interesting business opportunity for Dutch entrepreneurs.

Smart industry

Adopting a smart industry strategy and enhancing digitization can be beneficial to build a data matching platform, as requested by the Federation of Malaysian Manufacturers (FMM) for data collection and analysis. Furthermore, combining servitization (offering products as a service rather than a one-off sale) and smart technologies will make resource efficiency more valuable for industries and help them promote it. Implementing digitization on vehicle components, ICT, medical devices, and aerospace industries can help them improving their product information database and creating a more effective production system by identifying their product performances and technical data performances during their lifetime.

Energy

Finally, the district cooling energy system can be another new opportunity that can be seen as a part of the Malaysian government's commitment to reduce greenhouse gas emissions by 45% in 2030. Unlike conventional air-conditioning systems, district cooling energy systems consist of a network of underground pipes that pump cold water to multiple buildings in a district, neighbourhood, and city. Currently, The Malaysian government seeks companies that can provide energy from other renewable energy sources, like biomass and hydropower, or waste-to-energy projects linked to cooling installations.

REPORTS

- [Sustainable Waste Management in Malaysia](#)
- [The Potential of New Conversion Technologies for Adding Value to Malaysian Oil Palm Residues and Increasing Sustainability](#)
- [EPR Scheme Assessment for Packaging Waste in Malaysia](#)
- [Manufacturing Sector in Malaysia](#)
- [Market Study for Plastics Sector in Malaysia](#)
- [Malaysia Plastics Sustainability Roadmap 2021-2030](#)
- [Malaysia's Circular Cities Blueprint](#)

GOVERNANCE ON CE IN MALAYSIA

The development of a Malaysian circular economy depends on government leadership, industry involvement, and network governance acceptance. Leadership is limited at the moment, involvement of the industry is medium-high, and network governance is medium. Therefore, the development of circular economy initiatives in Malaysia can be set up by pro-active companies, and acceleration can take place when additional stakeholders mobilize. For Malaysia, the main drivers to develop circular economy

initiatives are carried by companies, especially FMCG companies through alliances and project collaboration within states. In the future, the Malaysian government seeks more collaborations with privates, research institutes, NGOs, and foreign investors to support the Malaysian transition to a circular economy. Incentives and tax benefits have been prepared by the government to attract more involvement in circularity projects in Malaysia.

PLASTICS

In 2019, WWF Malaysia reported that the country, compared to China, Indonesia, the Philippines, Thailand, and Vietnam, was the biggest consumer of used plastics per year, with 16,78 kg per person. This means, 1,41 million tonnes of plastic resins (PET, HDPE, LDPE, and PP) are consumed in the country per year. However, only 24% of it was recycled. The loss of material value in plastics shows mismanagement of plastic waste and creates economic consequences as the country would potentially lose up to € 887 million per year in the plastics recycling market.

Meanwhile, there have been voluntary initiatives, driven by FMCG multinationals in Malaysia. The multinationals started projects to collect and recycle their plastic waste. They are determined to change, considering the consumer concerns and global HQ commitments striving to have zero waste factories, and recyclable, or bio-based packaging. They also established MAREA (Malaysian Recycling Alliances) as a part of a voluntary-industry-driven initiative to implement EPR to tackle packaging waste issues in 2021. Some members are Unilever, Friesland Campina (Dutch Lady Milk Malaysia), Coca-Cola, and Mondelez.

Malaysia has room to scale the initiations further and professionalize closed plastic value chains. It goes from design to production, utilization to collection, sorting, recycling, and applying recycle in new products. Therefore, there is an opportunity for Dutch product designers (packaging), and Dutch companies in mechanical and chemical. Several technologies can be applied: solvolysis, depolymerization, pyrolysis, and gasification.

Developing technologies for repurposing and recycling non-bottle-PET waste products can be another business opportunity in Malaysia. Providing digital technology to identify the type of plastics in MSW is expected to be the winning technology. Developing a sound waste management system can be explored by Dutch consultants. That would involve G2G support and capacity building, and would simultaneously help measuring volumes of waste flows, gathering recycling and recovery data, and mapping the recycling capacity inventory.

Opportunities for Dutch consultants can be explored to develop collaborative action against corruption and training on waste segregation and recycling. Illegal practices (bypass and shortcut) in the waste field, made it hard to identify potential materials which can be recycled as most of the waste will be directly sent to the dumpsites by the corrupt operators. As transparency becomes an important requirement, the need for actors with capabilities to audit, measure, and govern sustainability within the companies, can be opportunities for best practices on international standardization and certification on sustainable initiatives.

BIOMASS

As a leading country in agriculture, Malaysia produces more than 103 million tons of biomass, including agricultural waste, forest residues, and municipal waste. More than 90% of the biomass is derived from palm oil mill residues. Malaysia is the second-largest palm oil producer globally, with a total plantation area of 5,6 million hectares. Organic residues of the palm oil industry are partly converted into biogas in digesters. These resulted in renewable energy representing 3,5% of the whole nation's electricity, mixed with solar and small hydropower for Malaysia in 2017.

Local companies, mostly based in Sabah and Sarawak, have become the main sources in generating biomass energy in Malaysia. However, having its local actors develop renewable energy does not hinder Malaysia from facing challenges. New technologies and expertise are difficult to find. Limited efforts from the Malaysian government to stimulate renewable energy made companies hard to get financial assistance.

MALAYSIAN-DUTCH BUSINESS COOPERATION

As the second-largest agricultural exporter globally, The Netherlands provides solutions for Malaysia's food production, such as horticulture and productive seeds. Combating plastics pollution, the Dutch Ocean Cleanup launched its first Malaysian 'Interceptor' in 2019 and has been continuing until present days to collect plastics and other waste from the Klang river, Selangor. Dutch companies have also been investing in manufacturing

plants in Malaysia, especially semiconductor business. Dutch-based FMCG companies (Heineken, Friesland Campina, and Unilever) actively started implementing circular economy programs in Malaysia. In addition, Dutch companies like Hyva and Pâques have been in Malaysia for a longer time and expanded their businesses in the Southeast Asian region on waste collection and management.

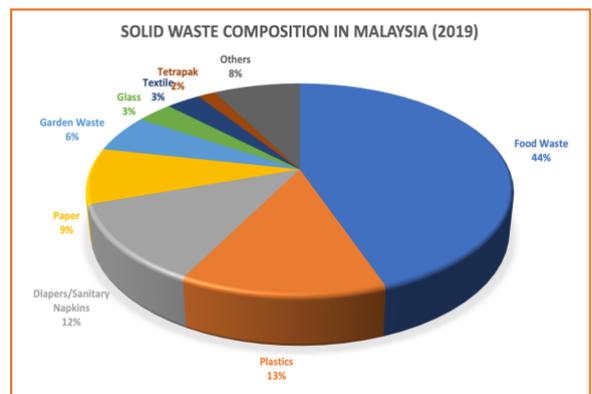
Overcoming the issue, from 2016 to 2020, Malaysia started collaborating with other Southeast Asia countries (Indonesia, Thailand, Singapore, Vietnam, and the Philippines) through the ASEAN Plan of Action on Energy Cooperation (APAEC). The objective was to increase the contribution of renewable energy up to 25% of the ASEAN energy mixture and 30% of the electricity generation mix by 2020. For Malaysia, this means that they need to sustain their electricity generation mix and pursue new methods to generate from domestic sources, like biomass, and improve sustainable production for smallholders in palm oil plantations. This also offers opportunities for collaborative research in the agriculture sector. The Netherlands has a track record of thinking cross-silo. Combining the expertise fields of biomass, water waste- and energy management offers opportunities in the palm oil industry. As data on the amounts of residues reutilized is missing, there might still be a lot of untapped potentials.

Further digitalization of the biomass industry at large to identify available and utilized residues can be one of the newer opportunities. Another potential market rises in biogas trapping and methane capturing activities from POME (palm oil mill effluent) treatment. Engaging Dutch entrepreneurs and experts in this field will create business opportunities for renewable biomass energy projects and services.

WASTE MANAGEMENT

The Department of Statistics Malaysia stated that the country generated about 38.000 metric tonnes of waste daily in 2019. Food waste was in the top position with 44,5% of the total Municipality Solid Waste, continued with plastics 13,2%, and diapers 12,1% (see the figure below). To overcome the problem, the government set big ambitions to raise the recycling rate (current rate: 30,67%, reported in 2020). However, another challenge is bypass and shortcut (corruption) in the field, which makes it hard to enforce the regulation.

Some flows have momentum, like plastics and packaging. Initiatives in packaging have been via the collaboration of multinational companies in Malaysia with local partners. However, lack of information on the waste flows, waste segregation, and waste recycling also become challenges since the stakeholders have a lack of knowledge on how to improve the waste treatment in Malaysia. As civil society organizations and academics have limited data on volume waste generation and waste treatment, support is needed from the government to improve the digitization of this sector.



Dutch businesses can provide technology and equipment supplies for waste sorting and waste segregation. Providing digital technology to identify the types of plastics in MSW is expected to be the winner technology. In addition, organic and food waste valorisation from MSW is still underutilized. Composting and digestion are entry-level technologies but are not optimally incentivized for renewable energy yet. The federal government has started the initiative to draft policies, but experts are needed to strengthen these efforts.

Lastly, business opportunities evolve in Selangor Maritime Projects. The state wants to rehabilitate the ecosystem along the Klang River and needs assistance. In addition, Selangor state also looks for expertise and solutions to develop renewable energy in the region. Several actions are possible: developing methods on river waste management, sharing knowledge on renewable energy solutions, building circular economy strategies, and knowledge transfer on biodiversity preservation.

RELEVANT NETWORKS

Circular economy think tanks

- [WWF Malaysia](#)
- [Jeffrey Sachs Center on Sustainable Development, Sunway University](#)

Embassies

- [Embassy of The Kingdom of The Netherlands in Malaysia](#)
- [Embassy of Malaysia in The Hague](#)

Business networks

- [Malaysian Dutch Business Council \(MDBC\)](#)
- [Malaysia Recycling Alliance Berhad \(MAREA\)](#)
- [MBI Selangor](#)
- [Federation of Malaysian Manufacturers](#)