

Invitation Letter

CSPE Environmental Technology & Facility Committee

Thailand has launched a full-fledged effort to adopt biomass as a major future energy source, a drive that has received a boost from companies looking for relief from skyrocketing fossil fuel prices. Thailand took up the bio-circular-green economic model a year ago as a way to revive its pandemic-battered economy. The idea is to promote new industries on the foundation of the country's dominant agricultural sector. Biomass energy relies on the burning of plant matter instead of fossil fuels. Thailand is a major producer of rice, sugar cane and cassava. The government estimates that 40 million tons of biomass is unused in a given year. Prime Minister Prayuth Chan-ocha has pledged to "maximize the revenue from agriculture and reduce waste and the use of fossil fuels."

With electricity demand rising annually in Thailand, the Thai government is committed to a more sustainable energy future, with renewables making up a bigger share of the energy mix. Small-scale biomass gasification plants, which generate electricity from agricultural and wood processing waste, have the potential to increase energy autonomy in rural communities, and the country as a whole, while reducing carbon emissions.

Malaysia will focus on using biomass created by the palm oil industry as a feedstock for new and advanced fuels, Deputy Minister of Investment, Trade and Industry, YB Liew Chin Tong, said May 2. The government is looking to bolster the biomass sector by attracting investments and to see biomass as "a necessary enabler for new and high value-added industries," the minister said at an event by the Malaysian Investment Development Authority. Malaysia, the world's second-largest producer of palm oil, has also made efforts to drive investments into palm oil byproducts as part of its national economic plan called the 12th Malaysia Plan to be implemented between 2021 and 2025, which has outlined biomass as a strategic sector. However, slow investments since 2019 have challenged efforts to fully utilize its biomass potential, chairman of the Malaysian investment authority, Tan Sri Sulaiman Mahbob, said at the event May 2. Due to the trend of fluctuating investments in the biomass sector since 2019, we have not met our ambitious target of MR10 billion (\$2.1 billion) as set in the 12th Malaysian Plan, Mahbob said. Currently, the sector has attracted investments worth MR222.9 million, according to recent estimates by the Malaysian Palm Oil Board. Malaysia churns out about 90 million mt of solid biomass like empty fruit bunches, mesocarp fiber, kernel shells, fronds and tree trunks when producing over 18 million mt of palm oil annually, according to studies by the MPOB. Traditionally, mesocarp fiber and shells have been used by Malaysian palm oil mills as an energy source but much of the solid biomass is disposed off. In the last few years, liquid byproducts of palm oil extraction, such as palm fatty acid distillate and palm oil mill effluent, have also seen rising demand from biofuel producers as EU regulations incentivize the use of waste feedstocks for making biodiesel.

Malaysia, in a progressive stride towards addressing environmental concerns, has launched the National Biomass Strategy Action Plan 2023-2030 (PTBN2030). The scheme, as outlined by Deputy Prime Minister Datuk Seri Fadillah Yusof who also holds the portfolio of Minister of Plantation Industries and Commodities, is built on a dynamic ecosystem that integrates planning, regulation, and reassessment of the biomass sector along with supply and market demand considerations. The PTBN2030 resonates with three of the six pillars of Malaysia's MADANI foundational policy: sustainability, well-being, and benevolence. The plan embodies the economic circular concept, aiming to significantly reduce greenhouse gas emissions. This initiative aligns with the 12th Malaysia Plan (RMK12), which underscores the importance of the biomass industry in enhancing export value. The strategy also encompasses the implementation of co-firing projects in power stations, a process that involves blending coal with biomass pellets. This innovative approach is set to contribute significantly to Malaysia's sustainable energy goal of achieving a 70% power generation energy mix by 2050. An additional component of the PTBN2030 is the proposed establishment of a Biomass Hub, intended to centralize and organize the collection of raw biomass materials. The government expects this strategic move to streamline the nation's biomass supply chain effectively. In conclusion, the Malaysian government believes that with robust support from all stakeholders, the biomass sector will serve as a catalyst for the national economy. It is expected to create job opportunities, boost household income, particularly for small-scale farmers, and contribute significantly to the nation's sustainable energy agenda.

The prospects of biomass energy in Cambodia's market are looking increasingly promising as the country continues to develop and modernize its economy. With a population of over 16 million people and a rapidly growing industrial sector, Cambodia is in need of sustainable and reliable energy sources to support its development goals. One of the main drivers behind the push for biomass energy in Cambodia is the country's abundant supply of biomass resources. According to a study by the United Nations Development Programme (UNDP), Cambodia has the potential to produce up to 10 million tons of biomass per year, which could generate around 2,500 megawatts of electricity. This is a significant amount, considering that the country's total installed power capacity currently stands at around 2,208 megawatts. The majority of Cambodia's biomass resources come from agricultural waste, such as rice husks, corn cobs, and sugar cane bagasse, which are readily available in the country's rural areas. Another factor contributing to the growth of biomass energy in Cambodia is the government's commitment to promoting renewable energy sources. In recent years, the Cambodian government has implemented various policies and initiatives aimed at increasing the share of renewable energy in the country's energy mix. The National

Strategic Development Plan (2014-2018), for example, set a target of increasing the share of renewable energy in the country's total installed power capacity to 20% by 2020. Moreover, the government has also introduced a feed-in tariff scheme for renewable energy projects, which provides financial incentives for investors in the biomass sector. The benefits of biomass energy in Cambodia extend beyond simply providing a sustainable source of power. By utilizing agricultural waste as a source of energy, the biomass sector can help to reduce the environmental impact of waste disposal and contribute to the country's efforts to combat climate change. Additionally, the development of biomass energy projects in rural areas can create employment opportunities for local communities and promote economic growth in these regions. In conclusion, the prospects of biomass energy in Cambodia's market are undoubtedly promising, with the potential to provide a sustainable and reliable source of power for the country's growing economy. By addressing the challenges facing the sector and capitalizing on the abundant biomass resources available, Cambodia can become a regional leader in the development and utilization of biomass energy. This will not only contribute to the country's energy security and environmental sustainability but also promote rural development and create new economic opportunities for its people.

Myanmar – an agricultural country, covering 45% of the area with forest, production over 20 million tons of paddy annually, major biomass sources – the forest and agricultural sector, rice husk, rice straw, bagasse, corn cob and cassava stalk, rural residents (70%) dependent on solid biomass fuels, approximately 65% of the total energy consumption from biomass sources, total capacity potential from biomass and biogas at 6899 MW and 4741 MW.

Thailand has a total of 2,700 landfills in the country. There were several complicated conditions and regulations that were a barrier to developing a waste-to-energy sector in Thailand during 2012-15.

The ERC has since amended several laws and conditions to create more potential for waste-to-energy business. The new PDP allows the regulator to adopt business models and development conditions to license private investors. The ERC consider the business model and capacity in providing two types of licences: small power producer at a capacity between 10-99MW and very small power producer for less than 10MW. Power purchase agreements is for a period of 20-25 years and the state grid has plans to buy power from this renewable resource. Licence holders have to comply with a single rule: quick development during a stipulated time frame to avoid any delays and postponement. The MEA oversees waste-to-energy projects in Bangkok, Nonthaburi and Samut Prakan, while the PEA supervises the remaining 73 provinces.

The first phase of waste-to-energy, with combined capacity of 344MW, ran from 2016 to 2020. Community waste was used to produce 313.2MW of electricity while industrial waste was used to produce 30.8MW.

Part of the waste fuel was used to produce heat which was supplied to factories, especially for food processing and cloth dyeing. The heat volume stood at 135 kilotonnes of oil equivalent.

The second-phase development consists of 34 projects to be operated by small power producers, each with an electricity generation capacity of 10-50 megawatts, and very small power producers, each with less than 10MW in capacity. Total capital expenditure is estimated at 50 billion baht for the development of the projects, with a combined capacity of 282.98MW. Authorities' target is for 600MW of electricity to be produced under the second phase of the waste-to-energy scheme, with 200MW from industrial waste and 400MW from community waste. The ERC help local administrative bodies deal with waste in their areas through the waste-to-energy scheme. The Interior Ministry oversees local administrative bodies nationwide, supports the scheme under its cooperation with the Energy Ministry. The scheme gained approval. Authorities are encouraging investors to join the scheme by offering them feed-in tariffs ranging from 1.81-5.08 baht per kilowatt-hour over 20 years. The ERC expects waste-to-energy projects to start commercial operations between 2025 and 2026.

According to the Ministry of Interior's Department of Local Administration (DLA), 79 waste-to-energy projects are planned nationwide, which will have a combined power generation capacity up to 619 megawatts and be capable of incinerating up to 33,006 tonnes of waste per day. Of them, 22 projects are still at the consideration process, and 11 projects have been operating since 2019 as part of a waste-to-energy investment promotion scheme under the Quick Win Project. Meanwhile, nine new waste-to-energy projects and 12 new refuse-derived fuel (RDF) plants under the DLA's plan will be ready for operation within the next three years, after the national energy policy board approved an agreement to start buying power from the plants in 2025.

The Interior Ministry and the Ministry of Natural Resources and Environment has designated areas for waste-to-energy projects in 24 provinces: Ayutthaya, Buri Ram, Chiang Mai, Chon Buri, Khon Kaen, Krabi, Loei, Lop Buri, Maha Sarakham, Nakhon Phanom, Nakhon Ratchasima, Nakhon Sawan, Nonthaburi, Pathum Thani, Phatthalung, Phitsanulok, Phuket, Rayong, Samut Prakan, Songkhla, Surin, Ubon Ratchathani, Udon Thani and Yala.

Pinsak Suraswadi, director-general of the Pollution Control Department (PCD) under the Ministry of Natural Resources and Environment, said authorities are not just focused on incineration at waste-to-energy plants, but considering how the national action plan can manage municipal solid waste and plastic waste.

The Malaysia government announce the extension of the first phase of the National Energy Transition Roadmap (NETR), known as Phase 2, which will focus on biomass,waste-to-energy usage,carbon capture and storage (CCS), and hydrogen integration, among others.

The Ministry of Housing and Local Government (KPRT) has identified 18 locations for the development of solid Waste-to-Energy (WTE) plants throughout Malaysia as a new method of solid waste management to eradicate landfills.Minister Nga Kor Ming said the development of the plants will use the latest and advanced technology that has been proven successful in several European countries besides China and Japan.

The direction of the ministry in the future is that we are now working very hard to turn thrash-to-cash and also to turn rubbish-to-energy. This will be the direction of the government to ensure that not only are we environmentally friendly, the garbage that has already been thrown away can be turned into renewable energy,” the minister said.

There are some waste to energy projects are undergoing in The Kingdom of Cambodia, Myanmar,Lao PDR.

Based on the previous successful 21 times Solid Waste Events in the world.To explore msw and biomass industry ‘s future development strategy, exchange the asean countries and international latest and most environmental friendly msw management and biomass technology, share the successful experience of asean countries and international enterprises in msw management and biomass industry, hereby Asean Biomass Utilization Congress 2024 & Asean Solid Waste Management Congress 2024 will be scheduled on 27th -28th Nov in Carlton Hotel Bangkok Sukhumvit.We sincerely invite you taking the time to attend the Asean Biomass Utilization Congress 2024 & Asean Solid Waste Management Congress 2024, share with us your views and suggestions concerning the msw management and biomass industry. We look forward to provide a platform for the entire waste management and biomass supply chain, promote the policy complement, business cooperation, networking the technology as well, make a contribution for the highly efficient solid waste management and biomass industry.



8th Jun 2024