TECHNOLOGY COUNTRY REPORT 2022
MALAYSIA

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- The presentation contents are for informational purposes only.

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TECHNOLOGY COUNTRY REPORT

1. An Overview of Iron & Steel Industry In Malaysia

Company:	**Wenan Steel Sdn. Bhd.**
Total steel production:	Planned to have 10.0 mil mt per year
Product range and quantities covered:	• - Wire rod, bar, HRC, pipes, etc

Important plant or equipment start-up commissioning, or de-commissioning:	• Detail:
	  ○ Investment: RM 13.8 bil
	  ○ Land area: 700 acres (Phase 1)
	  ○ Capacity: 10.0 mil mt per year
	• Wenan Steel project at Samalaju Industrial Park in Bintulu is now at its site preparation stage. Expected to be ready by 2024.
	• The project started earthworks in March 2021 and projected completion on Apr 2022, and the construction of the factory will commence thereafter.

Source: Recoda (Regional Coridor Development Authority, Sarawak)

TECHNOLOGY COUNTRY REPORT

1. An Overview of Iron & Steel Industry In Malaysia

Company:	**Alliance Steel Sdn Bhd (ASSB)**
Total steel production:	3.5 mil mt per year
Product range and quantities covered:	Wire Rod, Bar, H-beam
Important plant or equipment start-up commissioning, or de-commissioning:	• Mar 2022, ASSB planned on second phase expansion project, a continuation of innovative exploration of bilateral economic relations between both China and Malaysia under the “Belt and Road” initiative. Detail: • Investment: RM 5.0 bil • Land area: 250 acres • Product: flat product • Capacity: 6.5 mil mt per year • Employment: 3000 jobs (80% Malaysian)

ASSB, Kuantan, Pahang

Source: New Straits Times

TECHNOLOGY COUNTRY REPORT

1. An Overview of Iron & Steel Industry In Malaysia

Company:	**Eastern Steel Sdn. Bhd.(ESSB)**
Total steel production:	0.7 mil mt per yr (2.7 mil mt of steel per yr by 2023)
Product range and quantities covered:	Slab, Billet, HRC (Export 70%, China 30%, Indonesia, Thailand, Taiwan: 40% combined)
Important plant or equipment start-up commissioning, or de-commissioning:	• Nov. 2021, ESSB announced to expand its production and venture into HRC business at Kemaman. Detail: • Investment: RM 3.0 bil • Facility: A new blast furnace & new HRC plant • Product: HRC • Capacity: 2.0 mil mt per yr

Source: Eastern Steel, The Edge Markets

TECHNOLOGY COUNTRY REPORT

1. An Overview of Iron & Steel Industry In Malaysia

Company:	**JXR Manufacturing Sdn. Bhd.**
Product range and quantities covered:	• Billets
Important plant or equipment start-up commissioning, or de-commissioning:	• Jan 2022, JXR Manufacturing to take over Perwaja Steel Kemaman, Terengganu and will start-up steel plant by 2024 to produce steel billets, following the Malaysia Government announcement of Kemaman Port expansion from 7 mil tonne of cargo per year to 33 mil tonne of cargo per year.

Expension of Kemaman Port

Source: Utusan Malaysia, Malaysia Gazette, Harian Metro

TECHNOLOGY COUNTRY REPORT

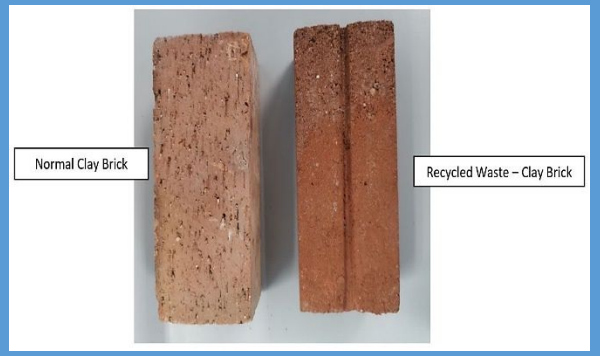
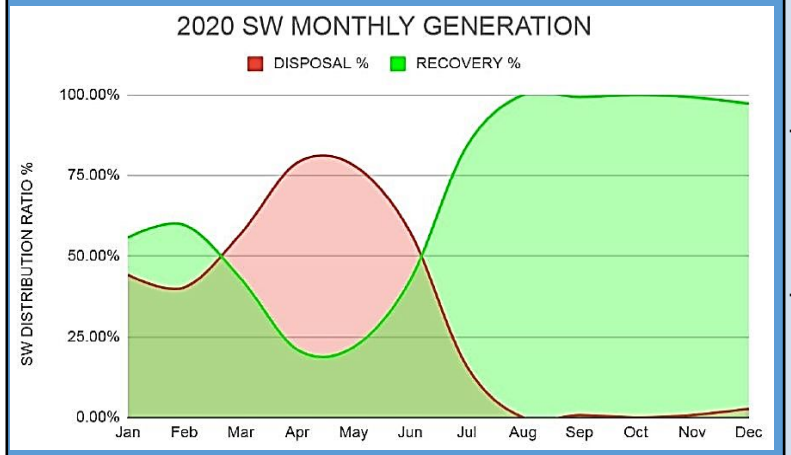
1. An Overview of Iron & Steel Industry In Malaysia

Company:	**E Steel Sdn Bhd**
Total steel production:	N/A
Product range and quantities covered:	• Steel bars and light sections such as angle bars, flat bars and U-channels • HBI
Important plant or equipment start-up commissioning, or de-commissioning:	• Jan 2022, Singapore's E Steel will buy Malaysian long steel fabricator Eden Flame for RM 135.88 million (US$32.51 million). • E Steel will take over Eden Flame from Amsteel Mills, which is a subsidiary of Malaysian conglomerate Lion Industries. • Eden Flame owns the long steel plant located in Pasir Gudang, Johor that includes a 100-tonne EAF, a ladle furnace, a six-strands continuous casting machine and 2 rolling mills. • Oct 2021, Amsteel Mills Sdn Bhd is selling Antara Steel Mills Sdn Bhd to Esteel Enterprise Pte Ltd for approximately US$165.63 million (about RM 697.74 million). • Antara Steel operates a Labuan-based hot briquetted iron (HBI) plant which produces HBI mainly for the export market. (Capacity 900,000 mt per year, HBI)

Source: The Star, The Edge Markets, Steel Orbit

TECHNOLOGY COUNTRY REPORT

2. An Overview of Technology in Iron & Steel Industry

Company:	**Bahru Stainless Sdn Bhd**
Research project: **From the Acid Pickling Sludge to Clay Brick**  Figure 1.0: Common Clay Brick versus Recycled Clay Brick  Figure 2.0: revolution of the total hazardous waste recovery and landfill rate	– GOLD AWARD recipient in the Sustainability category from The International Stainless Steel Forum (ISSF) on 25 May 2021. – Reuse the neutralized acid pickle sludge as sand replacement in the clay brick manufacturing process. Location of the project is based in Malaysia. – Bahru Stainless has engaged a local University and a waste recycler for the sludge recovery project. The recycled clay brick is a 100 % recycled product comprises of: • 70% of waste includes pickling sludge from the stainless steel industry, clay sludge from the ceramic industry, coal bottom ash from a power plant, • 30% balance is recycled cement. – The sludge-to-brick process does not use the conventional kiln operation, its 100 % mechanical process, no energy and chemical consumption. – This Sludge-to-Brick project fulfils the “Green” Innovation with zero waste generation achievable

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2. An Overview of Technology in Iron & Steel Industry

Company:	Bahru Stainless Sdn Bhd
Research project: **From the Acid Pickling Sludge to Clay Brick**	Project Outcome: – The annual KPI for the landfill reduction initiatives by Acerinox Group is set. – It is measured based on the percentage of sludge landfill ton/ Annealing Ton. – Average sludge generation is 10.5 kg/annealing ton, with the highest landfill ton/annealing ton of 1.29% in year 2017 (100% landfill) and decreased to 0.77% in 2020 (35% landfill). (Figure 3.0) – In term of cost savings, the sludge-to-brick recovery project manages to reduce 40% of waste management cost per ton of sludge.

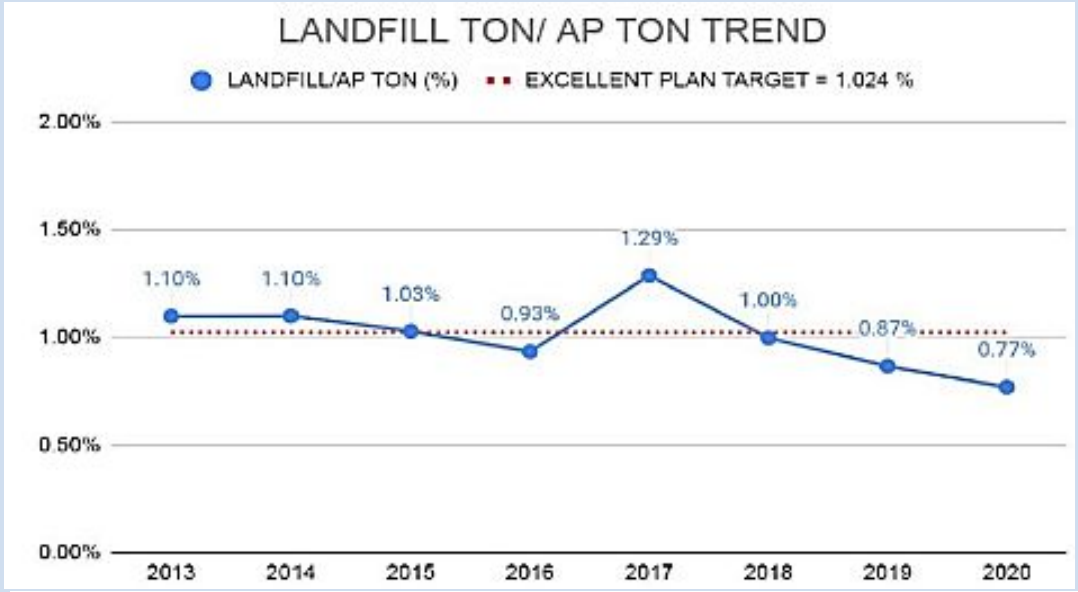

Figure 3.0: KPI for landfill reduction initiative and result

Source: Bahru Stainless, World Stainless (World Steel)

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2. An Overview of Technology in Iron & Steel Industry

Company:	**Bahru Stainless Sdn Bhd**

Research project: **From the Acid Pickling Sludge to Clay Brick**

Project Outcome:

Recycled Clay Brick Properties	Recycled Clay Brick Advantages
Shape: Uniform, free from warp-age	Environmental friendly
Surface Finish: Smooth	Support green building concept
Strength : 18-22 Mpa	Less usage of mortar and saving in manpower
Water Absorption: 5-10%	Dimension Accuracy
Sound Insulation: Better than red brick	Fire resistant and sound insulation
Efflorescence: Nil	Less penetration of water in brick work
Bonding with mortar: Good High compressive strength	High compressive strength

Estimated Economic Benefit to BAHRU STAINLESS		
For Every 100 ton of Sludge generated	Landfill cost	Recovery cost
	USD 13,888	USD 8,333
	40% Reduction in Waste Management Cost	

Source: Bahru Stainless, World Stainless (World Steel)

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2. An Overview of Technology in Iron & Steel Industry

Subject	Projects
Energy savings developments	**Company: Mycron Steel Bhd** **Subsidiary: Melewar Steel Tube Sdn Bhd** **Project 1: Zinc Pot Furnace** - Upgraded galvanizing plant furnace from a conventional design furnace, to a fuel-efficient furnace. - The innovated furnace design no longer uses a heat circulation fan, resulted in approximately RM100,000 savings per year in maintenance and downtime costs. **Project 2: New solar panel system** - MST's new solar panel system on its factories rooftops, had been successfully installed and had been operating since March 2021. - Under the nation's renewable Net Energy Metering (NEM) 2.0 Scheme, MST's utilization of solar power totaling 0.83 MWp translates to RM135,000 in electricity cost savings per annum. - Reduce the division's carbon footprint by approximately 432 metric tonnes of CO2 annually.
	Company: Ann Joo Steel Berhad **Upcoming project: Solar System Phase 2** - Installation of approx. 2,500kWp solar panel system - Existing solar system has 500 kWp solar panel on rolling mill's rooftop, expected to generate 650,000 kWh.

Source: Mycron Steel Annual Report 2021 and Ann Joo Steel Berhad annual report 2021

TECHNOLOGY COUNTRY REPORT

2. An Overview of Technology in Iron & Steel Industry

Subject	Projects
Important plant or equipment start-up commissioning, or de-commissioning:	**Company: Mycron Steel CRC Sdn Bhd** **Project: Acid Regeneration Plant, ARP** - MCRC's investment in the state-of-the-art pickling and acid recovery technology aims to improve the overall conversion cost, expand into new market segments and reduce environmental impact through a close loop acid-recycling system. - Between Oct 2019 to Jun 2021, The project was underway, and was delayed by its commissioning and installation by the technical expert from SMS Group, Austria, - ARP finally commissioned in July 2021 after an 18-month delay from its original schedule.

Source: Mycron steel Annual Report 2021

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3. Financing Scheme for Technology Investments

- **The Green Technology Financing Scheme 3.0 (GTFS 3.0)** - support Sustainable and Responsible Investment (SRI) as well as drive green and sustainable standards in Malaysia.

- Danajamin will administrate and manage this scheme which includes processing applications, undertaking credit evaluation, approval and rejection of applications, and post-disbursement monitoring for the entire tenure of guarantee.

- Danajamin – wholly owned by Bank Pembangunan Malaysia Berhad

Type of financing	Term loan financing facilities granted by lending Institution Bond / Sukuk issuance (Example: Malaysia Steel Works Sdn Bhd, MASTEEL – Total guarantee facility RM 130 million to invest in new steel melting technology)
Eligibility Criteria	Open to all Malaysian companies with green or sustainable and responsible investment (SRI) project financing that contributes towards Malaysia's sustainable development agenda
Financing Amount	From RM10M up to RM500M per group of company For < RM10M, to be viewed on a case to case basis
Financing Tenure	No cap on minimum/maximum financing tenure
Guarantee coverage	Up to 80% guarantee coverage or RM400M, whichever is lower Applicable for entire project financing cost
Interest subsidy	No interest subsidy
Application Method	Applicants or any participating financing institutions are to submit application to Danajamin Where applicable, Danajamin may require additional certification or impact analysis from independent parties

Source: https://www.danajamin.com/business/green-technology-financing-scheme/

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3. Financing Scheme for Technology Investments

Green projects	Social projects
Renewable energy	Affordable basic infrastructure
Energy efficiency	Access to essential services
Pollution prevention and control	Affordable housing
Environmentally sustainable management of living natural resources	Employment generation including the potential effect of SME financing microfinance
Land use	Food security
Terrestrial and aquatic biodiversity conservation	Socio-economic advancement and empowerment
Clean transportation	
Sustainable water and wastewater management	
Climate change adaptation	
Eco-efficient and/or circular economy adapted products, production	
Technologies and processes	
Green buildings which meet regional, national or internationally recognized standards or certifications	

- Types of eligible SRI Sukuk projects may include, but not limited to the following as stated in table.
- Additional details of SRI Sukuk Framework could be found in Malaysian Sustainable Finance Initiative (MSFI) websites (https://www.msfi.com.my)

Source: https://www.msfi.com.my/policies-sustainable-and-responsible-investment-sri-sukuk-framework/

TECHNOLOGY COUNTRY REPORT

4. Green Taxation

Green Investment Tax Allowance (GITA)

- 100% of qualifying capital expenditure incurred on green technology project, from the date of first qualifying capital expenditure incurred after application received by MIDA.

- The allowance can be offset against 70% of statutory income in the year of assessment.

- Unutilised allowances can be carried forward until they are fully absorbed.

- Applicable for companies that:
  1. Acquire qualifying green technology assets listed under MyHIJAU Directory for their own use/consumption; OR
  2. Undertake qualifying green technology projects for business or own consumption.

Green Income Tax Exemption (Green Technology Services)

- 70% on statutory income for qualifying green services where the period of incentive is for 3 years starting from assessment year of first invoice related to green technology services issued.

- Applicable for qualifying green technology service provider companies that are listed under the MyHIJAU Directory.

- MyHijau is a Malaysia's Green Recognition Scheme in which the MyHijau mark is issued by Malaysia Green Technology and Climate Change (MGTC).

Source: https://www.danajamin.com/business/green-technology-financing-scheme/

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4. Green Taxation

Green Income Tax Exemption (GITE)

•70% on statutory income for solar leasing activity for a period of up to 10 years of assessment based on capacity:

Capacity	Incentive period
>3MW until 10 MW*	5 years
>10MW until 30MW*	10 years

•Applicable for qualifying green technology service provider companies that are verified by Sustainable Energy Development Authority Malaysia (SEDA) and listed under the Registered Solar PV Investor (RPVI) Directory.

Source: https://www.danajamin.com/business/green-technology-financing-scheme/

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5. Current Issues and Potential Impacts to Technology in Iron & Steel Industry

Issues:

- Uncertain outlook for raw material and fuel costs.

- Significant impact could also be seen in the spike of the commodity price to record highs, as sanctions imposed on Russia severely disrupted the supply in the commodity markets.

- Crude oil prices are expected to hover at high level after Brent crude oil hitting USD98/barrel on 8 Nov 2022 as Russia's invasion of Ukraine escalated. Similarly, Australia coking coal price soared to a new high, surpassing USD600/mt in March 2022.

- Steel mill expected to register lower margins as a result of rising raw material and fuel costs, as well as elevated inflationary in general.

Potential Impact:

- Current challenging economic situation potentially creates strong urgency for self-development technology or import of innovative technology by Malaysia's Iron & Steel Industry to achieve better performance and cost saving.

REPORT END

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