



Taskforce for Climate-related Financial Disclosures (TCFD) Report 2021

KEJURUTERAAN ASASTERA BERHAD (KAB)



INTRODUCTION

At Kejuruteraan Asastera Berhad (KAB), we believe that our success in business must come along with being a sustainable and responsible company. We are committed to managing our key Sustainability or ESG matters with a special focus climate-related risks and opportunities.

KAB continues to fuel the funding of future energy related developments, greenfield projects and brownfield assets in Malaysia as well as in Asia, such as Thailand, Vietnam, Indonesia and India. And we hope that our Stakeholders, including investors and financial institutions, will join us in this journey towards greener and cleaner energy for the world.

In this inaugural TCFD Report for the year 2021, we are taking our first steps in putting together climate-related risks and opportunities that impact and influence our business. We hope that as we build our competencies along the way, we can continually contribute to greater positive impacts to the environment while striving for greater heights in our business.



DATO' LAI KENG ONN
MANAGING DIRECTOR

"Let's start from ourselves to building a Net Zero World, a Green World."

Our governance around climate-related risks and opportunities

Our Board of Directors has since 2019 increased its emphasis on Sustainability matters, with a special focus on Climate-related issues. From complying with the basic requirements of having a Sustainability statement incorporated in the company's Annual Report in 2019, we have taken a step forward to produce its inaugural standalone Sustainability Report in 2020 with more detailed focus on Environmental, Social and Governance (ESG) or Sustainability matters that relate to the non-financial performance of the company.

The Board has ultimate governance and oversight responsibilities across all of KAB's Sustainability risks, opportunities, strategies, policies and programmes, including climate action as one of our main driver. The Board has embedded its climate-related commitment into the company's mission, whereby the company would "continuously improve our engineering competences to new heights while reducing global carbon footprint by providing a cleaner and greener alternative which promotes a more efficient use of energy".

Our Board's oversight of climate-related risks and opportunities involve complying with the following code, standard and framework, among others, with continuous improvements carried out in line with the progress and growth of our business and organization

1. *Malaysian Code on Corporate Governance* – whereby the Board's role is to lead the company to address risks and opportunities in an integrated and strategic manner to support its long-term strategy and success including in the climate-related dimension.
2. *Global Reporting Initiative (GRI) Standards* – whereby the Board uses the standard to drive the company's Stakeholder engagements, to determine Sustainability topics that are material to our company including key environmental matters, to have oversight on the company's management approaches on various climate-related material topics, and to appropriately report the company's impacts and outcomes.
3. *Taskforce for Climate-related Financial Disclosures (TCFD) Recommendations* – whereby the Board relies on this framework to continually assess the company's climate-related risk and opportunities, report on how climate change is affecting and shall in the near-, mid-, and long-term future affect our business financially, and how we can collectively contribute to climate-related targets.
4. *GHG Protocol* – whereby the Board relies on GHG emissions data and information classified, collected and analysed with this methodology to guide its decision making processes.

Our governance around climate-related risks and opportunities

In 2021, the Board has decided to establish our group-wide Sustainability Team. Our Sustainability Team (ST) is the officially designated team within the Company that is delegated to assist the Board and the Board's Sustainability Committee in managing Sustainability matters relating to the Company.

The Sustainability Team is chaired by the General Manager of Corporate and Human Resources, which is in the management of the company. Along with the chairperson, our Sustainability Team comprises of management positions from finance and accounts, strategic planning and performance, corporate affairs, quality management and safety, energy, engineering, and operational and administration divisions.

The Sustainability Team plays the management's role in assessing and managing climate-related risks and opportunities in their wider scope of Sustainability responsibilities:

1. Realising KAB's Sustainability and climate-related strategy and direction as resolved by the Board;
2. Managing and achieving Sustainability Performance Targets (SPTs) that are outlined by the Board;
3. Initiating, coordinating and developing climate-related policies, plans, actions, budgets and resources while taking remedial measures when required;
4. Managing climate-related metrics, data and information for the Board's decision-making process;
5. Managing risks and opportunities in terms of KAB's material Sustainability and climate-related issues;
6. Ensuring that all business plans and business operations are aligned with KAB's Sustainability and climate-related policies, practices, and targets;
7. Keeping the Company updated and aligned with latest developments in Technology, Standards and Legislations that relate to Sustainability;
8. Supporting and providing adequate resources to KAB's subsidiaries and business units so they can perform established Sustainability and climate-related policies, processes and practices;
9. Preparing and publishing the company's Sustainability and climate-related reports;
10. Exploring non-conventional means of Sustainability and climate-related financing, capital-raising, and investments.

Impacts of climate-related risks and opportunities on our businesses, strategy, and financial planning

TRANSITION RISKS

01 POLICY AND LEGAL



Time horizon:
Medium

Malaysia is committed to its target of becoming a carbon-neutral nation by as early as 2050. The government is prepared to introduce economic instruments such as carbon pricing and carbon tax to support the country's effort to achieve this target. By the end of 2022, details of other measures for carbon reduction will be announced once the low-carbon long-term development strategy study is finalised. The Ministry of Environment and Water (KASA) has also announced that the long awaited Climate Change Act will be drafted soon and it is also developing a domestic emissions trading scheme (DETS) to execute carbon credit transactions at the domestic level.

Impacts of climate-related risks and opportunities on our businesses, strategy, and financial planning

TRANSITION RISKS

02 TECHNOLOGY



Time horizon:
Short

As the world progresses towards the fourth industry revolution, better known as IR4.0, more and more climate- or eco-driven technology has surfaced. However, these new technologies come at a cost. There are costs to for climate-related mitigation, adaptation and transition, whereby some of the latest technology may not be relatively cost efficient at the present time because it has not achieved mass adoption in the market yet. Additionally, research and development expenditures in new technologies would also pose as a cost to the company. All in all, capital investments in the acquisition and development of new technology, and the costs involved in deploying practices and processes in line with these new technologies are considered as a one of our transition risks due to volatility in the specific technology's adoption.

Impacts of climate-related risks and opportunities on our businesses, strategy, and financial planning

TRANSITION RISKS

03 Market



Time horizon:
Short

Commercial customers trends and behavior are changing because of better climate-related understanding. Market movements are also influenced by regulatory developments. Our customers are commercial (biz-to-biz) customers, and hence the market will usually tilt towards policy and legal carrots and sticks. Hence, market movements in terms of response to climate-related concerns, expectations and demands would affect the trajectory of our business. Additionally, as a player in the construction and engineering industry, increased costs due to changing input prices (such as raw material and logistics costs) and output requirements (such as waste management) as a result of climate-related impacts will also affect our financial performance.

Impacts of climate-related risks and opportunities on our businesses, strategy, and financial planning

TRANSITION RISKS

04 Reputation



Time horizon:
Medium

Reputation risk are related to how our Stakeholders perceive us, when being influenced by various climate-related concerns. Being a construction and engineering player, we are very conscious of matters such as negative impacts relating to waste, pollution etc in our operations. We also understand that we have to live up to the expectations of contributing to positive impacts to the environment. Failing which we would suffer from diminished credibility, resulting in a loss of large scale customers and also reduction in financing or investment availability.

Impacts of climate-related risks and opportunities on our businesses, strategy, and financial planning

PHYSICAL RISKS

01 Acute



Time horizon:
Short

Floods in Malaysia are one of the most regular natural disasters in Malaysia, occurring almost annually especially during the monsoon season. Locations of floods are traditionally at the same areas such as the east coast of Malaysia, but torrential rains have become more intense all across the country, causing floods in more and more areas that have never been flooded before. People including those in our business value chain are or are potentially affected or even displaced, roads and transportation routes are closed, and schedules are disrupted due to safety issues caused by torrential rains and floods. In our other areas of operations such as Thailand, torrential rains and flooding are also estimate to be more extreme and frequent. When climate events are met with the COVID-19 pandemic, the compounded risk was the additional challenge of preparing for and responding to disasters during the pandemic, such as the constraints of physical distancing during evacuations and response operations.

Impacts of climate-related risks and opportunities on our businesses, strategy, and financial planning

PHYSICAL RISKS

02 Chronic



Time horizon:
Long

Unstable precipitation patterns and extreme variability in weather patterns create negative impacts on the workforce and on the supply chain, thus affecting the achievability of planned revenues and also cost planning and control. Rising mean temperatures also mean using much more energy for cooling, which will increase overall energy costs.

Impacts of climate-related risks and opportunities on our businesses, strategy, and financial planning

OPPORTUNITIES

01 Resource Efficiency



Time horizon:
Short

The use of more efficient operational processes such as the design of systems that are deployed, more efficient project planning, better waste management would enable us to improve climate related impacts while reducing operating costs. Improving operational efficiency as a construction and engineering player also increases project capacity, resulting in increased revenues.

Impacts of climate-related risks and opportunities on our businesses, strategy, and financial planning

OPPORTUNITIES

02 Energy Source



Time horizon:
Long

Being a provider of green and renewable energy solutions to the market, the use of these green and renewable energy sources for our own consumption also enables us to more effectively lower the cost of energy consumption (via a good energy mix), reduce or decouple exposure to fossil fuel price fluctuations, and reduced GHG emissions for avoidance of future carbon tax or cost of carbon. It is also beneficial to the company's brand equity as a Sustainability-driven player in the construction and engineering industry, resulting in more visibility to customers who are moving in the direction of renewable and clean energy sources.

Impacts of climate-related risks and opportunities on our businesses, strategy, and financial planning

OPPORTUNITIES

03 Products/Services



Time horizon:
Long

The company is able to grow and diversify from the traditional construction and engineering field focusing on the mechanical and electrical segments, to a more high-tech position in the clean and renewable energy solutions business ecosystem, with elements of IR4.0 in development as well.

Impacts of climate-related risks and opportunities on our businesses, strategy, and financial planning

OPPORTUNITIES

04 Markets



Time horizon:
Medium

Instead of relying on old markets and old customer base such as project main contractors for regular M&E tenders and projects, the company is able to capture the larger market base which includes customers in the manufacturing sector or building owners and operators that are striving to have a greener energy mix in their operations.

Impacts of climate-related risks and opportunities on our businesses, strategy, and financial planning

OPPORTUNITIES

05 Resilience



Time horizon:
Medium

The company would increase its position in the market by participating in more large scale renewable energy projects and programmes driven by national governments, international organizations and also intergovernmental initiatives. With climate-related plans in place, the company would be able to better manage the supply chain and increase its ability to operate in various conditions.

Impacts of climate-related risks and opportunities on our businesses, strategy, and financial planning

In view of the varying climate related risks and opportunities, the Board, and the Sustainability Team has continually strategised to mitigate and adapt to the various risks that have been identified, and also to materialize opportunities in the climate-related business value chain.



1. We have progressed towards adopting and developing new technologies for cleaner and greener energy usage for our clients such as chiller optimization, co-generation, waste-heat generation, and solar PV systems.
2. We have committed to a group wide Environmental Policy that covers our efforts to lower carbon-, energy-, and water-intensive operations.
3. All new capital planning, major acquisitions, joint-ventures, technological investments, technical innovations, and new businesses segments are done in view of the identified climate-related risks and opportunities.
4. All of our employees will be trained, educated or informed continuously about climate-related risks and opportunities so that competencies and performance are driven to address the various operational issues in this area.

KAB is aiming to undertake detailed scenario analyses in the future to better quantify the possible financial impacts of these risks and opportunities and to take more consideration of climate-related scenarios including a 2°C or lower scenario, whereby the scenario analyses will also improve future TCFD disclosures.

How we identify, assess, and manage climate-related risks

KAB has established and developed an Enterprise Risk Management (“ERM”) framework, and in particular has adopted the framework by the Committee of Sponsoring Organization of the Treadway Commission. The approach applied annually includes, inter alia, risk identification, risk assessment, risk definition, and risk documentation.

Key management staff are delegated with the responsibility to manage risks of their respective areas of responsibilities. Key risks and mitigating controls are then deliberated in periodic risk management meetings. Risks identified are prioritised in terms of likelihood of occurrence and its impact on the achievement of our business objectives. Significant risks affecting KAB’s strategic and business plans are then escalated to the Executive Risk Management Committee (ERMC) at their scheduled meetings. The Risk Management Committee of the Board has ultimate oversight of this process.

On the other hand, we base our Sustainability management and reporting on the most widely used Sustainability standards, namely the Global Reporting Initiative (GRI) Standards. Stakeholder Engagement and Materiality Analysis is used to identify and prioritise our material Sustainability matters. Climate-related (environmental) topics that are material to us in the Risk Universe of KAB will be integrated into our overall Risk Register.

Overall Risk Parameters of the company are presented here:

1. Insignificant – Financial impact <RM100,000
2. Minor – Financial impact >RM100,001 to RM500,000
3. Moderate – Financial impact >RM500,001 to RM1,000,000
4. Major – Financial impact >RM1,000,001 to RM5,000,000
5. Catastrophic – >RM5,000,000

Measuring every step towards our goals

As an electrical engineering solutions provider, we manage climate related risks and opportunities, especially with regards to energy and emissions, both internally and externally via our products and services. We do our best to minimise negative impacts and increase positive impacts by both having internal initiatives and also providing the market with better and more efficient energy solutions such as renewable energy with our business relationships (such as vendors and customers) in the value chain.



We have continued to grow in the direction of renewal energy, i.e. our sustainable energy solutions portfolio, as we continue to excel in our traditional mechanical and electrical (M&E) engineering solutions. In our power generation portfolio, we have several key areas of focus, namely chiller optimization, co-generation, waste heat generation and solar photovoltaic systems

Measuring every step towards our goals

1. Chiller Optimization



Chiller Optimisation is a process that optimises chiller plant and HVAC system through a data driven approach. In this technology, the system connects existing mechanical equipment such as chiller plant, ventilators, AHU, FCU and light control. The system collects data from a network of on-site sensors and external data points such as the weather. Thereafter the system will perform calculations based on the data gathered by the sensors and then derive heat/cooling load.

There are currently 5 projects in operations throughout Malaysia and the total of energy saved for these 5 projects in 2021 comes to a total of 1,768,570 kWh. This means that there is an avoidance of 1,034 tCO₂e emissions in 2021 from the reduction of energy consumption in the chiller operations of the buildings in these projects.

Measuring every step towards our goals

2. Co-generation



Co-generation means simultaneously producing electricity and steam from a single fuel source. Co-generation is relevant for all facility that requires energy, hot water, cold water or steam.

In conventional generation systems, coal is used to move the turbines that causes the generator to generate electricity, while natural gas is used as fuel for the heating unit that produces heat. Co-generation system uses only natural gas to feed into the co-generation unit to directly produce electricity while at the same time fueling the heating unit for heat energy.

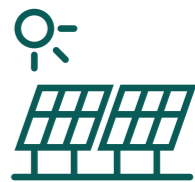
Measuring every step towards our goals

3. Waste heat recovery



Waste heat recovery or more specifically organic Rankine cycle (ORC) power generation uses a carbon based working fluid with a low boiling point, to capture low-grade heat and convert it into electricity. This technology is similar to traditional steam turbine but the crucial difference is that rather than using water vapour, the system vaporises a high-molecule-mass organic fluid, for excellent electric performance.

4. Solar Photovoltaic System

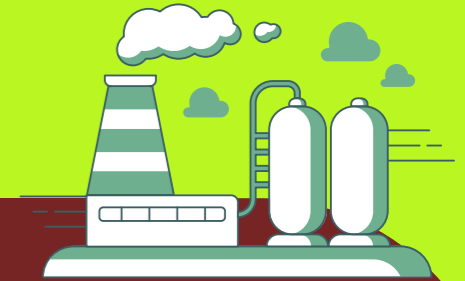


Solar PV systems harness the power of the sun to generate electricity.

As of 2021, we have a total of 12 awarded projects with a total capacity of 16,176kWp output. We will continue to pursue aggressively solar projects that has been proven to be one of the cleanest energy generation technologies to-date.

Measuring every step towards our goals

The Board along with the Management continues to develop and evaluate mechanisms, measures and strategies in terms of the internal performance of energy and emissions reduction towards our net zero goals, while at the same time aggressively pursue opportunities to bring clean energy and emissions-reducing solutions to the market in order to achieve the targets set out in the Paris Climate Agreement to limit global warming to well below 2°C, preferably to below 1.5°C, compared to pre-industrial levels.



We base all our management and calculation of emissions data based on GHG Protocol Corporate Accounting and Reporting Standard (Revised Edition). The consolidation approach for emissions of our boundaries are where we have full or significant equity share of the entity. For the purposes of our calculations, the global warming potential (GWP) values, when necessary, shall be based on the IPCC Fifth Assessment Report 2014 (AR5), while the emission factor for energy, i.e. 0.585 tCO₂/MWh, is according to Malaysia Green Technology Corporation's CDM Electricity Baseline for Malaysia (2017) – Peninsular Grid.

Measuring every step towards our goals

Scope 1 Emissions

2021 Total: 1,756 tCO₂e

For the purposes of our record, the average RON95 pricing per litre in 2021 is approximately MYR2.05, whereby 25,060 litres of petrol was purchased for the use of Company owned vehicles. Hence, based on Carbon Trust's Fuel Conversion 2020, the total of 54.3 tCO₂e emissions was derived.

Owned Transport – Petrol	2019	2020	2021
Emissions (tCO ₂ e)	32.6	30.1	54.3

Since September 2021, we have an addition of emissions from co-generation as a result from the combustion of natural gas. The total of natural gas that was consumed was 902,907.42 sm³. The emission factor for stationary combustion of natural gas is according to the WRI GHG Emission Factors Compilation, 2017.

Stationary Combustion – Natural Gas	2021
Emissions (tCO ₂ e)	1,702

Measuring every step towards our goals

Scope 2 Emissions

2021 Total: 59.3 tCO₂e

For the reporting period from January to December 2021, our purchased electricity was 101,357 kWh.

Energy indirect – Purchased Electricity	2019	2020	2021
Emissions (tCO ₂ e)	55.8	49.0	59.3

There was a significant drop in electricity purchase and consumption as a result of the COVID-19 pandemic which involved nationwide lockdowns, halts in business operations, restrictions in travelling to work and also limitations to total number of people being allowed to be present at the workplace. However, as the government begins to issue policy relaxations and also provide vaccinations to the population, we were able to accelerate our progress to make up on our lost opportunities during the pandemic crisis. Hence, 2021 has seen growth in our energy consumption and our Scope 2 emissions, in line with our growth in activities. For reasons stated above, 2021 as the beginning of the “new normal” shall be our base year moving forward.

Measuring every step towards our goals

Scope 3 Emissions

2021 Total: 20.65 tCO₂e

For business travel (air travel) calculations, 2021 shall be the base year moving forward. Fuel consumption per flight, and therefore, emissions per flight shall henceforth be based on Carbon Independent's calculation on aviation, whereby Carbon Independent values of 250 kgCO₂e per hour is within the range of other published values.

Category 6: Business travel – air travel	2019	2020	2021
Emissions (tCO ₂ e)	4.4	1.2	1.0

Significant Scope 3 emissions will also come from our employee commuting (Category Seven (7): Employee Commuting), as the economy recovers and operations adapt to the new normal. 2021 shall be the base year moving forward. The average data method in accordance to GHG Protocol is used as the base for calculations, with parameters including two hundred sixty-one (261) working days (average five (5) working days a week) in Malaysia in 2021 and assumption that employees use private passenger cars, and an average of twenty (20) kilometres round-trip per day for commuting to work.

Category 7: Employee commuting for 216 no. of Employees	2021
Emissions (tCO ₂ e) – Passenger Cars	19.65



Please refer to our **Sustainability Report 2021** for more information of our overall Economic, Environmental and Social (EES) disclosures

For enquiries, please contact us:
kabsustainable@asastera.com