Sarawak Field Report

Powering Progress: Sarawak's Multi-Sector Growth Blueprint

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We recently visited Sarawak and met with various state-related entities and companies, leaving us more optimistic about its long-term prospects. Concerns over the Petronas-PETROS uncertainty seem overplayed, as both parties are likely to reach a middle ground on the new gas agreement. PETROS is also investing in several production sharing contracts (PSCs), signalling potential support for upstream capex in Sarawak. Sarawak's green energy initiatives are progressing well, particularly with the Kuching ART project. From an ESG standpoint, the state is advancing with floating solar projects, carbon trading legislation, and carbon sequestration efforts. Petronas and Sarawak also have plans to position Kasawari's carbon capture and storage (CCS) project as a regional carbon storage hub. The property market, especially in Kuching, is thriving with multiple mixed developments, and Sarawak's shipbuilding sector is poised for growth amid global yard congestion. Given the explosive growth potential of the state, representation of listed firms for Sarawak possesses ample room for catching up, thus could result in scarcity premium in certain listed counters.

All in, we have identified a few plays to get exposure to the Sarawak incoming boom;

- **Oil & gas state dominance – DAYANG (OP; TP: RM3.80)**
- **Capex up-cycles from green energy economy and CCS – KKB (Not Rated), IJM (MP; TP: RM3.00), IBRACO (NOT RATED), BIPORT (MP; TP: RM6.65), MMHE (NOT RATED)**
- **Property plays with Kuching focus – IBRACO**
- **Shipbuilding boom – SYGROUP (NOT RATED)**

We recently met up with Sarawak state-related entities and firms to form a view on the state's recent developments and future projects. There were seven key themes from the visit: -

1) **Sarawak's Oil & Gas's Future Has Collaboration In Mind**: Sarawak will assume the role of gas aggregator from Petronas. However, at the operational level, the state intends to collaborate with Petronas in developing its oil and gas assets. For O&G names in Sarawak, we prefer **DAYANG**.
2) **No Stopping the Green Energy Economy Despite Today's Costs**: The hydrogen-powered ART system in Kuching is progressing well, though scalability of hydrogen production is still being watched. Some of the players in this transportation space include **IBRACO**, and also Peninsula names like **IJM**.
3) **Kasawari CCS Project Progressing Well**: The Kasawari carbon capture and storage (CCS) project is progressing well, with discussions about importing CO2 from Japan to maximise returns on the state's investments in the CCUS initiative. Players that have and could be involved in this space include **MMHE, KKB.**
4) **Property Market Boom in Some Areas**: The property market in Sarawak appears better performing in growth versus the national average, although more so in Miri and Bintulu than Kuching which is seeing pockets of strong growth. Property players in Sarawak include **IBRACO** and **NAIM** (both NOT RATED).
5) **Shipbuilding Witnessing Early Signs of Potential Upcycle**. We met **SYGROUP (NOT RATED)** and gathered that the Sarawak shipbuilding yards might get a revival in the coming years due to the filling up of global shipbuilding capacities caused by high newbuild orders (for LNG, FPSO and shipping fleet)
6) **Ports & Logistics Expansion Plans**: Bintulu Port (**BIPORT**) plans to streamline its operations and expects to renew its concession in 2026 and thereafter consolidate tariff management of both Bintulu port and Samalaju port under one entity. Also, the development of a supply base is under consideration to support oil and gas activities, as most discoveries are situated nearby. Sarawak is evaluating the development of a second airport near Kuching to accommodate future traffic growth, which aligns with its proposed takeover of MASwings.
7) **Major Highway Infrastructure Projects Still in Deliberation**: The Pan Borneo Highway is nearing full completion, while the Trans-Borneo Railway project remains in the feasibility study phase. Usual suspects in terms of leverage to materials include **CMSB**.

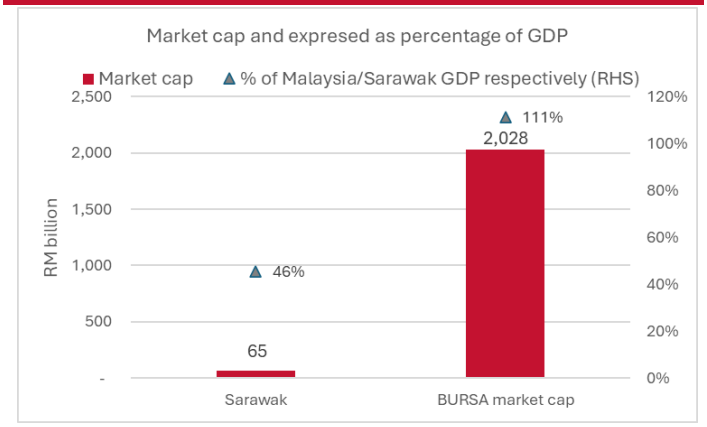
Gaining confidence around its high GDP ambition via our ground checks. The seven takeaways above highlight that the economic rollout momentum is good, especially in the green/hydrogen economy. Sarawak has ambition to double its economy by 2030 to RM282b, per its Post-Covid-19 Development Strategy (PCDS). A back of the envelope calculation shows an impressive growth of 8% annually is laid out. Investors thus are constantly looking for ways to capture the growth potential in Sarawak. We are encouraged to see major catalytic projects that sum up to no less than RM80 bn (see exhibit 1). Some projects are in nascent stages, such as the Trans Borneo rail-route which is undergoing feasibility study that begun in August. We are also seeing strides in digital, including data centres. Recent news emerged of a tier-4 data centre (under Aizo Group Berhad via MOU), following news earlier of the construction of a 200MW data centre under a Sarawak-Singapore consortium.

Exhibit 1 – List of Known Projects

Item	RM bn
Pan Borneo Highway Phase 2	4.6
Expansion of the Samalaju Industrial Park	Not disclosed
Bintulu port expansion	2*
Kuching International Airport expansion	Not disclosed
Plans to build a deep sea port in Kuching	Not disclosed
Phase 2 and 3 of ART	Not disclosed
Limbang-Lawas northern coastal road by 1Q25, part RM11 bn coastal road and second trunk road	6.1
Transborneo railway (feasibility study stage)	70.0
PETROS investment into gas hubs over 3 years	4.0
Subtotal	84.7

*Source: Bloomberg, Kenanga Research *Refers to planned fund raising for expansion of Bintulu Port*

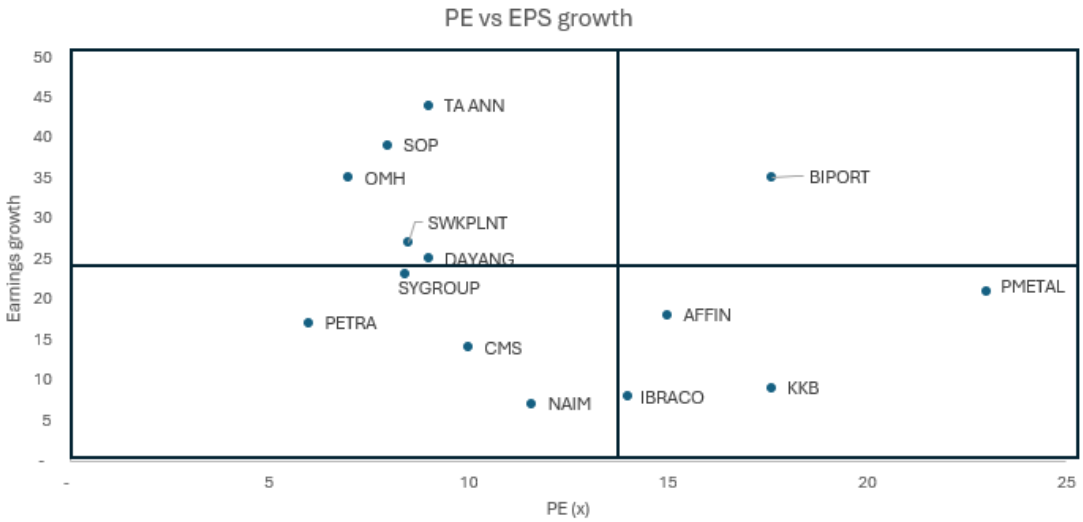
Exhibit 2 – Market Capitalization vs. GDP



Source: Bloomberg, Kenanga Research. Note: BURSA market cap is based on 2Q24 by BURSA.

Representation of listed firms has catch-up room, and thus some stocks may command premium. Overall, we estimate that Sarawak-listed companies have a combined market capitalisation of RM65b, if we include **AFFIN** whereby the state would be the majority owner of 31%, after the recent September inking of sale and purchase agreement. This market capitalisation would be c.46% of the GDP of Sarawak. There is much room to catch up if we were to use as a rough gauge the entire BURSA Malaysia market cap of RM2.0t (June 2024), which measures at 111% of Malaysia's GDP. While there have been new listings, they are not large – for example the recently listed auto parts maker **KHPT**, and Sarawak Tower firm **Ten Reach** that recently filed for IPO. Based on our count as well, only about 10 stocks have daily traded liquidity exceeding RM1m (90-day average). Thus, we are not surprised if some Sarawak stocks could possibly trade at a premium considering the macro growth ambitions above.

Exhibit 3 – PER vs. Earnings Growth (%, FY24 versus FY23) of Stocks



Source: Kenanga Research. Note: included firms above RM500 mn in market capitalisation for sake of comparability. We have used Bloomberg figures Note: due to lack of coverage, we used trailing PE and FY23 earnings growth for NAIM; 1H24 earnings would be multiple fold due to low ba FY23 earnings growth for Petra Energy. We have not inlcuded HARBOUR (7x trailing PE) above given negative earnings growth.

Examining closer the risk-reward. In a simplistic way to compare firms, we juxtapose the firms (with at least RM500m market capitalisation) by earnings growth and PER multiple in exhibit 3. The upper left quadrant of higher earnings growth and lower PER is more desirable, all things equal. We believe potentially the oil and gas sector provides among the best risk-reward profile as explained further inside, and we highlight here **DAYANG** and **SYGROUP.** An area that is also a focus for now is CCS and we highlight **KKB**, which may command premium for such potential and order book related to O&G. **IBRACO** offers a good mix as a proxy to both property price improvement in the Kuching market and infrastructure play. Other Sarawak firms more exposed to global demand include **PMETAL** and **OMH**, and we see more upside in the latter. While **BIPORT** has good earnings potential, our Market Perform view means we will look for better entry point. **AFFIN** which has surged 43% YTD (more below) offers longer term potential given its wide representation of the economy, though we likewise look for better entry point.

Peninsula proxies are available although contribution small. While contribution is not significant, companies from the peninsula looking for opportunities in Sarawak itself, which includes the likes of **IJM** involved in the ART, and also **YTL** that earlier in 2023 had inked a memorandum of understanding to produce cement and cementitious materials in Sarawak. Meanwhile, on the hospitality front, we are also saw this year IHH constructing a tertiary hospital in central Kuching, while healthcare arm of **SUNWAY** had set up two centres in Sarawak much earlier in 2022. Other names that we may be watching for on infrastructure include **MUHIBBAH** (non-rated), which have had developed port Samalaju Port.

Sarawak more focused on returns is a long-term positive. The state mentioned that government will not set aside capital outlays for government-linked companies (GLC) (link), starting with the Sarawak Economic Development Corporation (SEDC) and Bintulu Development Authority by 2027, but rather emphasizing investment into businesses with returns, and should build quality companies over time. This in turn could improve the pipeline of firms coming to market, or create the environment nudging GLCs to partner with listed firms; for example, in February we saw a SEDC-owned methanol plant entering into preliminary agreement with **PCHEM** to study setting up world scale blue ammonia plant.

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AFFIN (UP; TP: RM2.20) is poised to benefit from the wider economic prospects arising from the Sarawak State Government soon emerging as a majority stakeholder (of c.30% from 4.8%). Through this relationship, it is likely to increase its 2QFY24 Sarawak loans book of RM3.06b (4.4% of total loans, 3% of state market share of RM98.6b) from more financing opportunities and facilitation of state-run projects going forward. Additionally, an expanding branch network (targeted 14 branches from 7 as of Oct 2024) across the major townships should enable a stronger penetration into the consumer retail and SME markets there, spurring both fund-based and fee-based income.

In the more immediate term, we opine that AFFIN will benefit from the injection of state deposits to provide cheaper funds for loan disbursement. From our own model estimates, every RM1b in fresh CASA injection to its overall deposits book of RM71b could translate to lower cost of funds by 4 bps, translating to a ROE improvement of 7 bps (2QFY24: 4.1%).

At present, we believe investors are pricing ahead the Sarawak boon for AFFIN as recent share price ranges equate to a forward PBV of 0.6x (derived from a Gordon Growth ROE assumption of 7.5%). That said, we remain cautious on the longer-term earnings trajectory for AFFIN as the net benefit from the Sarawak State Government hinges on clarity regarding: (i) how much additional financing and fee-based income will be derived from the state; (ii) how competitive interest rates will be with regards to the state's exposure; and (iii) how much economic benefit the new branches network could generate. For now, our applied 6.0% ROE (which is above our expected FY25F ROE of 5.2%) gives some benefit should its synergies materialise sooner-than-expected and as we await to assess more initiatives and execution.

(1) Sarawak's Oil & Gas future has collaboration in mind

As reflected in share prices in the KLENG sector that has slipped 15% from early August, oil and gas listed firms have recently encountered higher uncertainty over outlook. This is on some overhang legal interpretation over rights on hydrocarbon resources. Nevertheless, we allayed some concerns after our visit as we believe that the upstream capex in Sarawak will still be ramping up.

PETROS had already begun its investment in Sarawak upstream. PETROS has acquired equity in various strategic producing assets and exploration acreages in the state. These include several production-sharing contracts (PSCs) for offshore fields such as the Kumang Cluster, SK407, BDO EOR and SK307. Additionally, PETROS holds exploration PSCs for offshore sites like SK427, SK439/SK440, SK437, SK325, SK328, SK418, DW 2A, DW 3B and DW 4E. It also has PSCs for Discovered Resource Opportunities offshore, including the Baram Junior Cluster and A Cluster. It is also developing four gas hubs in Kuching, Miri, Samalaju and Bintulu as part of the Sarawak Gas Roadmap. These hubs will centralise gas distribution, enhance access to affordable gas and create industrial investment opportunities. Hence, we believe that more CAPEX will arise from PETROS side in Sarawak upstream in the years to come.

PETROS, state owned oil and gas company, is potentially taking an increasingly more proactive role in the investments while its capital base is being built. At this juncture, the role of PETROS being the gas aggregator is confirmed, with the details of the arrangement yet to be announced. The state expects an outcome by end of 2024, which will remove some overhang over project and roll-out decisions, as reported by the news. The crux of the matter is the difference of opinion which pits the PDA 1974, as relied upon by the federal government, against the OMO58 and rights under MA63, which is the view by Sarawak. This has created a grey area. See Exhibit 1 for more background on the PDA 1974, (OMO 1958) and MA63.

Emerging middle ground. Even so, Kenanga's view from a oil and gas sector perspective is that there is an emerging middle ground, as we sense willingness to collaborate from the state's point of view. We believe this is because the state will still require Petronas' expertise in developing its natural resources. In our view, a complete separation of Petronas from Sarawak's oil and gas development is unrealistic in the near to medium term. To be sustainable, PETROS will need to collaborate with Petronas at the operational level. As such, we do not foresee Petronas significantly reducing its upstream capex in Sarawak, at least over the next two years as the majority of oil & gas resources in Malaysia are still situated at offshore Sarawak. In our view, we believe that the potential impact from PETROS taking over as the gas aggregator in Sarawak will amount to RM5-10b impact assuming that gas aggregation margins do not exceed 10%.

Back of the envelop calculations. Based on 2QCY24 Petronas financial results, gas revenue amounts to RM50.6b and this will fetch a total annual topline of RM200b if annualised. With Sarawak contributing c. 40% of Petronas gas production and value, the affected gas revenue could be at RM80b and if we assume a gas aggregation margin of 10%, the potential impact to Petronas PAT could be at the ballpark of RM8b. We believe that PETROS despite being the gas aggregator, will still have to pay fees to utilise the LNG liquefaction and export terminal facilities (owned and capex was spent by Petronas): hence, we do not expect gas aggregating margins to be higher than 10%. As an aside, our economics team believe that the dividends will be held at RM32b in both 2024 and 2025.

Potential beneficiary of increasing PETROS role in Sarawak oil & gas. We highlight **DAYANG** as a key potential beneficiary of PETROS' increasing role in oil and gas asset management. As a Sarawak-based company with a long track record in topside maintenance and hook-up & commissioning (HUC) services in the region, DAYANG is well-positioned to capitalise on the growing dominance of PETROS in managing Sarawak's energy assets. For mid-sized EPCC offshore jobs, **KKB (Not Rated)** could be a major beneficiary as they are one of the major yards in Sarawak with offshore fabrication capacity and track record and the group could bid for well-head platform jobs if the discoveries near Bintulu waters were sanctioned for field development. **VELESTO (OP; TP: RM0.30)** have been the most battered down (38% down from the peak) during recent sell down in the sector due to concerns on drilling contract renewals in 2025; hence, when the overhang is lifted, we believe this stock will likely to have the largest rerating quantum within our coverage.

Exhibit 4: Timeline of Events on Sarawak Oil and Gas History

Year	Event	Remarks
1963	Malaysia Agreement 1963	Grants Sarawak special rights, including autonomy over natural resources.
1974	Petroleum Development Act (PDA)	Centralizes control of oil and gas under Petronas, with the federal government receiving ownership of petroleum resources. Sarawak's resource control is largely transferred to Petronas, in exchange for a 5% royalty.
2012	Territorial Sea Act	Reduces Sarawak's territorial waters to three nautical miles, further limiting the state's control over its offshore oil and gas resources.
2017	Establishment of PETROS	A state-owned oil and gas company to exert more control over its petroleum resources.
2018	Reassertion of Oil Mining Ordinance (OMO)	Sarawak revives and enforces its Oil Mining Ordinance (OMO) 1958, asserting that this law, which predates the PDA, should give the state the right to regulate its oil and gas resources. This move challenges Petronas' exclusive control
2019	State Salex Tax on Petroleum	Sarawak imposes a 5% State Sales Tax (SST) on petroleum products, marking a significant move to reclaim revenue from its natural resources.
2020	Commercial Settlement with Petronas	In December 2020, Sarawak and Petronas reach a commercial settlement where Petronas agrees to pay the SST and gives Sarawak greater involvement in oil and gas operations through PETROS.
2024	Definitive Gas Agreements Pending	Sarawak continues negotiations with Petronas on a definitive agreement regarding full control over gas sales and distribution. The expected agreement will finalize PETROS' takeover as the primary entity managing Sarawak's gas sector

Source: The Edge, Dayak Daily,

Exhibit 5: Arguments For and Against the PDA

View in support of the PDA	View not in support of the PDA
The Federal Constitution grants supremacy to federal law (Article 75).	MA63 guarantees autonomy over natural resources; the federal government cannot unilaterally take control
The PDA is necessary for the national management of petroleum resources.	The PDA, enacted without state consent, is invalid with respect to Sarawak
MA63's provisions are subject to domestic law once the federation is formed, meaning federal laws like the PDA apply.	The Sarawak Oil Mining Ordinance (OMO) 1958 should take precedence within the state, as it predates the PDA.

Source: Company

(2) No Stopping the Green Energy Economy Despite Today's Costs

Hydrogen economy updates

We had the opportunity to visit and experience the new hydrogen-powered autonomous rail rapid transit (ART) vehicle in action, including a ride around its assembly plant, the Kuching ART Assembly Facility. The vehicle can travel at speeds between 36-50 km/h and requires 12 kg of hydrogen per bus daily. Sarawak Metro aims to have ten trains operational by 2026. Currently, three buses are running on a trial basis, with hydrogen supplied by Sarawak Energy. In the full operational phase, hydrogen production will take place at the Rembus depot, expected to be completed by 2025, which will be dedicated to the Kuching Urban Transport System (KUTS). The depot will have the capacity to produce 1,900 MT of green hydrogen annually through electrolysers and the vehicle could house c.250 passengers. The government will subsidise the cost of hydrogen as KUTS is expected to deliver substantial social benefits to the residents of Kuching, Sarawak.

Exhibit 6: ART Vehicle at the Assembly Facility

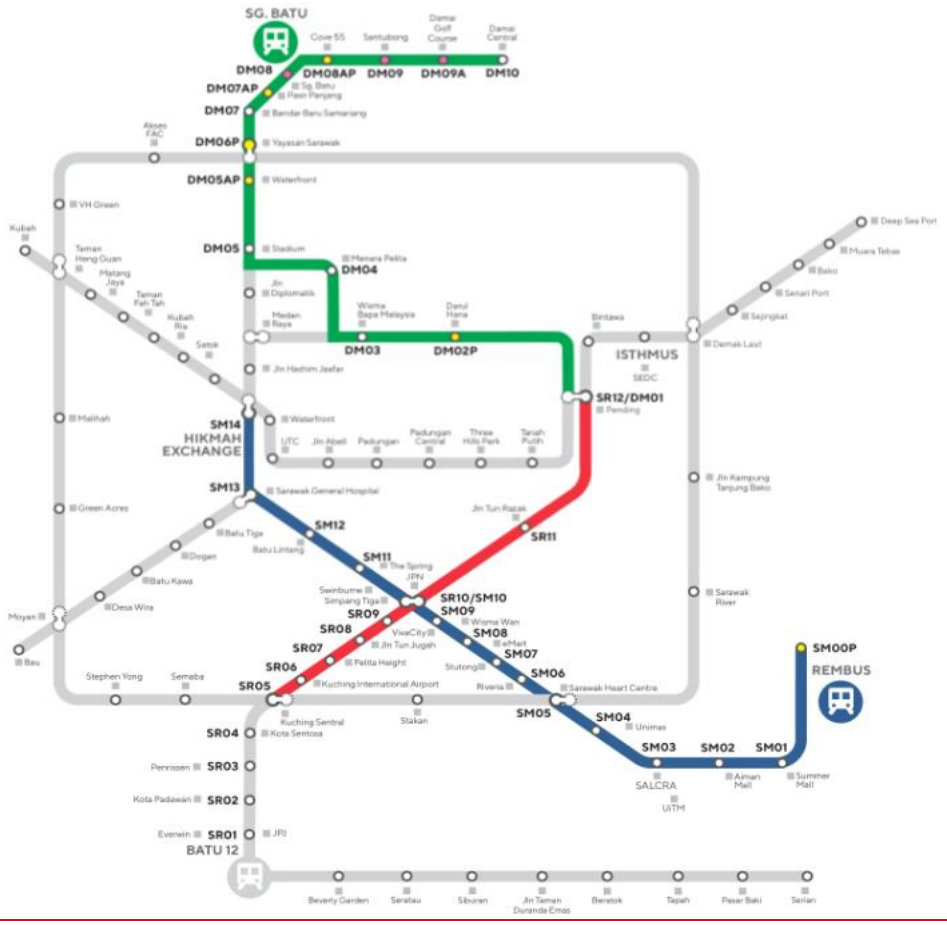
Source: Company

Phase 1 progressing well and operational by end 2025. The Phase 1 development of the Kuching Urban Transportation System (KUTS) is progressing steadily, with the project aiming for completion by the fourth quarter of 2027. This phase includes the Blue, Red, and Green Lines, spanning a total of 70km. The Blue Line, running from Rembus to Hikmah Exchange, is the most advanced part of Phase 1, with Package 1 expected to be operational by the end of 2025. Construction is underway, including key infrastructure such as the Rembus Depot, which will serve as the operations hub. Piling and geotechnical work at various sites, including UNIMAS and Simpang Tiga interchange, are ongoing.

Project timeline. According to the Sarawak Metro website, the operation of the Blue Line (Rembus to Riveria) is targeted to commence in 4QCY25. By 4QCY26, services for the Blue Line (Riveria to Hikmah Exchange) and the Red Line (Kuching Sentral to Pending) are expected to be operational. Meanwhile, the Green Line (Pending to Damai Central) is scheduled to be in operation by 2QCY27.

Given the strong track record of the contractors involved, we are not overly concerned about the progress of the construction. Similarly, the supply of rolling stock for the ART vehicles is not a concern, as the Chinese supplier has a proven history in manufacturing hydrogen-powered vehicles. The ART vehicles will be operated on dedicated lanes (trackless) on rubber tyres at grade level (road level). It is guided that 80% of the route will be at grade level and the remaining 20% will be elevated. The majority of the ART vehicles will be imported from China but the final assembly will be executed at its assembly facility at Demak Industrial Park Phase 3, Kuching, Sarawak.

Exhibit 7: KUTS Proposed Route



Source: Sarawak Metro

Exhibit 8: Status of KUTS Project

Component	Length (km)	Alignment	Status
System	-	-	Awarded
Depot	-	Located in Rembus	Awarded, under construction
Section			
Red Line	12.3	Kuching Sentral to Pending	Awarded, under construction
Blue Line			
Package 1	15.0	Rembus to Stutong	Awarded, under construction
Package 2	12.6	Stutong to Hikmah	Awarded, under construction
Green Line	30.0	Pending to Damai Central	Package 1 pending award, package 2 awarded

Source: Sarawak Metro, Kenanga Research

Exhibit 9: ART-related Job Awarded During 2024

Work Package	Contactors	Date of award
Blue Line Package 2 (Stutong to Hikmah Exchange)	Perbena Emas Sdn Bhd JV China Road & Bridge Corporation	30/8/2024
Bus Integrated System (BIS)	Shorefield Sdn Bhd, China Huaxin Malaysia Sdn Bhd, Kentkart International LLP	29/8/2024
Cybersecurity Assessor	Ocean Vantage Engineering JV Nexagate	25/7/2024

Source: Sarawak Metro, Kenanga Research

Green hydrogen supply remains the bottleneck. We agree that Sarawak holds a significant advantage in green energy supply, owing to its vast hydropower potential (which is already an advantage over solar and wind as hydropower does not face power intermittency risks). However, we have yet to observe any concrete evidence of green hydrogen production being scaled up for high-volume usage through electrolyser technology. The H2ornbill and H2biscus hydrogen plant projects are still awaiting a final investment decision (FID), with an outcome expected from the state soon.

Our research has identified several examples demonstrating the potential for scaling up green hydrogen production using electrolysers, such as the Fukushima Hydrogen Energy Research Field (operational since 2020) and Refhyne in Wessling, Germany (which supplies green hydrogen to European refineries). However, the commercial viability of these projects remains unproven at this stage and we are not privy to the status of the reliability of green hydrogen manufacturing of these projects, which is crucial as supply reliability of hydrogen remains critical.

State government to subsidise the project. Given that KUTS is an infrastructure project, we do not believe that Sarawak Metro aims for Phase 1 to achieve profitability in the initial years following its commencement. With the upcoming Rembus depot expected to have a production capacity of 1,900 metric tonnes of green hydrogen annually, the estimated production cost to sustain the hydrogen supply for the KUTS project could reach up to USD9.5m, assuming a production cost of USD5 per kg. The Sarawak state government will largely subsidise this cosbut we reckon that the pricing will be affordable to benefit the local users.

KUTS funding will rope in private-sector capital beyond phase 1. We commend the state's commitment to launching the ART project, as it not only delivers social benefits to the residents of Kuching but also serves as a critical milestone in demonstrating the feasibility of green hydrogen production in Sarawak. A successful implementation could pave the way for potential hydrogen exports to markets such as Japan and Korea, offering the state a new source of income. Nevertheless, we believe that the KUTS project will eventually need to be financially sustainable if Sarawak Metro intends to finance phase 2 of the KUTS project by raising money through the issuance of sukuk or bonds. For phase 1, the state will be the sole funder of the project, which in our opinion, paves the way for the project to showcase to its future investors the long-term potential of the KUTS project and with the possible improvement in the hydrogen technology in the future, operational costs will be more manageable over time.

Beneficiaries of the KUTS project. We believe that multiple local contractors are already benefiting from the KUTS project implementation at the construction stage with **IJM (Rembus depot construction)** and **IBRACO (Not Rated)** (JV with CREC on Blue line package 1). For future packages yet to be awarded (Green line particularly), we believe that the two names mentioned will be in pole position for contract bidding due to their track record and currently manifesting experience in the KUTS project. Therefore, as proxy to the KUTS project, we believe EPCC contractors with projects already awarded will be the best candidate for investors to get long-term exposure to the potential future phases of the project. Phase 1 is worth RM6b and future phases could also be worth a similar value per phase, opening up long-term opportunities for future wins, (23 jobs now under the tender stage for the remaining of Phase 1).

(3) Kasawari CCS Project Progressing Well

The Kasawari Carbon Capture and Sequestration (CCS) project, led by PETRONAS Carigali, is set to become one of the largest offshore CCS initiatives in the world. Located in Block SK316, approximately 200 km off the coast of Bintulu, Sarawak, this project aims to capture 3.3m tonnes of CO_2 annually, primarily from gas field operations, to mitigate emissions from flaring. Slated for operation by the end of 2025, the project will involve installing a new offshore platform connected to the existing Kasawari gas processing facilities. Captured carbon dioxide will be transported via a 138 km subsea pipeline to the depleted M1 field for long-term storage. In total, the project expects to sequester between 71 and 76m tonnes of CO_2 over its life time.

Carbon Capture Process:

1) **Membrane Separation Technology**: This technology isolates CO_2 from natural gas streams before further processing, ensuring that the captured CO_2 is separated efficiently without affecting gas production quality.
2) **High-Efficiency Gas Turbines**: These turbines are used to compress the CO_2 to the required pressure for transportation and reinjection.
3) **Subsea Pipeline**: A 138 km subsea pipeline will transport the captured CO_2 from the Kasawari gas field to the depleted M1 field, where it will be injected into underground reservoirs.
4) **Reinjection and Storage**: The M1 field acts as the long-term storage site, utilising depleted reservoirs to permanently store the injected CO_2. The platform built for this project will facilitate continuous monitoring and reinjection operations to ensure safe and effective storage.

To be the regional hub for carbon storage services. Estimated at RM4.5b cost, this initiative aligns with PETRONAS' broader goal to achieve net-zero carbon emissions by 2050 and aims to position Malaysia as a hub for CCS technology in the region. Aside from decarbonising its Kasawari gas-producing field, the CCS project also possesses the capacity to store more carbon. PETRONAS, through its subsidiary PETRONAS CCS Ventures, and PETROS (Petroleum Sarawak Berhad) recently signed a Storage Site Agreement (SSA) with a consortium of Japanese companies, including JAPEX, JGC Holdings, and Kawasaki Kisen Kaisha (K LINE).

This agreement covers the development of the M3 depleted field as a CO_2 storage site offshore Sarawak, marking a significant step in establishing Malaysia's CCS capabilities. The collaboration aims to not only store captured CO_2 but also position Malaysia as a regional hub for carbon storage services, offering the infrastructure to foreign emitters, including those from Japan. This strategic arrangement reflects the broader ambition of PETRONAS to monetize its CCS technology by charging companies from countries like Japan to store their CO_2 emissions within Malaysian storage sites, facilitating cross-border decarbonisation efforts. At this juncture, project details are not announced yet but in the longer run (2026 or beyond possibly) contractors (particularly fabricators) could benefit from more jobs flows related to the M3 portion of the CCS project.

There are two fields for storage involved for the Kasawari CCS project:

M1 Field: This field is directly associated with the Kasawari CCS project. It will store CO_2 captured from the gas operations at Kasawari, with an annual injection target of 3.3m tonnes through a 138 km subsea pipeline. The first injection into M1 is scheduled for mid-2026, making it a cornerstone for decarbonising operations in Sarawak and the largest offshore CCS project in the world by volume

M3 Field: The M3 field, another depleted reservoir offshore Sarawak, is being developed separately through a collaboration between PETRONAS, PETROS, and a Japanese consortium. This project aims to store CO_2 emissions from LNG plants in Bintulu, focusing on enhancing regional decarbonisation efforts. While not directly linked to Kasawari, M3 represents a complementary step in Sarawak's expansion of its CCS capabilities, serving as an option for future storage projects and collaborations, including cross-border CO_2 storage services for countries like Japan.

Awaiting legislation push for carbon transportation. One barrier to the CCS development in Sarawak is the absence of legislation on the transportation of carbon. Sarawak Premier Tan Sri Abang Johari Tun Openg has pointed out that the state is awaiting a new law to be passed in Parliament for transboundary transport of carbon before it can start carbon trading as this involves a government-to-government arrangement.

Contractors are the main beneficiary of CCS the project

The engineering, procurement, construction, installation, and commissioning (EPCIC) contract was awarded to **MMHE (Not Rated)**, which also handled the earlier design phase. The Kasawari CCS platform will feature advanced technologies, such as membrane separation and gas turbines, to ensure efficient capture and reinjection of CO2. McDermott International was awarded a significant contract to manage the transportation and installation (T&I) of the 138 km pipeline, the CCS platform jacket (weighing 15,000 tonnes), and the connecting bridge to the existing platform.

KKB possesses lower project execution risk. We believe that **KKB** would be the safest play to get indirect exposure in the CCS project as it has won a subcontract for the Kasawari project from MMHE, which in our view poses a lesser risk of project cost overruns compared to main contractor. Their scope of work focuses on critical offshore infrastructure, supporting the installation of the platform and associated facilities for capturing and storing carbon dioxide, which is technologically less challenging than the EPCC of the whole of the CCS platform, making its project margins more predictable. Moreover, success on the M1 field will bring about more potential CCS-related job opportunities for the M3 field which will involve more EPCC jobs yet to be awarded.

Examples of current operating CCS projects. There are already several examples of operational CCS projects around the world namely:

Sleipner Project (Norway):

1) Operated by Equinor since 1996, Sleipner is one of the first commercial CCS projects. It stores approximately 1m tonnes of CO_2 annually in a saline aquifer beneath the North Sea

Alberta Carbon Trunk Line (ACTL) (Canada):

2) Launched in 2020, this project captures CO_2 from industrial emitters in Alberta and transports it via a pipeline to enhance oil recovery operations, with a capacity of 1.6m tonnes of CO_2 annually.

Gorgon CCS Project (Australia):

3) Operated by Chevron, this facility captures CO_2 from the Gorgon LNG project. Since starting operations in 2019, it has aimed to store 3.4m to 4m tonnes of CO_2 annually under Barrow Island. Despite early setbacks, it remains one of the largest CCS projects globally

Operationally, CCS projects are technically viable; however, the scale of the Kasawari CCS project will present significant challenges for Petronas as an operator. Moreover, profitability is not the primary driver of current CCS projects. In the future, the development of a mature carbon credit market or the introduction of carbon taxes could make CCS projects more financially attractive for operators. For the Kasawari project, we believe that the success of the M3 field will be pivotal to the project's payback, as it could enable Petronas to monetise its CCS capacity by offering carbon storage services to other countries. In the longer term, the growth of carbon markets, local government policy support, and technological advancements will play essential roles in advancing the CCS business and we laud Petronas and Sarawak for taking the early initiative on CCS as the project would not materialise if left to the natural market forces within the private sector.

While the CCS project is in our view beneficial to the environment in the longer run, we have found out that operating CCS projects are not without its issues. Below are the key examples:

Gorgon CCS Project (Australia):

- According to Upstream Online, The Gorgon project, operated by Chevron, has consistently struggled to meet its targets. Designed to capture 4m tonnes of CO_2 annually, the project has only managed to inject 5m tonnes over its first five years—far short of the planned performance. Issues with sand infiltration and delayed startup in 2019 caused operational setbacks, forcing Chevron to purchase carbon offsets to compensate for missed targets. These challenges reveal the technical complexities in managing such a large-scale CCS operation

Sleipner Project (Norway):

- According to Prometheus Institute, although Sleipner is regarded as a CCS success story, the project has experienced unexpected CO2 migration within the geological reservoir. CO2 has moved upward by 220 meters from its intended storage location, raising concerns about long-term containment. While no immediate leakage has occurred, the unpredictable behaviour of stored CO2 illustrates the uncertainties inherent in underground storage despite detailed geological assessments

Alberta Carbon Trunk Line (Canada):

- The ACTL project has faced challenges primarily linked to the economics of enhanced oil recovery (EOR). While it has successfully transported CO2 for use in oil fields, fluctuating oil prices have impacted the project's financial sustainability. This highlights the dependency of some CCS projects on favourable market conditions, especially those tied to EOR strategies

Risks could eventually reduce as CCS technology progresses. Overall, we believe that the reliability of CO2 storage at the designated sites is still highly uncertain as it varies due to the geology of the area and there are still doubts about CO2 migration within the storage sites and possible side effects on the environment due to that. Nevertheless, we believe in technological progress in CCS technology and in the long run the challenges presented could be gradually resolved through innovation.

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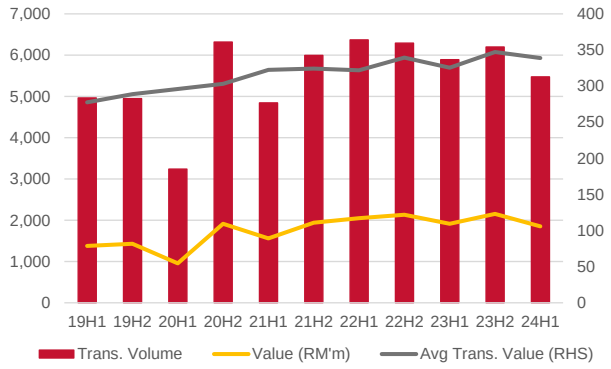
(4) Property Market Boom in Some Areas

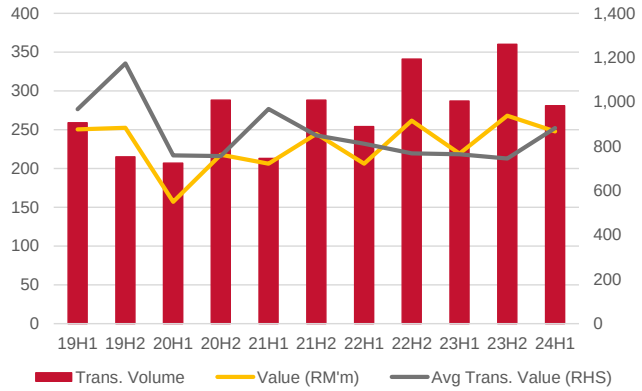
By: Clement Chua / clement.chua@kenanga.com.my

Exhibit 10: Residential Transaction and Value Trends from 1HCY19-1HCY24



Source: NAPIC, Kenanga Research

Exhibit 11: Industrial Transaction and Value Trends from 1HCY19-1HCY24

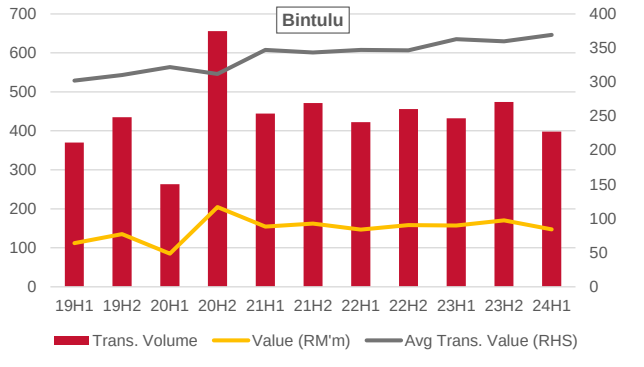


Source: NAPIC, Kenanga Research

Across Sarawak's key regions - Bintulu, Kuching, Miri, and Sibu, residential property market trends reflect local variations within the broader state-wide growth. We found higher price inflation in oil & gas focused cities in Miri (5-year CAGR: +7.9%) and Bintulu (+4.1%) with the state capital, Kuching showing a more modest growth (+3.8%) while the highest number of biannual transactions at c.2,200. Inland Sibu's average transaction prices remained relatively stable (+0.7%).

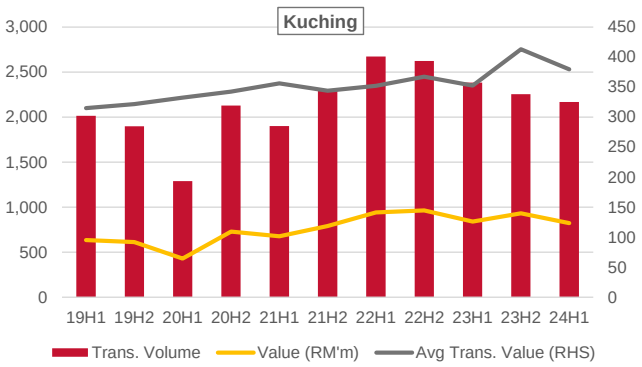
We attribute the rise in Miri and Bintulu's property market on the back of both being coastal cities benefiting from prominent oil & gas activities, with developments there to continue being spurred by investments by oil companies to stimulate migration. From our trip, we opine that Bintulu would enjoy greater economic activity as upstream and midstream businesses are expected to propel in the medium-term. Miri's higher transaction volumes and price inflation could be explained by it previously being at a low base and is now only catching up to Bintulu's prosperity.

Exhibit 12: Bintulu - Residential Transaction and Value Trends from 1HCY19-1HCY24



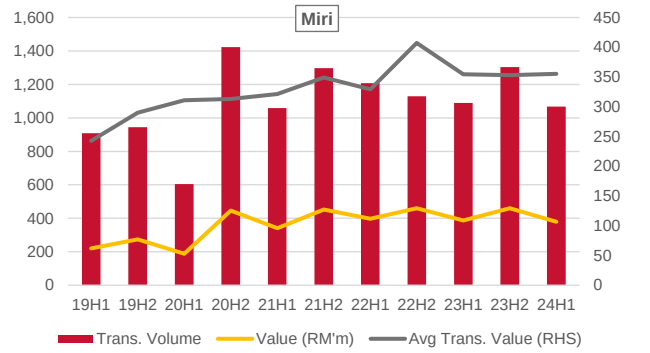
Source: NAPIC, Kenanga Research

Exhibit 13 Kuching - Residential Transaction and Value Trends from 1HCY19-1HCY24



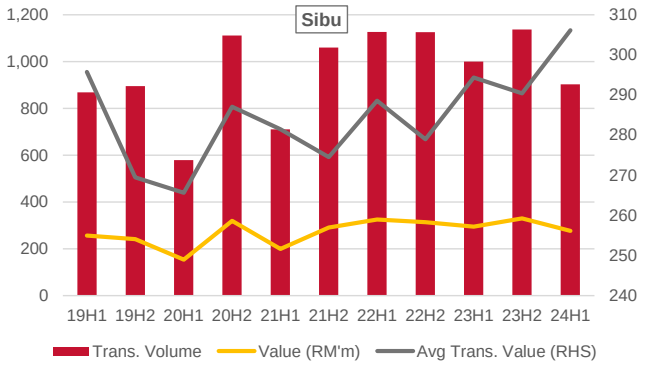
Source: NAPIC, Kenanga Research

Exhibit 14: Miri - Residential Transaction and Value Trends from 1HCY19-1HCY24



Source: NAPIC, Kenanga Research

Exhibit 15: Sibu - Residential Transaction and Value Trends from 1HCY19-1HCY24



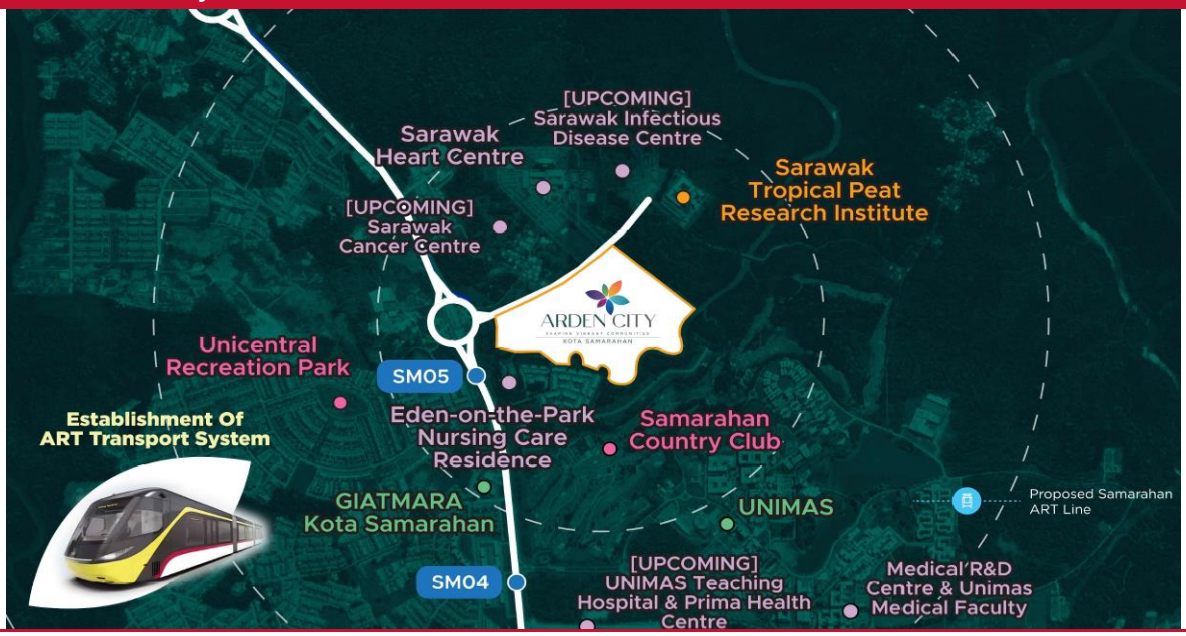
Source: NAPIC, Kenanga Research

Residential property market on a rise. We observed from NAPIC's property data sets from 1HCY19 to 1HCY24 in Sarawak. Although residential transaction volumes report fluctuations due to the Covid-19 pandemic affecting market demand, we gathered that average transaction prices have generally increased at a 5-year CAGR of c.4% (1HCY19: RM278k/transaction, 1HCY24: RM339k/transaction). This compares against a 3.2% 5-year CAGR nationwide. We opine that on top of recovering conditions in the real estate market with biannual transactions keeping steady at c.5,500, market dynamics are likely more vibrant on the back of the state's robust infrastructure projects and ongoing economic diversification efforts.

Government-driven projects to drive the property development market. The Sarawak Cancer Centre, planned for construction in Kota Samarahan near Kuching, recently received federal approval and financial backing through Malaysia's 2024 budget. The project is expected to begin by the end of 2024, with an estimated cost exceeding RM1b. Initially, the Sarawak government will fund the project, with reimbursement promised by the federal government upon completion. The centre aims to improve healthcare access by serving not only Sarawak but also neighbouring regions, including Sabah and parts of Borneo, reducing reliance on cancer treatments in Kuala Lumpur. It will feature 300 beds and is expected to ease financial burdens for patients by eliminating the need for costly travel to Peninsular Malaysia for treatment. Once completed, it will act as a regional hub, supporting better cancer care across Borneo. The Sarawak government has prioritised this facility to address growing healthcare demands, with Minister Datuk Amar Dr Sim Kui Hian expressing hopes to expedite formalities and construction following Prime Minister Anwar Ibrahim's endorsement in the budget.

Arden City project by IBRACO. Arden City development is a mixed-use township featuring residential, commercial, and healthcare facilities, designed to create a self-sustaining community. The development already hosts the Sarawak Heart Centre and will soon include the cancer centre, further enhancing the area as a medical hub. This proximity means the cancer centre will be part of a broader ecosystem aimed at supporting health and wellness. Both the cancer centre and Arden City are positioned to benefit from the area's infrastructure, including educational institutions like Universiti Malaysia Sarawak (UNIMAS) and connectivity improvements such as the Autonomous Rapid Transit (ART) system under development nearby. Currently, the project has an estimated GDV of RM1.4b with a target completion in 2032. It is still at its early stage with RM84m worth of GDV being launched and 30% take-up-rate.

Exhibit 16: Arden City Overview



Source: Company

The Northbank project. The NorthBank project in Kuching is a 123-acre integrated township developed by Ibraco Berhad. Located along the Kuching-Samarahan Expressway, this mixed-use development focuses on creating a sustainable and balanced environment, combining residential, commercial, and recreational spaces. Key features include landscaped parks, jogging and cycling tracks, and a clubhouse. The township also houses educational facilities like the Tunku Putra-HELP International School, as well as medical centres and commercial spaces, including The NorthBank Business Exchange (NBX), which offers three-storey shop offices and other business facilities.

The development aims to support vibrant community living by providing access to essential amenities, entertainment, and wellness offerings. It is also strategically situated near Sama Jaya High Tech Park and well-connected to the greater Tabuan Township, making it an attractive location for families and businesses alike. At this juncture, the project has a GDV worth RM2.2b with the mixed development project expected to be completed in 2029. RM1.2b worth of GDV was already launched with a take-up rate of 70%.

Exhibit 17: Northbank Project Overview

Source: Company

(5) Sarawak Shipbuilding Witnessing Early Signs of Potential Upcycle

Yards getting filled up globally. Global shipbuilding yards are currently experiencing high utilisation levels, driven by robust demand across key vessel categories. The utilization rate of top-tier shipyards is expected to reach 91% in 2024, compared to 83% in 2023, reflecting a steady flow of orders and limited yard capacity. This demand is particularly strong for container ships, LNG carriers, and dual-fuel vessels designed to meet evolving environmental standards

Structural increase in demand for new build seen due to the industry's green efforts and favourable shipping rates. Key trends shaping the order book include a focus on energy-efficient and eco-friendly designs as part of the maritime industry's decarbonisation efforts. Container ships and LNG carriers account for a significant share of new orders, reflecting both market dynamics and regulatory pressures. Meanwhile, there is also ongoing demand for bulk carriers and tankers, although these segments show signs of moderation due to uncertainties around energy transition policies and higher newbuild prices

Shipbuilding capacity tightening. China continues to dominate shipyard output, delivering about 50% of global tonnage, followed by South Korea, which leads in LNG vessel construction. Shipbuilders are also seeing longer lead times and increased prices—newbuild prices have risen nearly 40% since 2020, with some shipyards reopening or expanding to meet the surge in demand. Overall, with order books covering roughly 3.5 years of work (compared to two years historical average according to Clarksons), the outlook remains strong despite concerns over future capacity constraints and uncertainties around global trade volumes.

China capacities on an uptrend to cater for ramp up in demand. After years of capacity reduction, some Chinese yards are reopening since 2023. In August 2023, Wuhu Shipyard took over the land and facilities of the former Samjin Shipbuilding Industry part of the automobile group Chery. Kouan Shipyard has been going through a reorganisation process since 2019 and is currently building blocks and ships for the account of third-party shipbuilders including Dajin, Taizhou Changqin and Taizhou Changyue. Jiangxi New Jiangzhou Shipbuilding Industry was established on March 31, 2023.

The main investors are Qinshi (Xiamen) Trading and Jiangsu Yangchuan Investment Development. Qinshi (Xiamen) is the parent company of a listed company, Bestway Marine & Energy Technology, whereas Jiangsu Yangchuan is a subsidiary of Yangzijiang Shipbuilding Group. The yard has signed contracts for stainless steel tankers with Chinese buyers. Private company Fujian Guanhai Shipbuilding, which stopped production in 2013 and went bankrupt in 2019, has now been taken over by Fujian's private steel giant Jinshenglan Group and renamed the Fujian Songmin Group. Quanzhou Shipyard, which was established in 2004 and entered bankruptcy in 2019, reached an agreement with a local government-owned company to invest and reorganise the yard. In September 2023, a ceremony was held for the resumption of work and production.

We also had the privilege of visiting **SYGROUP**, where management shared that its Miri yard has already experienced a significant pick-up in activity. In 2023, ten vessels underwent repairs at their dry dock facilities, and the group is currently working on three new builds (compared to close to new build zero vessels during 2020-2022). With global shipbuilding capacities primarily focused on bulkers, LNG carriers, and container vessels, the offshore support vessel (OSV) shipbuilding market has been largely overlooked by major shipyards worldwide. This presents a strategic opportunity for SYGROUP to capitalise on the underserved OSV segment.

In our view, this could present a significant opportunity for Sarawakian shipyards, particularly SYGROUP, given their capability to construct new offshore support vessels (OSVs), which are currently in short supply, both in Malaysia and globally. At present, the cost of an accommodation work boat (AWB) can reach up to RM140m per vessel, depending on its specifications. This market dynamic offers SYGROUP promising prospects not only in OSV shipbuilding but also in potential contracts for bulkers and tankers. Assuming the capacity to build six vessels concurrently, the yard could potentially generate RM300m annually, based on an estimated value of RM100m per vessel with a two-year construction timeline.

(6) Ports & Logistics Expansion Plans

By: Wan Mustaqim Bin Wan Ab Aziz I wanmustaqim@kenanga.com.my

Ports

Consolidating the ports under one authority. The setting up of the new Bintulu Port Authority Sarawak (BPAS) which is under the purview of Sarawak government is on track to be completed by year-end. Concurrently, Bintulu Port is under an interim lease agreement until Dec 2024 pending the completion of the handover of BPA control. The Bintulu Port (Dissolution) Bill 2024 has been passed by both House of Representatives and House of Senate before notification in Gazette. At the same time, the new Port Operation Agreement is being drafted. Bintulu Port which is operated by **BIPORT** will not be disrupted during the process of the Sarawak Government's port authority takeover from the Federal Government. BIPORT plans to streamline its operations and expects to renew its concession as early as 2025 and consolidate tariff management of both Bintulu port and Samalaju port under one entity.

New supply base and RORO facility on the cards. Furthermore, it expects a higher contribution from the supply base support facilities segment revenue driven by Jerun gas field and Rosmari-Marjoram's onshore plant. Upon commissioning of the Jerun gas field and Kasawari gas development project, it expects a stable LNG gas supply to cater for the strong demand during winter season (refer to exhibit 1). On another note, it also plans to expand its Roll-on, Roll-off (RORO) shipment to Bintulu Port's Multi Purpose Terminal (MPT) to capitalise on the increasing demand for Bintulu to be one of the state's RORO hub due to its strategic and central location. Recall that, it just berthed one of the biggest RORO shipments to date in June 2024, arriving via vessel Jasa Murni, a total 1173 units of RORO were handled and transported to Bintulu Car Terminal (refer to exhibit 2).

On the ESG-side, it also plans to generate an additional revenue stream by exploring carbon capture, utilisation and storage (CCUS) to capture the carbon dioxide by-product as several major gas-producing fields are nearing the end of their lifespan which could be utilised for carbon storage (refer to ESG para for more details). It also plans to issue a new Sukuk which we believe to be green sustainability SRI sukuk of up to RM2b to fund its expansion and to re-finance existing Samalaju Industrial Port sukuk for a more favourable rate. We believe BIPORT expansion path is in line with Sarawak's vision for 2030 which is to cultivate a society that leverages new ideas and technology to continually enhance itself to ensure that everyone benefits from the positive developments taking place.

Exhibit 18: Jerun Gas Field

Source: Company, Kenanga Research

Exhibit 19: RORO Vessel Jasa Murni

Source: Company, Kenanga Research

BIPORT could become a key beneficiary if Kasawari establishes itself as a regional CCS hub. This would position Bintulu or Samalaju as the primary port for carbon imports from countries like Japan. To accommodate this, BIPORT would likely need to invest in a dedicated terminal, including storage facilities and pipeline connections, to support the CCS infrastructure. If carbon imports become consistent, this could create additional recurring revenue streams for BIPORT. However, the potential capex value is uncertain at this juncture as no details have been announced yet for the SSA signed between Petronas and Japanese companies.

Infrastructure that is needed at the port for carbon handling. Based on our initial studies, there are a few types of facilities required at the port to enable carbon import handling namely onshore storage tanks or terminal facilities (which helps to maintain carbon in a dense and liquid form to minimise leakage and avoid gas phase leakage), pipeline infrastructure (which connects ports to injection sites and facilitate flexible transfer between storage tanks, pipelines and ships) and loading and unloading systems for ship transport (transferring carbon from storage tanks to specialised CO2 carriers. Hence, all this would require more capex spending by BIPORT thus enabling it to charge tariffs (if approved by relevant authorities) to handle CO2 cargoes, especially the imported ones but at this stage we believe that the details are scare and is not able to provide more colour on the potential economics of the project.

Aviation

By: Raymond Choo Ping Khoon I pkchoo@kenanga.com.my

Sarawak is currently in the final stages for the takeover over MASWings, expected to be completed by end CY24. According to sources quoting daily news (Link), only a few matters needed to be finalised among the Sarawak government, MASwings parent company Malaysian Aviation Group (MAG), Khazanah Nasional Bhd and Malaysia Airports Bhd (MAB). Generally, MASWings is a regional airline operating the Rural Air Services (RAS) in Borneo Malaysia with a fleet of 14 aircraft. We believe one of the key objectives is to improve planning for routes and connectivity with the region (and expand beyond Borneo) to cater to business and tourism demand. As such it might offer cheaper fares for flights between Sarawak and other destinations in the country to increase traffic and hence tourism there.

In addition to the new airline, there are plans for a new Kuching International Airport, which will be able to accommodate a throughput of 15m passengers annually and is expected to be completed by three to five years, which would be triple the capacity of its current airport. **AIRPORT (ACCEPT OFFER; TP: RM11.00)** manages 39 airports in Malaysia, 17 of which are STOLports (short take-off and landing port) including Sarawak. The government has the right to restructure the airport industry through clustering, carving out, divestment of airports, closure of existing airports or terminals or the restructuring of the ownership of any of the facilities subject to mutual agreement with AIRPORT. Under the new Operating Agreement (OA), it offers AIRPORT "flexibility" to pursue strategic investments needed, including partnering with any external parties to improve capacity, facilities and infrastructure of the airports or any of the facilities subject to mutual agreement with AIRPORT.

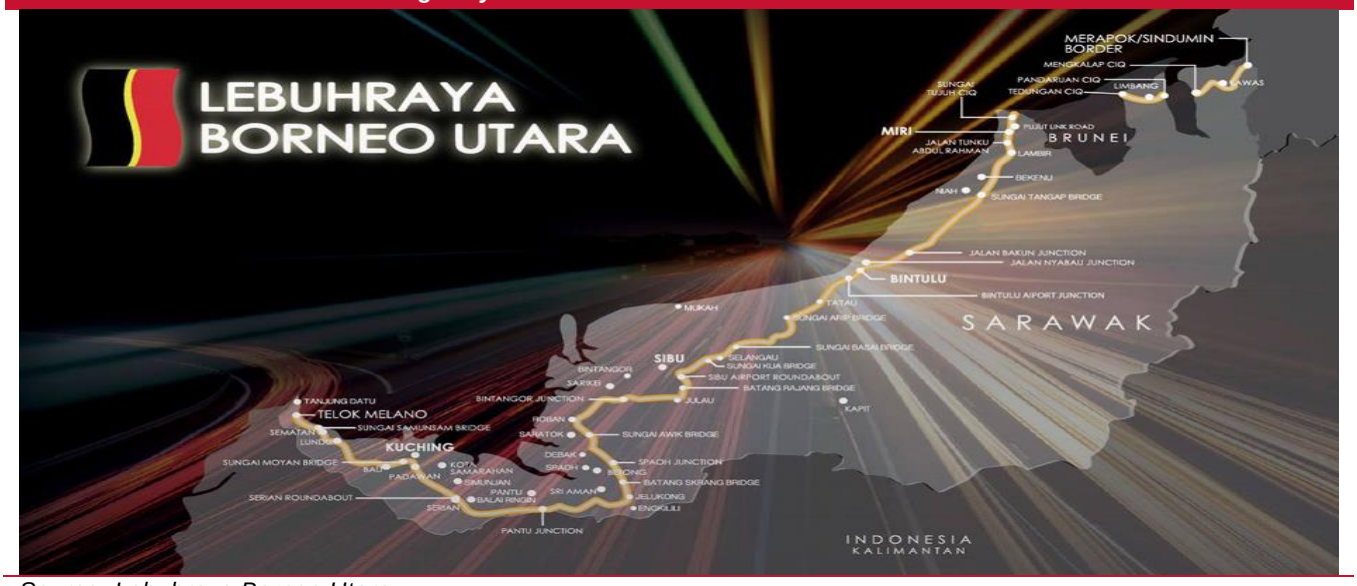
(7) Major Highway Infrastructure Projects Still in Deliberation

By: Teh Kian Yeong I tehky@kenanga.com.my

The Pan Borneo Highway is a transformative project aimed at establishing a continuous, high-quality road network across the Borneo region, including Sabah, Sarawak, and Brunei. This highway will enhance connectivity between key cities, towns, and rural areas, driving economic growth, improving access to remote and underserved communities, boosting road safety, and promoting regional integration. The project brings substantial social, economic, and strategic benefits to the region. In Sarawak, Phase 1 of the Pan Borneo Highway, valued at RM16b, is nearing full completion. This phase involves 11 work packages covering a 786km stretch from Telok Melano to Miri, upgrading existing roads and constructing new ones to provide a high-quality highway across Sarawak.

Sarawak section completion by 2028. Phase 2 of the Sarawak section, worth RM4.6b, will extend from Limbang to Lawas. With government approval, construction for this phase is expected to start soon and be completed by 2028. This initiative is part of a larger infrastructure plan to link Sarawak and Sabah without needing to pass through Brunei. Contractors from Phase 1, including JVs between companies NAIM (Not Rated) and GAMUDA (OP; TP: RM9.20), MUDAJYA (Not Rated) and Musyati Sdn Bhd, KKB (Not Rated) and WCT (OP; TP: RM1.43), BPURI (Not Rated) and CMSB (Not Rated) and etc, are expected to bid for Phase 2.

Exhibit 20: Pan Borneo Sarawak Highway



Source: Lebuhraya Borneo Utara

Trans-Borneo Railway is under feasibility study. In March, Brunei-based Brunergy Utama Sdn Bhd proposed this concept, sparking significant interest. Recently, in October, the Deputy Minister of Transport announced that a feasibility study for the railway project, which aims to link Sabah and Sarawak to Indonesia, will begin in November. This one-year study, is crucial due to the increasing demand for land and cargo transportation across Borneo, will take into account State-level development plans. This project holds great potential for Borneo's connectivity and economic growth.

It was reported that USD70b worth of project for its first phase is to be build along the west coast of Borneo from Kota Kinabalu in the north through Brunei via Sibu in Sarawak and to Pontianak in the southern Indonesian region. A second phase would connect Brunei to the central regions of the Malaysian region and down the east coast of the Indonesia region, eventually reaching the new Indonesian capital city - Nusantara.

Exhibit 21: Trans-Borneo Railway

Source: The Borneo Post

From Hydrogen Economy into ESG ecosystem

Green energy hub

Sarawak has a 10GW target of energy mix by 2030 comprising hydroelectric (48%), gas (31%), solar (12%), alternative sources including biomass (1%) with diesel making up the rest of it. Meanwhile, the state's energy demand is expected to increase to 6.6GW by 2030, which means it has plenty of excess for export in the form of energy or renewable energy certificates (RECs). The state's hydropower developments comply with the International Commission on Large Dams (ICOLD) standards and guidelines as well as the International Hydropower Association's Sustainability Assessment Protocol to ensure that the facilities are built and operated safely and efficiently.

RECs

Sarawak's huge potential for green energy, particularly hydropower, puts it in the front seat for renewable energy certificates (RECs) issuance. A preliminary study showed that Sarawak has 20GW of hydropower potential covering 52 sites. According to Sarawak Energy's annual report 2022, the state's total installed capacity is 6,019 MW and c. 57% (3,452MW) is supplied by large-scale hydropower plants i.e. Bakun (2400MW), Murum (944MW) and Batang Ai (108MW).

Floating solar progressing. Sarawak has also started deploying floating solar plants with a pilot 50MW floating solar farm at the Batang Ai hydropower plant which is on track for an October 2024 commissioning. It is projected to offset around 52 kilo tonnes of carbon emissions annually. A feasibility study on the second phase of the project with a potential capacity of up to 160MW is currently underway. The state plans to install solar floating farms in Bakun and Murum with 500MW and 600MW capacity respectively.

RECs from Sarawak made its debut on Bursa Carbon Exchange (BCX) on 25 June 2024 where 268,800 hydropower renewable energy certificate (HREC) contracts representing 268,800 MWh of green electricity generated from the Murum hydroelectric plant, Sarawak. The RECs, which were cleared at RM4.50 per contract, were bought by 15 companies that included CIMB Bank, Hong Leong Bank, AmBank, Saxon Renewable Energy, YTL-SV Carbon and Eco World Project Management among others.

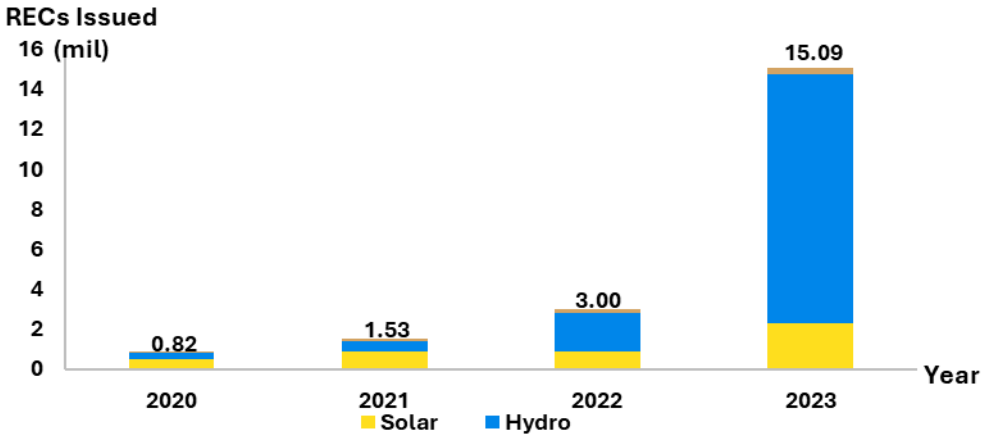
RECs, particularly those issued under the Tradable Instrument for Global Renewables Registry (TIGR) and i-REC standard (such as Murum RECs), are highly sought after for their globally recognised attributes, enabling owners to offset their Scope 2 emissions, a crucial aspect for RE100 companies in sectors such as manufacturing and data centres. Demand for i-RECs has been rising steadily while issuances by Malaysia have accelerated significantly.

Exhibit 22: RECs Issued in Malaysia under TIGR and i-REC Standard 2020–2023 (m)

	2020	2021	2022	2023
Hydropower	0.33	0.48	1.89	12.42
Solar	0.48	0.9	0.9	2.31
Bioenergy	0.01	0.15	0.21	0.36

Source: TIGR, i-REC Registries

Exhibit 23: RECs Issued in Malaysia under TIGR and i-REC Standard 2020-2023 (m)



Source: TIGR, i-REC Registries

Carbon trading and carbon credits

Sarawak appears to be ahead in carbon-related legislation. In terms of legislation, Sarawak is ahead of the rest of Malaysia. It is the only state with a standalone carbon trading legislation i.e. the Environment (Reduction of Greenhouse Gases Emission) Ordinance, 2023 (Sarawak Carbon Legislation), which came into force on 1 March 2024. In fact, the federal government is drawing up carbon trading regulations based on Sarawak's law. Briefly, the Sarawak Carbon Legislation mandates that businesses in the energy, and oil & gas sectors must register with the Natural Resources and Environment Board (NREB) and submit their GHG emission reports by 28 Aug 2024. Non-compliance will result in a fine up to RM50,000 or imprisonment up to 1 year. **PTTEP Sarawak Oil Limited** was the first to do so. The legislation also states that a threshold for CO_2 emission and carbon levy will be determined by the state exco.

Two companies are said to have been issued carbon trading licences in Sarawak i.e. PETROS (for carbon storage in former oil field areas) and Samling Group (for carbon projects in its plantations).

Sarawak also has two other regulations on carbon credits:

i) Land (Carbon Storage) Rules, 2022 which regulate carbon transportation, capture and storage (CCS) activities

ii) Forests (Forest Carbon Activity) Rules, 2022 which regulate forest carbon activities i.e. reforestation, afforestation, avoided deforestation, forest management, and carbon sequestration projects

Sarawak is reportedly collaborating with the World Bank to determine carbon sale prices. With a forest coverage of about 63% totalling some 7.7m ha, Sarawak's potential for carbon sequestration is significant. The average carbon density of forest biomass in Malaysia is 144--200 tonnes per ha. Assuming an average sequestration of 150 tonnes per ha, Sarawak's forests theoretically store over 1b tonnes of carbon.

Realising its potential, Sarawak has embarked on its first nature-based carbon project, the Marudi Forest Conservation and Restoration Project near Miri. Marudi is expected to receive a carbon licence in the "very near term", according to its project developer SaraCarbon, a subsidiary of Samling. With a projected delivery of 1.3m-1.4m credits per year, it is expected to be one of Malaysia's largest nature-based projects by carbon credit issuance volume.

SaraCarbon said the development cost, namely the breakeven price, for each Marudi credit is approximately USD5 to USD8/tCO2e, including a royalty of RM260 per ha for the project area and an ecosystem fee at 5% of the revenue from carbon credit sales. To recap, the BCX auction of Sabah's Kuamut carbon credits was cleared at RM50 a credit. Assuming RM50 per credit, Marudi could potentially net a revenue of RM65m to RM70m a year.

Stock Ratings are defined as follows:

Stock Recommendations

OUTPERFORM : A particular stock's Expected Total Return is MORE than 10%
MARKET PERFORM : A particular stock's Expected Total Return is WITHIN the range of -5% to 10%
UNDERPERFORM : A particular stock's Expected Total Return is LESS than -5%

Sector Recommendations***

OVERWEIGHT : A particular sector's Expected Total Return is MORE than 10%
NEUTRAL : A particular sector's Expected Total Return is WITHIN the range of -5% to 10%
UNDERWEIGHT : A particular sector's Expected Total Return is LESS than -5%

******Sector recommendations are defined based on market capitalisation weighted average expected total return for stocks under our coverage.***

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