



Sushil Purohit
Chief Executive Officer,
Gentari

The energy transition's accelerated pace in 2023, supported by a diverse coalition of stakeholders, underscores a unified commitment to sustainable energy. Poised to amplify PETRONAS' ambitions in renewable energy, hydrogen and green mobility, we are contributing to the PETRONAS Energy Transition Strategy and the Net Zero Carbon Emissions by 2050 Pathway.

We aspire to be the leading next-generation commercial and industrial, and utility-scale renewable energy developer, a scale hydrogen producer and go-to industry partner, and to be Asia Pacific's leading green mobility solutions partner.

Our initiatives and collaborations in 2023 have been positive. We have achieved a total of 2.9 gigawatt installed and under construction global renewable energy capacity, marked our entry into Australia and the offshore wind segment, and significantly enhanced our green mobility footprint in Malaysia, India and Thailand. This progress is a testament to Gentari's dedication to advancing cleaner energy solutions and playing a pivotal role in the global pursuit of a net zero future.

Gentari

First entry into Australia through the acquisition and rebranding of **Gentari Solar Australia**, and the offshore wind segment via the **Hai Long project** off the Changhua coast.

2.9
gigawatt (GW)
installed and under construction global renewable energy capacity.



Progressing towards actual hydrogen assets, with approximately **200 KTPA of hydrogen opportunities** that have advanced beyond the feasibility stage.



Cumulative installation of close to 570 charging points globally and deployment of more than **2,500 EVs** under Vehicle-as-a-Service (VaaS)

Key Focus Areas and Results







Gentari is set to amplify PETRONAS’ ambitions in renewable energy, hydrogen and green mobility, contributing to the PETRONAS Energy Transition Strategy and the Net Zero Carbon Emissions by 2050 Pathway.

Focus Area	What We Did in 2023	Results	Stakeholders
Renewable Energy	<p>Acquisition of Gentari Solar Australia</p> <ul style="list-style-type: none"> Acquired and rebranded WIRSOL Energy to Gentari Solar Australia, adding 422 megawatt of gross capacity to Gentari’s overall renewables portfolio. <hr/> <p>Acquired Stake in Hai Long</p> <ul style="list-style-type: none"> Completed the acquisition of 49 per cent ownership in Northland Power Inc.’s stake of the Hai Long project located off the Changhua coast. <hr/> <p>Project Commissioning with Amplus</p> <ul style="list-style-type: none"> Achieved final investment decision of more than 300 megawatt. <hr/> <p>Partnership with ReNew</p> <ul style="list-style-type: none"> Explored the development of 5 gigawatt in renewable assets including solar, wind and energy storage. Investment for a 49 per cent equity stake in ReNew’s 403 megawatt project. <hr/> <p>Cross-border Project via Vanda RE</p> <ul style="list-style-type: none"> Received conditional approval for a new cross-border renewable energy project from Singapore’s Energy Market Authority to establish a green electricity trading corridor between Singapore and Indonesia. 	<ul style="list-style-type: none"> Achieved a total of 2.9 gigawatt installed and under construction global renewable energy capacity – of which 1.6 gigawatt is installed capacity – marking significant growth globally with entry into new markets. 	<p>Stakeholders</p> <div style="display: flex; justify-content: center; gap: 10px;"> <div style="background-color: #f09428; border-radius: 50%; width: 25px; height: 25px; display: flex; align-items: center; justify-content: center; color: white; font-weight: bold;">FG</div> <div style="background-color: #f09428; border-radius: 50%; width: 25px; height: 25px; display: flex; align-items: center; justify-content: center; color: white; font-weight: bold;">C</div> </div>

Gentari

Key Focus Areas and Results			
Focus Area	What We Did in 2023	Results	Stakeholders
Hydrogen	<p>JFSA with Tenaga Nasional Berhad</p> <ul style="list-style-type: none"> Commenced Joint Feasibility Study Agreement (JFSA) to advance studies for hydrogen business development. 	<ul style="list-style-type: none"> Approximately 200 kilotonnes per annum (KTPA) of hydrogen opportunities have progressed beyond the feasibility stage. Strengthened Gentari's position in the hydrogen industry through seven key partnerships. 	E GIP
	<p>JFSA with City Energy</p> <ul style="list-style-type: none"> Commenced JFSA to supply hydrogen to Singapore via pipeline. 		E GIP
	<p>MoU with Sembcorp Energy</p> <ul style="list-style-type: none"> Accelerated the expansion of renewable energy and the supply of low-carbon hydrogen in Southeast Asia. 		E GIP
	<p>MoU with IHI Corporation</p> <ul style="list-style-type: none"> Collaborated on piloting a 100 per cent ammonia-powered gas turbine in Malaysia. 		FG GIP
	<p>Partnership with Asahi Kasei and JGC</p> <ul style="list-style-type: none"> Received approval from Japan's Ministry of Economy, Trade and Industry (METI) on New Energy and Industrial Technology Development Organization (NEDO) funding in joint venture with Asahi Kasei and JGC for production of green hydrogen with 60 megawatt alkaline water electrolyser. 		FG GIP
	<p>Investment Agreement with AM Green</p> <ul style="list-style-type: none"> Entered into strategic partnership to produce up to 5 metric tonnes per annum (MTPA) of green ammonia in India for export to key markets. 		FG E GIP
	<p>Feasibility Study Grant in Alberta, Canada</p> <ul style="list-style-type: none"> Received a CAD2 million grant for project feasibility studies in Alberta Industrial Heartland. 		HG CN

Key Focus Areas and Results

Focus Area	What We Did in 2023	Results	Stakeholders
Green Mobility	<p>Modular Electric Vehicle Charging Station</p> <ul style="list-style-type: none"> Launched Malaysia’s first modular and portable electric vehicles (EV)s fast charging station in collaboration with EV Connection Sdn Bhd (EV Connection) with battery energy storage system (BESS) at PLUS Highway. 	<ul style="list-style-type: none"> Achieved cumulative installation of close to 570 total charging points globally and deployed more than 2,500 EVs under the Vehicle-as-a-Service (VaaS) offering, enhancing green mobility footprint regionally. 	
	<p>Collaboration with KPJ Healthcare</p> <ul style="list-style-type: none"> Promoted sustainable transportation in the Malaysian healthcare sector through the installation of electric vehicle charging facilities at 10 KPJ Healthcare premises. 		
	<p>MoU with Evolt Technology</p> <ul style="list-style-type: none"> Explored green mobility infrastructure collaborations in Southeast Asia. 		
	<p>Tripartite Roaming Agreement</p> <ul style="list-style-type: none"> Activation of a roaming network with EV Connection and Yinson GreenTech to enable cross platform access electric vehicle charging on Setel, JomCharge and chargEV. 		
	<p>Partnerships for Decarbonisation in India</p> <ul style="list-style-type: none"> Initiated a collaboration with MoEVing Urban Technology and Gati Ltd to support decarbonisation of India’s transportation sector. Additionally, collaborating with Amazon to decarbonise its Indian transportation network through electrification of its third party delivery service partners’ transport vehicles. 		
	<p>MoUs for Green Mobility Infrastructure</p> <ul style="list-style-type: none"> Partnered with JLand Group, Lotus Cars Malaysia, Sunway Group, Sarawak Energy Berhad, and BMW Malaysia. 		

Gentari

Highlights and Achievements

Renewable Energy

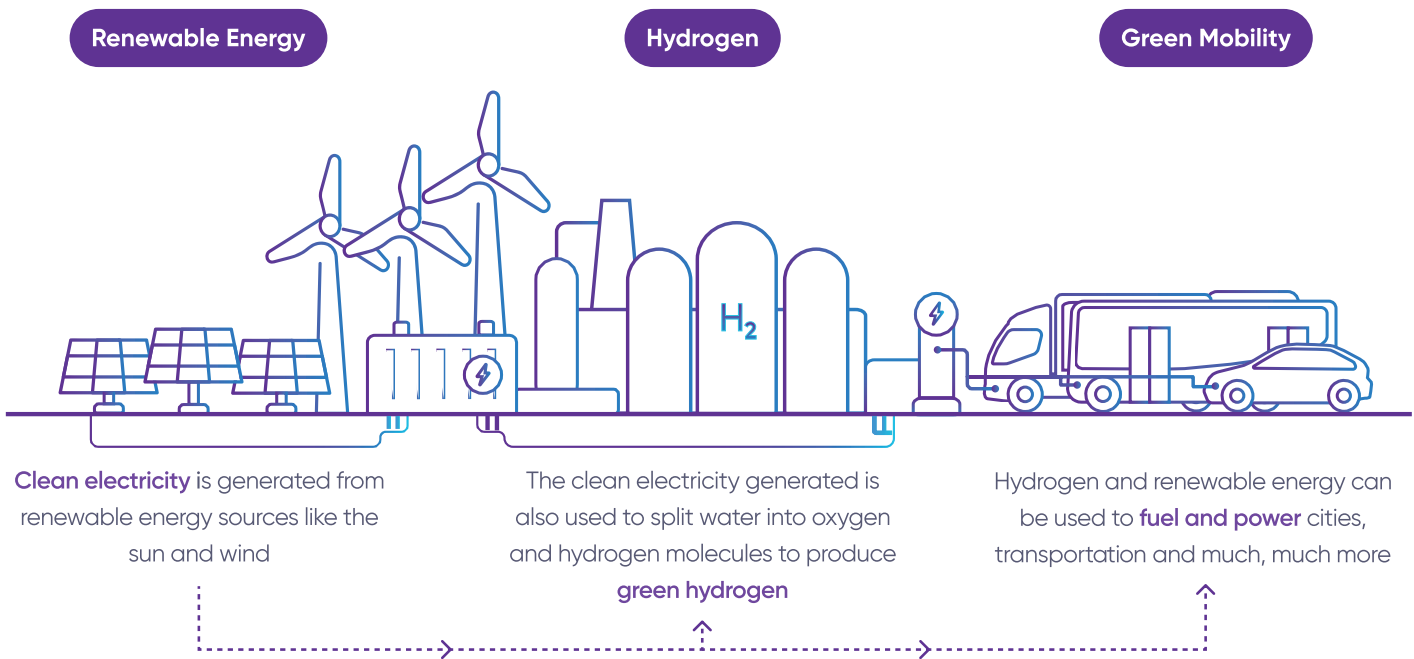
Through the addition of 0.5 gigawatt installed capacity in 2023, we have brought our total installed capacity to 1.6 gigawatt. Our renewable energy portfolio reflects an optimistic outlook with a robust pipeline of 1.3 gigawatt under-construction projects spanning solar and wind technologies. We continue to expand and diversify our portfolio in 2023 by entering the Australian market through Gentari Solar Australia and venturing into the offshore wind segment by completing the acquisition of 49 per cent ownership in Northland Power Inc.'s stake of the Hai Long project off the Changhua coast.

Hydrogen

In 2023, the emphasis was on developing projects for hydrogen supply and securing early commitments from customers. Locally, we are forming strategic partnerships in Sarawak to pave the way towards Malaysia's first green hydrogen hub. On a regional scale, we have advanced projects converting renewable energy to hydrogen in India and established key partnerships across the Asia Pacific region. Currently, we have progressed around 200 KTPA of hydrogen opportunities beyond the feasibility stage.

Green Mobility

Gentari is a key green mobility player in the region as evidenced by its significant achievements in 2023. We have become Malaysia's leading on-the-go DC charging point player and secured the top position in the three-wheeler VaaS segment in India. Through 21 MoUs and agreements, we fostered partnerships with major vehicle OEMs and charging point providers.



Challenges

Challenge	Mitigation Action	Results
<p>Policy and Regulations Dynamic and changing policies and regulations.</p>	<ul style="list-style-type: none"> • Stakeholder Engagement and Policy Influence: Mobilised local teams for stakeholder management and actively participated in shaping policy. • Strategic Local Partnerships: Partnered with influential local entities to navigate regulatory landscapes. 	<ul style="list-style-type: none"> • Strategic Partnerships: Established partnerships domestically and internationally across businesses and government entities for shared value.
<p>Macro Environment Uncertainties in the evolving cleaner energy landscape, including green financing availability and interest rate fluctuations.</p>	<ul style="list-style-type: none"> • Risk and Portfolio Management: Monitored and rebalanced portfolio risks, advocated for green financing access. • Geopolitical Strategy: Established signposts for geopolitical developments to navigate macro uncertainties. 	<ul style="list-style-type: none"> • Provided cleaner energy solutions to our customers with the facilitation of innovative green financing. Through balanced debt and equity financing, up to 1.3 gigawatt renewable energy capacity was successfully funded and deployed. • Undertook robust portfolio management to address geographical and technological risks.
<p>Capturing Synergies Challenges in realising synergistic benefits amidst fast-changing market dynamics.</p>	<ul style="list-style-type: none"> • Comprehensive Value Creation and Resource Allocation: Formed value creation plans and allocated resources for effective synergy capture. • Post-Acquisition Excellence: Institutionalised processes to ensure post-acquisition success. 	<ul style="list-style-type: none"> • Business Growth: Positioned businesses to advance our mission of becoming the leading next-generation C&I and utility-scale renewables developer, a scale hydrogen producer and go-to industry partner, and the leading green mobility solutions partner in Asia Pacific.
<p>Building Talents Acquiring the right capabilities in an evolving cleaner energy landscape.</p>	<ul style="list-style-type: none"> • Talent Development and Attraction: Focused on building core capabilities and attracting niche talents for global operations. • Competency and Culture Integration: Developed key competencies and institutionalised a cohesive culture. 	<ul style="list-style-type: none"> • Workforce Strengthening: Grew workforce from 330 to 601, with diverse expertise across multiple industries.

Opportunities

Gentari is scaling its business verticals through targeted growth vehicles, focusing on core markets, early investments, and building local teams.

- **Renewables:** Emphasising expansion in Asia Pacific, Gentari aims to grow and capture value accretive renewable energy projects and explore BESS opportunities.
- **Hydrogen:** The focus is on advancing supply-side hydrogen projects as well as customer commitments to offtake hydrogen.
- **Green Mobility:** Gentari seeks to strengthen market leadership and expand services in key markets across Asia Pacific, including our current core markets of Malaysia and India.

Gentari

Our Approach to Sustainability

Contributions

- **PETRONAS Electrification:** Achieved installation of 62.6 MWp across PETRONAS assets, contributing to the Group’s increasing use of sustainable energy sources.
- **Efficient Governance Practices:** Established robust and efficient governance practices aimed at upholding integrity.
- **Fleet Electrification:** Approximately 110 EVs delivered for PETRONAS operations, contributing to the reduction of carbon footprint in transportation.
- **Hydrogen as Clean Fuel:** Explored the use of green hydrogen and ammonia, including co-combustion, to expand the use of sustainable fuel alternatives within PETRONAS.



For more information on our sustainability contributions, please refer to pages 108-197.

► Our Outlook

Short-Term Outlook

In renewable energy, Gentari focuses on expanding commercial and industrial projects across Asia Pacific, with plans to grow utility-scale solar and wind projects in Malaysia and the region. These plans include embarking on offshore wind projects and developing energy storage capabilities for reliable supply.

The hydrogen business is developing projects in Malaysia, India, Canada and other competitive locations, targeting early adopters and expanding through strategic partnerships. Advocacy for supportive hydrogen industry policies and regulations is also a key focus.

In green mobility, Gentari aims to expand charging points in Malaysia, India, Thailand and potentially Indonesia while establishing a strong VaaS fleet in these regions. Enhancing value-added services for customers is also part of the strategy.

Medium- to Long-Term Outlook

Gentari is poised to amplify PETRONAS’ ambitions in renewable energy, hydrogen and green mobility, contributing to the PETRONAS Energy Transition Strategy and Net Zero Carbon Emissions by 2050 Pathway. Central to this strategy is a commercial and industrial, and utility-scale renewable energy business, supplying green electrons to the grid and supporting clean hydrogen production.

Gentari’s expansion in the electron value chain will offer comprehensive green mobility solutions backed by a network of public charging points, solidifying Gentari’s role as a key player in the cleaner energy sector.