

24 NOV, 2025

## FGV: Turning palm waste into Malaysias next green energy engine

The Edge, Malaysia



# FGV: Turning palm waste into Malaysia's next green energy engine

In the global race towards net zero, many corporations talk about sustainability, but few can truly deliver it. FGV Holdings Bhd is one of those rare few that are turning ambition into action. Once known primarily as an agribusiness giant, FGV is quietly evolving into a renewable energy (RE) powerhouse under group CEO Dato' Fakhruddin Othman.

Today, the company commands one of the region's most diversified RE portfolios, spanning biogas, biomass, biomethane, solar and certified biofuels, converting palm by-products into clean, exportable energy that powers homes, industries and economies. For FGV, sustainability goes beyond compliance or carbon targets. It is about redefining what a palm oil company can be, from a commodity producer to a catalyst for climate action, proving that sustainability can be both a purpose and a powerful engine for growth.

"We view renewable energy not as a cost but as a core growth pillar," Fakhruddin explains. "Our plantations produce enormous amounts of organic by-products and we've turned them into viable, scalable energy streams that power our mills, communities and even export markets."

### From waste to wealth: Building a circular energy ecosystem

Palm oil production naturally produces large amounts of organic residues such as palm oil mill effluent (POME), empty fruit bunches (EFB), mesocarp fibre and kernel shells. If left untreated, these waste streams release methane, a greenhouse gas many times more potent than carbon dioxide.

Through 24 biogas plants, the largest among Malaysian plantation peers, FGV captures this methane and converts it into renewable electricity for Tenaga Nasional Bhd (TNB). These biogas plants generate electricity that is sold to TNB under the Feed-in-Tariff (FIT) scheme, while solid biomass residues such as EFB, palm kernel shells (PKS) and palm mesocarp fibre (PMF) are used to produce steam and heat for the mills. FGV's renewable portfolio delivers a total energy output equivalent to around 150mw, comprising 100mw from biogas and biomass electricity generation and an additional 50mw from biofuel equivalent through Palm Kernel Shell (PKS) utilisation, marking significant progress towards its 200mw Net Zero 2050 target.

The approach is deeply circular. At FGV's mills, by-products are upcycled into fertilisers or fuel, whereas compost from EFB and POME enriches the soil, improving yields. It is a simple but powerful concept. "Nothing goes to waste, everything generates value."

Flagship projects such as the Triang Biogas Plant in Pahang (2.4mw, exporting 2mw to the grid and powering about 15,000 homes) and



FGV's 100% palm oil-based B100 Biodiesel is now on trial in passenger cars after successful runs with prime mover tankers. With FGV's B100, Malaysia accelerates further towards a cleaner, greener economy and sustainability leadership.

“Our journey proves that the palm oil sector can be part of the climate solution. It's about turning what was once waste into wealth — and powering the nation's sustainable future.”

— Dato' Fakhruddin Othman, FGV group CEO



the Umas Plant in Tawau (rural electrification for 3,000 households) demonstrate how RE can generate both income and impact.

These initiatives have even won National Energy Awards, proof that FGV's sustainability journey is being recognised nationally.

### Cutting carbon, creating impact

Every megawatt counts in the fight against climate change. In 2024 alone, FGV exported 33,438mwh of biogas electricity, displacing an estimated 25,882 tonnes of carbon dioxide emissions, up 20% from 2023. The group has pledged to halve its greenhouse gas emissions by 2030 and achieve net zero by 2050, with targets validated by the Science Based Targets initiative (SBTi).

Each new plant expands FGV's methane-capture network, helping prevent one of the world's most potent greenhouse gases from entering the atmosphere. These measurable gains show that climate leadership can coexist with operational efficiency and that Malaysia's palm oil sector can be part of the solution, not the problem.

### From local mills to global markets: Balancing profitability and purpose

What sets FGV's RE strategy apart is its ability to turn sustainability into exporta-

ble value. Its Green Gold Label (GGL)-certified palm kernel shells (PKS) are already being shipped to Japan, which recognises the certification under its RE programme, opening a premium market for traceable, low-carbon biomass from Malaysia. A portion of FGV's feedstock is ISCC-certified, qualifying it for use in Europe's sustainable biofuel and Sustainable Aviation Fuel (SAF) supply chains.

In Malaysia's Budget 2025, the government highlighted a partnership between PETRONAS, Sime Darby Plantation and FGV to develop SAF from palm oil mill waste, marking FGV's entry into next-generation fuels and advancing its RE transition efforts. Together with ongoing rooftop solar rollouts across mills and offices, FGV continues to diversify its RE mix while reducing electricity costs and carbon emissions.

"We're proving that Malaysia's palm oil industry can lead in green exports, not just in crude palm oil but also in certified low-carbon energy," says Fakhruddin.

While renewable projects are complex and capital-intensive, FGV approaches them with the financial discipline of a listed company. Typical payback periods exceed eight years, but the group mitigates risk through strategic partnerships that blend local ex-

pertise with international technology. Feedstock consistency is secured through scale, leveraging dozens of mills for a stable biomass supply. To manage foreign-exchange and certification risks, FGV upholds stringent governance and annual audits under GGL and ISCC standards.

By aligning commercial strategy with environmental impact, FGV ensures that sustainability is not a cost centre but a sustainable source of long-term growth and shareholder value.

### Policy alignment: From national roadmap to corporate reality

Malaysia's National Energy Transition Roadmap (NETR) outlines six levers of decarbonisation: energy efficiency; RE; bioenergy; green mobility; green hydrogen; and carbon capture, utilisation and storage (CCUS). FGV is already active in the first four, contributing directly to Malaysia's RE targets and rural electrification goals.

The company's roadmap mirrors the NETR's ambition, scaling biogas and biomethane, supporting green mobility through biofuels and exploring hydrogen and carbon capture as future opportunities.

"Our mills can be more than processing plants," Fakhruddin notes. "They can be power generators and biomass hubs driving the circular economy."

He also emphasises the role of policy and financing frameworks in accelerating private-sector adoption, particularly enabling small-scale generators to inject power into the grid and access green funding.

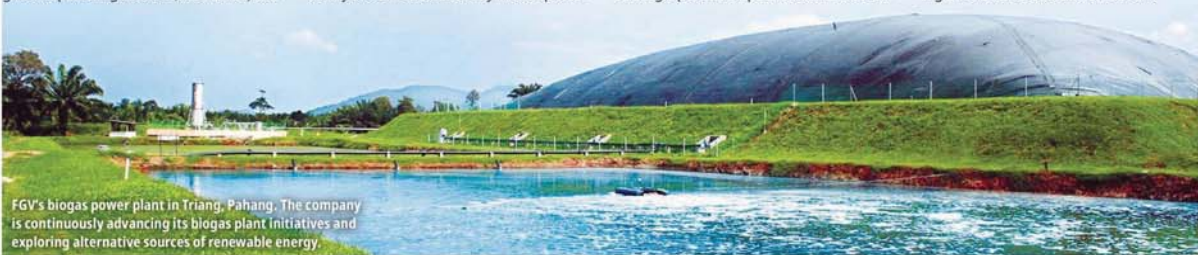
### The road ahead: From plantation to powerhouse

Looking ahead, FGV's renewable roadmap focuses on:

- Expanding methane capture across all mills;
- Scaling solar capacity;
- Developing new biomethane and bio-compressed natural gas (Bio-CNG) plants; and
- Decarbonising its logistics fleet.

Each step reinforces a simple but powerful truth. Sustainability is now a business strategy, not a side project. FGV's renewable initiatives have already transformed palm by-products into energy, revenue and impact, lighting up homes, powering industries and building national resilience. For investors, policymakers and everyday Malaysians, this transformation signals a broader shift: Malaysia's green economy is not a dream; it is already happening in the country's plantations.

"Our journey proves that the palm oil sector can be part of the climate solution," says Fakhruddin. "It's about turning what was once waste into wealth — and powering the nation's sustainable future."



FGV's biogas power plant in Triang, Pahang. The company is continuously advancing its biogas plant initiatives and exploring alternative sources of renewable energy.