



Steven Tee
Partner

Energy, Projects & Infrastructure
E: syt@lh-ag.com



Joyce Ong
Senior Associate

Energy, Projects & Infrastructure
E: oky@lh-ag.com



Jeremia Majantim-Goh
Pupil

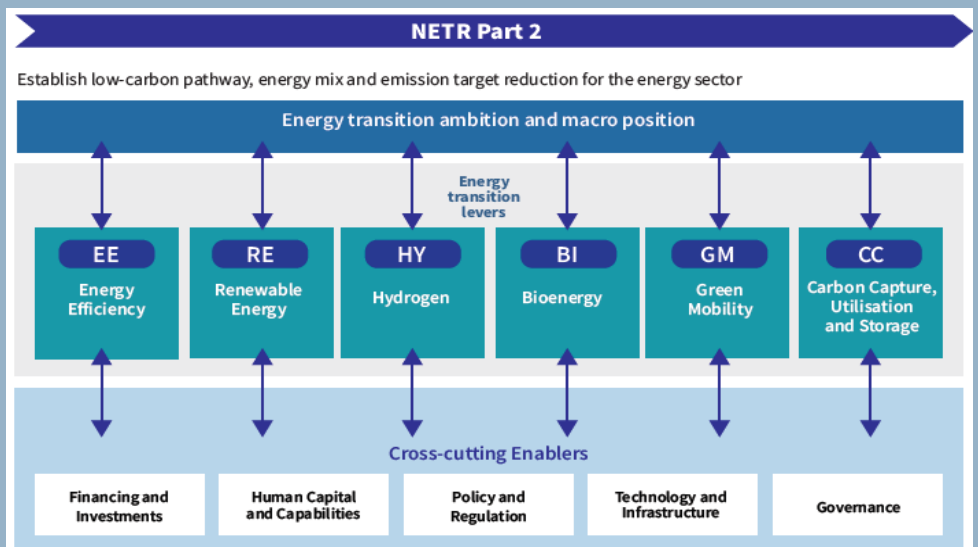
19 SEPTEMBER 2023

National Energy Transition Roadmap (NETR) Phase 2

The Ministry of Economy has now unveiled the second phase of the National Energy Transition Roadmap (“NETR”), which introduces additional initiatives to those revealed in NETR Phase 1 under the six energy transition levers.




The policy document addresses Malaysia's energy trilemma by navigating a balancing act among three key energy objectives; energy security, affordability, and environmental sustainability. The solutions encompass a blend of policies, innovations, and investments, all aimed at optimizing the harmony between these objectives while acknowledging the inherent trade-offs of the key objectives.



NETR Phase 1 outlined the flagship catalyst projects and their associated initiatives, whereas in Phase 2, the emphasis shifts towards establishing an energy mix, defining a pathway for reducing greenhouse gas emissions, and setting precise targets and initiatives. It also highlights the need to enhance investments, human resource strategies, international collaboration plans, and policy frameworks to build the necessary talent, technology, and infrastructure for expanding and maintaining decarbonization efforts through the 5 cross-cutting enablers.




NETR Initiatives

NETR Phase 2 builds upon the foundation laid in Phase 1 by incorporating more initiatives, focusing on a balanced energy mix, and emphasizing the importance of investments, international collaboration, and policy framework. As in Phase 1, the initiatives are categorised under different codes and will be implemented by the designated champions. The particulars of the initiatives are summarized below:






Energy Transition Levers	Key Targets	Initiatives
Energy Efficiency (“EE”) 	<ul style="list-style-type: none"> Energy savings of 22% by 2050 	<ul style="list-style-type: none"> Improve EE awareness, existing minimum energy performance standards and 5-star rating bands Enforce mandatory investment-grade audits for high-energy-consuming commercial and industrial buildings Establish green building codes Establish a public Energy Service Companies (“ESCO”) platform to coordinate public building retrofits Launch major modernisation initiative for government buildings
Renewable Energy (“RE”) 	<ul style="list-style-type: none"> 70% RE installed capacity share by 2050 No new coal power plant 	<ul style="list-style-type: none"> Set up solar parks and enhance current large-scale solar mechanism Promote floating solar and agrivoltaic technology by removing regulatory barriers and rolling out clear guidelines Expand virtual aggregation mechanism for rooftop solar Create strategies for accelerated investments of transmission and distribution Develop Third Party Access framework with a transparent mechanism for wheeling fee calculation Establish RE exchange hub for cross-border RE trade through new interconnections and physical enabler
Hydrogen (“H2”) 	<ul style="list-style-type: none"> Completely phase out the use of grey hydrogen as a 	<ul style="list-style-type: none"> Initiate low-carbon hydrogen policies such as domestic guarantee of origin certification and hydrogen-specific regulations

	<p>feedstock by 2050</p> <ul style="list-style-type: none"> • Produce up to 2.5 Mtpa of green hydrogen by 2050 • Set up one low-carbon hydrogen hub by 2030 and another two hubs by 2050 	<ul style="list-style-type: none"> • Build domestic green electrolyser manufacturing capabilities by providing funding and incentives • Decrease levelised cost of hydrogen by establishing H2 hubs and providing financial incentives for large-scale manufacturers of low-carbon hydrogen and electrolyser • Stimulate demand for low-carbon hydrogen domestically through bilateral agreements with importing countries, developing hydrogen refuelling stations and exploration of hydrogen co-firing
<p>Bioenergy</p> 	<ul style="list-style-type: none"> • Increase biorefinery capacity to 3.5 billion litres by 2050 • Increase biomass and biogas power generation capacity to 1.4GW by 2050 	<ul style="list-style-type: none"> • Explore alternative (bamboo and algae) bioenergy feedstock • Boost acceptance of palm oil biomass and obtain sustainable aviation fuel certification • Facilitate biomass clustering and scale up used cooking oil collection to address supply security challenges • Catalyse local demand for bioenergy through imposing mandates and providing incentives • Enhance solid waste management policies by exploring landfill tax and quota, landfill bans, expansion of de-risking revenue sources, and increasing recycling infrastructure investments
<p>Green Mobility</p> 	<ul style="list-style-type: none"> • Reach 60% public transport modal share by 2050 • Accelerate the penetration of xEV and electric two-wheelers' share of the vehicle fleet to 80% by 2050 • Achieve 90% local xEV manufacturing by 2050 	<ul style="list-style-type: none"> • Invest in buildout and electrification of public transport infrastructure • Improve light and heavy vehicle fuel economy and determine long-term fuel standards • Accelerate electrification of light vehicles segment • Implement B30 biodiesel blending and sustainable aviation field blending mandate • Introduce powertrain for heavy vehicles • Develop aviation decarbonisation roadmap • Assume palm oil-feedstock emissions study

	<ul style="list-style-type: none"> • 5% of heavy vehicles to utilise hydrogen by 2050 • Adopt International Civil Aviation Organization’s goal of net-zero carbon emissions by 2050 • Up to 47% sustainable aviation fuel blending mandate by 2050 • Low-carbon fuel penetration of 40% in marine transport by 2050 	<ul style="list-style-type: none"> • Unlock market opportunities for biofuel and future fuels in marine bunkering
<p>Carbon Capture, Utilisation and Storage (“CCUS”)</p> 	<ul style="list-style-type: none"> • Develop 3 carbon capture hubs by 2050 • Total storage capacity between 40 to 80 Mtpa by 2050 	<ul style="list-style-type: none"> • Develop CCUS-specific policies and regulations, and amend existing regulations to incorporate key enablers • Incentivise CCUS adoption through establishing carbon pricing instruments and enabling access to funding • Facilitate CCUS Hub infrastructure development • Develop transboundary CO₂ regulatory agreement • Promote local utilization of CO₂ in industry through specific mandates

Cross-Cutting Enablers

To address the challenges and obstacles identified in this energy transition, 5 cross-cutting enablers and initiatives have been curated to help overcome structural impediments. They are: (1) financing and investment; (2) policy and regulation; (3) human capital and just transition; (4) technology and infrastructure; and (5) governance and implementation. The enablers will be implemented through a series of 12 initiatives as summarised below:

Cross-Cutting Enablers	Initiatives
<p>Financing and Investment</p> 	<ul style="list-style-type: none"> • Launch a National Energy Transition Facility (NETF) with an initial seed fund of RM2 billion aimed at improving fund accessibility, streamlining investment procedures, and ensuring a smooth flow of financial resources towards energy transition projects • Mobilise private capital for energy transition sectors by attracting private investments, adopting sustainable financial instruments, enhancing financial literacy and expediting venture capital investments • Implement carbon pricing system in stages to provide clear signals to the market about the need for decarbonisation and develop a communication strategy to gain support from businesses
<p>Policy and Regulation</p> 	<ul style="list-style-type: none"> • Rationalise energy subsidies based on needs through leveraging Pangkalan Data Utama • Launch a Natural Gas Roadmap to optimise value-add of indigenous natural gas resources and enhance competitiveness of upstream O&G to meet domestic demand
<p>Human Capital and Just Transition</p> 	<ul style="list-style-type: none"> • Develop green skills taxonomy for strategic workforce planning • Establish and implement targeted green skilling, and community support programmes • Increase energy literacy and energy efficiency awareness among students, SMEs, and consumers
<p>Technology and Infrastructure</p> 	<ul style="list-style-type: none"> • Develop programmes to support SME involvement in the green value chain • Establish a National Energy Knowledge Hub as a one-stop centre for energy transition data, information, and programmes
<p>Governance and Implementation</p> 	<ul style="list-style-type: none"> • Establish a National Committee on Energy Transition to monitor the implementation of NETR Projects

Head Office

Level 6, Menara 1 Dutamas
Solaris Dutamas
No. 1, Jalan Dutamas 1
50480 Kuala Lumpur
Malaysia
Tel: +603 6208 5888
Fax: +603 6201 0122

Johor Office

Suite 21.01
21st Floor, Public Bank Tower
No.19, Jalan Wong Ah Fook
80000 Johor Bahru, Johor
Tel: +607 278 3833
Fax: +607 278 2833

Penang Office

51-12-E, Menara BHL Bank,
Jalan Sultan Ahmad Shah,
10050
Penang
Tel: +604 299 9668
Fax: +604 299 9628

Email

enquiry@lh-ag.com

Website

www.lh-ag.com

Final Thoughts

Part 2 of the NETR further demonstrates the commitment by the government to achieve the targets set out for the energy transition. It is now in the hands of the identified ministries and agencies to formulate clear and specific regulations, so that the levers for achieving the targets can be implemented.

Further details in relation to the NETR are described in the policy document “**National Energy Transition Roadmap: Energising the Nation, Powering Our Future**”, which can be viewed [here](#).

If you have any queries, please contact Senior Associate, **Joyce Ong** (oky@lh-ag.com) or her team Partner, **Steven SY Tee** (syt@lh-ag.com).