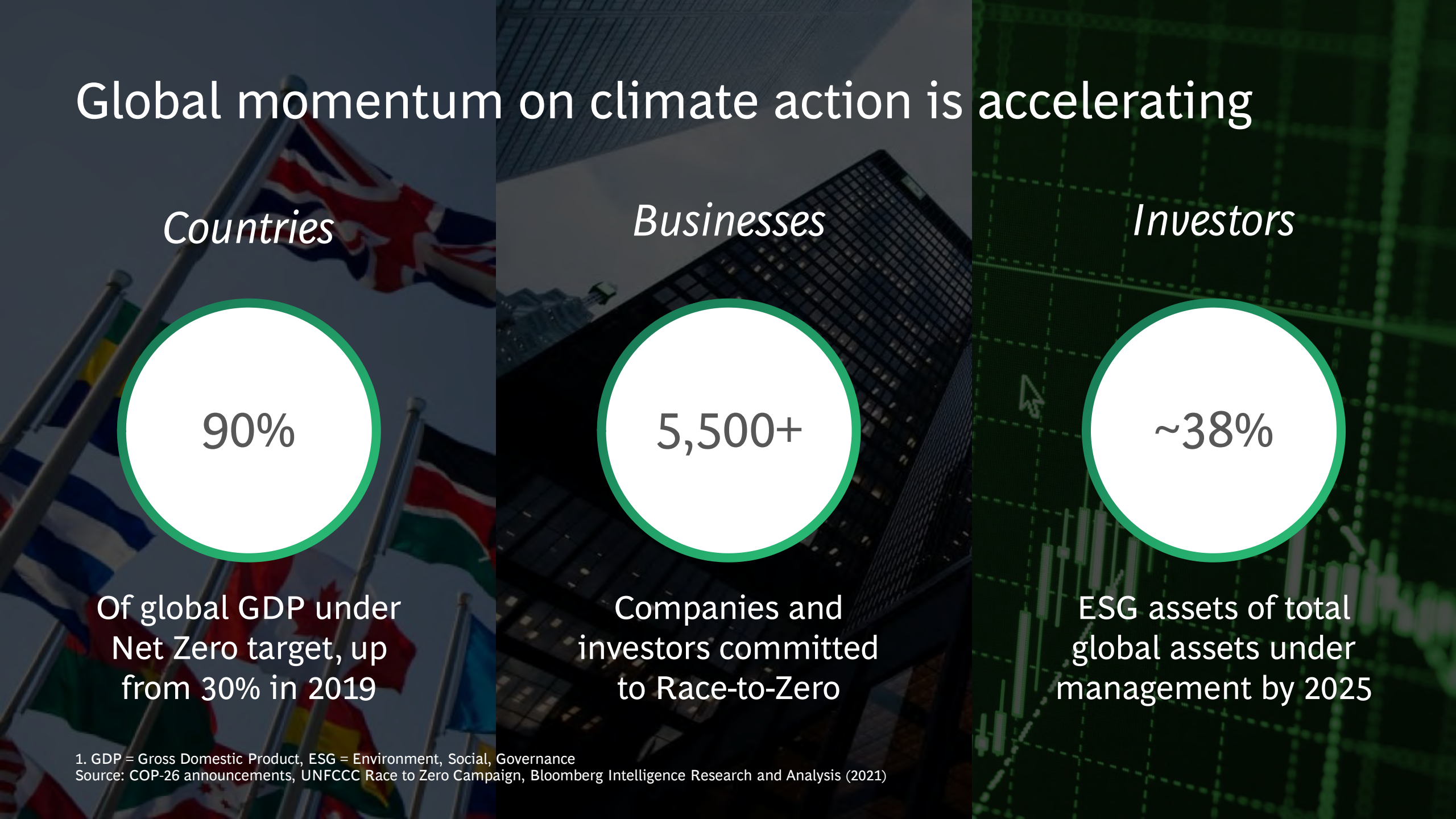
# SECURING OUR FUTURE: NET ZERO PATHWAYS FOR MALAYSIA

JC3 Executive Summary

# Global momentum on climate action is accelerating



*Countries*

90%

Of global GDP under Net Zero target, up from 30% in 2019

*Businesses*

5,500+

Companies and investors committed to Race-to-Zero

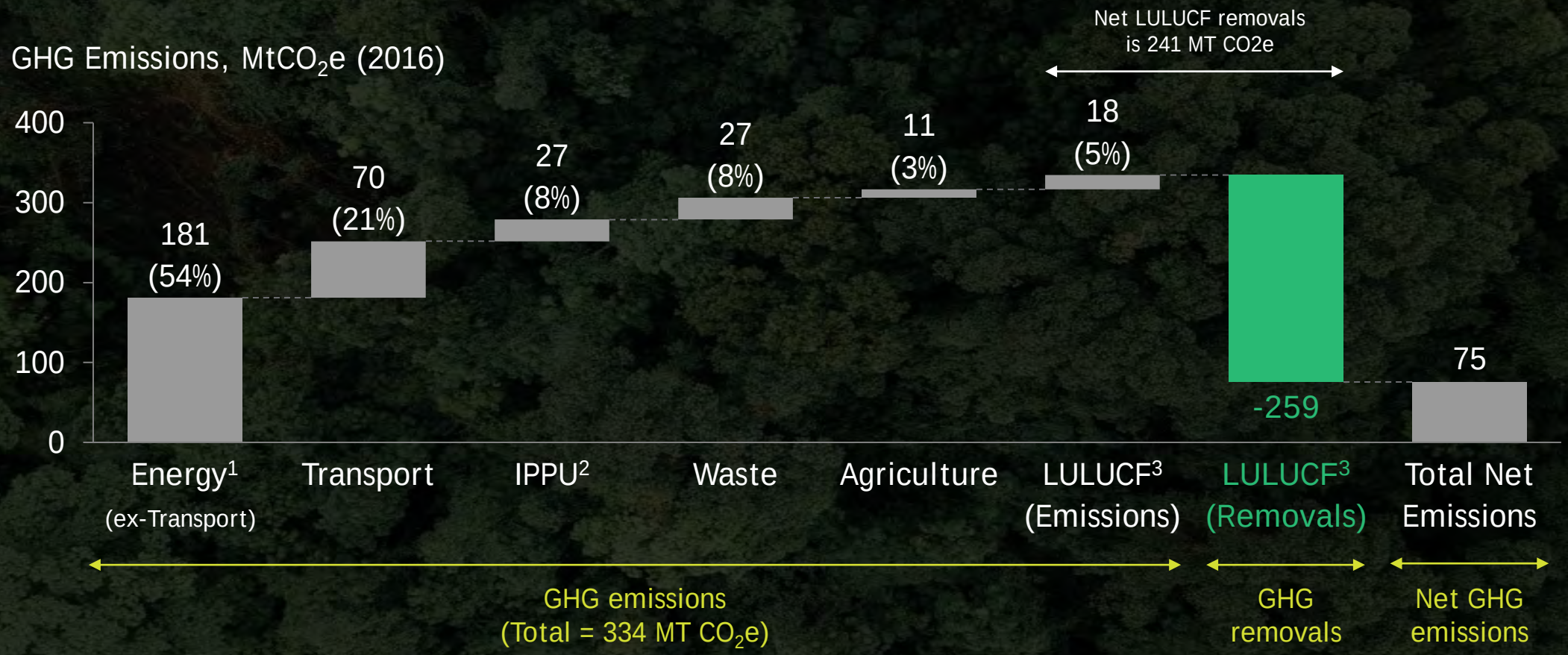
*Investors*

~38%

ESG assets of total global assets under management by 2025

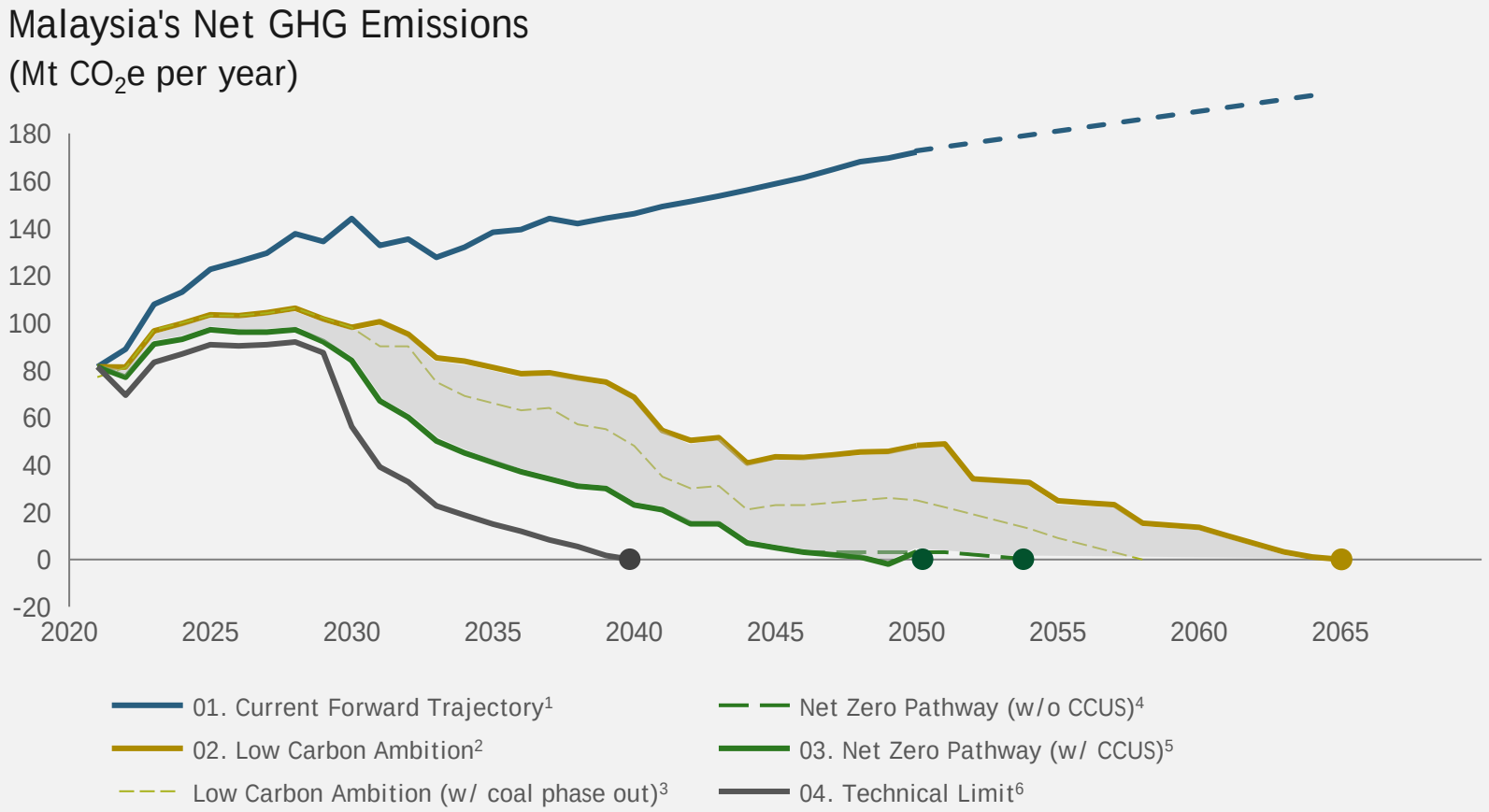
1. GDP = Gross Domestic Product, ESG = Environment, Social, Governance
Source: COP-26 announcements, UNFCCC Race to Zero Campaign, Bloomberg Intelligence Research and Analysis (2021)

# Malaysia will need to decarbonise key sectors and preserve carbon sinks in order to achieve Net Zero




1. Refers to emissions from energy industries (e.g., power), manufacturing industries and construction, other sectors, and non-specified energy emissions, and fugitive emissions from fuels 2. IPPU: industrial processes and product use 3. LULUCF: land-use, land-use change, and forestry
Source: Malaysia's Third Biennial Update Report to the UNFCCC (2020)

# Number of pathways towards Net Zero




1. Current forward trajectory represents the pathway where current stated forward-looking plans are implemented, resulting in decrease in emission intensity and slowed pace of emissions growth (pathway is compatible with NDC GHG intensity of GDP reduction targets) 2. Low carbon ambition pathway represents the pathway where only mainstream, proven, and commercially viable (NPV positive) abatement levers are adopted 3. Low carbon ambition pathway but with the phase-out of coal (i.e., avoided coal power plant builds or long-term repowering in Peninsular Malaysia during 2030s outlined under JPPPET 2020) 4. Net Zero 2050 pathway without adoption of CCUS 5. Net Zero 2050 pathway assumes optimal adoption of levers (factoring in socioeconomic impact and commercial viability) to achieve target of Net Zero GHG emissions by 2050; which includes early investments and application of levers which are non NPV positive; including emerging tech such as carbon capture utilisation and storage (CCUS). 6. Technical limit for decarbonisation where all abatement levers are adopted without commercial viability considerations
Source: WWF-BCG project team analysis

01 Reduced emissions intensity

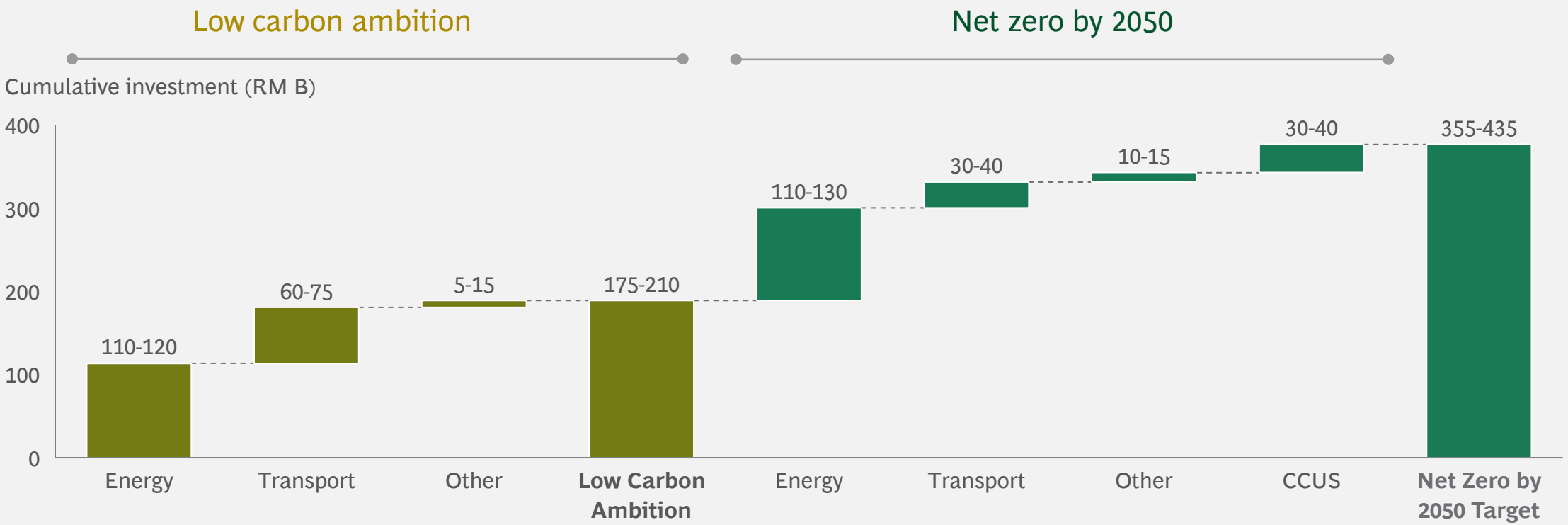
02 Low carbon pathway

03 Optimal pathway to achieve Net Zero by 2050

04 All technically-feasible abatement technologies

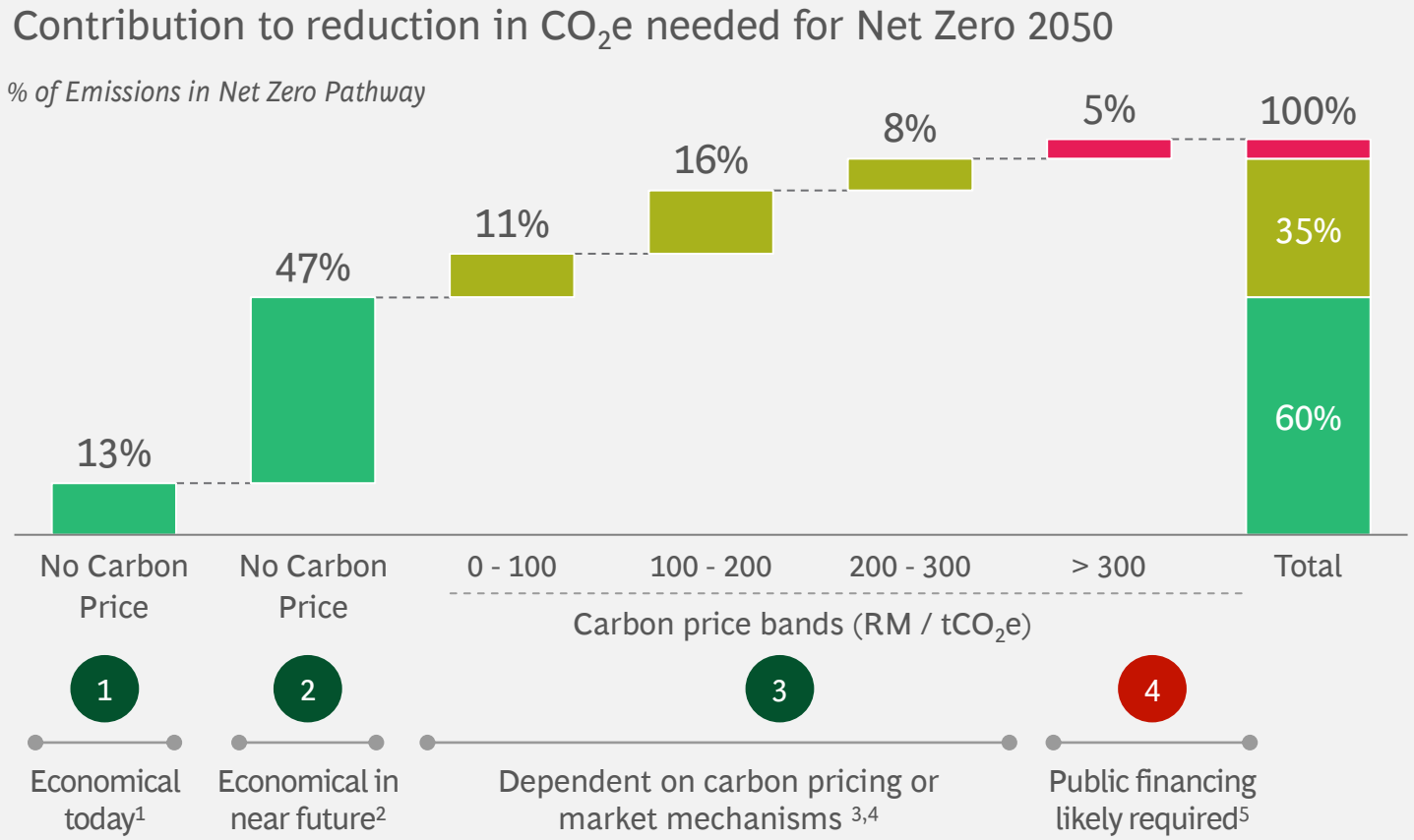
# Estimated investment of ~RM 350-450 Bn (~USD 90 Bn) required to achieve Net Zero 2050 ambitions

**Cumulative investment 2021-2050 under Low carbon ambition & Net Zero by 2050 targets (RM Bn)**




1. Investment represent CAPEX expenditure across various abatement levers but exclude any investments for Adaptation and Resilience (A&R). Power investments include power plants, energy storage, smart grid, audit and retrofits, green building investments, etc. 2. Transport investments include EV charging infrastructure, automotive facility upgrades, public transport investments, hydrogen infrastructure development, biorefinery capacity addition 3. Other investments include industry abatement initiatives such as steel recycling, hydrogen DRI, investments in agriculture and forestry (e.g., precision agriculture investments, degraded forest restoration, etc.), waste investments (e.g., WtE plants)
Source: Project Team Analysis, Expert Interviews

# 60% of pathway to Net Zero expected to be commercial, remaining 40% will need support of market mechanisms



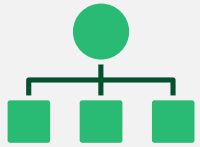

- **Around 40% of Malaysia's GHG emissions will not be NPV positive** even with tech progress in the absence of market mechanisms
- Market mechanisms such as **carbon pricing or carbon offsets will shift economics** to incentivise further reduction of GHG emissions
- The **mobilisation of private capital is critical** given the limited forward-looking fiscal space
- **Public financing should be focused on "last mile" of GHG abatement** required which is highly uneconomical (e.g., public transport) due to nature as public good

1. Economically net positive (NPV > 0) with current technology maturity 2. Economically net positive (NPV > 0) based on projected technology evolution in next few years 3. Carbon pricing could make these levers economically feasible 4. Based on median carbon pricing ($50-$80) from Report of the High-Level Commission on Carbon Prices (Carbon Pricing Leadership Coalition) and conversion of RM : USD rate of 4:1. 5. Most uneconomic levers; will likely require government funding. Lever justified for broader spillover effects (multiplier impact on GDP, jobs, and positive externalities beyond carbon reduction

Source: Carbon Pricing Leadership Coalition, BCG analysis

# 12 potential priority actions to scale climate finance

## Many already being focused on and being delivered through JC3 working groups



### Data, taxonomy and standards

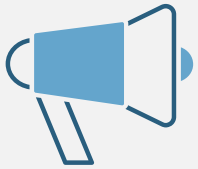
- **Mandatory disclosure** of data on climate risks and opportunities
- **Common definitions** on climate finance, translated into taxonomy
- **Globally consistent** regulation and supervisory tools

### Transition policies and roadmaps

- Establish and enforce sufficiently material **carbon pricing**
- **Fiscal programs and legislative action** to achieve climate targets
- Development of **sector and region-specific** transition pathways

### Capital mobilisation

- **Blended finance**[1] to incentivise private capital
- **Scaling** of transition funding and financing products / instruments
- Integration of climate factors into the **investment process**[2]



### Awareness and collaboration

- **Climate finance risk** awareness for corporate executives
- Sharing of **climate risk management best practices**
- Promote **innovative mindset in scaling climate finance**[3]

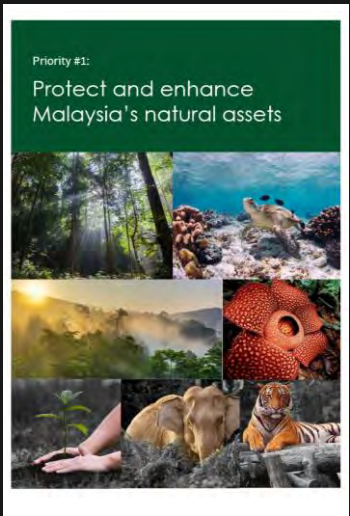
1. From either government or national / multilateral development banks 2. And portfolio company stewardship 3. Including data, use of tech, etc.
Source: Global Financial Market Association

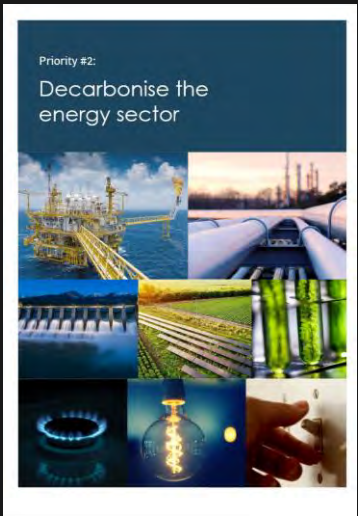
# Overview of 12 potential priority actions to scale climate finance

1. **Mandatory disclosures** of corporate-specific financially material, decision-relevant data relating to climate risks and opportunities; supported by consistent global disclosure frameworks
2. **Common definition and principles** for climate finance, translated into region and sector-specific taxonomies that are 1.5$^{0}$C pathway aligned, comparable, and flexible to technological evolutions
3. **Globally consistent regulation and supervisory tools** to mitigate market fragmentation and support the development of consistent regulatory drivers aligned with pace of developments
4. **Carbon pricing** such as a carbon tax or ETS which is enforced, comprehensive, and at sufficiently high price points, with forward-looking price direction and supportive of a "just transition"
5. **Effective and coherent government policies, fiscal programs, and legislative actions** that are aligned to the country's climate targets and implemented in a timely manner
6. **Sector- and region-specific transition or decarbonisation pathways** to achieve the country's climate targets, involving government, industry players, scientific community
7. **Enhance blended or public-private financing** to motivate mobilisation of private sector capital funded by government and multilateral international climate funding
8. **Develop broad range of development of financial products and instruments** to meet financing, investing, hedging, market liquidity, and funding needs of players in transition
9. **Integration of climate factors by investors and asset managers** into the investment process, risk and valuation models and frameworks, and portfolio company engagement and stewardship
10. **Climate finance risk awareness** and financial education building at the Board and executive level in corporates to actively prioritise and accelerate preparations for a low carbon future
11. **Sharing of best practices** of climate risk management capabilities and the transparency of the integration of climate risk within the firm's governance, strategy planning, and operations
12. **Promote an innovation mindset** in scaling climate finance, with the use of financial product innovation, advanced data and analytics for climate risk modelling, scenario analysis, and others

1. From either government or development banks 2. And portfolio company stewardship 3. Including data, use of tech, etc.

# The study is available as a public resource and reference

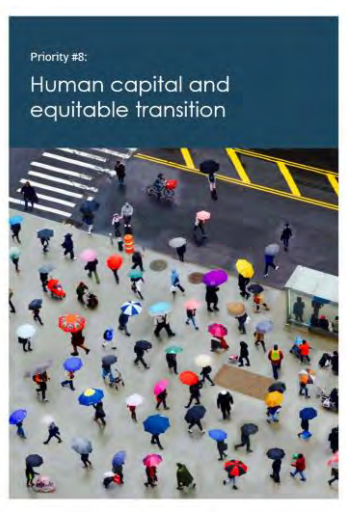


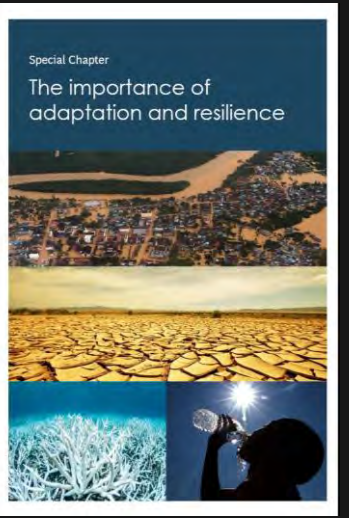


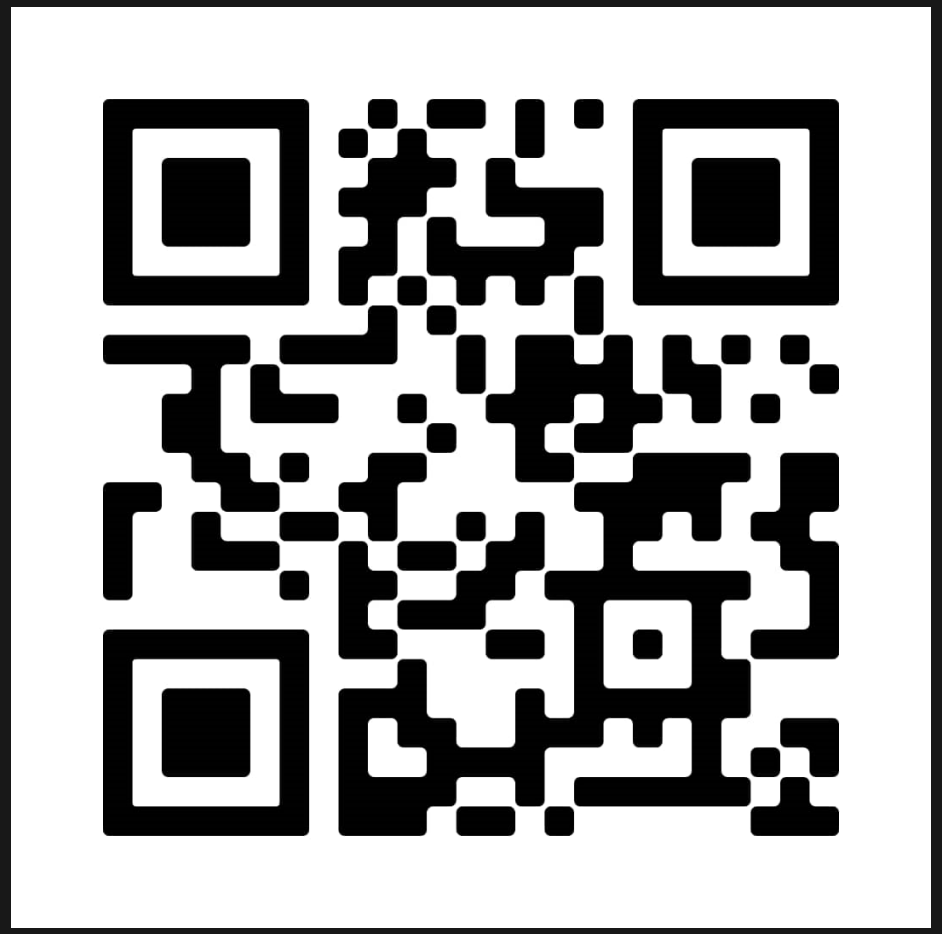








The report is also available for download on both the BCG and WWF Malaysia websites:

https://www.bcg.com/en-sea/net-zero-pathways-malaysia

https://www.wwf.org.my/?29365/TOWARDS-NET-ZERO-EMISSIONS-BY-2050

# Thank you