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Fiscal Policy to Support the Green and Just Energy Transition

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Foreword

As the President of the Economic Research Institute for ASEAN and East Asia (ERIA), it is my distinct honour to present this comprehensive study on the economic impact of the green and just transition in selected East Asian economies and the European Union. Climate change remains one of the most pressing challenges of our time, and addressing it requires a concerted effort from all sectors of society. At ERIA, we are committed to advancing economic research that not only highlights the challenges but also identifies viable solutions for a sustainable future.

This study provides an in-depth analysis of green transition efforts in select economies. The country authors examine various relevant aspects, such as governance systems, development agendas, economic structures, and fiscal policies. The impacts of green policies on economies and people have been estimated and projected. It also underscores the critical role of both public and private sectors in mobilising the necessary financial resources to support climate action. In addition to sectoral case studies, the report presents a detailed examination of strategies employed by Indonesia, Malaysia, Thailand, Japan, and the European Union in their transition towards a low-carbon economy.

Our findings highlight the importance of strategic planning, robust fiscal policies, and innovative financial mechanisms in implementing a successful green transition. It is vital to incorporate the principles of a just transition, ensuring that the shift to renewable energy and sustainable practices is both inclusive and equitable, particularly for those most vulnerable to the impacts of climate change.

I extend my deepest gratitude to the dedicated team of researchers and contributors who have worked tirelessly to produce this report. Their expertise and unwavering commitment have been instrumental in completing this study. I also wish to thank our partners and stakeholders for their invaluable support and collaboration.

As we move forward, it is imperative that we continue to foster both international and regional cooperation, particularly in the East Asia context. We must also strengthen our collective efforts to leverage innovative financial instruments and complement them with effective fiscal policies to finance the transition and mitigate the adverse effects of climate change. I believe the insights and recommendations in this study will serve as a valuable resource for policymakers, researchers, and practitioners as we work towards a sustainable and resilient future for East Asia and beyond.



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President of ERIA (Economic Research Institute for ASEAN and East Asia)

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List of Abbreviations

ACEA	European Automobile Manufacturers Association
AEDP 2018	Alternative and Renewable Energy Development Plan 2018–2041
APG	Association of Southeast Asian Nations (ASEAN) power grid
ASEAN	Association of Southeast Asian Nation
BCC	Banker–Charnes–Cooper
BOI	Board of Investment
CBAM	carbon border adjustment mechanism
CCR	Charnes–Cooper–Rhodes
CCS	carbon capture and storage
CCUS	carbon capture, utilisation, and storage
CDR	carbon dioxide removal
CFPP	coal-fired power plants
CGE	computable general equilibrium
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
COP	Conference of the Parties
CPI	consumer price index
DEA	data envelopment analysis
DID	difference-in-differences
DMU	decision-making unit
DTN	National Energy Policy
EEA	European Environment Agency
EEP 2018	Energy Efficiency Plan 2018–2041
EFTA	European Free Trade Association
EPBD	EU Energy Performance of Buildings Directive
ERIA	Economic Research Institute for ASEAN and East Asia
ESG	environmental, social, and governance

ESR	Effort Sharing Regulation
ETM	Energy Transition Mechanism
ETS2	Emissions Trading System 2
EU	European Union
EU ETS	EU Emission Trading System
EV	electric vehicle
FiT	feed-in-tariff
G7	Group of Seven
Gas Plan 2018	Natural Gas Management Plan 2018–2041
GBS	Green Bond Standard
GDP	gross domestic product
GHG	greenhouse gas
ggCO ₂	gigagrams of carbon dioxide
ggCO ₂ eq	gigagrams of carbon dioxide equivalent.
GHG	greenhouse gas
Gol	Government of Indonesia
GPI	government policy indicator
GRDP	gross regional domestic product
GW	gigawatt
GWh	gigawatt hours
GX	Green Transformation Policy
GX Policy	Basic Policy for the Realisation of Green Transformation
HDV	heavy-duty vehicle
HETR	The Hydrogen Economy and Technology Roadmap
IA	impact assessment
ICCT	International Council on Clean Transportation
ICE	Internal Combustion Engine
ILUC	indirect land use change
IMF	International Monetary Fund
IPCC	Intergovernmental Panel on Climate Change
IPPU	industrial processes and product use

ISIC	International Standard Industrial Classification
JETP	Just Energy Transition Partnership
kg H ₂	kilogramme of hydrogen
kW	kilowatt
LULUCF	land use, land-use change and forestry
LNG	liquefied natural gas
LPG	liquefied petroleum gas
MEMR	Ministry of Energy and Mineral Resources
METI	Ministry of Economy, Trade, and Industry
MSR	Market Stability Reserve
MtCO ₂	metric tonnes of carbon dioxide
MtCO _{2e}	metric tonnes of carbon dioxide equivalent
Mtoe	million tonnes of oil equivalent
MyRER	Malaysia Renewable Energy Roadmap
MW	megawatt
NDC	nationally determined contributions
NETR	National Energy Transition Roadmap
NPV	net present value
OECD	Organisation for Economic Co-operation and Development
Oil Plan 2018	Fuel Management Plan 2018–2041
PDP 2018 Rev.1	Power Development Plan 2018–2041
PHEV	plug-in hybrid electric vehicle
PLN	State Electricity Company - Perusahaan Listrik Negara
PMK	Peraturan Menteri Keuangan
PLTU	coal-based power plant
ppm	part per million
PV	photovoltaic
Q	Quarter
R&D	research and development
RED II	Renewable Energy Directive II
RISE	Regulatory Indicators for Sustainable Energy

RM	Malaysian ringgit
ROI	return on investment
SOEC	soil oxide electrolyser cell
Solar PV	solar photovoltaic technology
SR15	Special Report on Global Warming of 1.5°C
SAF	sustainable aviation fuels
SAM	social accounting matrix
SE4ALL	Sustainable Energy for All
SEDA	Sustainable Energy Development Authority
SDG	Sustainable Development Goals
SIBS	Large and Medium Manufacturing Industry Survey
SME	small and medium enterprise
SUSENAS	National Socioeconomic Survey
tCO ₂	ton carbon dioxide
TFEC	total final energy consumption
TPES	total primary energy supply
TWh	terawatt-hours
UK	United Kingdom
US	United States
UNFCCC	United Nations Framework on Climate Change Conference
WLTP	World Harmonised Light Vehicle Test Procedure
ZEV	zero-emission vehicle
ZLEV	zero- and low-emission vehicle