

# **Fiscal Policy to Support the Green and Just Energy Transition**

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ERIA Research Project FY2024 No. 28

Published in January 2025

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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.



**Tetsuya Watanabe**

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

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# Table of Contents

	Foreword	iii
	List of Project Members	iv
	List of Figures	vii
	List of Tables	xii
	List of Abbreviations	xv
Chapter 1	Achieving Climate Goals: The Intersection of Policy, Finance, and Innovation	1
Chapter 2	Financing the Green and Just Energy Transition: Green Fiscal Policy for Just and Fair Transition to a Green Economy	20
Chapter 3	The Green Economy Transition: The Effect of Environmental Factors on Renewable Energy Development in Malaysia	68
Chapter 4	The Economic and Greenhouse Gas Emission Impacts of Electric Vehicles	105
Chapter 5	European Union Transition to Green Energy in the Transport Sector	188
Chapter 6	Energy Transition in Japan from the Perspective of Economics and Technology	230

## List of Figures

Figure 1.1	Paths of the Pledges for Several Scenarios and the Gaps with Current Policies	2
Figure 2.1	Aggregate Trends of Climate Finance Provided and Mobilised by Developed Countries	21
Figure 2.2	State Electricity Company Pathway for Coal Fired Power Plant Early Retirement	28
Figure 2.3	Event Study Analysis: The Dynamic Effect of Coal-Fired Power Plants on Economic Development	35
Figure 2.4	Event Study Analysis: The Dynamic Effect of Coal-Fired Power Plants on Economic Development	36
Figure 2.5	The Natural Path of Retirement for Current Active Coal-Fired Power Plants in Indonesia	45
Figure 2.6	Power Capacity Loss Due to the Natural Path of Retirement for Coal-Fired Power Plants in Indonesia	45
Figure 2.7	The Annual Carbon Dioxide Emission Reduction Due to the Natural Path of Retirement for Coal-Fired Power Plants in Indonesia	47
Figure 2.8	Green Financing Framework	50
Figure 3.1	Total Primary Energy Supply Based on Energy Source	69
Figure 3.2	Energy-Related Acts	70
Figure 3.3	Energy-Related Policies	71
Figure 3.4	National Energy Policy Vision and Objectives	72
Figure 3.5	Selected Targets on Low Carbon Nation Aspiration 2040	74
Figure 3.6	Key Energy-Related Ministries	75
Figure 3.7	Key Energy-Related Organisations	75
Figure 3.8	Summary of Renewable Energy Resource Potential in Malaysia	76
Figure 3.9	Malaysia Renewable Energy Roadmap Strategic Framework	80
Figure 3.10	Conceptual Research Framework	84

Figure 3.11	Renewable Energy Generation by State and Federal Territory in Malaysia	86
Figure 3.12	Cumulative CO <sub>2</sub> Emissions Reduction According to State and Federal Territory	87
Figure 3.13	Electricity Consumption by State and Federal Territory in Malaysia	88
Figure 3.14	Employment Figures in the Electricity, Gas and Water Supply Sector in Malaysia, 2020–2020	88
Figure 3.15	Gross Domestic Product by State and Federal Territory at Constant Prices (2010 = 100), Malaysia	89
Figure 3.16	Efficiency Score of Renewable Energy Development in Malaysia	90
Figure 3.17	Technical Efficiency of Renewable Energy Development in Malaysia	92
Figure 3.18	Mean Technical Efficiency by State and Federal Territory in Malaysia	92
Figure 3.19	Energy Transition Levers and Project Prioritisation Criteria	96
Figure 3.20	An Overview of the Roadmap Presenting the Current, Short-Term, Mid-Term and Long-Term Target	98
Figure 4.1	Net Imports of Commercial Primary Energy	105
Figure 4.2	Thailand's Biofuel Consumption, 2019–2023	106
Figure 4.3	Thailand's Greenhouse Gas Emission Trends	109
Figure 4.4	Total Greenhouse Gas Emissions by Sector, 2000 and 2018 (Excluding Land Use, Land-Use Change, and Forestry)	110
Figure 4.5	Thailand's 2050 Carbon Neutrality Pathway	111
Figure 4.6	Thailand's 2065 Net-Zero Greenhouse Gas Emission Pathway	112
Figure 4.7	Net-Zero Greenhouse Gas Emissions Timeline for the Transport Sector	113
Figure 4.8	The Structural Relationship of all Energy Plans	117
Figure 4.9	The Main Structure of the Social Accounting Matrix	122
Figure 4.10	The Main Structure of the Computable General Equilibrium Model	129
Figure 4.11	The Price Index of Electric Vehicle Batteries over the Projected Period (2021–2040)	132



Figure 4.12	The Proportion of Electric Vehicles to the Total Domestic Production of Vehicles	132
Figure 4.13	A Comparison of Real Gross Domestic Product	133
Figure 4.14	The Impact of the Electric Vehicle Policy on Real Gross Domestic Product	135
Figure 4.15	The Impact of the Electric Vehicle Policy on Total Private Consumption	136
Figure 4.16	The Impact of the Electric Vehicle Policy on Gross Fixed Capital Formation	136
Figure 4.17	The Impact of the Electric Vehicle Policy on Total Export	137
Figure 4.18	The Impact of the Electric Vehicle Policy on Total Import	137
Figure 4.19	The Impact of the Electric Vehicle Policy on Net Current Account Balance	138
Figure 4.20	The Impact of the Electric Vehicle Policy on The Consumer Price Index	139
Figure 4.21	The Impact of the Electric Vehicle Policy on The Total Value of Employment	140
Figure 4.22	The Sectors with the Highest Positive Impacts Due to the Electric Vehicle Policy	143
Figure 4.23	The Sectors with the Highest Negative Impacts Due to the Electric Vehicle Policy	144
Figure 4.24	Changes in Total Government Revenue Due to The Electric Vehicle Policy	145
Figure 4.25	Changes in Total Direct Tax Due to the Electric Vehicle Policy	146
Figure 4.26	Changes in Total Indirect Tax due to the Electric Vehicle Policy	146
Figure 4.27	Fiscal Balance Due to The Electric Vehicle Policy	148
Figure 4.28	Impact of the Electric Vehicle Policy on Aggregate Household Income	149
Figure 4.29	Impact of the Electric Vehicle Policy on Aggregate Household Income from Capital	149
Figure 4.30	Impact of the Electric Vehicle Policy on Aggregate Household Income from Wages	150

Figure 4.31	Top Ten Goods and Services with the Highest Increment in the Consumption Basket	152
Figure 4.32	Top Ten Goods and Services with the Lowest Increment in the Consumption Basket	153
Figure 4.33	Impact of the Electric Vehicle Policy on Aggregate Household Saving	154
Figure 4.34	Greenhouse Gas Emissions Classified by Activity	155
Figure 4.35	Greenhouse Gas Emissions from Agriculture (Base Case)	155
Figure 4.36	Greenhouse Gas Emissions from Energy (Base Case)	156
Figure 4.37	Greenhouse Gas Emissions from Industrial Processes (Base Case)	156
Figure 4.38	Greenhouse Gas Emissions from Waste (Base Case)	157
Figure 4.39	Greenhouse Gas Emissions from Main Energy Sources in 2021	157
Figure 4.40	Greenhouse Gas Emission from Coal (Base Case)	158
Figure 4.41	Greenhouse Gas Emissions from Natural Gas (Base Case)	158
Figure 4.42	Greenhouse Gas Emissions from Oil (Base Case)	159
Figure 4.43	The Impacts of The Electric Vehicle Policy on Greenhouse Gas Emission	160
Figure 4.44	The Propagation of The Electric Vehicle Policy in the Economy	162
Figure 4.45	Impacts on The Savings of Government and Aggregate Household	163
Figure 4.46	The Ratio of Greenhouse Gas Reduction to Budget Deficit Change	164
Figure 5.1	Total Net Greenhouse Gas Emissions and Greenhouse Gas Emissions from Transport in the EU-27 – Million Tonnes of Carbon Dioxide Equivalent and Change between 1990 and 2021	189
Figure 5.2	Share of Transport Subsectors in Greenhouse Gas Emissions by Transport (Including International Bunkers) in the EU-27 during 2021	190
Figure 5.3	Passenger Transport Volumes by Mode in the European Union-27, 1995–2020	191
Figure 5.4	Freight Transport Volumes by Mode in the European Union-27, 1995–2020	192
Figure 5.5	Estimated Change in Fuel Expenditure as a Percentage of Household Consumption Expenditures due to Emission Trading	208

System 2 for Transport and Buildings per Income Group, and  
Member State Level of Gross Domestic Product per Capita – MIX  
Scenario Compared to the Reference Scenario

Figure 5.6	Average Carbon Dioxide Emissions from New Passenger Cars and Vans and Future Targets	214
Figure 5.7	New Registrations of Electric Cars in the European Union-27, 2010–2022	215
Figure 6.1	Carbon Neutrality in Energy towards 2050 for Japan	233
Figure 6.2	Green Transformation Transition Bond	238
Figure 6.3	Carbon Capture and Utilisation in Methanol Production	245
Figure 6.4	The Energy Intensity Level of Primary Energy	246
Figure 6.5	Renewable Energy Supply	247
Figure 6.6	Renewable Energy Supply	248
Figure 6.7	Renewable Energy Consumption	248
Figure 6.8	Progress on Sustainable Energy Regulation by Pillar	249
Figure 6.9	Correlation between Renewable Utilisation and Progress on Renewable Energy Regulation amongst the Group of Seven Economies, 2021	252
Figure 6.10	Fossil Fuel Subsidies	254
Figure 6.11	Fossil Fuel Subsidies	255
Figure 6.12	Government Expenditure on Research and Development Environmental Protection	256
Figure 6.13	Environmental Taxes	256
Figure 6.14	Correlation between Renewable Utilisation and Fiscal Policies amongst the Group of Seven Economies, 2021	257
Figure 6.15	Cost of Hydrogen Production	259
Figure 6.16	Biohydrogen from Gasification	260
Figure 6.17	The Technological Learning from Electrolysis Technology	261
Figure 6.18	Costs of Storage and Long-Distance Hydrogen Transport	263

## List of Tables

Table 1.1	Market Size of Sustainable Bond Markets	5
Table 2.1	Fiscal Policy for Coal Transition from Benchmarking Countries	25
Table 2.2	Impact of Operating Coal-Fired Power Plants on Growth Rate	30
Table 2.3	Impact of Operating Coal-Fired Power Plants on Gross Domestic Product	31
Table 2.4	Estimated Impact on Economic Level and Growth (Subsamples) of Operating Coal-Fired Power Plants	34
Table 2.5	Impact of Coal-Fired Power Plants on Household Monthly Expenditure	38
Table 2.6	Impact of Coal-Fired Power Plants on Average Monthly Electricity Expenditure	40
Table 2.7	Impact of Operating Coal-Fired Power Plants on Manufacturing Firms' Return on Investment	41
Table 2.8	Estimated Impact of Operating Coal-Fired Power Plants on Manufacturing Firms' Electricity Consumption (Subsamples)	43
Table 2.9	Simulation Results for All Scenarios	48
Table 2.10	Available Financing Schemes to Combat of Climate Change	51
Table 2.11	Summary of Regulations on Fiscal Incentives for Renewable Energy Development	54
Table 3.1	Efficiency Score of Renewable Energy Development in Malaysia	90
Table 3.2	Technical Efficiency of Renewable Energy Development by State and Federal Territory in Malaysia	91
Table 3.3	Tobit Regression Results	93
Table 4.1	Excise Tax Rates	108
Table 4.2	Main Indicators of Fiscal Sustainability Framework	115
Table 4.3	Production Activities on the Social Accounting Matrix Table	123
Table 4.4	Commodities on the Social Accounting Matrix Table	125

Table 4.5	Factors of Production and Institutions on the Social Accounting Matrix Table	127
Table 4.6	Cost Structure of Electric Vehicle Production	131
Table 4.7	A Comparison between Actual and Simulated Values of Macro Indication during 2015–2019	134
Table 4.8	The Sectoral Impacts of the Electric Vehicle Policy (Average Change in Total Output)	141
Table 4.9	Current Government Consumption	147
Table 4. 10	Change in Household Consumption	151
Table 4.11	The Impact of The Electric Vehicle Policy on Total Greenhouse Gas Emissions	160
Table 5.1	Evolution of Air Traffic, Fuel Burn, and Net Carbon Dioxide Emissions at European Union-27 And European Free Trade Association Airports	193
Table 5.2	Overview of Selected European Union Directives and Regulations for the Decarbonisation of Transport	195
Table 5.3	Summary of the Main Elements of the Effort Sharing Regulation, the Energy Efficiency Directive, the Energy Taxation Directive, and the Toll Directive	198
Table 5.4	The European Union Emission Trading Scheme	202
Table 5.5	Tax Benefits and Purchase Incentives for Electric Cars and Charging Infrastructure in the European Union-27 and the European Free Trade Association Member States and the UK	213
Table 5.6	Estimated Net Economic Savings from a Societal and End-User Perspective of Stricter Carbon Dioxide Emission Performance Standards for New Cars and Vans in the European Union, as Calculated in the Impact Assessment	216
Table 5.7	REFuelEU Aviation: Minimum Share of Sustainable Aviation Fuels and Synthetic Fuels	220
Table 6.1	Green Transformation Budget Commitment	237
Table 6.2	Selected Indicators for Analysis	240
Table 6.3	Cost of Methanol Production	245
Table 6.4	Renewable Energy Policy and Regulation Pillar	250

Table 6.5	Energy Efficiency Policy and Regulation Pillar	251
Table 6.6	The Technological Learning from Electrolyser Technology	262

## 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 <sub>2</sub>	carbon dioxide
CO <sub>2</sub> 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 <sub>2</sub>	gigagrams of carbon dioxide
ggCO <sub>2</sub> 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 <sub>2</sub>	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 <sub>2</sub>	metric tonnes of carbon dioxide
MtCO <sub>2e</sub>	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 <sub>2</sub>	ton carbon dioxide
TFEC	total final energy consumption
TPES	total primary energy supply
TWh	terawatt-hours
UK	United Kingdom
US	United States
UNFCC	United Nations Framework on Climate Change Conference
WLTP	World Harmonised Light Vehicle Test Procedure
ZEV	zero-emission vehicle
ZLEV	zero- and low-emission vehicle