E3G

REPORT OCTOBER 2019

SEA CHANGE:
DELIVERING A ZERO CARBON ECONOMY IN SOUTHEAST ASIA

CLAIRE HEALY AND
TINA MARIE MARCHAND

E3G

About E3G

E3G is an independent climate change think tank accelerating the transition to a climate safe world. E3G builds cross-sectoral coalitions to achieve carefully defined outcomes, chosen for their capacity to leverage change. E3G works closely with like-minded partners in government, politics, business, civil society, science, the media, public interest foundations and elsewhere. In 2018 E3G was ranked the fifth most globally influential environmental think tank for the third year running.
www.e3g.org

Berlin
Neue Promenade 6
Berlin, 10178
Germany
+49 (0)30 2887 3405

Brussels
Rue du Commerce 124
Brussels, 1000
Belgium
+32 (0)2 5800 737

London
47 Great Guildford Street
London SE1 0ES
United Kingdom
+44 (0)20 7593 2020

Washington
2101 L St NW
Suite 300
Washington DC, 20037
United States
+1 202 466 0573

Copyright

Cover image
www.istockphoto.com

Design
www.whatcommunications.com

E3G

Our partners

Shift South East Asia (Shift SEA)

The Shift SEA project and its partners encourage the shift of financial flows away from fossil fuels into low carbon energy in Vietnam, the Philippines and Indonesia by engaging with the relevant stakeholders to support the adjustment of national policymaking, investment frameworks and international financial institutions' strategies in favour of sustainable energy solutions. For more information on the project and partners visit: **https://www.e3g.org/library/shift-SEA-financial-flows-investing-low-carbon-development-southeast-asia**

Supported by:

Federal Ministry for the Environment, Nature Conservation, and Nuclear Safety

based on a decision of the German Bundestag

Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

This project is supported by the International Climate Initiative (IKI). The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) supports this initiative on the basis of a decision adopted by the German Bundestag. More information: **https://www.bmu.de/en/**

E3G

Acknowledgements

E3G would like to acknowledge the following people who kindly took the time to review all or part of this paper: Kavita Singh, Energy Transition Partnership; Melissa Brown, IEEFA; Adhityari Puri, GSCC; Russell Marsh, EY; Isabelle de Lovinfosse; Kathryn McPhail and consortium partners Nithi Nesadurai, Climate Action Network – Southeast Asia; Dean Bialek, Mission 2020; Mikael Melin and Florence Mazzone, SEforAll; and staff at E3G including Taylor Dimsdale, Shane Tomlinson, Nick Mabey, Chris Littlecott, Larissa Gross and Pedro Guertler. Thanks also to all our national partners, and James Hawkins and Dileimy Orozco from E3G for their part in the underlying political economy research and analysis.

E3G

Table of Contents

E3G

Executive Summary

Southeast Asia is one of the most vibrant and fastest growing economic regions in the world. Demand for energy services is growing extremely fast: since 2000 overall energy demand has grown by more than 80 per cent and the vast majority of this growth has been met by a doubling of fossil fuel use.

This report is the final report for a project entitled 'Shifting financial flows to accelerate the energy transition in Vietnam, Indonesia and the Philippines'. These countries were selected as the focus because as of July 2019 they collectively had a total of 49 GW of coal in their pipeline (announced, pre-permitted and permitted) – in addition to 25 GW under construction. The energy systems in Vietnam, Indonesia, and the Philippines are becoming *more*, not less, dependent on fossil fuels, and in turn their reliance on energy imports is growing. The projected increase in fossil fuel consumption, particularly coal, would lead to a 66 per cent rise in CO_2 emissions to 2.4 gigatons by 2040. Put simply, should they build the coal-fired power plants currently in their pipeline, the Paris Agreement goals cannot be met.

Southeast Asia is the only region in the world where the share of coal in the energy mix increased in 2018. In the same year, the Intergovernmental Panel on Climate Change (IPCC) issued a special report effectively saying there is no more atmospheric room for the emissions from coal power plants if we want to reach the 1.5 degree temperature goal set out by the Paris Agreement, and it is imperative that we do given the impact on lives and livelihoods if we stick to 2 degrees and overshoot. To this end, the task in hand is to decarbonise all economies so that they produce net zero emissions by 2050.

Southeast Asia is a diverse and dynamic region growing in economic weight and carbon footprint, despite possessing extraordinary renewable energy resources, and having already benefited from their falling costs and many positive early deployments. In order to compete in a low carbon world, and hasten its onset, regional collaboration must be strengthened. In their 2019 regional outlook, the International Energy Agency (IEA) paints a picture of two very different scenarios out to 2040. This is one model of many, but it is a stark illustration of the strategic choice.

E3G

The first IEA scenario is based on policy frameworks and ambition in place today – it is called the Stated Policies Scenario (SPS). In the SPS, the share of renewables in power generation rises from a base of around 24 per cent of power generation coming from renewables today (18 per cent of which is hydropower) to 30 per cent. This places Southeast Asia far behind China, India, and other Asian economies and would result in a net energy trade deficit of over USD 300 billion per year and 650,000 annual premature deaths associated with air pollution, up from an estimated 450,000 in 2018. This path means that the carbon intensity of Southeast Asia's power generation infrastructure would be responsible for almost half of the globe's total energy-related emissions, up from 42 per cent today. Pause for a moment and reflect on that. Southeast Asia would be trending in the exact opposite direction of most other parts of the world, where the share of energy-related emissions declines as they replace fossil fuels with renewables, cut demand and electrify.

There is an alternative low carbon development pathway for Southeast Asia. The IEA's Outlook forecasts one possible version of what that could look like. In their Sustainable Development Scenario (SDS), coal demand peaks after 2020 and is cut by 80 per cent relative to the scenario outlined above. The share of coal in electricity generation falls to 4 per cent in 2040. From the base of 24 per cent in 2019, in this scenario the share of renewables in generation triples to around 70 per cent in 2040 – cutting the current emissions trajectory by 50 per cent with this one measure alone.

The IEA provides a regional outlook and we know there are big variations between countries. Indonesia is a juggernaut compared to some other economies in the Association of Southeast Asian Nations (ASEAN) and warrants its own analysis. Not all countries will follow the same pathway or trajectory. Finding ways to work at the regional level is important to more efficiently share learning, build capacity and then support countries to make progress in the areas that resonate most. The region has considerable potential for renewable energy and faces a strategic choice: to continue on the high carbon development pathway and become an outlier, or switch to a low carbon model of growth and request the development banks and international donors support them to modernise their economies for the future.

This report considers the political economy conditions and dynamics in Vietnam, Indonesia and the Philippines in order to identify the political and institutional barriers that currently prevent Vietnam, Indonesia and the Philippines from throwing their political weight behind the sustainable development scenario.

E3G

It suggests a number of priority action areas to tilt them towards building a modern energy system and low carbon economy, and sending clear-cut and long-term market signals to unlock financial flows.

We start by asking why they should care. We argue that Vietnam, Indonesia and the Philippines should see it as critical to their national interest to get ahead of global forces and remain competitive in an inter-connected system of trade and finance. The global investment landscape is changing fast with a growing number of countries, companies and central bankers embedding practices to minimise financial jeopardy from climate risk and maximise flows to low carbon economic activity and assets. Transitioning to clean, home-grown energy sources would enhance energy security and save the public purse from having to cover the delta between expensive fossil imports and artificially cheap fuel prices.

There is a global and regional trend away from coal and towards renewables in the energy mix. Incremental steps are proving inadequate to meet rising public concern over air pollution or demands from younger generations for faster climate action and ambition. 'Net Zero' is becoming a mantra since the IPCC found that achieving the 1.5°C target requires emissions to decrease to net zero by 2050. Minimising dangerous domestic impacts of a warming world – Southeast Asia is one of the most vulnerable regions – requires collective action. Every country is expected to implement their nationally determined contribution in the global fight against climate change.

We know the characteristics of a low-carbon energy transition: a major focus on energy efficiency, a massive scale-up of renewable energy, and investment in flexible grids that can power a modern vibrant economy. Phasing out of fossil fuel subsidies and electrification of systems like transport are also critical elements. The science tells us we don't have time to go sector by sector: instead what is required is a transformation of the whole economy with a compelling and holistic package of reform measures including an industrial strategy, labour policy and revised social contract.

Choosing to pursue a low carbon instead of a high carbon development pathway is not as easy as it may sound. For example, coal is an energy input but also an import, or export commodity in Indonesia's case. Fossil fuels are hard-wired into the system and have underpinned the region's industrial growth. A focus on technical capacity building alone won't change that. The institutional inertia from business as usual manifests as a real drag on the transition. The extent to which the government is entangled with the high carbon sector can impede progress,

E3G

as does corruption which is often present. Managing an exit from coal assets involves significant losses now for the governments of Vietnam and Indonesia, versus a risk of stranded assets at some future time.

Five priority action areas

In Part 2 of this report, we suggest a framework of five priority action areas to address the most critical barriers and help position these countries to maximise value in the transition to a low carbon world.

1. Create a big vision and whole economy approach

Building a modern economy of the future for a growing middle class and the next generation of educated young people inherently has to be low or zero carbon and powered by regional modern renewable energy systems. Decarbonisation is not the only driver for change and can be framed as an optimistic vision of the future; other meta trends such as digitalisation, decentralisation, and demographic changes are having a big impact on what the future will look like. These are seismic shifts affecting the whole economy, not just the power sector; they present big opportunities for the young generations coming of age in Southeast Asia, or big risks if the governments fail to respond or resist.

2. Focus on competitiveness and full-cost benefit analysis

As the world enters a zero-carbon paradigm and the IMF is preparing to integrate climate risks in their country-level economic assessments, the case becomes more compelling that Vietnam, Indonesia and the Philippines invest in developing low carbon supply chains and energy systems, if not for climate reasons, then to protect the future competitiveness of their economies. As technology takers, dependent to varying degrees on being competitive in the global marketplace, this is a critical lever that needs more serious consideration. A lot of innovation is happening to reorient the financial ecosystem to which Vietnam, Indonesia and the Philippines are paying close attention. For example, there are various multilateral collaborations working to green the financial system and identify, measure and manage climate-related risk; the International Platform on Sustainable Finance is working to reorient capital flows and reduce friction to low carbon assets and activity.

3. Build confidence from the bottom up through at-scale demonstration projects and proof points

As a priority, we need to decouple economic growth and energy demand with a major drive to do more with less energy. Saving consumers and businesses

money in theory is politically palatable; yet utility business models and fossil fuel subsidies weaken this link currently. Hopefully the economic and competitiveness arguments in favour of a major energy efficiency drive will win over decision-makers and give them confidence for a faster transition to renewables. As an illustration, one of the fastest growing uses of electricity to 2040 is space cooling: its share in peak power demand is set to rise towards 30 per cent in the region by 2040.

There have been promising signs of progress to build on: Vietnam's successful feed-in tariff scheme secured 4.5 GW of solar in a matter of months and Cambodia's recent 60 MW solar auction secured a price of USD 0.039 – the cheapest yet in the region. These and other proof points reverberate around the region building confidence and tapping into competitive forces within and between ASEAN neighbours. We need to invest more in a communications apparatus to aggregate and amplify these signals. Like-minded diplomatic coalitions and learning platforms are also critical to give political and financial actors the confidence to take a leap of faith and commit to a low carbon future.

4. Provide an exit strategy to high carbon actors and assets

The level of fiscal entanglement has to be painstakingly thought through and a conversation opened about how to ease the capital destruction for governments transitioning to the low carbon development paradigm. A structured financing mechanism might enable Indonesia and Vietnam to restructure their debt and convince them to phase out fossil assets, invest in green and the grid instead, and align with the Paris deal. This is of first-order importance and warrants further research and dialogue. More robust support structures are needed to protect the public from climate impacts and prevent backlash to social and economic disruption from the transition; and stronger and more diverse coalitions can counter the fossil lobby and demand faster and more ambitious action.

5. Build the institutions for long-term change

The fifth priority area should include stronger governance and coordinating mechanisms. These are necessary to drive the transformation required.
We suggest investing in new leadership training platforms to reach the next generation of decision-makers, and starting now to raise their consciousness of the stakes involved and the shape and scale of global transformation required to deliver a low carbon future. We also need dedicated green national banks and instruments, as well as low carbon professional services – such as urban

E3G

planners, engineers, and lawyers. It's going to take everyone to change everything.

Since this is a question of global significance, donor governments and philanthropic foundations need to coordinate for more efficient and effective delivery of international support. The bilateral and multilateral development banks have committed to align their operations with the Paris Agreement, but we argue they need to go much further and do more with their public budgets and mandates to de-risk and drive the transformative agenda. This is their raison d'être.

This report is targeted at decision-makers regardless of where they sit in the system. Visionary and creative leadership will be required to address the most critical barriers to building a modern energy system and a low carbon economy in Southeast Asia. The benefits of pursuing decarbonisation range from the pragmatic, such as greater energy independence; to the economic, such as enhanced competitiveness and access to capital; to the political – clean air and future jobs for citizens; to the existential – minimising risks to the most vulnerable individuals and vital ecosystems.

Ultimately it is up to the governments of Vietnam, Indonesia and the Philippines to decide to pursue a new development paradigm that leapfrogs the carbon intensity of the Industrial Revolution and make it a political priority to pivot towards clean, affordable, reliable and sustainable energy for the 21st century. Based on our extensive engagement in the region we offer several ideas that can help deliver the paradigm shift.

Recommendations

If Vietnam, Indonesia and the Philippines are to modernise their energy systems, the 2020s must be the decade of action. Our main recommendations include:

> Develop a transition mechanism to take account of the capital destruction from an accelerated energy transition.

> Connect financial decision-makers and regulators in the region to the international initiatives designed to enhance transparency and disclosure of climate-related risks.

> Align with or agree a shared language for green investments by connecting the ASEAN capital markets' development with the International Platform on

E3G

Sustainable Finance, which includes China, India, and the EU and aims to move capital in the right direction at speed and scale.

> Use foreign direct investment and public pressure to decarbonise international supply chains to change norms and behaviours and keep the region abreast of discussions around border carbon adjustments and the like.

> Use patient capital from national and multinational development banks to de-risk the transition, underwrite a pipeline of low carbon assets and set new norms in the process. Development banks have to go beyond aligning their operations with the Paris goals, as we argue in our report, **Banking on Asia**, with specific recommendations for the six banks most active in Southeast Asia.

> Choose – unequivocally – to switch to a low carbon development pathway and send clear long-term market signals by publishing, for example, coal phase-out dates, a long-term strategy with a carbon neutrality deadline, and a low carbon infrastructure plan – that investors say they need from governments in order to shift financial flows.

> Double-down on energy efficiency and decouple energy demand from growth. All actors must emphasise the competitive advantages of decoupling and drive industry to join initiatives such as EP100 and ISO 50001 to consume energy in a smarter way, reduce costs and boost competitiveness.

> Develop and implement ambitious national cooling plans to provide populations with super-efficient cooling services.

> Channel all investment to industries, technologies and infrastructure compatible with a net zero world. All new infrastructure has to be built to handle this new normal.

> Position SEA as a renewable energy hub. Models vary but most indicate that there's room for more stringent near-term mitigation than currently planned in Vietnam, Indonesia and the Philippines by taking advantage of the economic, social and technical feasibility of solar energy, wind energy, and electricity storage technologies.

Whichever way these economies choose to develop the investment needs are enormous. The IEA in their 2019 regional outlook estimate the cumulative investment needs over 2019 to 2040 is over USD 2.5 trillion in the Stated Policy Scenario, rising to USD 3.3 trillion in the Sustainable Development Scenario. This breaks down to an average annual capital spend of USD 120 billion for the SPS or

E3G

USD 150 billion for the SDS, over the period 2019 to 2040. Investment in Southeast Asia's energy sector in 2018 was around USD 65 billion. The higher investment needs of the SDS are more than compensated for in savings elsewhere: for example, Southeast Asian economies could collectively save nearly USD 200 billion annually on fossil fuel imports by 2040. Put this way, it seems an obvious choice which path to invest in and put political weight behind. Either way, it will have profound consequences on their citizens and the globe.

Trying to rewire what is hard-wired into a system is tough work. Energy transitions in other parts of the world can offer valuable guidance and encouragement. The status quo has so many vested interests. It is political. There are multiple opportunities on the horizon where actors can work to change the optics and open up the politics for more ambitious regional outcomes including Vietnam's chairmanship of ASEAN and COP26 in 2020 – a year when governments are expected to upgrade their climate actions under the Paris Agreement. China plays host to the Convention of Biodiversity COP around the theme "Ecological Civilization: Building a Shared Future for All Life on Earth" and Japan hosts the Olympics. Both warrant further exploration. The relocation of Indonesia's capital city from Jakarta to Borneo is a unique opportunity to build and showcase what a low carbon Asian city of the future can look like. New leadership at the Asian Development Bank (ADB) can move the low carbon transition and climate risks higher up the organisation's agenda, as it has at the International Monetary Fund.

There are no simple solutions, and certainly no silver bullet. With some genuine political leadership in the region, international cooperation, public-private partnerships, and a big push to find and finance large-scale clean energy opportunities, SEA could become the world's new renewable energy hub. Becoming green is not an obstacle to growth, it is a requirement for it.
So goes Southeast Asia, so goes the world.

E3G

Introduction

There is no risk-free option, but some options open more opportunities than others.

Despite the extraordinary scale of available renewable energy resources, their rapidly falling costs and positive early efforts on their deployment, countries throughout the region are choosing to continue down a high carbon development path, in some cases ignoring the significant upsides in reducing their dependence on imported fossil fuels and the massive social, health, and environmental benefits that come with a cleaner energy system. Investors are making decisions that could add billions to the region's transition risk. How can investments quickly rebalance in favour of clean energy deployment and to intensify efforts to decarbonise the economies in Indonesia, Vietnam and the Philippines?

Background

Southeast Asia is one of the most vibrant and fastest growing economic regions in the world. The regional economy grew 5 per cent in 2018 – 7.1 per cent in Vietnam, 5.2 per cent in Indonesia and 6.2 per cent in the Philippines.[1]

Its rapid rates of population growth, rising income and urbanisation has meant that overall energy demand has increased by 80 per cent since 2000, the bulk of which has been met by a doubling of fossil fuel use, and will continue to grow by 60 per cent to 2040.[2] Southeast Asia's growth in electricity demand has averaged 6 per cent a year, among the fastest in the world and shows no signs of abating.[3] The critical question is: What mix of energy supply will countries choose to plan for and pursue, or will investors finance over the coming critical decades?

This is a question of global significance. Realising the Paris Agreement goals to limit the increase in global temperatures above pre-industrial averages to "well below" 2°C. and pursue efforts for 1.5°C of global warming requires a major shift

[1] World Bank Data (2018), **https://data.worldbank.org/**

[2] Southeast Asia Energy Outlook, International Energy Agency (2019) **https://webstore.iea.org/southeast-asia-energy-outlook-2019**

[3] Ibid

E3G

in investment decision-making and financial flows from high carbon to low carbon investments including clean energy, electric transport, and more efficient buildings. If countries in Southeast Asia choose to continue to plan and build the coal-fired power plants currently in their pipeline, the Paris goals cannot be met. Notwithstanding the negative impacts on their local populations and economies, we all have a stake in this decision.

It is, after all, a strategic choice. Decision-makers with political power in Vietnam, Indonesia and the Philippines need to make choices between different development paths and each come with their own set of risks and opportunities. There is no risk-free option, but some options open more opportunities than others. In their efforts to bring their large populations out of poverty, Vietnam and Indonesia have historically relied on large-scale fossil fuel-based industrial and power projects, much like the rest of the world until the emerging low-carbon economic transition. Asia accounts for 75 per cent of the global demand for coal.[4] While China, India, Japan and South Korea are some of the largest users of coal, Southeast Asia was the only region in the world where the share of coal-fired power generation grew last year.[5] The rapidly growing share of coal in electricity production in Vietnam, Indonesia and the Philippines is illustrated in Figure 11 under Annex I: Political Economy Mapping.

Amongst Southeast Asian economies, Indonesia, the Philippines and Vietnam have significant pipelines for new coal power infrastructure development. As of July 2019, coal power projects in the pipeline (announced, pre-permitted and permitted) in these three countries totalled 49 GW – this is in addition to the 25 GW currently under construction.[6] Fossil fuels currently account for three-quarters of Southeast Asia's total energy supply, and the IEA estimates that without policy and investment change much of the growing energy demand will be met by an 80 per cent increase in coal-fired power generation by 2040, resulting in a 66 per cent rise in CO_2 emissions to 2.4 gigatons by 2040. [7]This is one potential pathway. But – and it's a big but – it places Southeast Asia as an outlier lagging far behind China, India and other Asian economies; it results in a net energy trade deficit of over USD 300 billion per; and causes 650,000

[4] The Economist (2019), 'Asia digs up and burns three-quarters of the world's coal', **https://www.economist.com/asia/2019/08/22/asia-digs-up-and-burns-three-quarters-of-the-worlds-coal**.

[5] The Economist (2019), 'Asia digs up and burns three-quarters of the world's coal', **https://www.economist.com/asia/2019/08/22/asia-digs-up-and-burns-three-quarters-of-the-worlds-coal**.

[6] EndCoal (2019), 'Summary statistics', **https://endcoal.org/global-coal-plant-tracker/summary-statistics/**

[7] Southeast Asia Energy Outlook, IEA (2019) https://webstore.iea.org/southeast-asia-energy-outlook-2019

premature deaths – annually – because of indoor and ambient air pollution, up from 450,000 in 2018.[8]

So that's one option. The IEA calls that scenario the Stated Policies Scenario because it describes where the region is heading based on policy frameworks and the level of ambition today.

If government decision-makers keep on this path the carbon intensity of power generation across the region would be responsible for almost half of the world's total energy-related emissions, up from 42 per cent today. Pause for a moment and reflect on that. Southeast Asia would be trending in the exact opposite direction of most other parts of the world where the share of energy-related emissions decline as they decouple energy demand from economic growth, cut energy demand, replace fossil fuel with generation from renewables and expand electrification.

Financial actors have a critical role to play regarding the direction of future investment flows in Southeast Asia: their capital allocation decisions determine how fast economies can decarbonise

An alternative pathway for Southeast Asia would be to pursue a new development paradigm that leapfrogs the carbon intensity of the Industrial Revolution, and leads the rest of the world towards clean, affordable, reliable, and sustainable energy for the 21st century. The changes required to decarbonise electricity generation, not to mention other economic sectors, at the scale and speed necessary to be consistent with the Paris Agreement, are difficult to imagine, and even more difficult to deliver. Decision-makers would need to overcome the incumbency of existing market structures and regulatory systems; deeply entrenched economic and financial interests and institutional habits; and the need to maintain social support in the process of transition. Overcoming this economic and social disruption would require visionary and creative leadership. Leaders will have to be keep their eyes on the prize. The significant upsides range from the pragmatic – greater energy independence; to the economic – enhanced competitiveness and access to capital; to the political – clean air and future jobs for citizens; to the existential – minimising risks to the most vulnerable individuals and vital ecosystems.

On a daily basis, decision-makers are weighing these costs and benefits and committing their political and financial capital either to the locking-in of a high carbon development pathway, or alternatively the transition to a low carbon economy. Financial actors are political actors in this context and have a critical role to play regarding the direction of future investment flows in Southeast Asia:

[8] Ibid

E3G

their capital allocation decisions ultimately determine how fast economies can decarbonise and bend the emissions curve. The economics implicit in these choices and their inherent risk is influenced by the signals sent by governments and market sentiment of the future. A whole set of interlinked forces are moving to shape those signals and shift the national and global context in which investment and political decisions are being made. For example, the science is increasingly clear about the future impacts of a warming world: we can already see what is in store.

The reality today is that becoming green is not an obstacle to greater growth, wealth and well-being; it is a requirement for it.

Actors throughout the financial system are heeding these warnings and beginning to price significant fossil fuel market and climate risks into their investment decisions and risk models. Regulators and central bankers are urging precautionary measures to minimise the risks of a climate-related global financial crisis they see brewing on the horizon, including the growing risk of significant coal stranded assets. Governments in Vietnam, Indonesia and the Philippines, and indeed elsewhere in the world, have to make complex decisions today in the face of a shifting risk assessment environment. Implicit in which energy system they embrace is whether they are determined to at least try to get ahead of the changing landscape and shape the forces in their national best interest, or instead adopt a 'wait and see' approach at the risk of being steamrolled by them. The reality today is that becoming green is not an obstacle to greater growth, wealth and well-being; it is a requirement for it.

The task of managing an orderly transition is unprecedented – no one country has ever done it at the pace and scale now required by the climate challenge, and no one country is currently doing enough or moving quickly enough to rewire their economy in pursuit of the Paris Agreement temperature goals. Some countries are of course further progressed along their decarbonisation journey, and many are ready to share their success stories and their struggles with Vietnam, Indonesia and the Philippines as an input to Southeast Asia's journey toward a low-carbon and resilient economy for their populations.

Purpose of the report

Since its inception in 2004, E3G has been working to accelerate the global transition to a low carbon economy and climate safe world. We have studied the political economy dynamics of over thirty countries and discovered that often the most critical barriers to achieving the structural change we need – at the pace the science requires – lies outside the tight climate and energy circles and cannot be effectively addressed with a narrow technical focus on climate targets and trajectories.

E3G

In our study of transitions around the world, it appears that the systemic and structural issues can only be addressed by thinking through and finding ways to address the political economy conditions and concerns that decision-makers face in choosing which development pathway to pursue. Without careful consideration of the political nature and stickiness of decision-making and a deeper understanding of how national politics affect the economic choices in Vietnam, Indonesia and the Philippines, diplomatic approaches in favour of energy system decarbonisation are likely to be limited in their success.

That is the purpose of this contribution: to consider the political economy dynamics influencing decisions over which energy source to choose to power their growing economies. The report is structured in two halves: **Part One** considers why Vietnam, Indonesia and the Philippines should increase the pace and scale of their transition to a low carbon economic growth model. Chapter 1 looks at *why* decision-makers should reconsider business as usual and seriously commit to a low carbon development pathway given the fast-changing global and regional context. In **Chapter Two** we consider *what* needs to happen. Collectively we have a good sense of the characteristics of the energy transition and what good policy looks like. Moreover, investors and their interlocutors have been pretty explicit about the enabling environment and political signals they need to see to unlock financial flows. In **Chapter Three** we highlight the most pertinent political and institutional barriers that are preventing Vietnam, Indonesia and the Philippines from throwing their political weight behind the transition and sending the requisite market signals to unlock financial flows. Mindful that a big issue is one of bandwidth we strive to keep this part short and focused, providing more background analysis in the annex.

In **Part Two** of the report we propose several strategic priorities, or levers, that if pulled simultaneously might help to change the political and economic dynamics and processes that ultimately determines the pace and scale of the low carbon transition. We incorporate a few concrete ideas for practical action in the near term, by no means an exhaustive list, that might persuade different actors to use their agency to address the most critical barriers to a faster transition in Vietnam, Indonesia and the Philippines.

The target audiences for this report are decision makers in key institutions and organisations in each of the countries as well as donor governments and international financial institutions. While we are talking about national transitions determined by national actors and based on perceptions of national

E3G

interest, the speed of their low carbon transition can be informed by, even inspired by, experiences in other countries; and depends on support from all quarters. It is a struggle we all share and have a stake in. That is the spirit in which this contribution is offered. After all, as Southeast Asia goes, so goes the world.

Project context: SHIFT SEA

This report was completed under the project "Shifting Financial Flows to invest in Low-Carbon Development in Southeast Asia" (SHIFT SEA), which encourages a shift of financial flows to low or no carbon development in the region starting with Indonesia, the Philippines and Vietnam. Combining the expertise and resources of several local and international organisations, the project has engaged with a wide variety of stakeholders through research, convenings and coalitions to influence local and national policy making and investment frameworks in favour of energy efficiency and renewable energy.

The project is funded by the German International Climate Initiative (IKI) and is led by a consortium of international energy and climate experts including Sustainable Energy for All (SEforALL), Climate Action Network (CAN), Mission 2020 (M2020) and Third Generation Environmentalism (E3G); supported by the expertise of three national partners: Yayasan Mitra Hijau (YMH) in Indonesia, the Institute for Climate and Sustainable Cities (ICSC) in the Philippines and GreenID in Vietnam. For more information on the project visit please visit: www.seforall.org/shift.

E3G

Recent reports on Southeast Asian energy transition:

To provide context for this project and to frame the issues at hand, we highlight recent and ongoing work by other organisations addressing similar topics.

IEA *Southeast Asia Energy Outlook (2017 and 2019)*
This World Energy Outlook (WEO) Special Report confirms that Southeast Asian countries are looking towards a future in which energy demand is set to grow strongly. The full report provides a detailed framework for understanding the region's energy choices, examining the pitfalls and opportunities that lie ahead and what different pathways might imply for future energy security, the environment and economic development.
https://www.iea.org/southeastasia/

IRENA *Renewable Energy Market Analysis: Southeast Asia (2018)*
This regional market analysis from the International Renewable Energy Agency examines the challenges of economic and population growth, the need to boost energy supply, and growing environmental and energy security concerns. Southeast Asia's rich renewable energy potential remains largely untapped. However, this report offers compelling examples of the synergies between renewable energy and socio-economic development and highlights the wide-ranging benefits of decentralised renewable energy solutions.
https://www.irena.org/publications/2018/Jan/Renewable-Energy-Market-Analysis-Southeast-Asia

Climate Analytics *Decarbonising South and Southeast Asia (2019)*
This report shows that South and Southeast Asian countries can shift their energy systems from fossil fuels to renewables to fuel economic growth, boost sustainable development and overcome energy poverty while avoiding life-threatening pollution and environmental degradation. It includes seven country profiles: India, Pakistan, Bangladesh, Thailand, Vietnam, Indonesia and the Philippines. **https://climateanalytics.org/publications/2019/decarbonising-south-and-south-east-asia/**

Stanley Foundation *Toward a Regional Energy Modernization Investment Agenda: Stranding Risks and Decarbonization Challenges in Southeast Asia (2018)*
Key regional policy and decision makers gathered with energy and finance experts in September 2018 in Bali, Indonesia, to discuss the issues with and advantages to a transition. This report summarises this conversation, beginning with the energy trajectory and the specific market contexts in the region. The policy landscape is examined and the risks and opportunities of fossil fuel versus renewable energy development are discussed. Recommendations are made for taking energy policy and diplomacy forward in the region.
https://www.stanleyfoundation.org/publications/report/InvestinginSEAEnergyModernizationPDB819.pdf

E3G

Part 1

Why should Vietnam, Indonesia and the Philippines increase the pace and scale of their transition to a low carbon economic growth model?

In Part 1 of the report, we argue that it is in Vietnam's, Indonesia's and the Philippines' national interest to act now to get ahead of global forces and remain competitive in an inter-connected system of trade and finance. In the face of vested interests and institutional inertia it is hard to maintain momentum, but necessary if countries want to take advantage of the low carbon economic opportunities and minimise financial jeopardy. The science tells us we don't have time to go sector by sector; it requires transformation of the whole economy. Vietnam, the Philippines and Indonesia have many allies that stand ready to share their own struggles and success stories as an input into Southeast Asia's journey toward a low carbon and resilient economy for their populations.

E3G

Chapter 1
Why? The imperative to act

The speed of the energy transition and low carbon transformation in Vietnam, Indonesia and the Philippines is determined by national conditions and based on perceptions of national interest, but within a global context which is evolving very fast on a number of fronts. Why should Vietnam, Indonesia and the Philippines increase the pace and scale of their transition to a low carbon economic growth model? What's in it for them?

Progress in Asia will be the major factor shaping the world's climate change mitigation response. If it continues on its current path the region risks investing in carbon lock-in to a degree that endangers the goals of the Paris Agreement and threatens their own economies as Asian countries are at risk of suffering from some of the most severe impacts of climate change. First and foremost, the countries must absorb and be guided by the imperative to act and see it as critical to their national interest.

The investment landscape is becoming greener

The investment landscape is waking up to the risks of the change in climate and how that translates into financial risks for the system. In a growing number of markets, responsible practices and sustainability factors are being embedded into finance. There is a real momentum gathering within the global financial system to align private sector financial flows with the goals of the Paris Agreement and shift from unsustainable to sustainable infrastructure investments and economic activities.

The **International Monetary Fund** (IMF) is preparing to integrate climate risks into their surveillance work imminently, especially for countries they work in that are big emitters or at high risk of carbon shocks. According to the Fund's new Managing Director, Kristalina Georgieva, "there is no way to address the

fundamentals of their economies without looking at climate risks."[9] The IMF announcement builds on initiatives such as the **Task Force on Climate-related Financial Disclosure** (TCFD) and the **European Sustainable Finance Action Plan** that have emerged to help quantify and increase transparency around how climate change could affect the bottom line of companies worldwide. On the regulatory side, central banks have come together in the **Network for Greening the Financial System** to work together on the macroeconomic risk inherent in the climate crisis. And the **Coalition of Finance Ministers for Climate Action** is growing in strength and working together to practically apply the Helsinki Principles. Climate-related stress tests on financial institutions is a trend expected to intensify: Malaysia Central Bank is the first in the region to require all financial institutions to report their exposure to climate risks. The information it gathers will be used to set regulatory standards in Southeast Asia's third biggest economy.

In a sign of this trend, over **110 financial institutions** have implemented policies restricting lending to coal power including Asian financiers DBS, OCBC, UOB and Mitsubishi UFJ.[10] Singapore's Temasek Holdings declined to be a cornerstone investor in Saudi Aramco's initial public offering allegedly because it has set a goal to reduce the carbon emissions of its portfolio companies by 50 per cent by 2030. These data points and initiatives described above share a common objective: Vietnam, Indonesia and the Philippines will do well to get a head of this trend, minimise their financial jeopardy and position themselves to access growing pools of green capital.

Increasing fossil fuel dependency gives rise to energy security concerns

Over the long term, meeting growing energy demand through fossil fuels alone will come at the expense of energy security, with costs borne by exporters and importers and economic stability. Ensuring the security of fuel supply to meet long-term economy-wide needs is a priority across Southeast Asia.

Indonesia is a net energy exporter. Although it exports significant amounts of coal and gas in the region, it remains a net importer of oil.[11] Vietnam and the Philippines, on the other hand, are net energy importers and highly dependent on imported fossil fuels, particularly oil and coal to meet energy demand in the

[9] Bloomberg News (October 16 2019), 'IMF Will Include Climate in Country Analysis, Georgieva Says' **https://www.bloomberg.com/news/articles/2019-10-16/imf-will-include-climate-in-country-analysis-georgieva-says.**

[10] Global Energy Monitor (October 23 2019) ' 'More fizz than boom: 2019 sees coal plant growth in Southeast Asia dwindling as pipeline continues to shrink **https://globalenergymonitor.org/384-2/**

[11] International Energy Agency, 'Statistics: Global energy data', **https://www.iea.org/statistics**.

transport and industry sectors. The Philippines had the largest coal imports (in absolute terms) amongst the three focus countries, coal imports grew particularly fast in Vietnam. Indonesia, Vietnam and the Philippines are exposed to commodity markets and have to pay close attention to implications on their trade balance, energy independence and affordability for energy consumers. Diversification of energy supply through renewable energy sources and improvements in energy efficiency and demand response management makes a compelling national interest argument, in addition to the clear environmental, health and socio-economic benefits. And it is in keeping with the political rhetoric of Indonesia's nationalism towards natural resources calling for a tweak from "it's ours so we will burn it" to "it's ours so we will harness it". From Vietnam's perspective, harnessing its own energy resources may also reduce geopolitical tensions caused by having to pick sides between importing more coal from China or natural gas from the United States.

Younger generation is demanding action and climate ambition

A growing number of citizens – and investors – are angry with the status quo and are demanding decisive action. On the streets, in City Halls and in boardrooms a new fault line is emerging between old and young generations, and this is true in the Philippines, Indonesia and Vietnam as much as everywhere else. Millennials are shortly to become the largest age demographic in the world: more than two billion people. Almost 60 per cent of them are based in Asia. By 2050, they will control about USD 30 trillion of the world's private wealth.[12]

The upsurge in youth activism over the past year has altered the terms of debate as climate fears rise. Alarmed by predictions of climate impacts and driven to desperation by the repeated failures of national and international institutions, young people are taking to the streets demanding action from political leaders, and they are being listened to. The global turnout around the UN Summit in September 2019 was estimated to be around four million. Youth protestors and activists want big, rich countries and companies to pivot the global economy away from fossil fuels to zero carbon economic activities across the board. The number one demand from the UN Secretary General and the people on the streets was a bold call to stop building new coal projects from 2020 onwards – particularly with taxpayers' money.

[12] **https://www.eastspring.com/insights/millennials-and-artificial-intelligence**

E3G

Vietnam, Indonesia and the Philippines have populations with 37, 44 and 50 per cent under the age of twenty (respectively) who have grown-up with the reality of climate change.[13] While awareness among these populations may be starting from a low base, they represent high penetration rates of social media – 71 per cent in the Philippines in 2019.[14] Increasing numbers of young people lament the effects of climate change in their communities and lived experience and fear the future they face. It is only a matter of time before younger generations in Southeast Asia get angry and demand action. At the ballot box or by taking to the streets, they will find ways to make their voices heard.

Air pollution is an emerging political issue

Air pollution is becoming a major public concern in Vietnam, Indonesia and the Philippines. Vietnam's entire population is exposed to PM2.5 levels exceeding WHO standards.[15] Approximately 40,000 deaths, representing economic losses of five to seven per cent of GDP, were caused by air pollution in 2017.[16] Urban residents, especially in Hanoi, have growing concerns over the health impacts of air pollution linked to nearby coal power plants and heavy industry.[17] Indonesia's capital, Jakarta, is one of the most polluted cities in Southeast Asia – air pollution levels exceed both national and WHO standards.[18] This year, a group of Jakarta residents brought a lawsuit against the government over harmful levels of air pollution linked to vehicle and coal power plant emissions.[19]

In the Philippines, one in four deaths is attributed to air pollution, making it the country with the third highest mortality rate linked to air pollution in the world.[20] Metro Manila is particularly affected and local citizens have taken legal action

[13] World Bank Data (2018), **https://data.worldbank.org/**.

[14] Statista (2019), 'Active social network penetration in selected countries as of January 2019', **https://www.statista.com/statistics/282846/regular-social-networking-usage-penetration-worldwide-by-country/**.

[15] World Bank Data (2018), **https://data.worldbank.org/**.

[16] Vietnam Insider (2018),' Air pollution is Vietnam's silent killer', **https://vietnaminsider.vn/air-pollution-vietnams-silent-killer/**

[17] GreenID (2019), 'Air Quality Report 2018', **http://en.greenidvietnam.org.vn//app/webroot/upload/admin/files/BCCLKK%202018_16_07_2019_Final%20ti%E1%BA%BFng%20anh_b%E1%BA%A3n%20online.pdf**.

[18] World Bank Data (2017), 'PM2.5 air pollution, population exposed to levels exceeding WHO guideline value (% of total)', **https://data.worldbank.org/indicator/EN.ATM.PM25.MC.ZS**

[19] The Guardian (2019), 'Jakarta residents to sue government over severe air pollution' **https://www.theguardian.com/world/2019/jul/02/jakarta-residents-to-sue-government-over-severe-air-pollution**.

[20] The Philippine Star (2018), 'Are Filipinos experiencing 'wildfire' pollution every day?', **https://www.philstar.com/business/motoring/2018/11/28/1872203/are-filipinos-experiencing-wildfire-pollution-every-day**.

against the Philippine government for failing to reduce harmful levels of vehicle emissions as mandated by the 1999 Clean Air Act.[21]

While growing public concern over air pollution is not directly linked to climate change, decarbonisation across the economy, including industry and transport, has important co-benefits – renewables bring the promise of cleaner and safer air.

Net zero is becoming the new normal

Incremental steps and policy making are just not going to be adequate to meet rising public concern over air pollution or demands from the younger generation for climate action and ambition. Nor will incrementalism avoid the terrible impacts predicted by scientists. The IPCC 2018 report found that achieving the 1.5°C target requires emissions to decrease to net zero by 2050. Transformational change is now the order of the day.

To date, 24 countries in the world have joined the Carbon Neutrality Coalition, none yet from Southeast Asia. They have pledged to develop long-term strategies by the end of 2020 in line with the science to achieve a "triple win" of reaping the socio-economic benefits of the transition, building climate resilient economies and accelerating global climate action at the necessary speed and scale.[22] The Carbon Neutrality Coalition now includes six of the G7 members and accounts for 15 per cent of global CO_2 emissions and nearly 30 per cent of global GDP.[23] Sweden, France and the United Kingdom have enshrined net zero in legislation, with legislation pending in Chile, New Zealand and Fiji.[24] These countries may make different choices and focus on different sectors but by setting a clear direction of travel they have sent a critical signal to incentivise investment flows and technological innovation, while maintaining political and public support.

Tackling climate change requires transformation of the whole of the economy and requires all of society. This is becoming the frame of reference and framework for action. Governments need a compelling package of reforms

[21] Philippine Daily Inquirer (2015), 'Lawsuits mulled over air pollution', **https://newsinfo.inquirer.net/667944/lawsuits-mulled-over-air-pollution**.

[22] The 24 countries signed up to the Carbon Neutrality Coalition are: Austria, Canada, Chile, Costa Rica, Colombia, Denmark, Ethiopia, Finland, France, Germany, Iceland, Italy, Japan, Luxembourg, Marshall Islands, Mexico, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Timor-Leste, United Kingdom. **https://www.carbon-neutrality.global**

[23] **https://www.carbon-neutrality.global/carbon-neutrality-coalition-welcomes-new-members-pledges-renewed-ambition-at-un-climate-action-summit/**

[24] **https://eciu.net/netzerotracker**

E3G

beyond the energy sector, including an industrial strategy to give confidence that industries can compete in a net zero world; a labour policy to give confidence to workers that they will have a job; and a new social contract with help for those who have to transition and maintain intergenerational support.

To mitigate dangerous domestic impacts of a warming world

Technical discourse about temperature goals and carbon budgets can numb us to what this means in actual lived experience for human beings around the globe and the natural ecosystems we enjoy, as well as the economies we rely upon. The people living in Southeast Asia, and the Asia-Pacific in general, are uniquely exposed to physical risks from climate change. In a study by HSBC bank of 67 countries worldwide, South and Southeast Asian countries represented five of the top ten most vulnerable countries examined.[25] Focusing on the Asia-Pacific region, a major report by the Asian Development Bank (AsDB) and the Potsdam Institute (PIK) found that climate change risks posed significant challenges to agriculture, marine ecosystems, human health, urban areas, security, migration, and trade networks.[26]

The Fifth Assessment Report (AR5) of the IPCC identifies the key regional risks for Asia as being (1) "increased flood damage to infrastructure, livelihoods and settlements", (2) "heat-related human mortality", and (3) "increased drought-related water and food shortage". For both the small islands and Australasia, the IPCC also note "risks for low-lying coastal areas". The small islands, in particular, face "loss of livelihoods, settlements, infrastructure, ecosystem services and economic stability".[27] Countries such as Indonesia, Vietnam, and the Philippines face high climate vulnerability given their extensive coastal land area, large agrarian populations, and remote communities. According to the Global Commission on Adaptation, these countries will face significant challenges to agriculture due to temperature extremes during the growing season.[28]

The **Global Commission on Adaptation** has developed recommendations for how governments can protect vulnerable communities and deliver resilience across different sectors – whilst observing that adaptation becomes increasingly difficult at higher levels of warming and that global mitigation efforts are critical for the survivability of some communities.[29]

[25] HSBC (2018) **Fragile Planet: Scoring climate risks around the world**

[26] ADB (2017) **A Region at Risk: The Human Dimensions of Climate Change in Asia and the Pacific**

[27] IPCC (2014) **AR5 Synthesis Report**

[28] Global Commission on Adaptation (2019)

[29] Global Commission on Adaptation (2019)

E3G

To get ahead of the global trend away from coal toward renewable

It is in this context that the growth of the coal pipeline in Southeast Asia must be seen. While the share of coal in the power mix increased in the region in 2018 and coal demand is projected to rise steadily over the coming decades, projects are facing headwinds. New data from Global Energy Monitor (GEM) reveals that there is a disconnect between the coal power *pre-construction pipeline* in Southeast Asia and the coal power capacity *entering construction*. **Only Indonesia saw new coal-fired power enter into construction in the first six months of 2019**.[30] It seems many new permits are on hold and according to GEM this is the second year in a row in which the regional coal pipeline has declined sharply. In the first six months of 2019, 1,500 MW entered the construction phase, down from 2,744 MW in 2018.[31] This is a dramatic decline since peaking at 12,920 MW in 2016.[32]

Output from renewable sources of electricity could match the output of the world's coal-fired power stations by 2024.

This decline reflects a trend away from coal power in other parts of Southeast Asia and around the globe. Thailand, for example, released its new power development plan which removed two large coal plants, the 800 MW Krabi and 2,200 MW Thepa.[33] The 3,200 MW Thap Sakae was also cancelled due to community opposition. Thailand is instead preparing to tender plans for 2,700 MW of floating solar.[34] The shift from coal to renewables is being witnessed around the world. The coal sector is being challenged on three fronts: there is significant and growing community opposition to the construction of coal plants due to the high levels of pollution and negative health impacts; financial institutions are implementing policies that restrict or prohibit lending to coal power; and renewable energy technology is undercutting coal in terms of quality and cost.

The IEA's recently-released Renewables 2019 report suggests that output from renewable sources of electricity could match the output of the world's coal-fired power stations by 2024, if issues such as grid integration, policy uncertainty and financing challenges are addressed. This is according to analysis by Carbon Brief of the IEA's "accelerated case" in which the combined capacity of hydro, wind,

[30] More fizz than boom: 2019 sees coal plant growth in Southeast Asia dwindling as pipeline continues to shrink. **https://globalenergymonitor.org/384-2/**

[31] Ibid

[32] Ibid

[33] Ibid

[34] Ibid

E3G

solar and biomass increases by more than 60 per cent over the next five years, with annual capacity additions hitting 280GW by 2024.[35] Even in the IEA's "base case", renewable capacity is set to expand by nearly 50 per cent globally.

In their 2019 Southeast Asia Energy Outlook, the IEA forecast the share of renewables in the power generation will rise from a baseline of 24 per cent (18 per cent of which is hydropower) to 30 per cent in the Stated Policies Scenario – which is the path the region is currently on. In their Sustainable Development Scenario, the share of renewables in generation triples to around 70 per cent by 2040, cutting emissions trajectory in half with this one measure. Of note for Indonesia in particular, the IEA also forecast a global increase of one quarter in total biofuel output by 2024 as government efforts to accelerate decarbonisation shift towards transport.

Vietnam's experience proves that a rapid scale-up of renewable energy is possible.

The dilemma for governments in Vietnam, Indonesia and the Philippines is if they turn away from coal, how can the growing energy demand be met? Choosing renewable energy is a risky decision, but with high rewards. Vietnam is a case in point: careful management of a fledgling Vietnamese FiT programme produced a flurry of solar capacity installation in a relatively short period. Such success can inspire and serve as a model for other SEA countries where investors and developers unfamiliar with the technology are hesitant to engage. Vietnam's experience proves that a rapid scale-up of renewable energy is possible. The critical challenge is to replicate this success throughout the region.

[35] Carbon Brief (2019) 'Analysis: Renewables could match coal power within 5 years, IEA reveals' **https://www.carbonbrief.org/analysis-renewables-could-match-coal-power-within-5-years-iea-reveals**

E3G

Vietnam's growth in solar capacity exceeded expectations

With demand for electricity growing at 9 per cent per annum, more than the rate of economic growth at 7 per cent, few would have identified Vietnam as a country where rapid renewables build-out could take place. However, with its coal pipeline under increased scrutiny, and many projects put on hold, the government of Vietnam opted to try something new and launched a feed-in tariff (FiT) for solar PV. From a total of 150 MW of solar power capacity installed as of April 2019, the expiry of the attractive FiT of USD 0.09/kWh for 20 years triggered a huge rush so that by 30 June 2019, a total of 82 solar plants with a cumulative capacity of 4.46 GW had been connected to the grid, exceeding all expectations. Solar power now accounts for 8.28 per cent of Vietnam's electricity capacity.

This is an extraordinary result that validates the clean energy priorities of the Vietnamese government. Having done such a good job of the first FiT, the Ministry of Industry and Trade is presently consulting on a sophisticated second round of support for grid-connected projects between 1 July 2019 and 31 December 2021 in which rates will vary to encourage large-scale and floating solar projects, and drive new capacity to under-served areas.

To fulfil national commitments to the global fight against climate change

On 5 October 2016, the threshold was achieved for the entry into force of the Paris Agreement – the landmark agreement to combat climate change, adapt to its effects, and to accelerate and intensify the actions and investments needed for a sustainable low carbon future. For the first time, the Paris Agreement binds together all nations, including Vietnam, the Philippines and Indonesia, into a common cause to undertake ambitious efforts to limit global temperature rise this century to less than 2°C above pre-industrial levels and to pursue efforts to limit temperature increase to 1.5°C. The Paris Agreement is based by design on action from the bottom up and its credibility in part relies on evidence that each Party is implementing what they determine to be an ambitious national contribution to the global fight against climate change.

Indonesia submitted its Nationally Determined Contribution (NDC) committing to reduce GHG emissions by 26 per cent (41 per cent with international support)

E3G

against the business as usual scenario (BAU) by 2020.[36] Vietnam committed to reduce GHG emissions by 8 per cent by 2030 compared to the BAU (25 per cent with international support),[37] and the Philippines a 70 per cent reduction by 2030 relative to its BAU scenario of 2000–2030.[38] The imperative to act stems in part from these nationally-determined pledges to do so.

The internationally-respected 'Climate Action Tracker' provides comparative analysis of a G20 country's NDC as well as real-time performance data. According to their analysis, Indonesia's NDC is rated as "highly insufficient" as it is outside their fair share range and not at all compatible with a 2°C let alone a 1.5°C trajectory. They have not yet analysed the NDCs from Vietnam or the Philippines. Cognizant that the aggregated NDCs do not put the world on a "well below 2°C" trajectory, the Paris Agreement incorporated a so-called 'ratchet mechanism' in that every five years Parties are expected to review and enhance their NDCs so this gap can be closed. The first test of the ratchet mechanism will be at the Conference of the Parties (COP26) in 2020 in Glasgow, Scotland.

The IPCC reported last year that if countries aim to limit global warming to 1.5°C this century, they would need to halve global GHG emissions by 2030; become carbon-neutral by 2050; and then go carbon-negative thereafter.[39] Further recent analysis in *Nature* confirms that committed emissions globally from existing and proposed energy infrastructure (about 846 Gt CO_2) represent significantly more than the entire remaining carbon budget if global warming is to be limited to 1.5°C with a probability of 50 to 60 per cent (420–580Gt CO_2). That means virtually all of the planet's existing coal-fired plants would need to close by 2050 at the latest, and there is no atmospheric space for the emissions of any new coal plants. Repeat: there is no more room for new coal plants. The UN Secretary General has been a forceful advocate to stop the development of new coal-fired power plants after 2020 using a Summit for world leaders in September 2019 to put the world on notice to end the use of coal before the planet's temperature rise reaches 1.5°C.

[36] Republic of Indonesia (2016), 'First Nationally Determined Contribution', **https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Indonesia%20First/First%20NDC%20Indonesia_submitted%20to%20UNFCCC%20Set_November%20%202016.pdf**.

[37] Government of Vietnam (2016), 'Intended Nationally Determined Contribution', **https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Viet%20Nam%20First/VIETNAM%27S%20INDC.pdf**.

[38] Republic of the Philippines (2015), 'Intended Nationally Determined Contributions', **https://www4.unfccc.int/sites/submissions/INDC/Published%20Documents/Philippines/1/Philippines%20-%20Final%20INDC%20submission.pdf**.

[39] Intergovernmental Panel on Climate Change (2018), 'Special Report: Global warming of 1.5° C', **https://www.ipcc.ch/sr15/**.

E3G

Chapter 2

What needs to happen? Energy transition and economic transformation

Vietnam, Indonesia and the Philippines will continue to be affected by the global trends and impacts of a changing climate. An incremental transition is unlikely to offer the safest nor optimal change trajectory, so it is worthwhile to consider options for accelerating the pace of change. To assess various options it is necessary to first establish a baseline scenario and then consider different possible destinations over a given timeframe.

The context is changing very fast both globally and in the region. There is no one country that has a development model that is zero-carbon and resilient to the changing climate. No country is yet doing enough or what it takes, and there is no 'one-size-fits-all' climate fix. Different actors can offer different solutions and pieces of the puzzle and countries at all levels of development need to innovate, learn and transfer knowledge.

Characteristics of an energy system transition

In modelling an energy transition, the various scenarios are based on vastly different assumptions about the temperature target, the technology mix and the pace and scale of deployment and innovation. The underlying methodology and assumptions made are critically important as they plot out different pathways and technology choices. Decision-makers need to familiarise themselves with the scientific underpinning as they determine the risk – return ratios and decide where to invest their political and financial capital. For the purposes of this paper, the IPCC's 2018 report provides a robust synthesis as it is based on a review of 90 scenarios that would limit the average global temperature to 1.5°C, the safest and most ambitious end of the Paris Agreement spectrum.

E3G

The important point is that while there are many different pathways to this destination, they generally share a number of key aspects: First, global emissions must decline to net zero by around 2050. Second, all pathways require radical and, in many cases unprecedented changes in the energy system that include a significant scaling-up of the use of renewable energy; a significant scaling-up of energy efficiency measures to decease energy demand; the electrification of energy end-use; and a decline in coal-fired power to nearly zero by 2050. Beyond these similarities, there is some debate and controversy – which is beyond the purview of this paper – over the desirability and feasibility of the use of nuclear energy, carbon capture and storage, and the use of physical removal of atmospheric carbon dioxide.

All pathways require radical and, in many cases unprecedented changes in the energy system.

On the surface, it is hard to discern an 'energy transition' in the focus countries at the moment: A 'transition' implies a process or period of moving from one state or condition to another. There have been very promising signs of progress, such as Vietnam's successful feed-in tariff scheme that secured 4.5 GW of solar in a matter of months, or the new Energy Efficiency and Conservation Act in the Philippines, and it is now important to build on and scale-up these early efforts. The energy systems in Vietnam, Indonesia, and the Philippines are becoming *more*, not less, dependent on fossil fuels. Current plans on the table are to build 22.9 GW of coal power capacity in Vietnam, 16.6 GW in Indonesia and 9.4 GW in the Philippines.[40]

For an insight-rich analysis of the energy transition in the focus countries we refer to the **World Economic Forum's Energy Transition Index**.[41] An effective energy transition according to the World Economic Forum (WEF) is defined as "*a timely transition towards a more inclusive, sustainable, affordable and secure global energy system that provides solutions to global energy-related challenges, while creating value for business and society*". The WEF constructed an analytical framework to provide transparency on a country's 'system performance' and 'transition readiness' and created an index of 114 countries to allow peer comparisons. It assesses 'system performance' across three areas – economic development and growth, universal access to secure and reliable supply, and environmental sustainability – acknowledging the intrinsic value of the energy system to modern industry and broader society and the hard choices and trade-offs decision-makers are faced with trying to balance this trilemma.

[40] EndCoal (2019), 'Summary statistics', **https://endcoal.org/global-coal-plant-tracker/summary-statistics/**.

[41] World Economic Forum (2019), 'Fostering Effective Energy Transition 2019', **https://www.weforum.org/reports/fostering-effective-energy-transition-2019**.

E3G

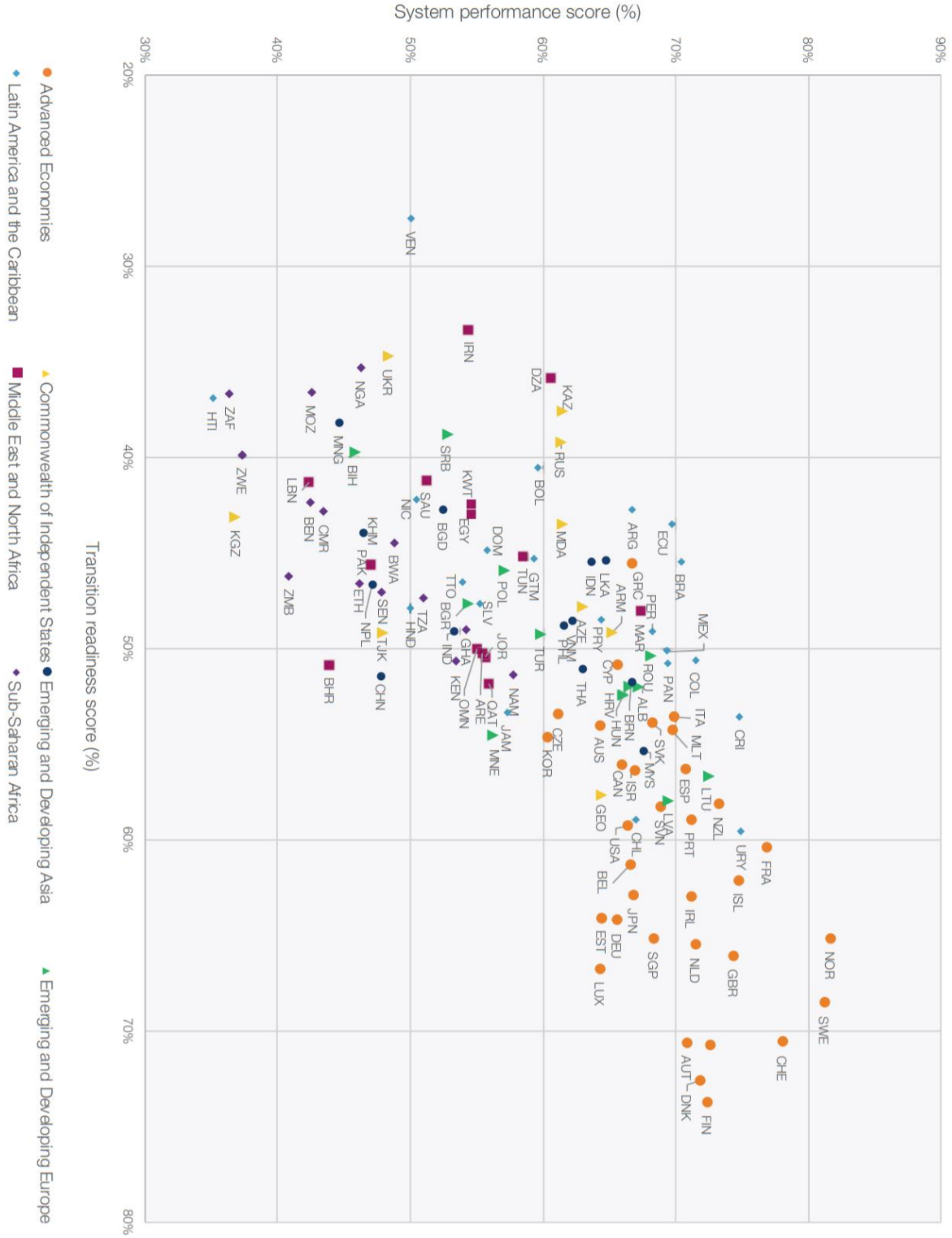
For emerging economies like Vietnam and the Philippines the need to meet rising industrial and residential demand needs, as well as demands for cleaner air and reliable service from the burgeoning middle class, have to be balanced against environmental sustainability. Resource-rich countries like Indonesia need to diversify revenue to reduce dependency on fossil fuel exports. WEF's country-specific energy transition work highlights how complex it is to continue to deliver a reliable affordable energy system underpinned by legacy infrastructure and constituency support, while preparing that system for the impact of new technology, changing public and international expectations and systemic trends like decarbonisation, digitalisation and decentralisation.

The level of political commitment and the availability of capital are decisive factors shaping the energy transition.

There are many factors that determine how quickly the energy system can pivot to address the challenges and opportunities of the future according to WEF's typology. These include the existing assets and energy architecture, the regulatory framework and market design, and the strength of the national innovation ecosystem. The presence of bilateral and multilateral partnerships can make a positive difference too. The level of political commitment to building the future energy system, and the availability of capital to finance the transition are decisive factors shaping the energy transition. This paper focuses on the latter two enablers and offers a more detailed consideration of these political economy conditions in the case of Vietnam, Philippines and Indonesia.

As shown in Figure 1, Vietnam, Indonesia and the Philippines are placed in the middle range; performance is slightly higher on energy "system performance" compared to "transition readiness", although improvements are required in both areas. The focus of this paper is on actions and measures in the near to medium term (over the next 10 to 15 years) that would likely lead to increased momentum and investment in renewable energy, energy efficiency and clean transport, as well as deliver broader social and economic reforms, that are essential to improve energy 'system performance' and 'transition readiness' and improve the Energy Transition Index score.

Figure 1: Energy Transition Index 2019: Performance/ Readiness Matrix (by country)



Source: World Economic Forum (2019), 'Fostering Effective Energy Transition 2019', Figure 11,[42]

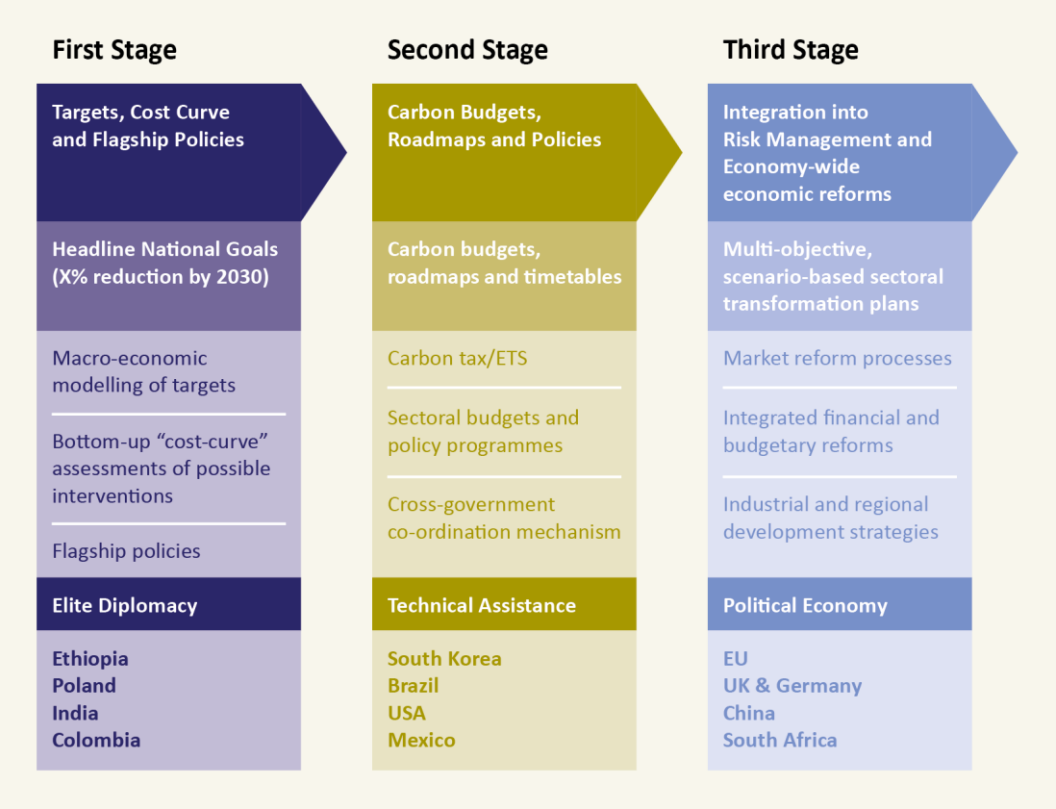
[42] 'http://www3.weforum.org/docs/WEF_Fostering_Effective_Energy_Transition_2019.pdf

E3G

From targets and trajectories to economic transformation

Countries around the world have been working through these technical challenges and choices, many are further along the policy journey including some counties in Southeast Asia. The context and national conditions may be different but there are common underlying drivers for change. Through earlier analysis of and engagements with countries in transition, notably Europe and China, E3G has identified three distinct stages of the journey. The three stages are illustrated in Figure 2. This generalised model can be used to assist Vietnam, the Philippines and Indonesia to prepare for the political issues and challenges that arise at each stage and align their policy responses for a faster transition.

Figure 2: The three stages of climate transformation



***Source**: E3G*

The first stage is characterised by the setting of targets, modelling and flagship policies – this is the stage the focus countries are currently in. The second stage is characterised by a focus on sector-specific strategies, pricing instruments and co-ordinating mechanisms to strengthen the signals sent to markets and attract investment. Stage three is when renewable generation surpasses the tipping point of around 20 per cent of power produced and begins to have a more

E3G

disruptive impact on broader market dynamics and financial risk-return calculations. Typically, at this stage, political attention starts to zoom out to the transformation of the whole-of-the economy rather than just the energy sector.

That is the key point: this is not just about the power sector alone nor can the discussion be limited to a transition from dirty to clean fuels. The decision is about much more than which fuel source to use, especially in commodity-based and emerging economies like Indonesia. It is about exports and imports and the reality that whole parts of the economy and huge swathes of society are tied up with a commodity like coal, oil or gas. Coal is deeply embedded into and concentrated in parts of *the system*. To phase-out these high carbon inputs is not simply a case of switching in one form for another, it takes a system-wide approach and requires economic transformation and a robust package of measures to manage the social aspects of this transition. These essential realities have to be acknowledged and addressed in order to accelerate the transition in the target countries, as elsewhere.

Coal is deeply embedded into and concentrated in parts of the system. To phase-out coal is not simply a case of switching in one form for another, it takes a system-wide approach

Southeast Asia countries can jump ahead to deliver a just and low carbon transition

Conventionally, the energy transition has been addressed separately from the need for social inclusion, but that is now changing. An effective reform agenda needs to take account of and be responsive to the views and fears of citizens and voters, otherwise there is a risk of backlash and further delay as witnessed for example the recent protests in Ecuador and Chile over the fuel price increases as a result of removing fuel subsidies. In the face of political realities and risk of fallout, some countries find themselves struggling to maintain momentum. However, most recognise the rapidly changing global landscape and the imperative for industry to remain competitive in an inter-connected system of trade and finance as regulators and governments continually assess and adapt to what is happening and how it might unfold; And so, they continue on the decarbonisation journey. Southeast Asia is not immune to these global forces, and populations will look to the government for protection, order and direction in times of transition.

Putting in place effective policies to support the transition to low carbon development, and by extension ambitious climate action, will require sustained public support. Measures can and need to be designed so that they positively benefit low- and middle-income families, delivering a 'just' and inclusive low-carbon transition. The Platform for Coal Regions in Transition of the European Commission is an example of such measures. It is designed to bring together

E3G

actors from the 41 regions across 12 EU countries where coal is still mined to discuss how they can modernise their economies in line with a clean energy transition, that also focuses on attracting new industries for the communities and creating new income opportunities for workers. The focus of the last European Commission was on a 'Clean Energy Package for All' with binding targets of 32 per cent of the energy mix from renewable sources and 32.5 per cent target for energy efficiency by 2030 from a business-as-usual scenario. The focus of the Commission for the next five years is on strengthening 'just transition' measures to manage the social impacts of the change as well as developing a plan for growth and jobs in a low-carbon economy and a fiscal strategy to replace lost tax income. There is even talk of using trade tools such as border carbon adjustments to protect the competitiveness of economies at the vanguard. Such experience from other parts of the world represent valuable inspiration for Southeast Asia countries to build on.

What do Investors need to unlock financial flows?

Transforming the energy system and decarbonising national economies to greatly reduce emissions will require significant investment. Investment in Southeast Asia's energy sector in 2018 was around USD 65 billion, which is low on a per capita and GDP basis and trending downwards. In their 2019 Southeast Asia Energy Outlook the IEA estimate the cumulative investment needed over 2019 to 2040 is over USD 2.5 trillion in the Stated Policy Scenario, rising to USD 3.3 trillion in the Sustainable Development Scenario. This breaks down to an average annual capital spend of USD 120 billion for the SPS, or USD 150 billion for the SDS, over the period 2019 to 2040. USD 30 billion more per annum to decarbonise the energy sector however the this more compensated for in savings elsewhere: for example, Southeast Asian economies collectively save nearly USD 200 billion annually on fossil fuel imports by 2040. To attract investment to deliver the sustainable development scenario requires more capital flows and a shift away fossil fuel power generation to renewable power generation and a major shift towards efficiency and grid modernisation.

We know what investors say they need to see to unlock financial flows. **The Climate Finance Leadership Initiative** (CLFI) took a deep dive and identifies five challenges and proposes solutions for each of them by actors within the private sector and those responsible for public finance and public policy. The challenges are categorised from the most attractive solution from risk/return profile for the private sector to the least attractive, meaning that some challenges won't be addressed by a single group of stakeholders.

E3G

Challenge 1. Investors' demand for clean energy projects exceeds the volume of investment opportunities.
Policy uncertainty is having an effect on renewable markets, particularly in more mature markets where there is a stagnation whilst in other countries investment in carbon-intensive infrastructure continues. In emerging countries, development of new coal fired plants continue despite alternatives being more cost competitive. **Private finance actors** could utilise more financial instruments such as the securitisation of clean energy project debt in bonds that can allow both developers to access capital markets for long-tenor, fixed-rate financing and expand funding opportunities beyond the use of non-recourse loans. Clear policies are key to signal to the market that the pipeline of projects should be boosted, this should be complemented with ambitious targets from government on clean energy supported by short- to medium-term procurement goals.

Challenge 2. Emerging markets are struggling to attract low-carbon investments – risks are too high. Country, project specific risk and other factors such as lack of policies and regulations combined with underdeveloped local capital markets, and the absence of experienced project developers and value chains, limit the project pipeline. One solution is for private finance to directly invest in or partner with local developers which could potentially offer higher returns. Another solution is for financiers to provide standardised risk assessment templates for renewables that enable developers to have a clear understanding of what data and reporting is required. The role of Development Finance Institutions (DFIs) are crucial to leverage private sector and open new market opportunities. For example, on occasions where there is not a commercially viable opportunity, DFIs could use de-risking sharing tools, such as guarantees and political risk insurance. Governments could support these efforts by improving the regulatory framework and providing policy certainty with ambitious energy targets. They can also look into improving the wider investment climate e.g. by establishing predictable and fair dispute resolution.

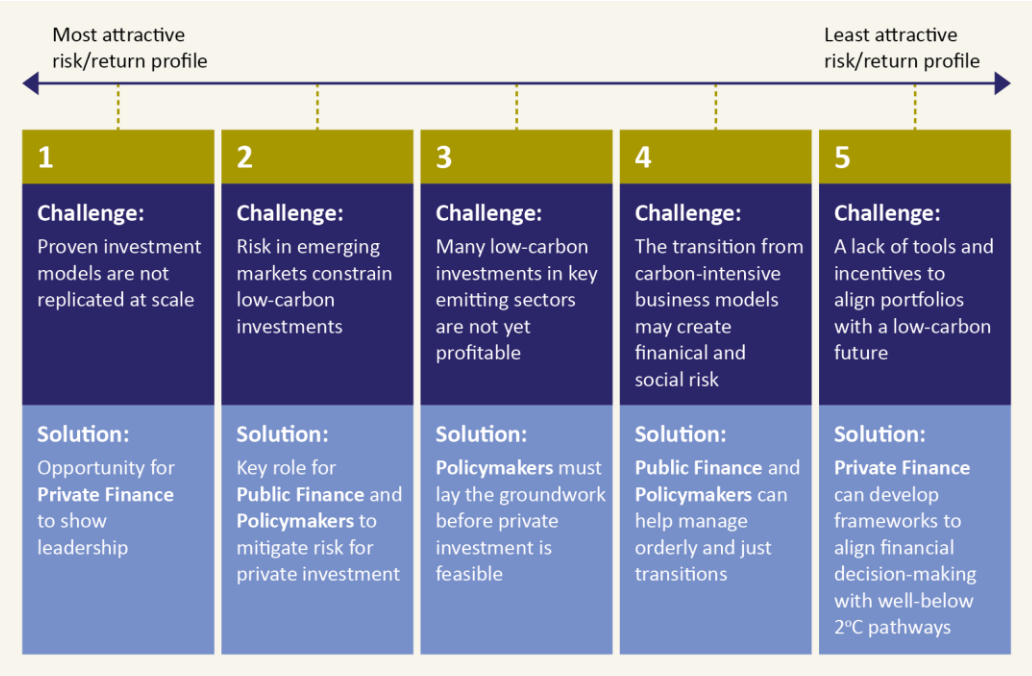
Challenge 3. Profitability in many low-carbon investments in key emitting sectors are yet to be seen. Current low carbon investment is directed towards renewable energy generation and electric vehicles. Within the private sector, producers could develop labelling standards for low-carbon products; phasing out fossil fuel subsidies and having carbon price that could level the playing field for trade-exposed, high-carbon industries. This could be also complemented by incentives schemes, or public procurement and product standards can support the development of markets for low-carbon products.

E3G

Challenge 4. The transition away from BAU high carbon intensive industry may create financial and social risk. Some carbon intensive infrastructures are likely to be retired in the near future which is going to have consequences at the social and financial level; nevertheless if they are able to work together, private finance, public finance and public policy could minimise these effects. Public budgets could be used to mitigate short term impacts via compensation, workforce development programs, and community grants to diversify local economies. Governments could encourage the transition through regulation or emissions standards, both could become more stringent over time. Investors would take this as clear pathway and could be able to anticipate any changes.

Challenge 5. Lack of tools and incentives to achieve Article 2.1.c *(making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development).* Financial actors within the value chain could have a role to make this a reality by incorporating climate-related risks as well as opportunities into governance and financial decision making – following TCFD recommendations. Credit rating agencies also have a role to play by including both transition and climate risks within their analysis – provide the right information needed by the private sector. Public finance should be setting the example, sovereign shareholders of both public and private (development banks, sovereign wealth funds etc) can encourage their institutions to align their portfolio with Paris Agreement. Central Bankers could take the work already done via NGFS to start identifying domestic climate-relates risk. In turn, policy makers could focus on increasing transparency by developing green standards and taxonomy. This will require the development of both region and sector specific pathways and benchmarks to assess the progress against the alignment with the Paris Agreement.

Figure 3: Challenges and solutions to mobilise private finance in support of the low-carbon transition (Source: CFLI)



E3G

Chapter 3

Political economy misalignment with the low carbon transition

Due to a complex set of political, economic and institutional challenges, politicians' hands are sometimes tied, and they feel unable or unwilling to provide the clear-cut long-term signals that would drive market adjustments more efficiently. Instead there is equivocation and backtracking which confuses markets, increases perceptions of policy risk, and dampens the financial flows needed to build the modern economies of the future.

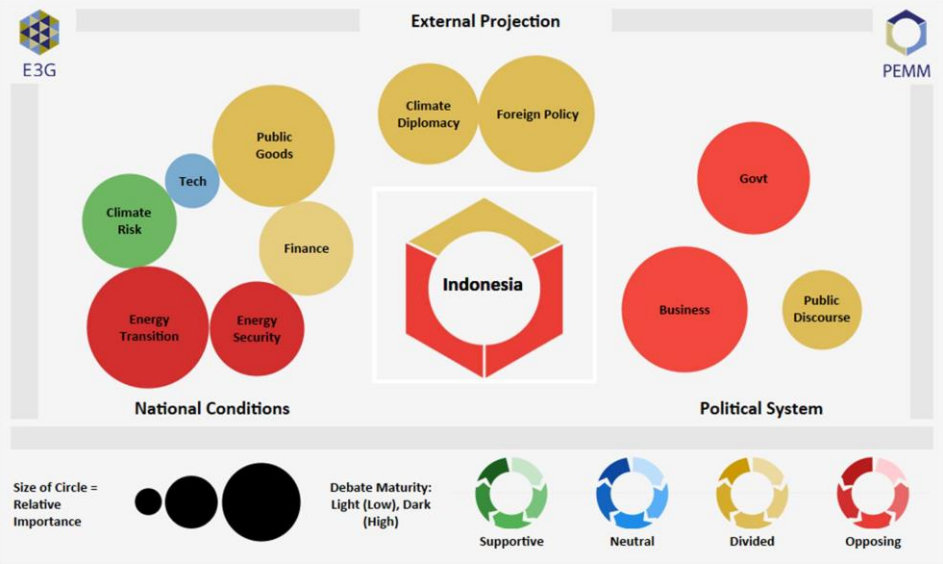
PEMM provides a shared understanding of what constructs a country's core national interests; diagnoses the key obstacles and tensions in the economy and political system and helps to identify strategic opportunities and priority actions .

As part of the Shift SEA project, E3G conducted political economy analysis of the low carbon transition in Indonesia, Vietnam and the Philippines from May to November 2018. Political economy is the study of how a nation's economic conditions – what and how it chooses to produce, consume and trade – interacts with its political system, including government, laws and customs, and the resulting choices that society makes. Political economy choices made around implementation of a low carbon transition creates clear winners and losers. While large efforts have been invested in the technical analysis of the low carbon transition, to date, little attention has been given to political economy analysis. To assess country level threats and opportunities presented by the low carbon transition, E3G have developed a tool called Political Economy Mapping Methodology (PEMM)[43]. PEMM provides a shared understanding of what constructs a country's core national interests; diagnoses the key obstacles and tensions in the economy and political system and helps to identify strategic opportunities and priority actions for a given country at the national and/or international level. We provide a high level summary of each country here and more detail discussion of the political economy dynamics in each country in Annex 1.

[43] The methodology combines hard analytical data and in-country intelligence to make an informed judgement on political economy conditions. During this research process, E3G's climate and energy experts met with over 125 local stakeholders from key government ministries, such as Environment, Energy, Planning and Finance, as well as relevant investors, private companies, development agencies, multi-lateral development banks and civil society groups.

Indonesia

Figure 4: Political economy analysis of the low carbon transition in Indonesia



National conditions

Domestic energy security concerns, particularly access to electricity, strongly shapes its energy transition to a high carbon development model. While there are early efforts on sustainable finance, high investment in domestic coal development and financial stability issues create divided conditions. Social and economic development are highly valued, though the close relationship between high carbon activities and tax revenue, as well as large subsidies to coal, create divided conditions on public goods. Increased awareness of climate risk is supportive, with opportunities to link a low carbon transition to disaster-related recovery. Technology and innovation is neutral, but plays a limited role in raising the debate on a low carbon transition.

Political system

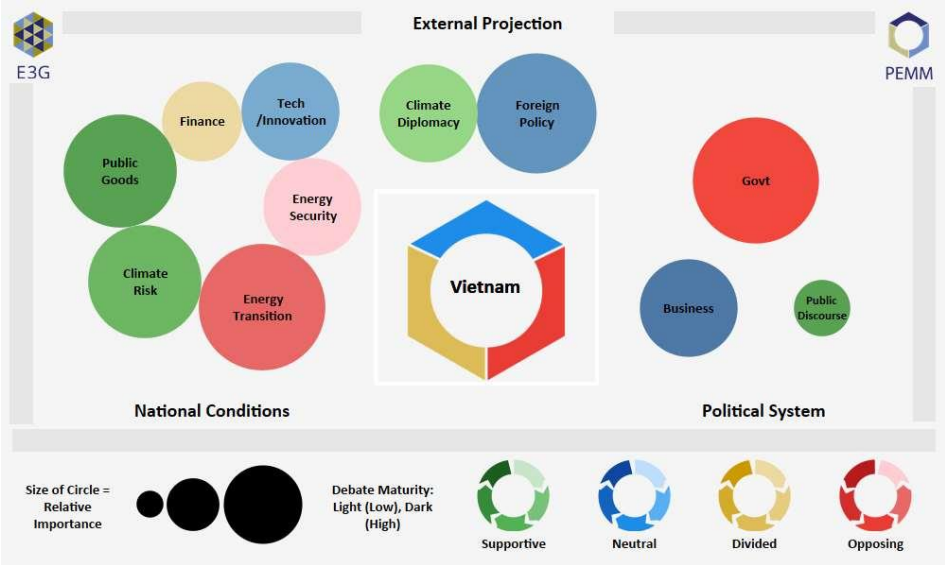
Government and business dominate the political system, are deeply entangled and have large vested interests in coal, particularly through state-owned enterprises such as PLN. While some government ministries are supportive of climate action, the larger government system opposes a low carbon transition, in part driven by a strong focus on economic development and poverty reduction which places affordability of energy ahead of sustainability, as well as coordination and transparency issues. Public discourse has less influence in the political system and is polarised on the transition. Civil society groups are regularly consulted by government, but there are emerging issues around freedom of speech and fake news via social media.

External projection

Indonesia takes a non-alignment approach to foreign policy and under President Widodo it has become more people focused. While the country does not position itself directly for or against fossil fuels, the importance of trade in high carbon goods and regional economic diplomacy, creates divided conditions on a low carbon transition. In global climate negotiations, Indonesia acts as a consensus-builder through alliances with G20 countries and the G-77 & China group. However, there is a disconnect between its NDC target and progress on the low carbon transition domestically, potentially reducing its ability to increase climate ambition.

Vietnam

Figure 5: Political economy analysis of the low carbon transition in Indonesia



National conditions

Vietnam's vulnerability to climate change impacts and risk to social development and highly valued economic sectors, such as agriculture, may help to raise the national debate on the low carbon transition; however increased dependence on imported coal to meet the rising electricity demand shapes its energy transition towards a high carbon development model. Some green finance initiatives are underway, but financial stability issues and a lack of transparency in the sector creates further division on a transition. Technology and innovation is neutral and has some potential to raise the debate, though low capacity along the value chain limits it ability to accelerate a low carbon transition.

Political system

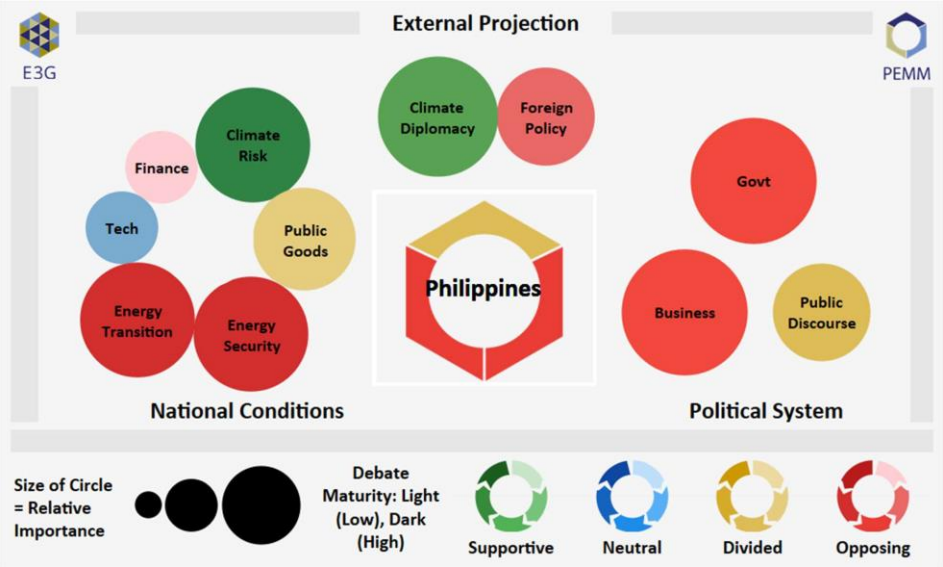
The state plays a dominant role in Vietnam's political system and while the government is interested in renewable energy, there is a large focus on high carbon coal development to meet the country's economic and social development objectives. Outside of state-owned enterprises, the broader business community is neutral on a low carbon transition and some prominent international businesses, such as Samsung, are voicing their interest in sourcing renewable energy for in- country operations, presenting opportunities for the transition. Civil society is supportive of a low carbon transition, though there are restrictions which make its role less influential in the political system.

External projection

Vietnam is supportive of multilateralism and has a foreign policy approach that focusses on making friends everywhere and is neutral on a low carbon transition. In global climate negotiations, it has been supportive of the Paris Agreement and is a member of the CVF negotiating group. However, limited progress on the low carbon transition domestically and growing concerns over the rise of Chinese influence in the region poses challenges for its climate diplomacy and regional foreign relations.

The Philippinnes

Figure 6: Political economy analysis of the low carbon transition in the Philippines



National conditions

While high climate risk has increased public awareness and driven domestic climate action in some affected areas of the country, increasing dependence on coal power for energy security purposes strongly shapes its energy transition to a high carbon development model. Incumbency in a technology neutral and low maturity finance sector also oppose a transition. The importance of meeting social and economic development objectives overrides growing environmental pollution concerns, creating divided conditions on public goods. Technology and innovation is neutral, though it has limited capacity to raise the debate or accelerate a low carbon transition.

Political system

Government and large privately owned, family-run business groups are deeply entangled, and together create a political system that opposes a low carbon transition. Climate change is an emerging priority for the government, but a technology neutral approach to energy development; highly bureaucratic permitting processes; and issues of corruption at all levels of government are key barriers. Public discourse plays a relatively smaller role and is divided on a transition. Civil society networks are well developed and active on climate change, though restrictions have been placed on freedom of speech and social media has a tendency to spread misinformation.

External projection

Philippine foreign policy and climate diplomacy are increasingly diverging, causing division on its external projection and choice. Under President Duterte, there has been a sudden and significant shift in the foreign policy priorities and diplomatic relations, including a stronger focus on national security and closer ties with China, including increased cooperation on offshore oil and gas development. Meanwhile, within the international climate regime, it holds an ambitious position on GHG emissions reductions and a strong voice on climate risk and loss and damage through the CVF and V20 negotiating groups. There is, however, a disconnect between its NDC target and progress on the low carbon transition domestically.

Summary of political economy challenges and opportunities

As the Figure 7 shows, there are both political economy challenges and opportunities around low carbon dynamics in over thirty countries. Refer to Annex I for more detailed PEMM analysis.

E3G

Figure 7: Summary of key political economy challenges and opportunities around a low carbon transition across Vietnam, Indonesia and the Philippines

	National conditions	Political system	External projection and choice
Barriers	• Macroeconomic conditions/risks • Low technology and innovation • Rapidly rising energy demand • Increasing fossil fuel dependency (local production and/ or imports) • Fossil fuel subsidies and coal power financing • Low foreign direct investment (FDI) • Limited energy efficiency efforts • Competition for land/ land acquisition issues	• Climate action not a political priority at highest levels of government • Poor coordination/ tension on climate change agenda at ministerial level • Technology neutral approach of powerful actors • Entanglement between business and government (corruption and/or low transparency) • Limited influence/ fragmentation of clean energy/ tech sector • Limited role of public discourse & restrictions on freedom of speech	• Geopolitical tension (changing alliances and the rise of China in the SEA region) • Decreased interest in multilateralism (except Vietnam) • Limited diplomatic capacity on clean energy & climate • Disconnect between climate commitments (NDC) and real economy trends
Blockers	• Unfavourable purchase power agreement (PPA) conditions for renewable energy projects • Removal of fiscal policy incentives for wind and solar (except Vietnam) • Market structures that create high entry barriers for renewable energy	• Powerful actors have large vested interests in high carbon energy (energy & industry ministers, state-owned enterprises and large, private businesses) • Conflicting mandate of state-owned enterprises (i.e. electrify all and make profit)	• High carbon trade (oil, gas, coal and agribusiness)
Opportunities	• Rising awareness and/or experience of climate change • Air quality issues • High renewable energy potential • Climate-related laws/ frameworks • Green finance initiatives and partnerships • Renewed feed-in-tariff (FiT) rates for wind and solar in Vietnam graduating to auction	• Planning ministries integrating climate into national development planning processes • Increased public discourse on environmental pollution (air, land and water) • Rise of social media and youth movements • Characteristics of the social contract (Vietnam)	• Signatories to the Paris Agreement • Participation in climate ambitious negotiating groups under the UNFCCC • G20 membership and brokerage role in UNFCCC (Indonesia) • Bilateral and regional partnerships
Levers	• Tax, banking and/ or industrial reforms • Financial stability (credit rating, avoiding recession) • MDBs/IFIs • Strong interest in attracting FDI for new economic growth and job creation	• Finance ministers (peer-to peer dialogue) including with those countries which already have climate in their political frameworks • Cities/ local government authorities • International supply chains	• ASEAN bodies focused on capital market developments • Mission Innovation • V20 group (under UNFCCC) • C40 network (Jakarta, Quezon, Hanoi, HCMC)

Source: E3G analysis based on PEMM

E3G

A focus on technical barriers alone won't deliver real change

Too often in the past, attention has been limited to the "technical barriers" to the clean energy transition. While there are many technical issues that need addressing, it is a false premise that with concerted effort one, then another, barrier will fall and finally the transition will be underway. To drive forward the process of decarbonisation in SEA, and elsewhere, it is important to understand it as a process of economy-wide transformation and a set of political challenges, not only those in play today, but those that are likely to emerge going forward.

Practical experience over the past decade from the likes of Europe and China illustrates that the changes afoot are non-linear in nature, unanticipated, and are taking too long. Limiting the transition to a technical discussion doesn't deliver the change we need to see in the time that we have. Vietnam, Indonesia and the Philippines have the opportunity to think about the transition in a different way to maximise value for their economies and societies and deliver faster results. They can cut out the part where actors get stuck on modelling incremental approaches within sectoral boundaries and jump straight ahead to transformational plans to modernise their economies fit for the 21st century. Through a concerted national effort, with significantly-enhanced international support, if they choose, they can tackle head-on the structural and distributional impacts to create a lower-cost, faster, low carbon development pathway.

Business as usual is a real drag

Support for politicians depends on their ability to keep the lights on in the urban mega centres and bring electricity to rural and remote areas. Lower-level bureaucrats are held accountable for fulfilling these promises and getting critical national infrastructure built to fuel the growing energy demand. Their jobs depend on doing so. There is a real backlash to blackouts in a growth economy; as the recent blackout in Jakarta illustrates, they cause great political embarrassment and can potentially open a political window for diversification and prioritising renewable energy sources.

People are building and funding coal plants because that's what they know

The supply is there, the cost is low, and the technology is known. It is human nature to stick to our comfort zones; it is very hard to unlearn certain things. Bureaucracies are designed to reinforce that. Institutional habits are deeply entrenched, and institutional change is difficult. Imagine being asked to abandon a technology and a system that heretofore has worked well and kept you out of trouble with your base or the bosses, for an alternative technology that investors

E3G

are less familiar with, constituents unsure about and the system architecture not yet designed for.

The political economy ecosystems in Vietnam, the Philippines and Indonesia are no different from elsewhere in the world: the inertia of business as usual is a real drag and leads to bad outcomes. To incentivise a diversion from business as usual, politicians have to decide to throw their political weight behind the new pathway and offer financial inducements. In most jurisdictions, politicians had to do both to get renewables off the ground.

Decision-making with imperfect information

Within organisations, most people make decisions based on a fraction of the information available to them. For example, decision-makers might not know what their neighbours are paying for renewable electricity and that the cost for renewables have been falling dramatically and is cheaper than coal in many jurisdictions. The power of example, such as the solar auction in Cambodia, can challenge the "coal is cheap" orthodoxy and compel decision-makers to think anew. The trouble is that Ministers like most people are preoccupied managing their inboxes and to do lists and don't have the bandwidth to look over the horizon or have clear sight on what their neighbours are doing. It is often no one's job to find fragmented bits of information and weave them together with the latest intelligence for time-constrained decision makers.

Need to improve governance and anti-corruption

People are building and funding coal plants because the system is also geared up to help them do so cheaply and quickly, and often times with some actors personally profiteering. Many actors have been able to extract rents along the investment chain of the coal pipeline from the Chinese, Japanese and Korean banks that finance the projects to the politicians and technocrats at state-owned enterprises (SOEs) that sign them off and built the plants.

In many ways, this is a demographic problem: to older generations this is the cost of doing business and they are incentivised to do one more dirty deal and they are familiar with coal, oil and gas. There is an opportunity to tackle this corruption with newer technologies and younger generations in positions of authority; but it is not inevitable. According to Transparency International, perceived levels of public sector corruption are high across the three countries – Vietnam ranks 117th, Indonesia 89th and the Philippines 99th on the index.[44]

[44] Transparency International (2018), 'Corruption Perception Index 2018', **https://www.transparency.org/cpi2018**.

E3G

A key barrier, perhaps the main one, impeding the transition to a low carbon development pathway is the extent to which the governments are entangled with the high carbon sector.

In Indonesia, the Corruption Eradication Commission (KPK), established by law in 2002, has been continuously prosecuting and bringing perpetrators of corruption to justice, including many high-profile arrests in the energy sector including the Head of the state-owned energy utility PLN. Perhaps the KPK has been too effective given a recent draft law designed to curb its powers. Hasty deliberation of the draft revised law, coupled with the controversial selection of the commission's chairman for the 2019–2023 term, has raised doubts about Indonesia's fight against corruption and undermined Jokowi's anti-corruption credentials which helped get him elected in 2014 and again in 2019. Antigraft activists have taken to the streets in protest amid public rebuke. The new Cabinet retains the well-respected Finance Minister, Sri Mulyani, but other appointments suggest that Jokowi's reformist credentials will suffer in his second term. The appointment of the former National Police Chief as Home Minister is regarded as a sign that KPK's independence will be constrained. The new Minister of Energy and Natural Resources is a former petrochemical executive who was recently Ambassador to Japan. The Coordinating Minister for Maritime Affairs and Investment has prioritised a significant increase in oil and gas investment.

In sum, pursuit of development programmes, whether they are high or low carbon projects, should not come at the expense of establishing good governance within all arms of the government. The case of Malaysia offers an instructive model when a highly corrupt administration is replaced by one with a strong anti-corruption mandate. Prime Minister Mahathir appointed Ms Yeo Bee Yin, born in 1983, as Minister of Energy, Science, Technology, Environment and Climate Change. With an intent on accelerating the energy transition, Yeo, within months of her appointment, had canceled contracts with Independent Power Producers (IPPs) for four new coal-fired power plants while boosting renewable energy targets from 2 per cent in 2018 to 20 per cent by 2025.

E3G

Fossil entanglement

A key barrier, perhaps the main one, impeding the transition to a low carbon development pathway is the extent to which the governments are entangled with the high carbon sector. In particular, the dependence of governments budgets on revenues from fossil fuels and high carbon economic activities; and especially in the case of Indonesia, the share of state-owned enterprises locked into high-carbon infrastructure and power generation, namely coal.

The spectre of capital losses from a transition away from high-carbon infrastructure and power generation to renewable energy acts as a brake. Managing that exit from coal assets involves significant losses. In free market economies, the early retirement of coal plants has implications for a range of asset owners; in Indonesia and Vietnam those assets are owned by the government. More analysis and growing awareness of stranded assets does not speed up the transition from coal to clean energy when it is the exchequer left holding the bag, or public pension funds that bought the government's bonds? In fact, it can have the opposite effect and cause the government or SOE to dig in and double down on the high carbon asset and power source and spend public resources to prop it up. Non-performing loans and non-performing assets have a big impact on a country's economy, their credit rating and ability to borrow on the capital markets to fund other parts of their programme. A conversation needs to be opened about how to ease the capital destruction for governments in transitioning to the low carbon development pathway.

A conversation needs to be opened about how to ease the capital destruction for governments in transitioning to the low carbon development pathway.

E3G

Part 2

How can Southeast Asia proactively maximise value in the transition to a low carbon world?

In Part 2 we suggest five strategic priority areas for action based on the political economy challenges and opportunities around the low carbon transition in Vietnam, Indonesia and the Philippines. Aware that a key issue is bandwidth for change, we prioritise actions that address the most critical barriers and open up space and traction for more of the technical work required. Again, this is about the pace of change. The problem is one of speed; the science requires deep structural changes across the board in a short amount of time. We only stand a chance if we pool resources, share learning, be smart and find points of entry that resonate and unlock broader changes. We also offer practical ideas for near-term action to inspire other ideas and persuade actors to use their agency for transformational change.

E3G

Five strategic Priority Action Areas

1 Create a big vision and whole-economy narrative for change

– The modern economy of the future has to be low carbon
– Reimagine renewables throughout the region
– Share renewable resources across the region
– Focus on building flexible grids
– Commit to carbon neutrality or net zero at some future date
– Leapfrog to become low carbon system architects

2 Focus on future competitiveness and full cost-benefit analysis

– Invest in innovation and low carbon industrial strategies
– Include climate risks in IMF surveillance and Article IV consultations
– Join the global movement to green the financial system
– Make it easy for investors to redirect capital flows to low carbon activities and assets
– Leverage limited public budgets with green banks and instruments

3 Build confidence from the bottom-up

– Support existing shared learning platforms and create more
– Undertake an urgent drive to deliver energy efficiency first
– Utilise at scale demonstration projects and real economy proof points
– Encourage like-minded diplomatic coalitions

E3G

4 Provide an exit strategy for high carbon assets and actors

– Develop a financial offer for the capital destruction of coal transition
– Revitalise social support structures
– Build new constituencies for the clean economy and climate action

5 Build the institutions and incentives for long-term change

– Design leadership training platforms for the next generation
– Create new governance and co-ordinating mechanisms
– Reform development banks to drive transformative change
– Enhance donor coordination for more efficient and effective delivery of international support

E3G

If Southeast Asia is to transform the energy system – and their economies – in a way that manages the risks of climate change and creates future security and prosperity for citizens, the 2020s must be the decade of action.

Vietnam, Indonesia and the Philippines are making progress but not at the speed and scale required by the science. Energy demand is growing unchecked and coal is an increasing part of the energy mix. The countries face different challenges and opportunities as a result of different national circumstances, but the underlying drivers for change are common to all countries. And decarbonisation is not the only driver for change; there are other meta trends such as digitalisation, decentralisation, and demographic changes that are having a big impact on what the future will look like. These are seismic shifts affecting the whole economy, not just the power sector; they present big opportunities for Vietnam, Indonesia and the Philippines, or big risks if they fail to respond or resist. Everyone is struggling to make sense of the extent of transformation required and underway.

There are ways to think about the transition and strategies that can help countries take advantage of the changes afoot.

Though the issues involved are complex, made more so by the urgency and interrelatedness of interventions, there are ways to think about the transition and strategies that can help countries take advantage of the changes afoot. Here we present a framework of priority actions and high leverage intervention points to increase the pace and scale of reform. These levers, if pulled in a concerted manner could create enough space or traction to unstick the politics and unlock financial flows.

There are multiple ways to organise actions, choices and trade-offs. A framework is by definition a way to simplify and make sense of what can be a paralysing amount of information and noise. The different elements combine so that they are mutually reinforcing and more than the sum of their parts. We have to make progress across multiple areas simultaneously. It is not enough to talk up future winners, we need solutions for those that lose out or who have to adapt. International support should be made available to assist Vietnam, Indonesia and the Philippines, to address the underlying political economy drivers of their transition. We offer practical ideas for near term actions that build on the good work going on the ground. Hopefully they resonate and inspire more ideas and persuade actors to use their agency to unlock structural change and longer-term ambition.

E3G

1 Create a big vision and whole-economy narrative for change

– The modern economy of the future has to be low carbon
– Reimagine renewables throughout the region
– Share renewable resources across the region
– Focus on building flexible grids
– Commit to carbon neutrality or net zero at some future date
– Leapfrog (the West?) to become low carbon system architects

The modern economy of the future is carbon neutral. According to the science, it has to be. It is folly to pretend otherwise.

The level of success in transforming Vietnam, the Philippines and Indonesia to low carbon, resilient economies is limited first and foremost by imagination. The overarching narrative and mindset are that climate action and the shift to low carbon economy is a burden and will slow development. This narrative needs changing – their future competitiveness depends on it.

Leaders in Indonesia, Vietnam and the Philippines need a big vision of the future modern economy that they can commit to and get behind, not just because of the relative cost of renewables, rather that their future competitiveness will depend on it. They need to have confidence that their growing energy demand can be decoupled from growth and be powered by modern renewables energy systems and that their economies will be able to compete.

The modern economy of the future is low carbon

Southeast Asia is one of the world's fastest-growing and economically vibrant regions. Indonesia, Vietnam and the Philippines are going to be among the major and most dynamic economies of the future. The modern economy of the future is carbon neutral. According to the science, it has to be. It is folly to pretend otherwise. While the pace and scale needs picking up, the world economy is transitioning to cleaner and less carbon-intensive forms of growth. That is a given, and regardless of individual country efforts to limit their emissions.

E3G

Building the modern economy of the future for a burgeoning middle class and young educated population inherently has to be low or zero carbon. It is the only growth story in town. It is a story of opportunity and growth. Decarbonisation can be framed as part of an optimistic vision of the future and presented as a project of national resurgence and renewal, with a technology-focused and ambitious approach centered around building the modern economy of the future for the growing middle class and the next generation.

Reimagining renewables throughout the region

It is true the cost of renewable power is falling rapidly, and it is the fastest growing source of energy supply globally. Renewable power capacity additions are forecast to grow 12 per cent in 2019, their fastest pace of growth in four years, as plummeting costs and the emergence of clean energy auctions boosted the project pipeline in a number of key markets, including Vietnam.[45] In Southeast Asia, there is a significant perception gap when it comes to renewables that severely undermines confidence in the low carbon transition, and it is not just one of cost. Renewables are still thought of as small-scale projects incapable of displacing fossil base load. The latest deals to be 'green-lighted' illustrate the increase in scale of renewable technologies, throughout the region, and their massive potential. In other markets the boundaries are being redrawn around "renewable energy systems" comprising of a package of interventions, including a massive upstream energy efficiency drive aided by sophisticated digital demand management technologies; utility-scale and off-gird renewable energy technologies, combined with a storage facility of some sort. There are many parts of the world where bundled together in this way, this 'renewable energy system' can be plugged in to displace baseload fossil. Southeast Asia decision-makers and key influencers are either not aware of this development or remain deeply sceptical. They need to be convinced if they are to become effective advocates for the transition.

Sharing renewable resources across the region

Redrawing market boundaries is also key to optimising and maximising the use of renewable energy resources. Adopting a more regional approach is one way to reduce costs and enhance security. This pathway can be fraught with difficulty even when there are more commonalities like the European Union for example. The ASEAN region is diverse and fragmented, yet electricity trade, mainly of hydropower is increasing. ASEAN's Power Grid Initiative is developing interconnection infrastructure and exploring resource-sharing mechanisms.

[45] IEA Renewables 2019, **https://www.iea.org/newsroom/news/2019/october/global-solar-pv-market-set-for-spectacular-growth-over-next-5-years.html**

E3G

These endeavours should be encouraged and supported as regional trading will be a key part of a future low or no-carbon energy system. An inordinate amount of trust is required to rely on regional integration for security of supply and the levels of trading necessary.

Focus on building flexible grids

As countries advance in their low carbon transition, the focus shifts from singular power generation projects to the system-wide transmission and distribution of the power across the grid, this creates more space for less carbon intensive interventions and investments. It also dilutes the capture on the system of high-carbon interests. Reaching a fuel mix with substantial amounts of energy demand derived from solar and wind requires investments in power storage systems and modernised grids. While the technical issues are not insurmountable based on experience in other jurisdictions that have had upwards of 30 per cent renewables in their energy mix, the costs of system integration begin to escalate as penetration levels increase if not managed carefully. There needs to be more transparency on and priority given to the technical capability and cost of grid networks in Vietnam, the Philippines and Indonesia to integrate large proportions of renewables. Donors and development banks should reorient their programmes to invest in grid infrastructure. Becoming grid-centric undermines the cost case for coal and dilutes the vested interests inherent in building coal plants. Investing in a modern flexible grid opens the way for more innovative and green off-grid solutions too. Mini-grids and solar home systems are especially important to meeting SDG 7 and reaching remote rural areas of Vietnam and islands in Indonesia and the Philippines to fulfil national energy access targets.

Commit to carbon neutrality or net zero at some future date

It is hard to imagine Vietnam, Indonesia or the Philippines committing to carbon neutrality in the near term given they are starting from a low base, but it is not impossible. It is this failure of imagination which is the first hurdle that has to be overcome. Setting an unequivocal target of net zero at some future date could provide a competitive advantage in a region where competition for Foreign Direct Investment (FDI) is fierce; and where other markets are considering the use of trade agreements and border adjustments to mobilise more ambitious global climate action. Leaders can acknowledge the tough choices that need to be made but leave no doubt that business as usual is not an option. To galvanise and attract the investors and innovators and new entrants and entrepreneurs of the future, any such narrative would have to be underpinned by a credible and comprehensive policy reform programme overseen by a central governance

E3G

mechanism to drive progress and send a strong signal that the transition is a political priority.

Leapfrog to become low carbon system architects

A fundamental dilemma still prevalent in emerging economies is prioritising the goal of meeting peak demand. System-operators from markets further ahead in their energy transition have learned how to more effectively manage peak load with energy efficiency interventions, new technologies and smaller modular generation projects. This system-wide balancing typically leads to a less carbon intensive generation mix. Beyond the power sector, the next phase will be about decarbonising transport. Will that mean a lot of electric vehicles bolting on to power systems or an increase in biofuels? What will that mean for land-use? Also, what of the increase in demand for air conditioning throughout the region; could the local power network take a sudden influx of ACs? These are systems questions, requiring an understanding of how the whole system fits together. The reality is that too few countries are currently set up organisationally to think about the *integration* of the various markets. Vietnam, Indonesia and the Philippines have an opportunity to learn from and leapfrog other more advanced markets in figuring out how the various 'bits' fit together and to optimise decarbonisation pathways in a sensible way. This is an area where international support could make a big difference.

E3G

1 Ideas for practical near-term actions

– Asia [RE]volution
– Launch a long-term strategy for decarbonisation without delay
– ASEAN Clean Growth and Innovation Ministerial
– Asia Cities 30 by 30 Initiative

Asia [RE]volution

Create a new regional platform to get RE to tipping point.

Our Consortium partners Mission 2020, together with SEforAll, have piloted a new brand and platform called 'Asia [RE]volution', a series of bespoke gatherings of region-leading ministers, project developers, technology innovators and financiers willing to embrace large-scale renewable energy deployment and take it to a tipping point in the region.

These gatherings of like-minded decision-makers are intended to provide visibility of what's possible, what's necessary, and build confidence that the rapid and large-scale roll-out of RE is possible, despite the challenges.

Following a pilot meeting in New York on 22 September 2019, featuring new Japanese Environment Minister Shinjiro Koizumi and Asian RE industry leaders and investors, planning is now underway on further gatherings to tackle specific subjects critical to the roll-out of renewable energy systems, including grid upgrades, utility-scale energy storage and large off-grid generation projects as an alternative to current plans for the expansion of fossil-fuel based power.

Future gatherings could form part of the activities being planned by Vietnam as the forthcoming chair of ASEAN in 2020, and could be supported by SEA Energy Transition Partnership and draw on technical advice from the IEA, IRENA, ADB, AIIB and ASEAN's expended Renewable Energy sub-sector networks.

Launch a long-term strategy for decarbonisation without delay

To send clear market signals, Vietnam, Indonesia, and the Philippines need a LTS

Under article 4, paragraph 19, of the Paris Agreement, all countries should strive to formulate and communicate long-term low greenhouse gas emission development strategies. 65 countries have established long-term targets to achieve carbon neutrality by 2050.[46] Over 100 cities worldwide have also established long-term targets to achieve carbon neutrality by 2050, including various cities across Vietnam, Indonesia, and the Philippines.[47] Benefits to developing an LTS include minimising transition risks and financial jeopardy. Having an LTS sends a clear signal to markets, encouraging low-carbon innovation and investment in low-carbon industrial opportunities.[48] [49] [50]It can also allow for a managed and just transition that avoids socioeconomic risks across regions and sectors.[51]

Indonesia has committed to developing an LTS, led by the Ministry of Environment and Forestry. At the same time, the Government of Indonesia is pursuing a strategy of Low Carbon Development Indonesia (LCDI), highlighted by Vice President Kalla at the UN Climate Action Summit. The Ministry of National Development Planning/Bappenas is working to mainstream into the next five years 2020-2024 National Medium-Term Development Plan for Indonesia. The city of Jakarta has established the long-term target of carbon neutrality by 2050.[52]

Continued on next page

[46] UN (2019) **CAS Closing Release**

[47] Government of Chile (2019) **Alianza de Ambición Climática**

[48] **https://www.vivideconomics.com/casestudy/a-low-carbon-industrial-strategy-for-the-philippines/**

[49] **https://www.vivideconomics.com/casestudy/a-low-carbon-industrial-strategy-for-vietnam/**

[50] **https://www.vivideconomics.com/casestudy/a-low-carbon-industrial-strategy-for-indonesia/**

[51] E3G (2019) **The EU Long-term Strategy as an opportunity for just transition**

[52] Government of Chile (2019) **Alianza de Ambición Climática**

continued from previous page

Vietnam has previously pledged to develop an LTS but has yet to formally initiate developing it. As one of the countries in the Climate Vulnerability Forum (CVF), Vietnam pledged to develop a mid-century LTS as early as possible before 2020, to achieve net carbon neutrality, and to achieve 100 per cent renewable energy "as rapidly as possible".[53] The cities of Hanoi and Ho Chi Minh City have established the long-term target of carbon neutrality by 2050.[54] Vietnam currently has the fastest growing carbon emissions of any country in the world.[55]

The Philippines has previously pledged to develop an LTS but has yet to formally initiate developing it. The Philippines is also a member of the CVF and pledged to develop a mid-century LTS before 2020, to achieve net carbon neutrality, and to achieve 100 per cent renewable energy "as rapidly as possible".[56] Within Metro Manila, Quezon City, the most populous city in the Philippines, has established the long-term target of carbon neutrality by 2050.[57]

[53] **https://thecvf.org/marrakech-vision/**

[54] Government of Chile (2019) **Alianza de Ambición Climática**

[55] BP (2019) **Statistical Review of World Energy**

[56] **https://thecvf.org/marrakech-vision/**

[57] Government of Chile (2019) **Alianza de Ambición Climática**

E3G

ASEAN Clean Growth and Innovation Ministerial

Work with Vietnam as ASEAN Chair in 2020 to create a new platform for learning and innovation

A lot of technical capacity building and shared learning is already going on across the SEA region but to reach ambitious RE targets and NDCs, peer to peer learning and knowledge exchange needs to be put on steroids. New platforms are needed.

One idea is to work with the government of Vietnam as Chair of ASEAN in 2020 to consolidate existing ASEAN structures into a new 'ASEAN Clean Growth and Innovation platform'. The ASEAN Center for Energy (ACE), based in Jakarta, acts as a regional interlocutor and plays a prominent role in the energy transition but their template is technology neutral, limiting their ability to drive forward this agenda. Perhaps a new platform unambiguously centred around the low carbon growth agenda might be a more effective sponsor of cross-learning and problem-solving towards this end. An alternative could be to leverage a marquee regional event such as the Singapore International Energy Week for this purpose. Whatever the vehicle, combining the political role of key ministers – energy, finance, planning, transport, land use for example – underpinned by technical working groups could help with cross-government coordination and align the political economy mandate for change with the technical work necessary to implement the vision.

There are existing structures for peer to peer learning and exchange with regards the energy transition such as the ASEAN Sub-Sector Networks (SSNs). Sub-sector networks are operational already for renewable energy (RESSN), energy efficiency (EESSN) and a Heads of ASEAN Power Utilities Authorities (HAPUA). These could be supported and strengthened to boost learning throughout the region. The Heads of ASEAN Power Utilities network (HAPUA) would be the place to start to support a utility to utility dialogue and foster discussion on grid modernisation, power trading and modern business models.

continued on next page

continued from previous page

Additional networks could be created to focus on particular aspects of the transition. For example, an SSN for system operators–transmission, distribution and regulators –to prepare appropriately for higher levels of renewable penetration. New SSN's could be developed to incentivise corporate procurement, electric vehicles or industrial energy management for example as well as foster collaboration on low carbon industrial strategies. Collaboration on R&D is possible in the early stages up to the point at which ASEAN neighbours start to compete. With support from donors and development banks there could be multiple reinforcing SSNs or groups working on particular challenges to the transformation required, such as system-wide planning and design.

The ASEAN Working Committee on Capital Markets Development (WC-CMD) is already collaborating with the ASEAN Capital Markets Forum (ACMF) on infrastructure investment and sustainable finance. This could potentially be tied into the Clean Growth and Innovation Ministerial to incorporate ministerial discussion on the sustainable finance agenda and the integration of Environmental, Social and good Governance (ESG) into investment decisions.

E3G

Asia Cities 30 by 30 Initiative

A competitive program for 30 Asian cities to be completely modernised by 2030 – possibly Indonesia's new capital

According to the UN, 55 per cent of the world's population currently lives in a city or urban area; by 2050 two-thirds will do so. Cities consume over two-thirds of the world's energy and account for more than 70 per cent of global CO_2 emissions. By 2030, it is projected worldwide there will be a total of 663 cities of more than one million people, the largest number in Asia including 148 in China alone. Cities and mega-cities in Asia are growing, and as they do populations complain about traffic congestion, waste and pollution. Creating a comprehensive, holistic high-level response would meet a number of strategic goals, not least climate mitigation and adaptation, and could be of interest to Manila, Hanoi and Jakarta and timely for Indonesia's new capital soon to be under construction.

The simple idea is to launch a new initiative focused on the complete modernisation of 30 Asian mega-cities by 2030. Once selected through a competitive process, 30 cities would get dedicated technical and financial support as they prepare and bid tenders to build the major infrastructure required as well as integrate the best-known energy efficiency, adaptation and resilience measures. These 30 cities would provide real world classrooms for other cities to learn, be inspired and replicate. Young professional populations would be trained and get hands-on experience on the vanguard of designing Asian cities of the future and exporting this expertise to other cities and markets.

The funding window would have to be ambitious and fit for purpose combining public, philanthropic and private capital streams in innovative ways. This too would be part of the innovation. The 10-year time horizon is long enough for implementation and short enough for sustained attention and accountability required to deliver real ambition. There are questions as to where such an initiative could be anchored in Asia: the ADB's capitalisation is too low. China's Belt and Road Initiative have the capex but would need to mainstream green principles. It could also encompass protection of natural ecosystems and biodiversity as urban populations grow so could accommodate the desire to align strategies across the CBD, UNFCCC and SDGs. Japan might be persuaded to export their competitive advantage in building efficient mass transit systems, instead of coal finance.

E3G

2 Focus on future competitiveness and full cost-benefit analysis

– Invest in innovation and low carbon industrial strategies
– Include climate risks in IMF surveillance and Article IV consultations
– Join the global movement to green the financial system
– Make it easy for investors to redirect capital flows to low carbon activities and assets
– Leverage limited public budgets with green banks and instruments

Countries and companies that mine coal or use coal will be left with fewer options.

Demand for low carbon products is expected to grow 11 per cent annually, with opportunity for greater gains as the world enters a zero-carbon paradigm.[58] The global transition from high carbon to low carbon development makes a compelling case that Vietnam, Indonesia and the Philippines should accelerate their own transition and invest in developing low-carbon supply chains and innovation if not for climate reasons then to protect the future competitiveness of their economies.

South Korea is an exemplar: in 2008, it implemented a green growth strategy, increasing its global share of low carbon exports from 3 per cent to 10 per cent 10 years later.[59] In addition, investors are starting to ask questions about the long-term prospects of fossil assets and are under increasing pressure to 'go green'. The sustainable finance agenda is gaining credence with countries working together in the areas of taxonomies, disclosures, standards and labels, which are fundamental for investors to identify and seize low carbon investment opportunities worldwide. Countries and companies that mine coal or use coal will be left with fewer options. The recent announcement that the IMF is preparing to integrate climate risks into their surveillance work and Article IV

[58] ClimateWorks Australia and Vivid Economics, (2019), **https://www.vivideconomics.com/wpcontent/uploads/2019/08/discussion_paper_a_low-carbon_industrial_strategy_for_indonesia.pdf**

[59] ClimateWorks Australia and Vivid Economics, (2019), **https://www.vivideconomics.com/wpcontent/uploads/2019/08/discussion_paper_a_low-carbon_industrial_strategy_for_indonesia.pdf**

E3G

consultations is further proof that the global investment landscape is changing. It behooves the target countries to get ahead of the inevitable shift in financial flows.

Invest in innovation and low carbon industrial strategies

The operation of a largely renewable power system will be very different from one based on fossil fuels. Already markets around the world have seen the costs of new technologies fall dramatically. Onshore wind and solar are now being deployed, without any government-backed contracts, as a result of tumbling costs. The cost of new storage technologies, such as batteries, are on a similar trajectory. Last year, the UK got 53 per cent of its electricity from low carbon sources, up from 26 per cent in 2005.

The levels of innovation seen and the waves to come is truly staggering. Where are Vietnam, Indonesia and the Philippines in all of this? Are they going to ride the wave or be washed out?

Of course, the power sector is just the beginning. Commitments to net zero and carbon neutrality will see the focus turn to decarbonising transport, buildings, industry and agriculture. Massive increases in R&D will lead to both continuous incremental innovation and new breakthroughs. New technologies such as off-shore wind are penetrating markets; new vectors like hydrogen will soon follow. New approaches like the circular economy are being adopted to improve resource efficiencies and reduce waste and improve competitiveness. New business models using digitalisation and artificial intelligence are being deployed to drive down costs and improve customer experiences. The levels of innovation seen and the waves to come is truly staggering. Where are Vietnam, Indonesia and the Philippines in all of this? Are they going to ride the wave or be washed out? As technology takers dependent to varying degrees on being competitive in the global marketplace, this is a critical lever that needs serious consideration. These economies, and others like them, need to have confidence that they can compete in this brave new world; without it they have little incentive to lean into it and every incentive to resist.

Include climate risks in IMF surveillance and Article IV consultations

When a country joins the IMF, it makes a commitment to pursue financial and economic policies that are conducive to 'orderly economic growth' and 'price stability'. On behalf of the collective membership, the IMF manages an ongoing process of monitoring global trends and 'country surveillance'. The process culminates in annual consultations, known as Article IV consultations, with member countries to assess and discuss the country's economic and financial policies with the government and central bank officials and other stakeholders. In their surveillance, the IMF team typically looks at the monetary, fiscal and exchange rate policies of the country. They also conduct a Financial Sector

E3G

Assessment Program (FSAP) which is an evaluation of the strengths and weaknesses of the financial sector in that country and an assessment of risks and vulnerabilities of their capital flows. After this surveillance and article IV consultation, the IMF issues a report containing policy advice to address perceived weaknesses that could lead to financial or economic instability. The reports are influential documents that shape the debate in national capitals and the views of the global financial community. Since the last financial crisis, institutional and structural issues in the financial system as a whole have gained importance for the IMF. To this end, the announcement by the new head of the IMF, Kristalina Georgieva, that the Fund is going to integrate climate and environmental risks into its economic analyses is significant. This sends a powerful signal to the world about the salience of climate risk to the stability and functioning of the modern economy. In this way, climate-related financial risks will also be brought to bear on national policies and priorities.

Join the global movement to green the financial system

There are early signs of reform among financial regulators in the SEA region interested in mainstreaming climate risk, yet these efforts are nascent and isolated. Proactive and prolonged cooperation between financial regulators throughout the region, supported by actors in other countries who are also working to better understand and integrate climate-related risk in their own financial systems, is an area worthy of increased regional and international support. Vietnam, Indonesia and the Philippines should seriously consider joining global conversations and multilateral collaborations such as **The Coalition of Finance Ministers for Climate Action** and the **Network for Greening the Financial System**. Both Indonesia's and the Philippines' Minister of Finance have endorsed the Coalition's Helsinki Principles which commits them to aligning financial flows with the Paris Agreement. The State Bank of Vietnam, Indonesia's Financial Regulator and the Philippines' Central Bank are members of the Sustainable Banking Network which is an observer of the NGFS. Given the size and significant of Indonesia's economy, OJK the financial regulator should give serious consideration to joining the NGFS and help shape the emerging practice of voluntary frameworks and guidelines for the financial sector that aim to preserve stability and identify, measure, and manage climate-related risk. This emerging agenda and systemic view have not yet landed in the region, with support it could.

E3G

MEMBERS
Argentina
Austria
Bangladesh
Canada
Chile
Colombia
Costa Rica
Côte D'Ivoire
Cyprus
Denmark
Dominican Republic
Ecuador
Equatorial Guinea
Ethiopia
Finland
Fiji
France
Germany
Ghana
Guatemala
Iceland
Greece
Indonesia
Ireland
Italy
Jamaica
Kenya
Latvia
Lithuania
Luxembourg
Marshall Islands
Mexico
Monaco
Netherlands
Nigeria
Norway
Paraguay
Philippines
Poland
Portugal
Spain
Sri Lanka
Sweden
Switzerland
Uganda
United Kingdom
Uruguay

The Coalition of Finance Ministers for Climate Action

Overview of the Santiago Action Plan (SAP)

Finance Ministers of Indonesia and the Philippines are members of The Coalition of Finance Ministers for Climate Action – along with 47 others. During the World Bank Annual Meetings, the Coalition shared an overview of their priorities for 2020. It is called the Santiago Action Plan (SAP). Below are the headlines as it currently stands:

> **Transition strategies** towards low carbon emission and climate resilient economies (Helsinki Principle 1) – The Coalition will be reviewing Long Term Strategies (LTS) in select countries and examine the transition implications to cover economic impacts.

> **Finance Ministries' Roles and Capacities in Climate Policy** (Helsinki Principles 1, 2, and 6) – Focus to strengthen horizontal coordination for the design of policy actions; Sharing national approaches and good practices to help Members develop their capacities and roles in policy making, including the NDC process.

> **Carbon Pricing** (Helsinki Principle 3) – the Coalition will consider the transition challenges and economic impacts to understand the benefits of carbon pricing, and ensure that policies address political economy, distributional, and competitiveness concerns.

> **Climate Change in Macroeconomic Management and Public Finance** (Helsinki Principle 4) – The Coalition will develop tools and address gaps in macro forecasting and fiscal planning for climate change impacts and disaster risk management, etc.; facilitate the adoption of climate-smart budgeting where appropriate; support macroeconomic and fiscal assessments of adaptation, resilience and mitigation policies, including NDCs

> **Financial Sector Development that underpins Mitigation and Adaptation** (Helsinki Principle 5) **–** The Coalition will support the preparation of national roadmaps for greening the financial system; review the efforts of Multilateral Development Banks (MDB) in mobilising climate finance.

E3G

Make it easy to redirect private capital to low carbon activity and assets

With increased attention and sense of urgency on the need to shift financial flows away from unsustainable economic activity, a priority area for action is to make it easy for investors to redirect capital to low carbon activity and assets. A lot of innovation is going on in the financial ecosystem to make this switch as frictionless as possible. For example, an **International Platform on Sustainable Finance** (IPSF) was recently launched with relevant authorities from Argentina, Canada, Chile, China, the European Union, India, Kenya, and Morocco – representing almost half of CO_2 emissions in the world. The platform is to exchange knowledge and compare different approaches to creating classification systems on what counts as sustainable, and what does not; as well as standards for disclosure and labelling of green products. In the joint statement members said the aim is to promote best practices in the emerging field of environmentally sustainable finance and, "while respecting national and regional contexts, enhance international coordination where appropriate".

Investors would no doubt prefer one classification system, rather than a range of taxonomies across geographies that will slow the flow of finance. It remains to be seen what the Platform will become or whether some members of the platform choose to go further and move towards aligning and harmonising approaches. Regardless, Vietnam, Indonesia and the Philippines should pay close attention to this emerging conversation and if it makes sense nationally or regionally sign up to join the endeavor. ASEAN has started to look into sustainable finance principles of its own. Perhaps it would be beneficial to join forces with the founding members of the Platform to share learning and mobilise private investment at the scale necessary to finance the low carbon transition throughout the region.

Train local bankers to do full cost accounting and play their part

Local banks in ASEAN markets often hold significant capital but can lack the knowledge or comfort level to do full-cost accounting or innovative structuring to favour risker renewable deals. In many cases, the powering purchase agreement (PPA) is heavily skewed toward incumbents and coal assets tying their hands in making final investment decisions that support the transition. For example, of the 75 PPAs for renewable energy projects signed with the Indonesian government, 46 were delayed due to financial difficulties in 2018 – developers stated that banks were reluctant to provide financing as their

projects could not be used as collateral.[60] In this way, renewable energy projects were perceived as risky.

Given the absence of a carbon price, extra effort could be made to get bankers up to speed on full-cost accounting to support renewable energy projects and programmes. In addition to large scale renewables, to deliver 1.5 requires a shift to decentralised digital solutions and investments in energy efficiency, flexible grids not to mention just transition and adaptation measures. This may be beyond local banks and will require public banks to stretch beyond their comfort zones and to make and grow markets to scale not just remove barriers. This will mean a new wave of public finance institutional reforms that will require significant balance sheet, risk resources and technical assistance at the policy, institutional and project level. We say more later in the paper on the potential transformative role of development banks, that goes way beyond their current work programme of Paris alignment methodologies. Regional bodies such as the capital markets development group could also help the region accelerate clean energy investment. On-going and robust forms of technical assistance should be available to help government's access the full range of tools such as taxation, budgeting, subsidies, investment, climate financing, public procurement and not least carbon pricing.

Given the absence of a carbon price, extra effort could be made to get bankers up to speed on full-cost accounting to support renewable energy projects and programmes.

[60] The Jakarta Post (2018), 'Task force to address funding problems in renewable energy', **https://www.thejakartapost.com/news/2018/04/30/task-force-to-address-funding-problems-in-renewable-energy.html**.

E3G

2 Ideas for practical near-term actions

– ASEAN join the International Platform of Sustainable Finance and host a regional conference with NGFS and Santiago Action Plan

– Build confidence with enhanced support and collaboration for low carbon innovation and industrial strategies in which Vietnam, Indonesia and the Philippines have potential to move up the value chain

– Indonesia launch Mission Innovation campaign

ASEAN join the International Platform of Sustainable Finance and host a regional conference with NGFS and Santiago Action Plan

Malaysia as a regional leader could host a regional conference

So much is happening to align global financial flows with the Paris Agreement that it is hard to keep track. A lot of engagement and awareness raising is happening on a bilateral and ad hoc basis, an intervention is needed to catch everybody up in a coordinated, comprehensive and efficient manner.

The idea is for a regional actor – perhaps Malaysia –to offer to host a regional conference in Q1 of 2020, with philanthropic support, and invite representatives from the various initiatives to brief regional market regulators and central bankers convened in one place. As Bank Negara Malaysia (BNM) – Malaysia's Central Bank – is a member of The Network of Central Banks and Supervisors for Greening the Financial System (NGFS), and as BNM has formed the Joint Committee on Climate Change, Malaysia is well positioned to act as host for all SEA countries to take stock and make informed decisions as to their next step.

continued on next page

continued from previous page

The **ASEAN Working Committee on Capital Market Development** is already collaborating with ASEAN Capital Markets Forum (ACMF) to support infrastructure financing, including the utilisation of Islamic financing and the adoption of the ASEAN standards on sustainable financing to promote green bond issuance and financing. It makes sense for actors in ASEAN to learn from and even align their efforts with the emerging community of practice including investors from China, India, Europe and other parts of the world.

Indonesia and the Philippines are already members of the Coalition of Finance Ministers and could offer to host regional dialogue after the one in Santiago to further develop the Action Plan. It is imperative these endeavors are more broadly socialised throughout the region, which currently they are not. The requisite signals need to be sharpened and strengthened to have a material impact on capital allocation decisions in the region, sooner rather than later. Local stakeholders from across government, public and private regulatory authorities, and private finance actors including the financial press could be invited to a high-level regional conference. It is an efficient way to get everyone up to speed, show leadership and land this agenda in the region.

E3G

Build confidence with enhanced support and collaboration for low carbon innovation and industrial strategies in which Vietnam, Indonesia and the Philippines have potential to move up the value chain

An important piece of work on low carbon industrial strategy by **ClimateWorks Australia** and **Vivid Economics** shows the opportunity space and potential for low carbon industries in Vietnam, Indonesia and Philippines. They researched optimal low-carbon industrial strategies that build on existing elements and could facilitate a pivot towards clean technologies.

Vietnam potential

> Vietnam already has a competitive strength in production of solar PV and can further strengthen this expertise by growing its domestic market (as PV is predominantly manufactured for export).

> Vietnam's competitiveness in electronics means they are already manufacturing some components required for smart grids. These components are the same used in some electronics, but they are not yet being used for smart girds.

> Vietnam has high wind and solar potential. However, technological transfers should be encouraged to ensure domestic manufacturing occurs.

> Large bauxite and titanium endowments mean that with incentives, Vietnam could support electric vehicle manufacturing.

Indonesia potential

> Geothermal energy is a largely untapped resource, meaning there is large potential to utilise this for the economy. De-risking upfront capital explorations costs is a priority area.

> Despite almost non-existent domestic wind generation capacity, Indonesia is already competitive in the production of wind towers (building on its steel manufacturing capability) and produces them at one-third of the cost of China.

> Energy storage and electric vehicles could also be a growth area due to an established minerals industry. Large nickel endowments mean Indonesia can play a unique role in energy storage and batteries due to proximity to regional supply chains.

continued over the page

continued from the previous page

Philippines potential

> The Philippines already holds a comparative advantage in solar PV cells and lighting. Panels are produced in special economic zones which limit the ability of the domestic market to access PV at competitive cost.

> The Philippines should consider innovation in efficient lighting technologies such as LEDs to benefit from increasing construction in ASEAN.

> Geothermal potential is high due to domestic resources. Energy storage and electric vehicles could also be a growth area due to an established minerals industry.

This is a critical issue that warrants much greater attention and support. Countries are always going to be hesitant putting their weight behind a transformative agenda if they are unsure they will be able to compete. RD&D collaboration is a sensitive endeavour with intellectual property at stake and the reality is ASEAN countries are neighbours but also competitors. However there are models that could be adapted to provide the target countries greater support and encouragement in moving up the value chain in the areas where they have potential.

For example, a consortium could be created to bring together governments, policymakers, researchers, and industry to develop a long-term platform for joint R&D to improve efficiency in buildings, increase indoor comfort, and reduce stress on the electric grid. Countries could coordinate and ask donors or development banks for support for open access test facilities, validation and engineering expertise to accelerate the commercialisation of new technologies and by developing intellectual property, software, tools, guidebooks, codes, policies, and more.

Vietnam, Indonesia and the Philippines could implement public policies including public procurement to incentivise the creation of a downstream low carbon market, the creation of knowledge hubs, collaborative R&D and joint ventures to encourage technology transfer. Passing regulation that allows for fairer cost comparisons of renewables and fossil fuels helps as does improved information dissemination through a coordinating or planning agency.

Indonesia launch Mission Innovation campaign

A global call to action to accelerate RD&D on geothermal

Indonesia is already a member of Mission Innovation – a global initiative to accelerate clean energy innovation – and could easily lobby the other 23 countries to create an 'Innovation Challenge' in geothermal.

Mission Innovation countries collaborate on Innovation Challenges (ICs). These are global calls to action aimed at accelerating research, development and demonstration (RD&D) in technology areas that could provide significant benefits in reducing greenhouse gas emissions, increasing energy security and creating new opportunities for clean economic growth. The ICs cover the entire spectrum of RD&D: from early-stage research needs assessments to technology demonstration projects. Each IC consists of a global network of policymakers, scientists and innovators working towards a common objective and built around a coalition of interested MI members. Through the ICs, Indonesia could encourage increased engagement from the global research community, industry, and investors, while also providing opportunities for new collaborations between MI members.

In 2016, Mission Innovation (MI) members endorsed seven ICs, and in 2018, they added an eighth IC on Renewable and Clean Hydrogen. With so much potential, and so much at stake, Indonesia could lead the effort to add a ninth IC on geothermal.

E3G

3 Build confidence from the bottom-up

– Support existing shared learning platforms and create more
– Undertake an urgent drive to deliver energy efficiency first
– Utilise at scale demonstration projects and real economy proof points
– Encourage like-minded diplomatic coalitions

Support existing and create more shared learning platforms

We need to prioritise learning in Southeast Asia, and everywhere, if we are to overcome deeply entrenched institutional habits and BAU inertia. A priority action area is therefore to create incentives and build the infrastructure required for decision-makers and problem-solvers from different parts of the system to get together to technically figure out how to transition and provide each other political cover and the confidence to try.

Technical capacity building is necessary but by itself will not be sufficient; more platforms are needed to efficiently disseminate what works in the real world and spread the tacit knowledge of *how* to make change – institutional, cultural, political, and social. Learning is an intrinsically human activity and the network effect of bringing individuals together is proven more effective in disseminating knowledge, changing behaviours and creating momentum for change. Learning must be demand-led, and initiatives should be driven by the framework of building partnerships, a "we're all in this together" approach, sharing analysis and providing proof points and leveraging the demonstration effect. Vietnam, Indonesia and the Philippines might be more interested in learning lessons from other emerging economies who have made progress, for example India on solar PV, or Chile on renewables, as well as their ASEAN partners further ahead in their transition, for example Malaysia and Thailand.

There are existing structures for peer to peer learning and exchange with regards the energy transition such as the ASEAN Center for Energy (ACE), based in Jakarta, and the ASEAN Sub-Sector Networks (SSNs). ACE might be a good interlocutor to advocate the imperative to act and provide a platform for cross-learning and problem-solving though at the moment their template is technology neutral. An alternative or additional option is to invest in a new architecture that could act as a one stop shop for a clean energy system and put learning on

E3G

steroids across the region. The question is where to anchor such an architecture within the SEA region, if not ASEAN. Possible options might include the Asia Development Bank or a well-respected professional or business school might be an option; or an investor-led forum such as the Singapore International Energy Week could also be adapted to provide a learning platform. The critical point is more robust platforms are needed to more efficiently and effectively share learning across the region.

Limit the increase in energy demand by sweeping energy efficiency programmes and incentives in end use sectors

Saving consumers and businesses money in theory is more politically palatable. With almost all efficiency improvements, the business case works whether or not you care about climate change. The question is why it isn't already a priority.

Energy efficiency is one of the most cost-effective ways to combat climate change. Studies from the IEA suggest that improvements in energy efficiency can deliver over 40 per cent of the GHG reductions needed to meet the Paris goals. In addition to enabling a faster transition to renewables, these measures can also clean the air we breathe, improve the competitiveness of our businesses and reduce energy costs for consumers. Energy efficiency improvements are by far the cheapest way of cutting emissions and is a key plank of any credible strategy to pursue a low carbon development pathway. Policy-makers have to first have confidence that an energy efficiency agenda can be delivered at scale and will be able to dent rising energy demand. There are many initiatives and platforms to help countries, corporates and consumers reduce their use of energy and demand for electricity. Besides a lack of confidence and commitment to energy efficiency as an infrastructure priority in its own right, there are technical capacity constraints to contend with. There have been some efforts to run capacity building programmes but they are nascent and need building on. Saving consumers and businesses money in theory is more politically palatable. With almost all efficiency improvements, the business case works whether or not you care about climate change. The question is why it isn't already a priority.

Often the biggest barrier to greater energy efficiency is business as usual: utility companies sell units of energy, still largely fossil fuel in most countries, giving them few incentives to promote conservation that would cut their profit. This is a political economy barrier in Vietnam and Indonesia that needs addressing. Likewise, fossil fuel price subsidies are a prevalent part of Indonesia and Vietnam's energy system. Electricity is just too cheap and not priced according to the market, even excluding negative externalities. Without market reforms or wading into the politics of energy subsidies current energy efficiency efforts are tinkering around the edges and will only deliver marginal improvements. Without a shift in the paradigm, energy efficiency as a lever will not be able to

E3G

massively move the dial in Vietnam or Indonesia, the way it has in a growing number of other economies and regions.

Utilise at scale demonstration projects and real economy proof points

All three countries can point to successes to build confidence in and momentum behind the low carbon transition. For example, the Million Green Homes programme is an inspiring and concrete example of local leadership working to shift financial flows towards low carbon development in Vietnam. Decision-makers can be convinced when provided evidence that energy efficiency plus demand response plus renewable energy plus storage can displace fossil baseload power; and that there are cheaper and more reliable ways to meet their growing energy demand with multiple co-benefits including clean air, future competitiveness and fewer emissions. There are other levers like the sustainable cities' agenda, corporate procurement across supply chains or providing off-grid clean energy access to the many islands throughout the region, where actors are working to replicate and scale demonstration projects to build the evidence base that it can be done. Further, decision-makers throughout the region keep a watching brief on the green deal flow and the relative prices in neighbouring countries. A case in point was provided with the avidly discussed case of Cambodia's 60 MW solar auction which resulted in a price of solar of USD 0.03877/kWh which, according to the Asian Development Bank, this is the cheapest power purchase tariff for a solar project so far recorded in Southeast Asia. These and other proof points reverberate around the region to build confidence and tap into competitive forces within and between ASEAN countries. A priority action is to significantly enhance support for bottom-up action and demonstration projects, and invest in smart communication apparatus that can hunt down these proof points, aggregate and mould them into a story, shoot them like arrows into the direction they need to go to amplify their impact on decision-makers to spur action, build local supply chains and motivate climate ambition.

Proof points reverberate around the region to build confidence and tap into competitive forces within and between ASEAN countries.

E3G

In Vietnam a million green homes will catalyse change from the bottom-up

In Vietnam for example, the Million Green Homes program has recently been launched by SHIFT SEA project partner **Green ID** who is partnering with renewable energy companies, including Vu Phong, SolarBK and Hoa Binh, to install a million solar rooftops by 2030. The programme directly targets and works with Vietnamese households and SMEs to apply energy efficiency solutions and solar rooftops in the first instance, and then expands towards other solutions such as household-based waste treatment or smart homes. Million Green Homes aims to bring the technology closer to consumers through policy and finance advocacy, green home pilot projects, and a digital information hub. They are looking to establish a "third force" for renewables and help close the time gap until green energy utility-scale projects take off in Vietnam. There are multiple examples, and together they start to create a catalytic force for change from the more bottom-up.

Encourage like-minded diplomatic coalitions

Real Economy platforms like the **Powering Past Coal Alliance** (PPCA) and **The Cool Coalition** help develop technical know-how and disseminate proof points for sector specific reforms. The Powering Past Coal Alliance now counts 91 members including 32 national governments, 25 subnational governments – including the Filipino Province of Negros Oriental – and 34 businesses. With 45 GW of coal-fired power plants and 27,000 employed in the coal sector, Germany is the largest coal user in the EU to have signed-up. Coal provided 37 per cent of Germany's electricity production in 2018, down from 47 per cent in 2013. Undoubtedly it will be a challenging transition for industrial economies to move beyond coal but by joining with like-minded actors they provide and receive support and the global momentum for the phase out of coal is further strengthened. The Alliance is working with its members to make their energy supply more modern and advance the development of new technologies. Governor Degamo of Negros Oriental in the Philippines showed local leadership by joining the PPCA and prohibiting the construction or operation of coal fired power plants and establishing a Provincial Renewable Energy Council in the province.

There are many examples of like-minded coalitions joining forces to share the scientific case for action and lead by example to promote collaboration, advocate for more innovation, greater investment, better information and enhanced

E3G

capacity. **The Cool Coalition**'s membership of 70 includes the national governments of Bangladesh, Chile, Denmark, Japan, Rwanda and the United Kingdom, multinationals such as Arla, Danfoss, French utility ENGIE and Mahindra, and leaders in cities, civil society, academia and intergovernmental institutions such as the World Bank. The aim is to ensure growing cooling needs are met sustainably at speed and scale within a 1.5 degree pathway. This platform is of particular relevance for Southeast Asia where today just 15 per cent of ASEAN households have air conditioners versus 91 per cent in Japan and 90 per cent in the US. The IEA estimate that cooling will account for a 35 per cent share of final electricity demand growth to 2040 in ASEAN – more than industry (26 per cent), lighting and appliances (21 per cent) and other buildings (11 per cent). According to the IEA, this growth in cooling demand could be cut by 50 per cent with a pragmatic suite of policy measures making sustainable cooling a priority area of action in the region. Without this. focused attention, cooling demand will skyrocket and the share of cooling in peak power demand in Southeast Asia rises towards 30 per cent by 2040 accentuating strains on power systems. [61]

While there are many coalitions working across borders in all sectors to accelerate various aspects of the low carbon transition, many more are needed to achieve the structural change necessary.

One final example of how a network of doers can come together to support and spur each other in action is the **World Mayors Summit** organised by C40. The Mayor of Jakarta recently joined 2,000 mayors, city officials and civic organisations to share experiences and learn about innovative solutions. Collectively they called on key decision-makers to take bold and urgent actions to keep global temperature rise to below 1.5°C. The number of C40 cities which have peaked their greenhouse gas emissions now stands at 30 cities, and mayors and city representatives from over 70 major cities gathered to learn how they can do likewise. It is critical that cities, particularly the mega-cities, green their growth trajectory and work together towards transformative change. No easy task but one that is critical if we are to meet the Paris goals. To that end, the **Mayor of Jakarta** joined Mexico City, New Delhi, Seoul and Tokyo to sign a Clean Air Declaration committing to deliver ambitious pollution reduction targets by 2025. While there are many of these coalitions working across borders in all sectors to accelerate various aspects of the low carbon transition, many more are needed to achieve the structural change necessary.

[61] Southeast Asia Energy Outlook, IEA (2019) **https://webstore.iea.org/southeast-asia-energy-outlook-2019**

E3G

3 Ideas for practical near-term actions

– A major focus on Energy Efficiency First to break the link

– The Cool Coalition

A major focus on Energy Efficiency First to bend the demand curve

An urgent, massive and fundamental energy efficiency drive to reduce energy intensity is called for to save costs and boost competitiveness.

Set ambitious regional energy efficiency target and support package

Most, if not all, of the countries in the region have barely scratched the surface of this opportunity space and face common hurdles including lack of technical capacity, perverse incentives, weak enforcement apparatus and access to affordable and accessible capital to finance improvements on the front end. The dilemma is especially acute for Vietnam which is currently trending at 10 per cent electricity demand for growth for 6–7 per cent economic growth. **An urgent, massive and fundamental energy efficiency drive to reduce energy intensity is called for to save costs and boost competitiveness**. Energy-efficient practices and programmes aided by regional policy coordination along the following lines could bend the demand curve and create confidence in the transition to low carbon:

> SEA companies to join the global **EP100 initiative**, or create a regional version

> Drive to get 50001 entities across ASEAN to adopt the **ISO50001 energy management standard** to integrate energy management into business operations and quality controls, and save money!

> Revitalise ASEAN's SHINE program for rapid implementation and enforcement of the regionally-specific MEPS and HEPS for household appliances and industrial processes.

continued over the page

continued from the previous page

- Train 100 energy auditors in each jurisdiction to implement and enforce regulations starting from 2020. Penalise companies that fail to comply to send a market signal that this is a high priority.
- Replicate the Philippines public procurement policies to implement EE measures and help build the supply chain and technical capacity.
- Experiment with pilot projects that switch out fossil fuel price subsidies for energy efficiency and new technology measures in particular clean cooking, heating and transport arrangements.
- ADB to enhance its EE financing mechanisms such as the ESCO model and train the banks ready for when there is a pipeline of projects.
- Regional Digital-EE Trade Fair to showcase the growing range of digital technology innovation that is opening-up new opportunities for energy efficiency enhancement.

E3G

The Cool Coalition

Membership of the Cool Coalition will enable Vietnam, Indonesia, and the Philippines to advance efficient, climate-friendly cooling for all.

Already a particularly warm region, demand for cooling is set to increase dramatically in Southeast Asia over the coming decades. Ensuring cooling that is affordable, sustainable, and accessible is essential to alleviating poverty and achieving the SDGs and NDCs in fulfilment of Paris commitments.

It is crucial that minimum energy performance standards (MEPS) for air conditioners be adopted, enforced, and updated, and longer-term plans to manage cooling needs be developed. Accordingly, the IEA claims its recommendations for MEPS could reduce cooling demand by up to 50 per cent in the region. This will result in substantial consumer energy savings, lower emissions, and a dampened impact on power grids. Cooling is a major area for policymaker consideration in the realms of energy security, innovation and trade, urban planning and infrastructure, access to energy services and resilience to a warming world.

Some regional progress is being made to address these challenges and opportunities through ASEAN SHINE, a public-private partnership linking the issues of energy efficiency, energy security and growth in the region's economic cooperation. This is a good foundation for ASEAN engagement with the Cool Coalition, and a strong platform for individual ASEAN members to do the same.

The Philippines, Thailand and Vietnam are developing National Cooling Action Plans (NCAPs) for the delivery of efficient, climate-friendly cooling for all. In the wider region, China and India have already prepared NCAPs. Joining the Cool Coalition will enable Vietnam, Indonesia, and the Philippines to leverage knowledge from national governments, cities, banks, businesses and civil society experts on the design and implementation of comprehensive NCAPs, access support for cooling actor and economic opportunity mapping, facilitate access to financing for sustainable cooling solutions and get support for the piloting of 'cooling-as-a-service' contracts – a business model for energy utilities and energy services with high growth potential. **Becoming Cool Coalition members will enable VIP to advance efficient, climate-friendly cooling for all, contributing to national and regional priorities** including access to high quality, affordable energy services; tourism and hospitality profitability and growth; enhanced productivity in the agricultural and commercial sectors; and greater resilience to a warming world.

E3G

4 Provide an exit strategy for high carbon assets and actors

– Develop a financial offer for the capital destruction of coal transition
– Revitalise social support structures
– Build new constituencies for the clean economy and climate action

At the end of the day, compensation of the losers from climate policy may be needed on political economy grounds to get the low carbon transition underway.

Develop a financial offer for the capital destruction of coal transition

The spectre of capital losses from a transition away from high-carbon infrastructure and power generation to renewable energy acts as a brake. It is all well and good talking about shifting financial flows from coal generation to lower-cost renewables however, managing that exit from coal assets involves significant losses. The level of fiscal entanglement with fossil fuel industries has to be painstakingly thought through and addressed head-on. This is especially true in the case of Indonesia, where the share of state-owned enterprises locked into high-carbon infrastructure from extractives to power generation and energy consumption, not just coal, is very high and is arguably the main constraint on the low carbon transition. SOEs need a solution to their unsustainable losses; perhaps a transition mechanism could be developed in return for modernisation of their business model. A work-around or debt restructuring while the institutions are being reformed might break the political deadlock. This is of first-order importance and an important area for further research and dialogue.

This is a nascent area of work: Some NGOs and financial actors have begun thinking about this and working on solutions, comparing this issue to the third world debt crisis. The Rocky Mountain Institute for example has proposed a flexible package of measures to manage capital losses.[62] There is a live effort being explored to create an USD 11 billion transition fund to support South Africa's state-owned utility Eskom through the necessary reforms.[63] It is a contentious debate with concerns around moral hazard, and the morality of taxpayers being asked to bail out an SOE when for so long influential actors in the system have been extracting rents and getting rich off the deals being done. At the end of the day, compensation of the losers from climate policy may be needed on political economy grounds to get the low carbon transition underway.

[62] Managing the Coal Capital Transition (2018), RMI **https://rmi.org/insight/managing-coal-capital-transition/**

[63] **https://www.bloomberg.com/news/articles/2019-09-16/-11-billion-green-energy-initiative-takes-shape-in-south-africa**

The P&L of PLN is a brake on Indonesia's transition

IEEFA Report: Indonesia PLN

In 2018, The Institute for Energy Economics and Financial Analysis (IEEFA) released a report analysing the finances of Indonesia's state-run power monopoly, Perusahaan Listrik Negara (PLN). The IEA has also pointed directly to PLN's financial vulnerability and long history of under recovery. The results of IEEFA's analysis were not promising, pointing to mismanagement, reckless fiscal strategy, and a willingness to hide mounting debt and financial troubles from Indonesian voters and bond investors alike. The IEEFA's reporting has contributed critical information and evidence to inform the judgements presented in this briefing.

In their findings, IEEFA determine that PLN's long-term growth strategy of securing high-cost coal IPPs is committing Indonesia to a future of highly polluting energy production at worryingly non-competitive prices. Already, this over-reliance on coal capacity has forced PLN to get unduly creative with its balance sheet, using questionable asset valuations in an attempt to obscure massive financial losses. IEEFA suggests PLN would have to raise tariffs 10–20 per cent just to keep the company solvent as its debt burden soars, although PLN's leadership has attempted to publicly downplay any structural problems.

In reality, PLN's losses have ramped up because the company is absorbing coal IPPs that it cannot possibly afford. According to IEEFA, operating losses have averaged USD 2.1 billion annually. For a long time, PLN has been charging its customers less than it pays for electricity – at the government's insistence. In order to meet Jokowi's 35 GT generation target, PLN rushed through a series of deals with Independent Power Producers (IPPs), predominantly on Java and Bali. To get the deals done quickly, PLN had to include guarantees to the IPPs. Even though there is now meaningful over capacity on the islands of Java and Bali, PLN will have to pay out cash as those IPPs come on line. That will hit their P&L in 2019–2021.

continued over the page

continued from the previous page

The trajectory is fiscally untenable despite the presence of extraordinary Treasury subsidies in 2018. Credit ratings agencies expect the government to continue to subsidise PLN and will be watching closely to see if the government increases power tariffs to begin to ease pressure on payments from the Treasury. With taxpayers already footing the bill for PLN's operating losses, it will be politically difficult for PLN to additionally raise rates going forward unless public concerns about power reliability and air pollution are addressed more effectively.

This is an unsustainable situation. One in need of a solution. As IEEFA rightly points out, PLN's current dilemma only highlights the need for a major change of course. and "creating a truly transparent and competitive market for new capacity with more reliance on clean energy would be an obvious first step."

IEEFA also recommends keeping an eye on Meralco, the largest power distribution utility in the Philippines. As the new rules on competition are brought to bear in the Philippines, the power producer will have to adapt to market forces. The question remains whether Meralco will embrace cleaner power sources and storage and emerge a winner or chart a damaging course for business-as-usual.
http://ieefa.org/indonesia-update-plns-fractured-finances-require-real-leadership/

A more holistic view of the social contract is urgently needed in Vietnam and Indonesia. It doesn't help local populations to ignore the inevitable or delay the transition that's coming

Reframe the social contract and revitalise social support structures

Distributional impacts only become more important the deeper the transition reaches and become critical factors determining the political acceptability of policy measures and public support for climate action. There is a strong focus in all three target countries on the impact on social welfare of energy policy and high and sustained social assistance in the form of energy subsidies. Indeed, the impact on vulnerable consumers and issues around energy access and energy affordability are arguments employed against the transition. This needs to be turned on its head and harnessed in favour of a faster and fairer transition.
A more holistic view of the social contract is urgently needed in Vietnam and Indonesia. It doesn't help local populations to ignore the inevitable or delay the transition that's coming. It also does them a disservice, particularly younger

E3G

populations, not preparing them for the economy and jobs of the future. Decision-makers need to balance short-term protection for the fossil lobby with those most deserving of protection when climate impacts hit hard and when those assets are stranded. It will be the state left owning the stranded assets or the pension funds. They have an incentive to act now to reframe the social contract beyond subsidised access to cheap, dirty energy.

Creative win-win solutions are available. For example, could a robust program of energy efficiency measures be harnessed to secure social support for the low carbon economy and requisite subsidy reform? If technically superior appliances could be switched out for older dirtier ones this may do away with a significant share of inefficient fuel subsidies. However front-loaded costs would have to be managed or underwritten somehow and many fuel subsidies emanate from transportation, cooking, heating or cooling homes requiring more R&D in culturally-appealing low carbon alternatives.

Indonesia is familiar with the challenge of fuel subsidy reform, having attempted several waves in the 1990s and 2000s. Only when there was a social welfare system in place to compensate the poorer populations for the economic burden of subsidy reform did they secure enough public support to make significant price change possible. There may be a window of opportunity on the horizon to experiment with more modern forms of social support in Indonesia since prices were kept artificially low in the run-up to the general election and a hefty rate increase is expected soon.

Many political actors derive their political support from rural or remote populations where renewable energy systems can offer advantages over coal. For example, given the difficulty of getting power to Southeast Asia's most remote areas – Indonesia has more than 13,000 islands and the Philippines another 7,000 or so – solar and wind mini-grid installations can offer electrification without costly extensions of the grid. **SEforALL's Energising Finance** research also strongly reinforces the premise that coal will not reach vulnerable, remote populations, instead bringing solar off-grid solutions to power the more remote areas has the potential to provide reliable, sustainable, and affordable electricity to all.

E3G

Furthermore, the technology is available if Vietnam, Indonesia or the Philippines wanted to leapfrog other advanced markets by enabling all consumers, in urban centres and remote areas, to generate their own electricity and sell it to each other or back to the utility or the market. Could this model be adapted to displace the need for fuel subsidies while securing social support for the transition?

Build new constituencies for the clean economy and climate action

To counter the fossil lobby, the climate community has become savvier and now incorporates many different voices. Globally, regionally and nationally, climate groups have invested in building diverse coalitions to call for and drive more ambitious action across the economy. CSOs in Vietnam, Indonesia and the Philippines have been building multi-stakeholder alliances that use different messengers and networks to create the surround sound and influence decision-makers. These broad-based coalitions can represent both a growth-maximisation and risk-minimisation frame of reference mobilising groups that reflect the co-benefits of climate mitigation as well as those most impacted by climate change. The role of CSOs is critical in being able to drive change, shape the narrative, challenge norms and hold decision-makers to account. Their perception of what's necessary, what's feasible and what's desirable in terms of the transition is a key factor.

The role of CSOs is critical in being able to drive change, shape the narrative, challenge norms and hold decision-makers to account. Their perception of what's necessary, what's feasible and what's desirable in terms of the transition is a key factor.

Vietnamese leaders from the private sector, financial institutions, universities, communities and civil society institutions formed the **Vietnamese Coalition for Climate Action (VCCA**) vowing to accelerate low-carbon development in Vietnam. VCCA will engage non-state actors and work constructively with the national government to put in place mechanisms to meet Vietnam's climate goals and meet its growing energy needs with renewable technology. The coalition will focus on key sectors of the economy, starting with the energy sector. It will champion the massive adoption of renewable energy and energy efficiency measures by commercial and residential buildings. VCCA actions are facilitated by **GreenID** and **WWF-Vietnam**, under the umbrella of the **Alliances for Climate Action**, with partial financial support from the **SHIFT SEA** project.

E3G

In similar vein, **the Indonesian Low Emissions Network** (***JIRE*)** was formed in 2019. The network is being coordinated by the Green Partner Foundation (**Yayasan Mitra Hijau or YMH**) and also supported by the **SHIFT SEA project.** JIRE's efforts will concentrate on facilitating the convergence between the Indonesia's government vision with the aspirations and implementation capacities of the local private sector, CSOs, academics, investors and practitioners. Practically since its launch, JIRE has been working with the Indonesian Conservation and Energy Efficiency Community (**MASKEEI**) to develop and widely socialise concrete proposals for energy efficiency policy in Indonesia. The network has identified specific policy recommendations and a package of incentives which they are presenting to the new Administration in the hope that they will be adopted in the "Government Regulation on Energy Conservation" policy and form the base for energy efficiency policy in Indonesia for the next five years.

E3G

4 Ideas for practical near-term actions

– Develop a transition mechanism to decommission coal

Develop a transition mechanism to decommission coal

Indonesia and Vietnam need a structured financing mechanism to phase out fossil assets and restructure debt to invest in green and the grid, and align with the Paris deal.

The first priority is decouple energy demand from growth and second, is to stop building coal and build clean instead. There are implantable options today if decision-makers were minded. But then the question arises as to what to do with existing high carbon assets, those currently in operation. There are many countries, or companies, that would transition out of fossil assets if they were offered incentives or support. It is not desirable for these assets to be taken off-line all of a sudden or all at once. Aside from the economic hit to people's jobs and whole communities, that would have a massive destabilising effect. Instead, these assets would have to be wound down over time, as the alternative infrastructure is built and comes on-line to replace baseload and in off-grid islands and remote communities. That takes time. However, a conversation could be started now on how that transfer is incentivised and structured. Some coal plants will naturally be decommissioned in the next ten years, however the tragedy is that the coal fleet in Southeast Asia is not that old, and the new capacity in the pipeline is likely to be large building more not less public liability into the system, hence the sense of urgency and financial jeopardy.

A compelling offer has to be developed if we want to phase-out coal at a pace required to meet the Paris goals. A growing body of analysis is beginning to shed light on the size and scope of the stranded asset risk, and who will be impacted. More granular analysis is needed to fully scope the size of the problem. Enlisting the help of structured finance specialists and the international finance community to at least explore what a transition mechanism might look like should the opportunity arose. Otherwise we are still stuck.

E3G

5 Build the institutions and incentives for long-term change

– Design leadership training platforms for next generation
– Create new governance and co-ordinating mechanisms
– Reform development banks to drive transformative change
– Enhance donor coordination for more efficient and effective delivery of international support

Design regional leadership training platform for the next generation

The bulk of the decisions which determine the pace and scale of the low carbon transition and climate ambition are made by real economy actors sitting in cities and states, and working in businesses of all kinds, and banks. The long-term transformational change will be led by younger generations who will take-up positions of authority in future. We must start now finding innovative and effective channels to raise their consciousness of the stakes involved, and the shape and scale of global transformation required. There are traditional modalities of education and professional training and these of course should be employed throughout the region. In addition, new and supplementary platforms must be created to reach the next generation quickly and at scale since in the final analysis, it will be their daily decisions that will determine the rate of decarbonisation. They must be reminded of their agency and imperative to act, regardless of what role they play in the economy. We must step-up our collective efforts to make sure the next generation in Vietnam, the Philippines and Indonesia truly become leaders and are up to the task. Once they take the reins they can send unambiguous signals to attract future financial flows to be able to design, build and live in the modern net-zero economy and climate-resilient society.

Strengthen governance and co-ordinating mechanisms

The transition to a low carbon development is an opportunity to address the deep entanglement issues and old ways of doing business between the governments of Vietnam, Indonesia and the Philippines and the high carbon sector. The dependence of governments budgets on revenues from high carbon economic activities is addressed above, however actions are needed to deal with relatively high levels of corruption and rent capture. There are systemic ways of rooting out bad actors and loosening the grip on the system of powerful vested

E3G

interests with much to lose from a transition away from high carbon development. If done right, strengthening parliamentary oversight can be a powerful lever for change as evidenced by the UK's Committee on Climate Change (CCC). The CCC was established in law as an independent statutory body to provide independent advice on setting and meeting targets and preparing for climate change and report on progress. It has proven to be an effective oversight arrangement and adept at engaging the public in the national debate. The Philippines Climate Change Commission, which is mandated through the Climate Change Act, is trying to set up something similar and is a local model of excellence.

It is important to introduce and maintain these kind of governance structures with the strong backing of the executive to send the right signal that the low carbon transition is a political priority.

There are programs that train and support parliamentarians in providing effective oversight, these could be extended and adapted to support a whole-of-government approach to the problem and not limited to environment or energy committees. Public finance, planning and budgeting parliamentary committees are critical in the transformational change required and should be prioritised in training and capacity building. They also help provide a much-needed coordinating function across government.

A central coordinating agency or mechanism to synthesise multiple government plans, which are often contradictory and send mixed signals as to the direction of travel. It is important to introduce and maintain these kind of governance structures with the strong backing of the executive to send the right signal that the low carbon transition is political priority, otherwise it becomes another layer of bureaucracy. Another governance mechanism that would benefit from enhanced support is the training of Pension Fund trustees. This could be a local or regional endeavour to train trustees to ask the right questions and stress test their holdings against a Paris-aligned future. In many jurisdictions, this is being interpreted or redefined as integral to their fiduciary duty. They may have a rude awakening and be enlisted to use their agency, along with other supervisors and public servants, to demand greater action, ambition and above all, accountability.

Leverage limited public budgets with green banks and instruments

To dramatically drive global private investment into domestic low-carbon, climate-resilient infrastructure many jurisdictions are creating green banks, or have expressed interest in setting up one. Green banks are institutions tailored to the local context, mission driven and "investors of first resort"[64]. They can

[64] Mazzucato, M. and MacFarlane, L. (2018). Patient Finance for Innovation-Driven Growth

E3G

provide the policy certainty needed in the transition by proving that the government is willing to put skin in the game; they focus on driving systemic change rather than market tweaks. As a market creator they pave the way for the private sector to follow thereby mobilising private sector investment at a greater speed and in greater quantity than would take place without this intervention. Basically, green banks are a way of using limited public resources to leverage large amounts of private capital by tackling specific barriers to investment. For example, instruments can be designed to enhance the credit rating of a project, demonstrate feasibility by early stage investment or subordinating debt; or use of instruments to aggregate projects that are individually too small in terms of market capitalisation for most private investors.

Both the Philippines and Vietnam have expressed interest in creating a green bank. The Philippines seems further along in their process with a draft executive order on institutionalising green finance waiting for final approval. It aims to set up a government task force including the Central Bank, Ministry of Finance, Planning Ministry, Climate Change Commission. The government wisely wants to achieve internal alignment before opening it up to business and others. Vietnam is working with Vivid Economics to reform an existing institution. Whilst the Government of Indonesia has created an integrated platform called **SDG Indonesia One** managed by the Ministry of Finance and PTSMI it aims to blend public and private funds and channel them into infrastructure projects related to the achievement of SDGs.

The distinct value-add of such a national public finance institution is its unique knowledge of the local market and understanding of and ability to influence national policies. They can channel support from international investors, multilateral and bilateral development banks as well as donor governments to projects on the ground, although they need robust brokerage and project preparation services to do this efficiently. Green banks can become a tool for innovation and driver of the transition.

Reform national development banks and export credit agencies so they are Paris-aligned

Alongside the interest on the sustainable finance agenda to reorient private capital flows, multiple jurisdictions are in the process of reforming their national development banks to better align with the Paris goals. National banks are important institutions since they channel international resources into domestic markets and can in the process reset norms towards sustainable infrastructure and incentivise low carbon development. The **International Development**

E3G

Finance Club (IDFC) is a partnership of development banks that join forces and work together on how to do more effective global development. In 2017, members of the IDFC, which includes the China Development Bank, committed to align with the Paris Agreement and are in the process of establishing what that practically means for their operations. The national infrastructure development fund in Indonesia, **PT Sarana Multi Infrastruktur** (PT SMI), is not yet a member of IDFC. E3G's report **'Banking on Asia'** takes a closer look at this process and assesses how aligned with the Paris goals are the operations of the China Development Bank, Korea Development Bank and Japan International Cooperation Agency.

There is a need for innovative new vehicles or instruments to connect the growing investor appetite with the infrastructure investment need and national development banks need to step up.

For Vietnam, Indonesia, and the Philippines, access to low-cost financing and de-risking facilities remains an issue to support large-scale renewable energy projects, flexible grid upgrades, energy efficiency programmes at scale not to mention mass transit systems and low carbon urban planning. Pure concessional finance is often not the best option, or even possible in the case of Vietnam who has reached its borrowing ceiling, so blending concessional financing with different types of debt and guarantees, combined with project preparation and brokerage services is a critical priority. There is a need for innovative new vehicles or instruments to connect the growing investor appetite with the infrastructure investment need and national development banks need to step up. As an example ADB's Asia Infrastructure Fund has developed a new **Catalytic Green Finance Facility** (CGFF) which although relatively small has adopted a promising blended approach with reduced lending rates for the first seven years when the project is operational and can access capital from the markets and the public investment can be recycled. The CGFF approach also deploys a team at the front end to prepare and structure the deals to ensure their capital is effectively and efficiently channeled to projects on the ground. The lack of brokerage is often a weakness of dedicated green funds and instruments.

Reform multilateral and bilateral development banks to be the key drivers of transformational change

Multilateral and bilateral development banks also have unique power to catalyse other public and private financial flows, both in the global North and South. Where they lead the private sector is more likely to follow, in terms of geographies, technologies and business models. They act as market makers in the global financial system, using their position as knowledge banks to set norms and precedents that shape what good economic development and sound investment look like. They can both catalyse investment in green economic activity and use de-risking measures to help green the financial system. They can

E3G

build infrastructure that is fit for the future and redirect economic growth. Most importantly they think in the long-term, making them ideal actors to take a leadership role on climate change. As institutions responsible for the use of billions of dollars of public taxpayer capital, development banks must use their money for the public good, nationally and internationally. Indeed, they have a responsibility to constantly re-assess their activities to ensure they are always using this money in the public's interests.

China Development Bank (CDB) alone is a major source of finance for both brown and green infrastructure. The CDB dwarfs its peers in other countries and wields significant power, within just one national financial institution, to shift financial flows towards sustainable infrastructure.

The debate within institutions is whether their overarching objective is to tackle climate change or poverty reduction; this misses the point. Economic growth and prosperity will be sustainable and permanent only if climate change is managed and mitigated.

Development banks are – or at least should be – key change agents in the transition to a climate-safe global economy for the region and worldwide. The current debate raging within these institutions is whether their overarching objective is to tackle climate change or poverty reduction; this misses the point. Economic growth and prosperity will be sustainable and permanent only if climate change is managed and mitigated, and sound climate management means sound banking. Left unchecked, over the coming decades climate change could annihilate the gains in poverty reduction these banks have overseen over the past few decades.

All of the major multilateral and bilateral development banks including those in Asia have committed to align their operations with the Paris goal of holding global temperature rise to well below 2°C and pursuing efforts to limit this to 1.5°C. Translating this global objective into new policies, consistent with the joint MDB framework for alignment with the Paris Agreement and International Development Finance Club approach, is the next step in the process of responding to climate change. The climate crisis demands much more urgent and radical reform of these institutions if they are to drive transformational change in their client countries and on behalf of the publics they serve.

‘Banking on Asia’

The role of six development banks in SEA’s transition

As part of the SHIFT-SEA project, E3G analysed six banks active in the SEA region that collectively disburse over USD 1.7 trillion The Asian Development Bank (ADB), Asian Infrastructure Investment Bank (AIIB), China Development Bank (CDB), Japan International Cooperation Agency (JICA), Korea Development Bank (KDB) and the World Bank Group are assessed as to how aligned their activities are with the Paris Agreement and temperature goals. The methodology and findings are published in **the report ‘Banking on Asia’ as are detailed recommendations as reform of these institutions is a principal lever to shift financial flows and accelerate the transition to low carbon development in Vietnam, the Philippines and Indonesia.**

The six institutions covered in the report are estimated to have invested USD 65 billion in total over 2016 and 2017 in ‘brown’ energy finance. It is essential that these banks share best practice and harmonise their standards to continually drive up the quality of their investments. Standards and safeguards are not only a matter of red tape but are a way to ensure that banks are operating on sound principles and responding to the latest understanding of regional investment needs.

Sound banking for future readiness requires that the Asian multilateral and bilateral development banks become ‘climate banks’ at rapid pace. Of course, the process of operationalising a complex international agreement like the Paris Agreement into the day-to-day operations of an even more complex bank is neither simple nor easy. But it must be done and done quickly.

The report shows that none of the development banks active in Asia – which includes the World Bank – is yet fully aligned with the Paris Agreement. Much progress has been made however, especially by the World Bank, the Asian Development Bank and the Japan International Cooperation Agency.

Elevating and mainstreaming an energy efficiency drive across the bank operations and across the region is the first of the recommended actions.

continued over the page

continued from previous page

Developing new innovative ways to finance sustainable infrastructure in the region is another imperative. All of these institutions need to do a better job of using guarantees and blended finance approaches to finance utility-scale renewable projects and grid upgrades. There are promising signs to build on.

Alignment of their operations with the Paris Agreement is a necessary first step. The next step, and the bigger prize, will be for the banks to become institutions that support the countries where they operate to accelerate their progress along the countries' own low-carbon development pathways towards a prosperous, resilient and net-zero carbon economy.

Enhance donor coordination for faster impact on the ground

To accelerate the region's low-carbon energy transition from 2020–2025, a critical period for progress towards the Paris Agreement targets, a group of international donor governments and philanthropies have joined together to form the South East Asia **Energy Transition Partnership (ETP)** to support Vietnam, Indonesia and the Philippines and potentially other SEA countries in accelerating and increasing their adoption of clean energy sources.

ETP members recognise that the region's tremendous natural endowment of renewable energy potential provides a strong foundation for a low-carbon energy transition, but this requires greater coordination among donors to achieve greater leverage and lasting impact. ETP has a strong focus on unlocking private and public financing for the clean energy transition. ETP members are currently in consultation with Southeast Asian governments and other key stakeholders on the program's final design. Meanwhile, the ETP members have established an interim Secretariat based in region to engage with stakeholders to design and launch joint programmes focused on the rapid transition to clean energy sources. ETP plan to provide technical and financial assistance that leverages public and private financing. This is an opportunity for a more ambitious and synergistic approach for clean energy deployment in the region. The donors and philanthropies are keen that their help be used to mobilise public and private sector investment and expertise to support real change in the region. Vietnam, Indonesia and the Philippines must proactively steer the ETP towards their priorities for the low carbon transition including some of the thornier political economy issues highlighted here.

E3G

5 Ideas for practical near-term actions

– Utility to utility knowledge-exchange
– Create a new leadership platform for GenZ to deliver Net Zero
– Joint industry projects and project prep facilities for a healthier green pipeline

Utility to utility knowledge-exchange

High-level convening of Utility executives to share transition stories and lessons

In more advanced markets, the business models of utility companies and energy providers are evolving into a service delivery model where utilities provide a service to maintain a home or office at a comfortable temperature. They sell 'comfort' instead of a unit of electricity. In Vietnam and Indonesia, the business model of the state-owned utility, with their dual mandates to both make a profit and sell electricity at less than market value, acts as a dampener on the transition to a low carbon economy. Notwithstanding their different national contexts, the majority of decision-makers know that the model as currently constituted is not sustainable in the long term, economically or politically, and does not deliver the environmental outcomes that climate science dictates and local populations increasingly demand. So, what can be done?

Recent events in each of the countries could be used as a catalyst for change. In Indonesia, the start of Jokowi's second term in office could be used to start a process, perhaps a Presidential Taskforce, to look at the restructuring of PLN. This could be given impetus by the recent blackout in Jakarta that lasted 9–12 hours, or news that South Africa is discussing how to restructure their loss-making state-owned utility Eskom. In Vietnam, the successful solar feed-in tariff that surpassed all expectations could provide a rationale to reflect on how to modernise EVN and in turn their energy system and gird infrastructure.

continued over the page

continued from the previous page

At the very least, the governments could launch a review of current policy and structures to ensure that no more public liability is being built into the system. Spurred on by recent gestures by the IMF that, on one side of the coin, climate risk will be incorporated into future economic surveillance and, on the other side, indicated that outstanding debt to China for coal infrastructure may not be included in future stabilisation packages. This, alongside deeper engagement from finance ministers and central bankers may change the cost-benefit analysis of the status quo with unlimited support for the SOE.

To help decision makers in Vietnam and Indonesia, in government or at the utility, find a path forward a utility to utility dialogue could be curated to provide a safe space and support for high level executives and their political backers to explore new business models fit for their national contexts but also capable of supporting modern economies of the 21st century. Utility executives could be invited from other jurisdictions to share their experience that delaying the inevitable only adds to the cost of the transition. Often the energy ministry teams do not have sight on the financial analytics so much of the framing around financial risk and economic competitiveness do not land. This would also provide an opportunity to bring economic planners and finance ministry perspectives which are typically more pragmatic and less defensive about the issues than the energy ministry or power company executives.

Create a new leadership platform for GenZ to deliver net zero

A cross between TED-X & EDX to raise awareness and sense of agency and urgency among GenZ to deliver Net Zero

Millennials currently make up 58 per cent of the population in Asia and 25 per cent of its workforce.[65] As a socio-economic group, individuals born after 1980 are going to become meaningful. They will play a decisive role on whether the world can deliver net zero emissions and a climate-safe world. We need to find new ways of engaging this generation, so-called “Gen Z”, beyond university or technical school, and support the sharing of ideas, the latest science and best strategies to cut emissions in their chosen field. It doesn’t matter what they do, they will have a part to play in the economic transformation required.

[65] **https://www.eastspring.com/insights/millennials-and-artificial-intelligence**

Continued from previous page

We have to make sure the next generation get that becoming wealthier and becoming green are two sides of the same coin; one is not possible without the other; and try and engender a green race to the top. Winning this argument, and channelling their political and purchasing power to zero carbon choices will eventually pave the way for the tough political choices necessary to do the transformation the science says is called for. There is no time to waste.

The idea is to build a new platform to target millennials throughout Asia to win this argument once and for all, and harness their energy, agency and sense of urgency to deliver Net Zero emissions in Asia and around the World. The vision is to create a cross-between the TED-X and ED-X platforms to create a clearinghouse of free knowledge in Southeast Asia from the people who are figuring out how to cut emissions and adapt to warming world. TEDx is an independently run off-shoot of TED, the global on-line platform. TED began in 1984 as a conference where Technology, Entertainment and Design converged and now today TED talks and TEDx events help share ideas in communities around the world. edX is another platform for education and learning. It was founded by Harvard and MIT and now offers on-line courses from the best universities in the world to remove the barriers of cost, location and access to the best education and life-long learning. Each platform reaches millions of learners and could be adapted to create millions of Net Zero leaders in Southeast Asia.

How could something like this be funded? It would take one entrepreneur to create it, and versions of it may already exist in Asia that could be adapted to the net zero goal. There are 100–120 family offices in Singapore with an average of USD 450 million in assets under management (AUM). Perhaps a portion of this wealth could be channelled into creating an on-line platform to share knowledge so that the next generation of wealth creators do so in a way aligned with the Paris goals.

E3G

Joint industry projects and project prep facilities for a healthier green pipeline

Collaboration to standardise project prep and due diligence to lower barriers for investment in renewable energy projects in South East Asia

The IPCC estimates that around USD 2.4 trillion must be invested annually in the energy system until 2035 to support a Paris Climate Agreement 1.5°C ambition. In 2016, annual global investment in renewable energy is around USD 500 billion. More than 80 per cent of this renewable energy finance is 'domestic', i.e. in-country and often in-developed country. Investors such as Pension funds provide less than 5 per cent. Development Finance Institutions provide about 8 per cent. In Southeast Asia, one challenge to scaling up and accelerating low carbon investments is that the risk-adjusted returns are unfavourable when compared with traditional energy sources such as coal. Lack of competitiveness is due to inefficiencies in the value-chain across developers, financiers and service providers. One solution is to create cross-industry learning platforms – or a Joint Industry Project (JIPs) – to develop a standard form of due diligence. Joint Industry Projects executed by professional third-party institutions are a well-tested vehicle for cooperation. We need more of them to improve the risk-return profile for capital owners and developers, and deliver accelerated deal flows for renewable energy systems.

JIPs not only reduces the cost but will enable comparison between projects though a standardised due diligence process and allow projects and assets to be bundled for financing. Large institutional investors seek investments with projects and assets that are largely de-risked, can be benchmarked for consistency and quality, and aggregated and bundled into large funds.

For an example of investor and industry collaboration, see EnergyCC (**www.EnergyCC.com**). EnergyCC convenes renewable energy companies, law firms and other service providers, climate finance and investor groups to engage in collaborative Joint Industry Projects and help deliver the Paris Agreement goals.

E3G

Reflections and recommendations

This report is the final report for a project entitled 'Shifting financial flows to accelerate the energy transition in Vietnam, Indonesia and the Philippines'. These countries were selected as the focus because as of July 2019 they collectively had a total of 49 GW of coal in their pipeline (announced, pre-permitted and permitted) – in addition to 25 GW under construction. The SEA is the only region in the world where the share of coal in the energy mix increased in 2018. The same year that the IPCC issued a special report effectively saying there is no more atmospheric room for the emissions from coal power plants if we want to reach the 1.5 degree temperature goal, and it is imperative that we do given the impact on lives and livelihoods if we stick to 2 degrees and overshoot. To this end, the task in hand is to decarbonise our entire economies so that they produce net zero emissions by 2050.

In Chapter 1 we laid out the reasons why it is in the national interest of Vietnam, Indonesia and the Philippines to stop building coal plants, and instead commit to building a modern, low carbon, resilient economy for the future. In Chapter 2 we explained what an energy transition entails and how at this stage of the game we need to fast forward to an economy-wide low carbon transformation. In Chapter 3, E3G's political economy mapping methodology was used to distil the political economy barriers and opportunities, and apply lessons learned from transitions elsewhere to get a better sense of the real issues blocking progress. In Part 2 of the report we identify some strategies to help set Southeast Asia on a new emissions trajectory.

The five priority action areas proposed were informed by E3G's political economy research and analysis and extensive engagement with stakeholders in the region and in other parts of the world. It is essential we connect early signs of progress in the region with global trends and initiatives. We need to create room for key decision-makers to manoeuvre and get political traction behind the energy transition and transformative agenda. There is no silver bullet to change the political equation in Vietnam, Indonesia and the Philippines. The issue is one of speed and scale: the science demands that we address head on the structural and systemic issues slowing progress.

E3G

Indonesia's 2045 long-term economic vision should be low carbon with a modernised PLN

Indonesia has a natural resource-intensive economy and the society is connected to their national resources. The profit and loss account of PLN – the state-owned electricity company – is a real barrier to the energy transition. These are realities that have to be incorporated into any transition plan if we want President Joko Widodo – or Jokowi –to make this a priority of his second and final five-year term. 'Building the low carbon modern economy of the future' certainly chimes with Jokowi's long-term economic vision to become a USD 7 trillion economy by 2045 – which marks a century of Indonesia's independence. His second term focus on 'soft infrastructure' could be interpreted to equip the world's fourth most populous country with the skills to build low carbon goods and services, including nature-based solutions and resilient infrastructure.

Vietnam is on the cusp and needs creative financing solutions in order to invest in grid upgrades

Vietnam feels like it is on the cusp of a clean energy revolution. It is clearly primed to do more on solar given their first go at a feed-in tariff surpassed all expectations. It has given staff in the public and private sectors the confidence to try a second round and maybe graduate to auctions. The main challenge in Vietnam is the investment needed to upgrade the grid to integrate more renewables and provide flexible demand response capabilities. If the international community is serious about helping Vietnam transition, donors and development banks need to develop more creative financing mechanisms. Traditional approaches don't fit the current circumstances since Vietnam is at its public borrowing limit. The government is guarded of asking for concessional finance for grid upgrades since that would leave a strategic national asset vulnerable and open to tender.

Mixed signals from the Philippines despite high electricity prices and energy security concerns

The Philippines has the technology, policies, and mechanisms in place to enable a rapid transition to renewables but the political mandate to shepherd the transition remains ambivalent or absent. President Duterte expressed misgivings about the Paris Agreement from the start but ratified it under pressure. He has since advocated for the role of renewables. Yet more coal-fired power plants have been approved for construction since his taking office in 2016, locking-in emissions. There is a pervasive belief in "clean coal" and concern – albeit misplaced – that renewables are expensive, unreliable and unable to provide baseload, and that a clean energy transition will hurt the country's

E3G

industrialisation agenda. This despite the fact that electricity prices in the Philippines remain among the highest in Southeast Asia, driven by high dependence on fossil fuel imports. The opportunity is to redesign the market to lower prices and attract more investment for home-grown energy-efficiency measures and renewable technologies.

Regional dynamics, choices and opportunities for collaboration

Southeast Asia is a diverse and dynamic region growing in economic weight and carbon footprint. Just as other countries are collaborating across borders, and sometimes as a continental bloc to reorganise their own and the global economy around the low carbon transformation, Southeast Asia should strengthen regional collaboration too in order to compete in a low carbon world and hasten its onset. The region has considerable potential for renewable energy and faces a strategic choice: to continue on the high carbon development pathway or switch to a low carbon models of growth.

In their 2019 regional outlook, the IEA paints a picture of these two very different scenarios out to 2040 – this is of course one possible version of what the low carbon economy looks like. There are other models even more ambitious which gets the region to net zero carbon by 2050. The first IEA scenario is based on policy frameworks and ambition in place today – they call it the Stated Policies Scenario (SPS). In the SPS, the share of renewables in power generation rises from a base of around 24 per cent of power generation coming from renewables today (18 per cent of which is hydropower) to 30 per cent. This places Southeast Asia far behind China, India, and other Asian economies and would result in a net energy trade deficit of over USD 300 billion per year and 650,000 annual premature deaths associated with air pollution, up from an estimated 450,000 in 2018. This path means that the carbon intensity of Southeast Asia's power generation infrastructure would be responsible for almost half of the globe's total energy-related emissions, up from 42 per cent today. Pause for a moment and reflect on that. Southeast Asia would be trending in the exact opposite direction of most other parts of the world, where the share of energy-related emissions declines as they replace fossil fuels with renewables, cut demand and electrify.

There is an alternative low carbon development pathway for Southeast Asia. The IEA's Outlook forecasts one possible version of what that could look like: In their Sustainable Development Scenario (SDS), coal demand peaks after 2020 and is cut by 80 per cent relative to the scenario outlined above. The share of coal in electricity generation falls to 4 per cent in 2040. From the base of 24 per cent

E3G

in 2019, in this scenario the share of renewables in generation triples to around 70 per cent in 2040 – cutting the current emissions trajectory by 50 per cent with this one measure alone. The biggest contributors being solar PV, hydropower and wind with combined capacity additions of 450 GW in emissions.

This pathway would require we get started now on the priority action areas – aligning stakeholders around a big vision of a low carbon modern economy underpinned by renewable energy systems and enhanced grid and regional trading. The IEA provides a regional outlook and we know there are big variations between countries. Indonesia is a juggernaut compared to some other ASEAN economies and warrants its own analysis. Not all countries will follow the same pathway or trajectory; this is a feature not a bug. Finding ways to work at the regional level is important to more efficiently share learning, build capacity and then support countries to make progress in the areas that resonate most. It is challenging to find the right venue to lead a change in mindset from the transition being seen as a burden to one of opportunity and necessity. ASEAN seems to be of the view that climate action will slow down development. There is nobody in the region, other than Singapore, that wants to be the regional leader for low carbon economy. We have to change that and expedite a race to the top.

Other key take-aways from our political economy analysis

We need a new systems-approach for transformative change, but that's easier said than done

Climate action is still seen as a siloed and often sidelined issue, and not the overarching reality and systemic challenge that it is. This paper focused predominantly on the energy sector and hardly explored leverage points in the transportation section or energy access and health costs as drivers for change. Land use warrants its own project and paper. Achieving the low carbon economic transformation will require action in every part of the economy and an ecosystem of aligned incentives including the use of markets, innovation support, regulation, pricing, subsidy, and competition with the different instruments working together to create a demand pull and government push for the transition. For that to happen we need to create a lot more connectivity between actions and interventions. The Energy Transition Partnership is best placed to provide a coordinating function in the near term.

E3G

At the narrative level this is easily done by conceptually redrawing boundaries: we defined “modern energy systems” as comprising efficiency, renewable generation, smarter technologies and flexible grids and created a ‘systems approach’. It is far more difficult at the operational level. An individual or institution needs to be given responsibility for making the connections and extracting the value from the intersections and spaces in between the silos in real life. To understand the full range of costs and trade-offs, and identify high leverage points, we need to understand how the whole system fits together. There is not an optimal set of institutional arrangements anywhere that enables that kind of detailed planning and implementation. One of the focus countries could pioneer such an approach.

Higher investment requirements at the front end are off-set by cost savings and have to be weighed against the cost of inaction

The IEA in their 2019 regional outlook estimate the cumulative investment needs over 2019 to 2040 is over USD 2.5 trillion in the Stated Policy Scenario, rising to USD 3.3 trillion in the Sustainable Development Scenario. This breaks down to an average annual capital spend of USD 120 billion for the SPS or USD 150 billion for the SDS, over the period 2019 to 2040. Investment in Southeast Asia’s energy sector in 2018 was around USD 65 billion. The higher investment needs of the SDS are more than compensated for in savings elsewhere: for example, Southeast Asian economies collectively save nearly USD 200 billion annually on fossil fuel imports by 2040. Put this way, it seems an obvious choice which path to invest in and put political weight behind. Their choice will have profound consequences on their citizens and the globe. The cost of action now has to be assessed against the cost of inaction.

It takes everyone to change everything

This is a collective action problem, so it is going to take all actors – governments, business, finance, and civil society – working bottom-up in each country and throughout the region, connecting with new and existing international initiatives and diplomatic endeavours. Mobilising the investment needed will require more creative use of public funds and many more private actors willing to commit their capital in this space. We barely scratch the surface with the practical action ideas proposed in this paper. We hope to demonstrate that there is a role for everyone and an opportunity for everyone to use their agency in accelerating the energy transition and economy-wide transformation.

E3G

Key recommendations

> **There is a need to develop a transition mechanism to take account of the capital destruction from an accelerated energy transition.** It is worth exploring a mechanism that offers Vietnam and Indonesia a chance to restructure their debt to swap out high carbon assets in return for the opportunity to invest in green and grid infrastructure. The high carbon assets could potentially be securitised and decommissioned over time.

> **It is imperative to connect financial decision-makers and regulators in the region to the international platforms and initiatives** designed to enhance transparency and disclosure of climate-related risks. The global financial system and investment landscape is a key determinant of the pace and scale of the transformation.

> **Multinational companies should bring influence to host governments to enable them to rapidly decarbonise their supply chains** in making good on commitments they make on the world stage in response to demands from their climate-conscious customers. This is could have a big impact on economies in Southeast Asia, Vietnam in particular. The region should also be kept abreast of discussions around border carbon adjustments and the like so they can calibrate their policy choices accordingly.

> **National and multinational development banks need to provide patient capital to de-risk the transition, underwrite a pipeline of low carbon assets and set new norms in the process.** Their role is crucial. They have to go beyond aligning their operations with the Paris goals. E3G's *Banking on Asia* report provides a detailed assessment of the six banks most active in the Southeast Asia region with specific recommendations for each institution.

> **Send clear long-term market signals – such as coal phase-out dates, a long-term strategy with a carbon neutrality deadline, a low carbon infrastructure plan – that investors say they need to shift financial flows.** Weak and uncertain policy remains one of the major obstacles facing financiers wishing to back the transition. Political actors in Southeast Asia need to make a clear strategic choice about their future energy mix, and soon, before they miss the window and get stuck with stranded assets and public liability.

> **Align with or agree a shared language for green investments by connecting ASEAN capital markets' development with the International Platform on Sustainable Finance** which includes China, India, and the European Union. This could provide the basis to build a common framework, easing the way

E3G

for governments and financial institutions to move capital in the right direction at speed and scale.

> **Double-down on energy efficiency and decouple from growth.** There is huge potential to improve efficiency and an imperative to decouple energy demand and economic growth. All actors should emphasise the competitive advantages of decoupling as the narrative does not yet resonate in Southeast Asia. A concerted effort is needed to drive industry to consume energy in a smarter way to reduce costs and boost competitiveness. Companies can join existing initiatives and utilise support structures such as EP100 and ISO 50001. Efficient cooling services is a high priority for action.

> **Investment needs are large and should be channelled to industries, technologies and infrastructure compatible with a net zero world.** Climate change is here, and our communities are not ready for it. Any new infrastructure has to be built to handle this new normal.

> **Position SEA as a renewable energy hub** Models vary but most indicate that there's room for more stringent near-term mitigation than currently planned in Vietnam, Indonesia and the Philippines. What is striking is the economic, social and technical feasibility of solar energy, wind energy, and electricity storage technologies has improved dramatically over the past few years, with costs dropping rapidly and corresponding growth trajectories much faster than expected (IRENA, 2018c). 2020 is the year of the ratchet mechanism where countries are expected to enhance their NDC. There is plenty of room for the focus countries to do so.

So what does it all mean?

The status quo has so many vested interests. Trying to rewire what is hard-wired into a system is hard work. It is political. And there is no venue dedicated to tackling the political economy barriers; hence the status quo. The UN Secretary General tried with his summit to change the politics, with limited success. Other potential venues for high level political interventions are few and far between, especially given that the G7 and G20 are impeded on this issue for the time being. New forums like the Belt and Road Initiative or BASIC summits and other regional gatherings like ASEAN or APEC should step up and prioritise these issues but have so far resisted, not wanting to deal with these perplexities and geopolitics. The next opportunity for a high-level attempt to change the optics and open up the politics for more ambitious climate action might fall to the UK and Italy as hosts of COP26. There are other opportunities on the horizon.

E3G

Near-term moments and opportunities

> **Lighthouse projects such as Widodo's announcement to move Indonesia's capital city from Jakarta to Borneo** is a unique opportunity to build a zero or low carbon city with a circular economy. The capital's current location faces environmental issues, including the fact that it's sinking, groundwater is dangerously polluted and traffic constantly gridlocked. It is an opportunity to build in a completely different way and showcase what a low carbon Asian city of the future can look like.

> **Vietnam's forthcoming chairmanship of ASEAN is an opportunity to challenge the scepticism around the scale of renewable energy systems** and build support for a new vision of success based on low carbon development. It is the only growth story in town. Vietnam would have standing to advocate such a shift since their recent regulatory reforms and cooperation with the private sector have energised their domestic solar market and led to a solar surge. Alternative venues could be the Asia Clean Energy Forum hosted each year by the Asia Development Bank or Singapore Clean Energy Week.

> **COP26 in 2020, a year when governments are expected to upgrade their climate actions under the Paris Agreement.** This is a good opportunity to present an internationally aligned sustainable finance action plan, advance a conversation on a transition mechanism to shutter the most polluting generation assets, and for Vietnam, Indonesia and the Philippines to show up with credible net zero transition strategies.

> **China hosting the Convention of Biodiversity COP around the theme "Ecological Civilization: Building a Shared Future for All Life on Earth"**. China has a big influence in the region. Southeast Asia is less likely to turn off coal plants if that's what China is funding through its Belt and Road Initiative, or Japan and Korea are encouraging with the use of export credits. There may be some leverage, however, with this event, that warrants further exploration.

E3G

> **The appointment of the new President of the Asian Development Bank is an opportunity for a paradigm shift.** The Bank currently funds lots of projects but is not being particularly ambitious or good at connecting the dots for transformational change. The current president, Takehiko Nakao, announced he was leaving earlier than expected to make way for some "fresh ideas". We set out specific ideas for ADB in our paper *Banking on Asia*. This is an opportunity not to be wasted.

> **The transition at the top of the IMF** illustrates the impact a new leader can have on an organisational response to the low carbon transition. New managing director Kristalina Georgieva has wasted no time putting climate change high on the agenda and has committed to integrating climate into the Fund's economic assessments. This is an opportunity to land the economic competitiveness and financial risk arguments with influential actors in government who don't typically focus on climate risks. Can they be persuaded to become advocates through the IMF and other platforms such as the Coalition of Finance Ministers for Climate Action for example.

The criticality of addressing climate change for financial stability

It was the new IMF Head who recently said, "The criticality of addressing climate change for financial stability, for making sure that we can have sustainable growth, is so very clear and proven today that no institution, no individual, can stand back from the responsibility to act." The stakes are high, climate impacts will be harsh, particularly for the populations of Southeast Asia both in terms of their physical and financial health and security. This alone should motivate leaders to accelerate action on their energy transition and low carbon economic transformation.

The transformational change demands a willingness for decision-makers to take political and diplomatic risks. However, inaction also carries risks. There is no guaranteed prosperity or security by doing nothing. The near-term cost of action has to be compared against the cost of inaction over the longer term. A new fault line is emerging between old and young generations that can see this. Countries need to have a credible reform plan to show investors they know where they are going in order to unlock the finance essential to build their vision.

E3G

Many of the ideas developed in the process of doing this report will be passed on to **The Energy Transition Partnership,** the new secretariat based in the region to help align and pool funds from international donors and philanthropic organisations. This is a commendable effort to improve the impact of international support for Southeast Asia, and in particular Vietnam, Indonesia and the Philippines, in recognition that there are no simple solutions, but energy transitions in other parts of the world can offer valuable guidance and encouragement.

With some genuine political leadership in the region, international cooperation and public-private partnerships, and a big push to find and finance large-scale clean energy opportunities, Southeast Asia could become the world's new renewable energy hub. Becoming green is not an obstacle to growth, it is a requirement for it. So goes Southeast Asia, so goes the world.

E3G

ANNEX I: Political Economy Mapping of Indonesia, Vietnam and the Philippines

This section discusses in further detail the political economy conditions around the low carbon transition in Indonesia, Vietnam and the Philippines based on E3G's political economy mapping activities conducted under the Shift SEA project from May to November 2018.[66]

The discussion is presented using the three-dimensional assessment structure of the PEMM, composed of the **national conditions** (trends in the real economy), **political system** (actors involved in decision making) and **external projection and choice** (how a country positions itself in the world). For each country, the PEMM seeks to answer the following research questions:

> What are the core interests that shape the national debate around a low carbon transition in the country?

> How are these national conditions affected by the country's political system?

> How does the interaction between the country's economic and political systems play out in its external projection and choice?

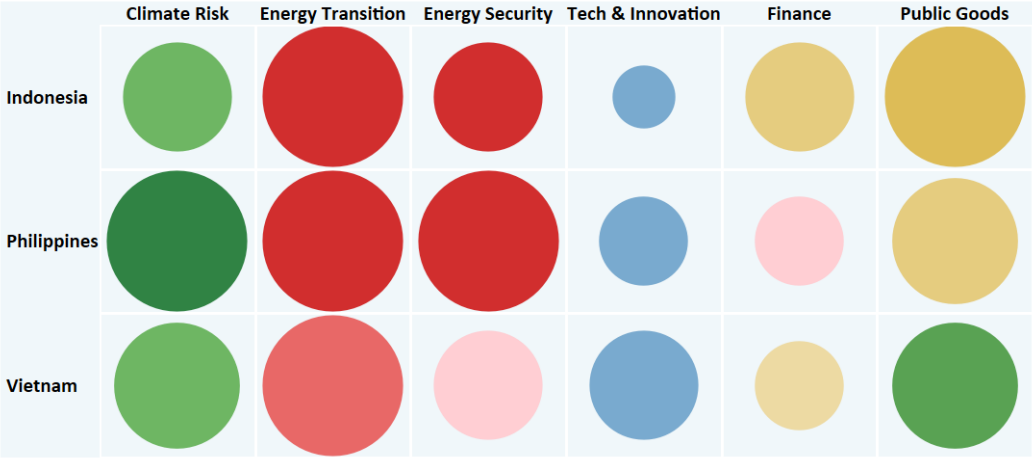
National Conditions

National conditions refer to the trends observed in the real economy. Within the PEMM, there were six major areas assessed for their significance, maturity and role in shaping the national debate around a low carbon transition. These include **climate risk, energy transition, energy security, technology and innovation, finance and investment and public goods**. The overall assessment of these six areas are illustrated in Figure 6. The size of the circle represents the relative significance in shaping the national debate around a low carbon transition. The colour of the circle represents the extent to which it supports a low carbon

[66] Note: The PEMM summary captures the political economy conditions in Vietnam, Indonesia and the Philippines at the end of 2018. It is possible that certain political and economic conditions may have changed since that time, for example Indonesian President Joko Widodo was re-elected to a second term, the Philippines held elections for the House of Representatives and the 'Million Green Homes' project was launched in Vietnam. Changes have been factored into the discussion of the main text on priority actions.

transition; green represents a supportive role, yellow – divided, blue – neutral and red – opposing. As shown in the PEMM summary visualisation, there are both real economy challenges and opportunities related to a low carbon transition in Vietnam, Indonesia and the Philippines.

Figure 8: High-level PEMM summary – National conditions in relation to a low carbon transition in Vietnam, Indonesia and the Philippines



Climate risk assesses how exposed a country is to climate change and its adaptive capacity to respond. As shown in Figure 6, climate risk was found to be relatively significant and supportive in raising the national debate around a low carbon transition. Maturity of the debate was highest in the Philippines and Vietnam, where experiences of extreme weather events tend to be relatively greater than in Indonesia. On the 2019 Global Climate Risk Index, Vietnam ranked as the sixth most at risk country globally, and in terms of long-term risk observed between 1998 and 2017, Vietnam and the Philippines both ranked in the top 10.[67]

In these three countries, climate change not only threatens their diverse ecosystems but also key sectors of the economy which are vital for supporting employment, economic growth and food security, most notably the agriculture sector. In Vietnam, agriculture accounts for 40 per cent of total employment and 15 per cent of GDP,[68] yet more severe droughts and saltwater intrusion in the Mekong River Delta is impacting agricultural output. In 2016, Vietnam

[67] GermanWatch (2019), 'Global Climate Risk Index 2019', **https://germanwatch.org/sites/germanwatch.org/files/Global%20Climate%20Risk%20Index%202019_2.pdf**

[68] World Bank Data, **https://data.worldbank.org/**.

E3G

experienced the worst drought in nearly a century, resulting in a 6 per cent drop in rice production[69] and raising rice exports prices for countries like Indonesia and the Philippines.[70] Furthermore, salt water intrusion impacted about half of total arable land (over one million hectares) in the Mekong River Delta;[71] economic losses were estimated at USD 669 million.[72]

In the Philippines, agriculture accounts for 25 per cent of total employment and nine per cent of GDP.[73] High frequency of extreme weather events has substantial impacts on the economy and society; Typhoon Haiyan which hit the country in 2013 displaced four million people and led to economic damages of USD 13 billion.[74] Of this, the agriculture and fishing sector incurred losses of USD 225 million.[75] Typhoons also impact the nation's capital with Manila ranking third on the 2018 Lloyd's City Risk Index; annual losses are estimated at USD 13 billion.[76] In Indonesia, agriculture accounts for 31 per cent of total employment and 13 per cent of GDP.[77] Severe drought in 2019 has led several provinces to declare a state of emergency, with failed harvest areas projected to reach 40,000 hectares in Java by the end of the dry season.[78] Forest fires are also exacerbated by drier conditions with implications on commodity production; economic losses due to forest fires in 2015 were estimated at USD 16 billion.[79]

[69] Business Insider (2016), 'Vietnam is being crippled by its worst drought in nearly a century', **https://www.businessinsider.com/vietnam-drought-economic-slowdown-2016-4?r=US&IR=T**.

[70] Reuters (2016), 'Vietnam's H1 2016 rice exports may edge up despite output fall', **https://www.reuters.com/article/us-vietnam-rice-exports/vietnams-h1-2016-rice-exports-may-edge-up-despite-output-fall-idUSKCN0XC1XK**.

[71] Forbes (2016), **https://www.forbes.com/sites/timdaiss/2016/05/25/why-vietnam-is-running-dry-worst-drought-in-nearly-100-years/#c6078c774b31**.

[72] The Diplomat (2017), 'Is Vietnam in for Another Devastating Drought?', **https://thediplomat.com/2017/02/is-vietnam-in-for-another-devastating-drought/**.

[73] World Bank Data, **https://data.worldbank.org/**.

[74] PreventionWeb (2018), 'Five years on: How Haiyan shocked the world', **https://www.preventionweb.net/news/view/61777**.

[75] The Wall Street Journal (2013), 'Typhoon Haiyan Caused $225 Million in Agricultural Damage', **https://blogs.wsj.com/economics/2013/11/19/typhoon-haiyan-caused-225-million-in-agricultural-damage/**.

[76] Government of the Philippines, Department of Science and Technology (2018), 'Manila among cities facing biggest economic risks from natural and man-made disasters', **http://www.dost.gov.ph/knowledge-resources/news/56-infographics/infographics-2018/1482-manila-among-cities-facing-biggest-economic-risks-from-natural-and-man-made-disasters.html**

[77] World Bank Data, **https://data.worldbank.org/**.

[78] Bloomberg (2019), 'Indonesia Warns of Rice Crop Damage in Drought-Parched Fields', **https://www.bloomberg.com/news/articles/2019-07-24/indonesia-warns-of-rice-crop-damage-as-drought-parches-fields**.

[79] The Washington Post (2019), 'Why It's Another Bad Year for Indonesia Forest Fires', **https://www.washingtonpost.com/business/energy/why-its-another-bad-year-for-indonesia-forest-fires/2019/09/19/9001f12a-daaf-11e9-a1a5-162b8a9c9ca2_story.html**.

E3G

Agriculture is not the only sector affected; with a large share of the population and industrial facilities located in low-lying coastal areas, sea-level rise and more intense storm surges also threaten housing, transport and energy infrastructure – not to mention coastal tourism. For example, in Indonesia about 150 million people and 80 per cent of industrial facilities are located in low-lying coastal areas,[80] and maritime tourism generates over USD 1 billion annually.[81] While the three focus countries may have well developed national disaster risk reduction (DRR) and climate change adaptation strategies and plans, adaptive capacity to climate change remains relatively low. Implementation is often tasked to local governments, which are only beginning to integrate climate change into local development planning processes and often lack adequate resources, training and tools required to translate plans into action. High exposure to climate change impacts and limited adaptive capacity to respond makes these countries particularly vulnerable to climate change, though attention to this risk may help to raise the debate around the transition to a low carbon and climate resilient economy.

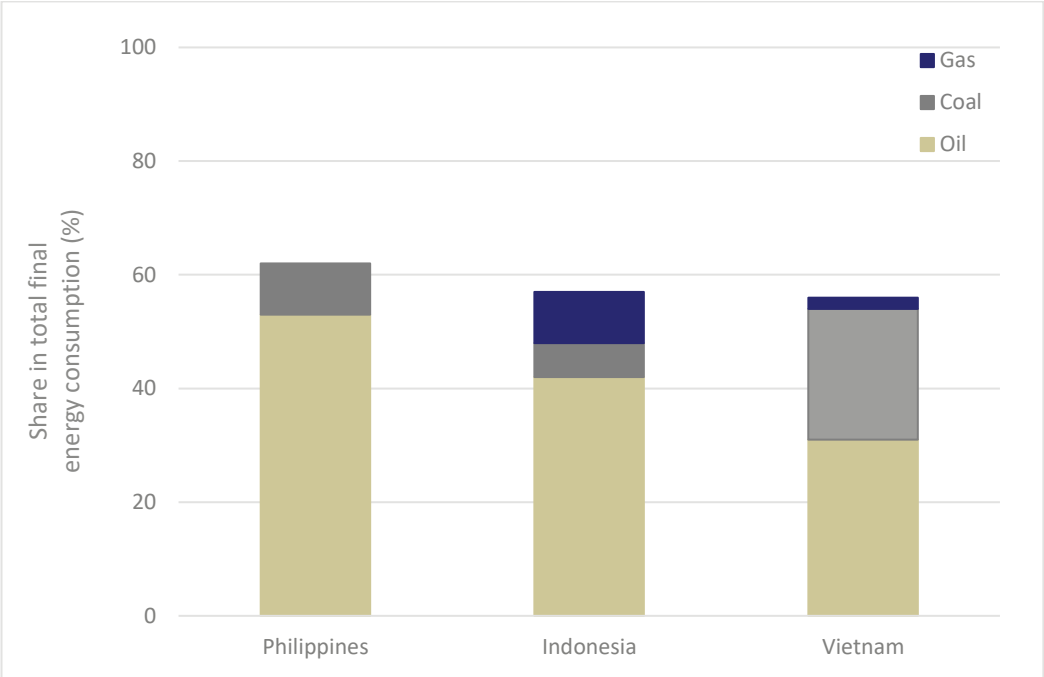
Energy transition assesses a country's domestic energy trends and the balance between low and high carbon energy development. In Vietnam, Indonesia and the Philippines, the energy transition was found to be relatively significant in shaping the national debate around a low carbon transition, though acting in opposition to it. Maturity of the debate was highest in the Philippines and Indonesia. In all three countries, energy systems were found to be increasingly fossil fuel dependent, leading these countries on a high carbon development pathway. As shown in Figure 9, fossil fuels accounted for more than half of total final energy consumption in 2017 in Vietnam, Indonesia and the Philippines.[82]

[80] The Straits Times (2019), 'Indonesia's coastlines shrink as sea levels rise', **https://www.straitstimes.com/asia/indonesias-coastlines-shrink-as-sea-levels-rise**.

[81] Asia News (2016), 'Beaches, diving, culture: Jakarta to boost tourism', **http://www.asianews.it/news-en/Beaches,-diving,-culture:-Jakarta-to-boost-tourism-42114.html**.

[82] International Energy Agency (2017), 'Statistics: Global energy data', **https://www.iea.org/statistics**.

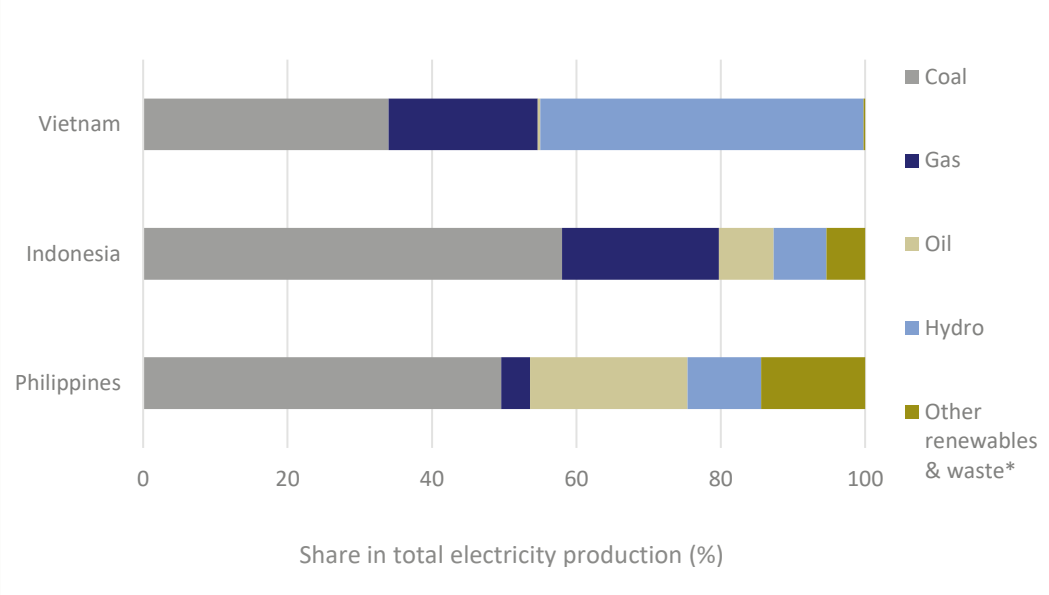
Figure 9: Share of fossil fuels (oil, coal and gas) in total final energy consumption in Vietnam, Indonesia and the Philippines in 2017



Source**: E3G analysis of IEA data (2017), **www.iea.org/statistics

Oil and coal dominate the energy mix in these Southeast Asian countries. While oil is predominately used to meet the energy demand in the transport sector, coal dominates in the power sector. Figure 10 shows the high use of fossil fuels, particularly coal, in total electricity production – Indonesia had the highest use of coal for power at 58 per cent, followed by the Philippines at 50 per cent.

Figure 10: Energy mix in Vietnam, Indonesia and the Philippines' power sector in 2017



*Includes geothermal, solar PV, wind, biofuels and waste

Source: E3G analysis of IEA data (2017), ***www.iea.org/statistics***

Hydro and geothermal power make important contributions to renewable electricity production in these countries, though it masks the relatively small share of solar PV and wind energy on the grid. While these non-hydro renewables have rapid growth rates which surpass both hydro and geothermal, their share accounted for less than one per cent of total electricity production in Indonesia and Vietnam in 2017. In the Philippines, the share of solar PV and wind was slightly higher – albeit still relatively small, accounting for about two per cent of total electricity production in 2017.

Overall, fossil fuels play a central role in meeting the demand for electricity in these countries and the use of coal for power is driving a higher share of fossil fuels on the grid. Figure 11 shows the increasing use of coal for electricity production from 2010 to 2017. During this time, Indonesia maintained the largest share, followed closely by the Philippines which also grew the fastest.

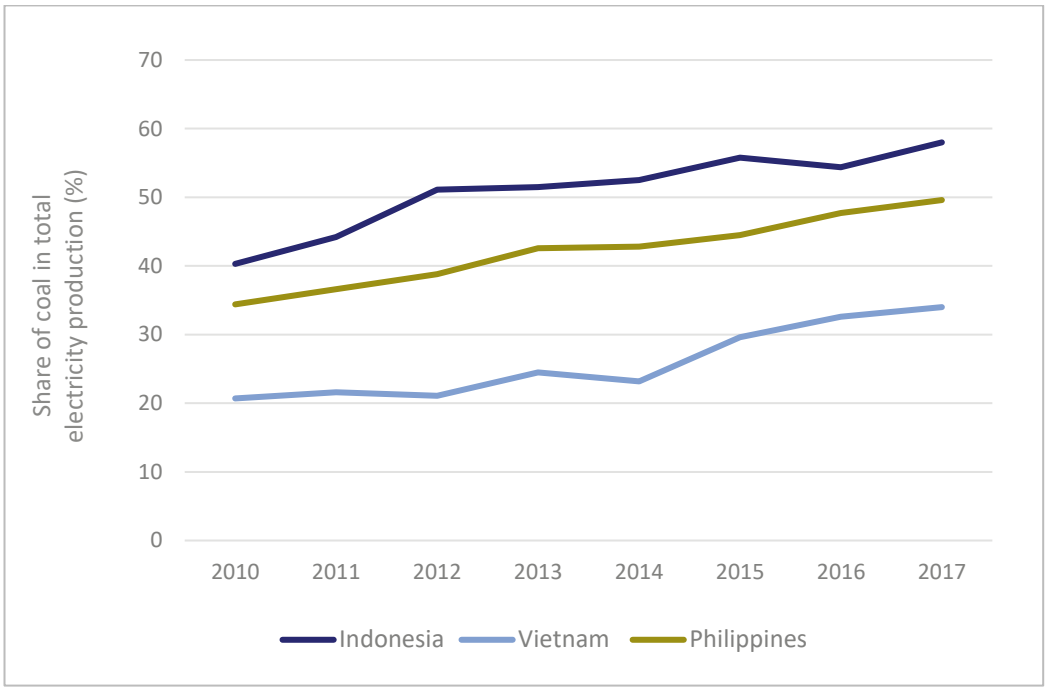


Figure 11: Share of coal in total electricity production in Vietnam, Indonesia and the Philippines from 2010 to 2017

***Source**: IEA data (2010 – 2017),* **www.iea.org/statistics**

The growing use of coal to meet the electricity demand has led to more fossil fuel dependent energy systems in the three countries.[83] Furthermore, fiscal policy incentives for some renewables have worsened, in particular the removal of the feed-in-tariff (FiT) scheme for solar PV and wind in the Philippines and Indonesia's new cost production regulations based on the price of coal which disincentivises investment in solar PV development, especially in Java. In Vietnam, new feed-in-tariffs for solar and wind, including floating solar and offshore wind, are sending positive signals for investors, though at present the country remains on a high carbon development pathway which is in opposition to a low carbon transition.

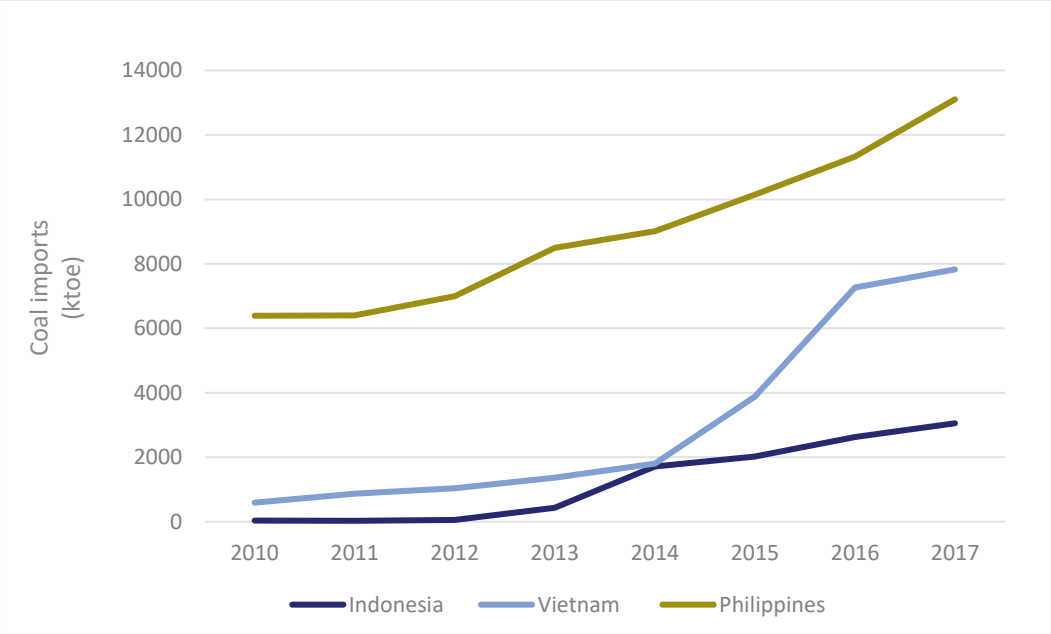
Energy security assesses a country's availability of natural resources to meet the domestic energy demand and approaches to securing energy supply. In Vietnam, Indonesia and the Philippines, energy security was found to be significant in shaping the debate around a low carbon transition and relatively mature, though it opposes a low carbon transition. A focus on achieving development objectives including industrialisation and energy access, has spurred the development of

[83] International Energy Agency, 'Statistics: Global energy data', **https://www.iea.org/statistics**.

domestic coal resources in Indonesia and higher coal imports in Vietnam and the Philippines, with implications on energy prices for consumers and impacts on society. Energy security was found to strongly shape energy transition.

Indonesia is a net energy exporter and the largest amongst Southeast Asian countries. Although it exports significant amounts of coal and gas in the region, it remains a net importer of oil.[84] Domestic energy access is Indonesia's leading energy security concern and significant progress has been made on electrifying the nation. From 1990 to 2017, the per centage of the population with access to electricity increased from 60 per cent to 98 per cent.[85] However, this led to a large focus on the development of domestic coal resources. Vietnam and the Philippines, on the other hand, are net energy importers and highly dependent on imported fossil fuels, particularly oil and coal to meet energy demand in the transport and industry sectors. Figure 12 demonstrates an increase in coal imports in all three countries between 2010 and 2017. While the Philippines had the largest coal imports (in absolute terms) amongst the three focus countries, coal imports grew particularly fast in Vietnam.

Figure 12: Coal imports (ktoe) in Vietnam, Indonesia and the Philippines from 2010 to 2017



***Source**: IEA data (2010 – 2017),* **www.iea.org/statistics**

[84] International Energy Agency, 'Statistics: Global energy data', **https://www.iea.org/statistics**.

[85] World Bank Data, ' Electricity access', **https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS**.

E3G

All three countries, however, have an abundance of renewable energy sources. While the expansion of medium to large hydro is limited due to environmental and social constraints, non-hydro renewable energy sources are significant and remain largely untapped. The Philippines is the world's second largest producer of geothermal and deploys a substantial amount (2 GW in 2016) and also has high solar potential (4.5–5.5 kWh/m2/day).[86] Indonesia has significant geothermal resources, though current geothermal power generation accounts for less than five per cent of its available potential.[87] In addition, solar PV has potential for about 208 GW of power generation, though only 16 MW of solar PV has been installed as of 2017.[88] In Vietnam, wind power generation potential is estimated at 27 GW,[89] though only 205 MW was installed as of 2017.[90] These extraordinary renewable energy resources present an opportunity to reduce dependence on imported fossil fuels and deliver more secure, affordable and sustainable energy.

Technology and innovation assess the characteristics and performance of a country's technology and innovation capabilities. In Indonesia and the Philippines, technology and innovation was found to play a relatively small and neutral role in shaping the national debate around a low carbon transition. In Vietnam, it played a slightly larger – albeit neutral role. Maturity of the debate was found to be relatively low across all three countries. Advanced technology and innovation capabilities, not only in clean energy technologies but more broadly across the economy, helps to drive competitiveness which in turns enables a transition to a low carbon economy. As shown in Figure 13, E3G PEMM analysis of over 10 countries has found that the limited role of technology and innovation in the debate around a low carbon transition tends to hinder both business and energy transition in supporting a full shift away from fossil fuels.

[86] Energypedia (2014), 'Solar Photovoltaic Project Development in the Philippines', **https://energypedia.info/wiki/Solar_Photovoltaic_Project_Development_in_the_Philippines**.

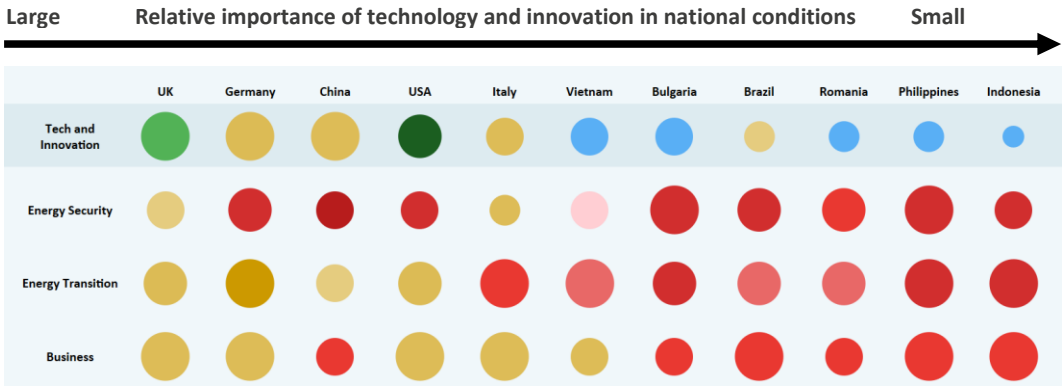
[87] International Institute for Sustainable Development (208), 'Missing the 23 percent target: Roadblocks to the development of renewable energy in Indonesia', **https://www.iisd.org/sites/default/files/publications/roadblocks-indonesia-renewable-energy.pdf**.

[88] The International Renewable Energy Agency (2018),'Renewable energy capacity statistics 2018', **https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2018/Mar/IRENA_RE_Capacity_Statistics_2018.pdf**.

[89] Vietnam Briefing (2019), ' Renewables in Vietnam: Current Opportunities and Future Outlook', **https://www.vietnam-briefing.com/news/vietnams-push-for-renewable-energy.html/.**

[90] The International Renewable Energy Agency (2018),'Renewable energy capacity statistics 2018', **https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2018/Mar/IRENA_RE_Capacity_Statistics_2018.pdf**.

Figure 13: Key insights from E3G PEMMs on the influence of technology and innovation on the energy transition, energy security, and business



Source: E3G PEMM analysis

The 2019 Global Innovation Index ranks Indonesia 88th globally, lagging behind on institutions (regulatory environment), business sophistication and human capital and research.[91]The Philippines ranked 54th, and while it performs well on knowledge and technology outputs, low performance on the ease of starting a business, accessing credit and expenditure on education, contribute to its relatively low score. [92] Vietnam ranked slightly higher at 42nd – it also performs well on knowledge and technology outputs, though major improvements are needed on institutions, particularly business and regulatory environments.[93] Expenditure on research and development is also low amongst the three countries; Indonesia has the lowest with R&D representing 0.01 per cent of GDP, followed by the Philippines at 0.2 per cent of GDP and Vietnam a t 0.4 per cent of GDP.[94]

In relation to clean and renewable energy, technological capacity is limited. Manufacturing is Vietnam's most advanced sector, accounting for 83 per cent of total merchandise exports;[95] however, it remains difficult to compete with China's high skill manufacturing on clean technologies such as solar panels and

[91] Global Innovation Index (2019), **https://www.globalinnovationindex.org/userfiles/file/reportpdf/gii-full-report-2019.pdf**.

[92] Global Innovation Index (2019), **https://www.globalinnovationindex.org/userfiles/file/reportpdf/gii-full-report-2019.pdf**.

[93] Global Innovation Index (2019), **https://www.globalinnovationindex.org/userfiles/file/reportpdf/gii-full-report-2019.pdf**.

[94] World Bank Data, 'Research and development expenditure(% of GDP), **https://data.worldbank.org/indicator/GB.XPD.RSDV.GD.ZS**.

[95] World Bank Data, **https://data.worldbank.org/**.

E3G

wind turbines. Opportunities exist for Vietnam to play an increasing role in the value chain as manufacturing continues to advance under favourable economic conditions and higher innovation performance. The Philippines, a predominately service-based economy, is also unable to compete with international prices for renewable energy equipment; a duty exemption on solar PV equipment, materials and parts was recently introduced as part of a wider plan to improve the ease of doing business for which it currently ranks 124th globally.[96] [97] Indonesia's natural resource based economy is highly dependent on commodity exports, such as coal and palm oil, making it deeply entrenched in high carbon development. In addition, local content regulations on solar PV raises the price for developers and reduces project viability.[98] Overall, technology and innovation play a limited role in the debate and while it doesn't push for or against a low carbon transition, improvements in this area could have many benefits for the transition and the economy more broadly.

Finance and investment assess the characteristics and performance of a country's finance and investment sector. In Indonesia and Vietnam, finance and investment were found to play a moderately important role in shaping the debate around a low carbon transition, though divided on the transition. It played a smaller and opposing role in the Philippines. Maturity of the debate was found to be relatively low. Finance sectors tend to be a mature aspect of most countries' economies – in contrast to new and rapidly growing sectors, such as digital and renewable energy. However, the role of climate change in finance in relatively new. This creates opportunities for innovation and competitive advantage, and indeed some positive efforts have been made on promoting green and sustainable finance. Yet, finance institutions are still deeply entangled with supporting high carbon sectors.

Vietnam is showing early signs of greening the finance system; it is a member of the Sustainable Banking Network and the State Bank of Vietnam (SBV) introduced a directive on green credit growth in 2015, including ESG risk management in the credit activities. More recently, the SBV introduced a definition of green sector through Green Project Catalogue. However, a lack of transparency in its state dominated banking sector, as well as high public debt, is

[96] Business World (2019), 'Energy dep't issues draft rules for duty-free importation of renewable energy equipment', **https://www.bworldonline.com/energy-dept-issues-draft-rules-for-duty-free-importation-of-renewable-energy-equipment/**.

[97] The World Bank (2019), 'Ease of Doing Business Ranking', **https://www.doingbusiness.org/en/rankings**.

[98] International Institute for Sustainable Development (208), 'Missing the 23 percent target: Roadblocks to the development of renewable energy in Indonesia', **https://www.iisd.org/sites/default/files/publications/roadblocks-indonesia-renewable-energy.pdf**.

E3G

a deterrent for investment. Attracting foreign direct investment is important, though foreign capital remains a major source of financing for high carbon coal-fired power projects, mostly China, Japan and South Korea.

Indonesia has also made positive efforts on green finance with the launch of the world's first sukuk (Islamic) green bond and development of a Sustainable Finance Roadmap for 2015-2024. However, its financial sector is also dominated by state owned banks. Here, the scale of financial risk due to public coal assets is more visible. According to IEEFA, PLN's inability to recover generating, transmission and distribution costs resulted in operating losses of USD 2.1 billion annually between 2014 and 2017 – during this period direct government subsidies to PLN totalled USD 20.8 billion.[99] Again, coal power development is largely financed by foreign countries, mostly China, Japan and South Korea. The Export Credit Agencies JBIC and CEXIM loaned 45 per cent of the total debt, while bilateral development banks provided 19 per cent between 2010-2017 for debt finance to 21 coal projects.[100] Indonesia's banks provided only two per cent to coal projects.[101]

In the Philippines, green bonds have been issued; the government has introduced a Catastrophe Risk Insurance Program; it has an advanced microinsurance sector linking to low carbon energy and there are plans to develop a national Green Investment Bank (GIB). However, the performance of the Philippine stock market has been declining since January 2018 and it has one of the highest corporate 'brown revenue' rates globally, standing at 23.9 per cent of total revenue ('green revenue' represented 0.7 per cent).[102] Coal power projects are largely financed by domestic commercial banks, which tend to be technology neutral. As a result, there are investments in both low and high carbon energy, though bankability of renewable energy projects is much lower than coal and a major barrier for renewable energy investors.

Public goods assess how commodities and/ or services that benefit all of society are perceived and valued. In Vietnam, public goods were found to play a relatively large, supportive and mature role in shaping the debate around a low

[99] IEEFA (2018), 'Perusahaan Listrik Negara (PLN): A Power Company Out of Step With Global Trends', **http://ieefa.org/wp-content/uploads/2018/04/PLN-A-Power-Company-out-of-Step-With-Global-Trends_April-2018.pdf**.

[100] Market Forces (2018), 'Foreign finance to Indonesian coal', **https://www.marketforces.org.au/research/indonesia/public-finance-to-indonesian-coal/**.

[101] Market Forces (2018), 'Foreign finance to Indonesian coal', **https://www.marketforces.org.au/research/indonesia/public-finance-to-indonesian-coal/**.

[102] Corporate Knights (2017), 'Measuring Sustainability Disclosure', **https://www.corporateknights.com/reports/2017-world-stock-exchanges/**.

E3G

carbon transition. In Indonesia and the Philippines, public goods were found to be important but divided on a low carbon transition. The manner in which public goods are perceived and valued varies across societies, and yet citizens from around the world, including Southeast Asia, are growing increasingly concerned about the quality of their environment, in particular air and water quality. While often spurred by concerns for human health rather than climate change, public goods provide an opportunity to raise the debate around a low carbon transition.

Vietnam is experiencing particularly high levels of air pollution. According to the Green Innovation and Development Centre (GreenID), air pollution from nearby coal and heavy industry is becoming particularly worrying for residents in Hanoi and Ho Chi Minh City; in Hanoi an estimated 232 days in 2018 exceeded WHO standards.[103] Health impacts are high – an estimated 40,000 deaths, representing economic losses of five to seven per cent of GDP, were caused by air pollution in 2017.[104] The effects of industrial pollution on food safety is another major public concern as evidenced by the toxic waste spill from the Formosa steel plant in 2016 which devastated fishing communities and caused massive public protest.[105] Clean air, water and land is an essential component of the social contract between the state and its citizens, providing an opportunity for public goods to raise the national debate on a low carbon transition. Furthermore, awareness of climate change in Vietnam is high and research shows that more than half of the population believes climate change is a major threat to their country.[106]

Indonesia's capital, Jakarta, is one of the most polluted cities in Southeast Asia, where air pollution levels exceed both national and WHO standards.[107] In July 2019, a group of Jakarta residents brought a lawsuit against the government over harmful levels of air pollution linked to vehicle and coal power plant emissions.[108] Poor water quality and plastic pollution are other key public

[103] GreenID (2019), 'Air Quality Report 2018', **http://en.greenidvietnam.org.vn//app/webroot/upload/admin/files/BCCLKK%202018_16_07_2019_Final%20ti%E1%BA%BFng%20anh_b%E1%BA%A3n%20online.pdf**.

[104] Vietnam Insider (2018),' Air pollution is Vietnam's silent killer', **https://vietnaminsider.vn/air-pollution-vietnams-silent-killer/**

[105] Reuters (2016), 'Formosa unit offers $500 million for causing toxic disaster in Vietnam', **https://www.reuters.com/article/us-vietnam-environment-idUSKCN0ZG1F5**.

[106] Pew Research Center (2015), 'Climate Change Seen as Top Global Threat', **https://www.pewresearch.org/global/2015/07/14/climate-change-seen-as-top-global-threat/**.

[107] World Bank Data (2017), 'PM2.5 air pollution, population exposed to levels exceeding WHO guideline value (% of total)', **https://data.worldbank.org/indicator/EN.ATM.PM25.MC.ZS**

[108] The Guardian (2019), 'Jakarta residents to sue government over severe air pollution' **https://www.theguardian.com/world/2019/jul/02/jakarta-residents-to-sue-government-over-severe-air-pollution**.

concerns. Severe plastic pollution has led several islands with important fishing and tourism sectors to declare a 'plastic emergency'. In addition, West Java's Citarum river which supports over 25 million people, is one of the most polluted rivers in the world and high public concern has led to military involvement in large scale clean-up activities.[109] Growing environmental concerns are supportive in raising the debate around a transition to a low carbon economy, including the recent announcement to move the nation's capital to Kalimantan.[110] However, there are also opposing forces, such as low awareness of climate change (less than half the population sees it as a major threat)[111], extensive employment in high carbon sectors (coal, rubber, palm oil etc.) and differing views of development across the archipelago.

The Philippines is also highly exposed to air pollution, where an estimated 96 per cent of the population is exposed to PM2.5 levels which exceed WHO standards.[112] With one in four deaths attributed to air pollution, the Philippines has the world's third highest mortality rate linked to air pollution.[113] Poor air quality in Metro Manila is mostly linked to vehicle emissions and in 2015 a group of citizens took legal action against the Philippine government for failing to reduce harmful levels of vehicle emissions as mandated by the 1999 Clean Air Act.[114] The public is also dissatisfied with water quality; about two thirds of river systems are considered unsuitable for public water supply and up to 58 per cent of ground water is contaminated due to untreated waste and plastics.[115] Filipinos have a high level of awareness of climate change, with 65 per cent believing it is a major threat to their country.[116] However, meeting social and economic development objectives overshadows growing concerns related to the

[109] Reuters (2018), 'Indonesia president says toxic river should be clean enough to drink within seven years', **https://www.reuters.com/article/us-indonesia-river/indonesia-president-says-toxic-river-should-be-clean-enough-to-drink-idUSKCN1G619X**.

[110] BBC (2019), 'Indonesia's planning minister announces capital city move', **https://www.bbc.co.uk/news/world-asia-48093431**.

[111] Pew Research Center (2015), 'Climate Change Seen as Top Global Threat', **https://www.pewresearch.org/global/2015/07/14/climate-change-seen-as-top-global-threat/**.

[112] World Bank Data (2017), 'PM2.5 air pollution, population exposed to levels exceeding WHO guideline value (% of total)', **https://data.worldbank.org/indicator/EN.ATM.PM25.MC.ZS**

[113] The Philippine Star (2018), 'Are Filipinos experiencing 'wildfire' pollution every day?', **https://www.philstar.com/business/motoring/2018/11/28/1872203/are-filipinos-experiencing-wildfire-pollution-every-day**.

[114] Philippine Daily Inquirer (2015), 'Lawsuits mulled over air pollution', **https://newsinfo.inquirer.net/667944/lawsuits-mulled-over-air-pollution**.

[115] Borgen Magazine (2016), 'Water Pollution in the Philippines: Causes and Solutions', **https://www.borgenmagazine.com/water-pollution-in-the-philippines/**.

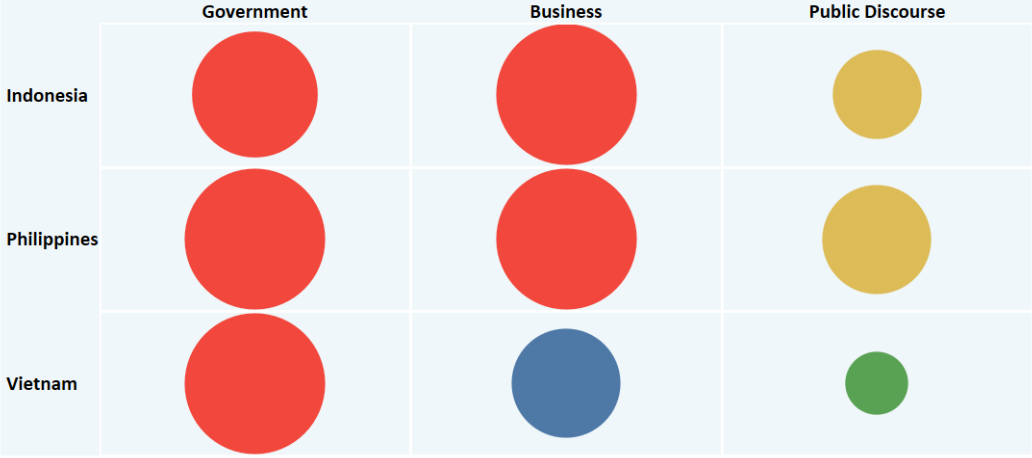
[116] Pew Research Center (2015), 'Climate Change Seen as Top Global Threat', **https://www.pewresearch.org/global/2015/07/14/climate-change-seen-as-top-global-threat/**.

environment and climate, creating a divided debate around a low carbon transition.

Political system

Political system refers to the actors involved in a country's decision-making processes. Within the PEMM, there are three categories of political actors assessed for their level of influence and role in shaping the national debate around a low carbon transition. These include **government**, **business** and **public discourse**. The overall assessment of these three types of political actors are illustrated in Figure 14. As shown in the PEMM summary visualisation, political barriers are high around a low carbon transition in Vietnam, Indonesia and the Philippines. Government and business dominate the political system and are highly influential in shaping the debate, though they act in opposition to a low carbon transition. Each country has their own reason – whether it be the duty to provide electricity to all no matter the energy source, bureaucracy around permitting processes or a lack of transparency. Public discourse, including media and civil society groups, tends to be more supportive, but plays a limited role.

Figure 14: High-level PEMM summary – Political system in relation to a low carbon transition in Vietnam, Indonesia and the Philippines



Government assesses the key actors and priorities within a country's government system, including the implementation capacity of the civil service. In Vietnam, Indonesia and the Philippines, government was found to be a significant actor in shaping the national debate around a low carbon transition, though playing an opposing role. This was most visible in Vietnam and Indonesia where government oversees and promotes the development of high carbon coal resources through state-owned enterprises (SOEs). While climate champions

E3G

exist at the ministerial level and supportive governance frameworks are in place, on the whole climate change remains low on the political agenda and coal power continues to be prioritised in order to meet development objectives. Accelerating a low carbon transition is further complicated by coordination issues amongst ministries, a lack of transparency, corruption and inefficiencies in the civil service.

In Vietnam, the state dominates the political system and strongly shapes the national debate. The Communist Party has the highest level of influence, setting the country's strategic direction – top priorities include maintaining social stability and delivering economic reforms. The Prime Minister is one of the key decision makers on climate and energy policy, for example approving renewable energy strategies, feed-in-tariff rates and purchase power agreements. Renewable energy development is viewed positively and policy support for solar PV and wind has been confirmed through new FiT rates. However, government simultaneously promotes and subsidises coal power development.

Support to coal power is not viewed as a subsidy but rather as the public cost of providing energy to all – an important aspect of the social contract. This, however, has implications on public finances and a lack of transparency around state-owned enterprises limits robust analysis of financial risks associated with coal. According to Carbon Tracker, Vietnam's state owned electricity (EVN), oil and gas (PetroVietnam) and mining (Vinacomin) companies held 77 per cent of the country's total coal assets in 2018, with stranded asset risk of USD 11.7 billion.[117] Overall, the government's pursuit of both high and low carbon energy development hinders a shift towards a low carbon and climate resilient economy.

In Indonesia, government is also important in shaping the debate, particularly the executive branch. Presidential decrees can set direction on climate and energy, for example calling for increased biofuel development or the recent decree to support the electric vehicle industry.[118] However, this also means that regime change may affect the coherence of national strategies. The current President has a strong focus on people, with a high level of attention given to job creation, poverty alleviation and improvement in public services. Despite co-

[117] Carbon Tracker (2018), 'Economic and financial risks of coal power in Indonesia, Vietnam and the Philippines', **https://www.carbontracker.org/reports/economic-and-financial-risks-of-coal-power-in-indonesia-vietnam-and-the-philippines/**.

[118] Reuters (2019), 'UPDATE 1-Indonesia president signs new EV decree to bolster industry', **https://www.reuters.com/article/indonesia-electric/update-1-indonesia-president-signs-new-ev-decree-to-bolster-industry-idUSL4N255133**.

E3G

benefits of climate action, such as improved human health and energy savings, climate change is disconnected from the government's pro people agenda.

Ministers also play an important role in introducing climate-related regulations and initiatives. The Minister of National Development Planning (Bappenas) is a champion on climate action, for example having launched the Low Carbon Development Initiative (LCDI) and recently endorsing a new, multi-stakeholder network focused on low carbon emissions called Jejaring Indonesia Rendah Emisi (JIRE).[119] In contrast, the Minister of Energy and Mineral Resources (MEMR) introduced a ministerial decree in 2017 that replaced feed-in-tariff rates for solar PV and wind power with an 85 per cent cost production regulation based on the price of coal.[120] This has made renewable energy projects unattractive to investors, particularly in Java.[121]

Under the direction of the MEMR, the state-owned power company PLN has the difficult task of delivering electricity to all while making profit, which has resulted in a preference for using 'cheap' coal power. High levels of corruption exist around PLN[122] and its consolidated financial statements have shown annual operating losses averaging USD 2.1 billion.[123] According to Carbon tracker, PLN held half of the country's total coal assets in 2018, with stranded asset risk of USD 15 billion.[124] The government's preference for coal power, reduced policy support for renewable energy and conflict between development and climate agendas hinder Indonesia's transition to a low carbon economy.

In the Philippines, executive and legislative branches of government play an important role in shaping the debate. Legislature is particularly robust, and the country has well developed climate governance frameworks, including climate

[119] The Federal Ministry for the Environment, Nature Conservation, and Nuclear Safety (2019), 'Launching of Indonesia Low Emissions Network JIRE', **https://www.international-climate-initiative.com/en/news/article/launching_of_indonesia_low_emissions_network_%22jire%22/**.

[120] IEA (2017), 'Renewable Energy Purchase Policy 2017', **https://www.iea.org/policiesandmeasures/pams/indonesia/name-162229-en.php**.

[121] The Insider stories (2017), 'Policy Review: Investment in Renewable Sectors Still Far Below Expectation', **https://theinsiderstories.com/indonesias-policy-review-investment-in-renewable-still-far-below-expectation/**.

[122] The Jakarta Post (2019), 'Five years' imprisonment sought for former PLN chief in bribery case', **https://www.thejakartapost.com/news/2019/10/08/five-years-imprisonment-sought-for-former-pln-chief-in-bribery-case.html**.

[123] IEEFA (2018), 'Perusahaan Listrik Negara (PLN): A Power Company Out of Step With Global Trends', **http://ieefa.org/wp-content/uploads/2018/04/PLN-A-Power-Company-out-of-Step-With-Global-Trends_April-2018.pdf**.

[124] Carbon Tracker (2018), 'Economic and financial risks of coal power in Indonesia, Vietnam and the Philippines', **https://www.carbontracker.org/reports/economic-and-financial-risks-of-coal-power-in-indonesia-vietnam-and-the-philippines/**.

E3G

change and renewable energy laws. This led to the establishment of a national coordinating body (Climate Change Commission) tasked with developing and mainstreaming climate change policies across government. Despite this strong foundation, climate action is slowed by high levels of bureaucracy, particularly around permitting processes for renewable energy projects. In addition, climate change remains relatively low on the domestic political agenda.

Infrastructure development continues to be the President's top priority, and in terms of energy development, the government promotes a technology neutral approach which works in opposition to climate action and sends unclear signals to investors. In line with this approach, the Minister of Energy removed feed-in-tariff rates for solar PV in 2017,[125] slowing growth and investment in solar power. Coal power is pursued as the most secure way of providing energy to all, though it faces high stranded asset risk. According to IEEFA and ICSC, about USD 21 billion of potential investments in coal capacity face stranded cost risks.[126] The government's technology neutral approach to energy development, removal of policy incentives for solar PV and high levels of bureaucracy in the approval of renewable energy projects hinder a low carbon transition in the Philippines.

Business assesses key actors within a country's business community and the balance of political engagement of high and low carbon industry within the economy. In Indonesia and the Philippines, business was found to be a significant actor in shaping the national debate around a low carbon transition, though plays an opposing role on the low carbon transition. In Vietnam, business was found to have less influence in the political system and a neutral role on the transition. As seen in several countries around the world, local business communities are largely composed of small to medium-sized companies, which tend to have relatively little influencing power politically, especially on a low carbon transition. Large privately-owned businesses and/or state-owned enterprises are the most influential.

The Vietnamese government provides a wide array of public services and its role in domestic commercial affairs means that private business takes up a relatively smaller space in the political system and has less influence on the debate around

[125] Manila Bulletin (2017), 'Cusi scraps next round of FIT for solar, rules no subsidy for stranded capacity', **https://business.mb.com.ph/2017/05/29/cusi-scraps-next-round-of-fit-for-solar-rules-no-subsidy-for-stranded-capacity/**.

[126] IEEFA and ICSC (2017), 'Carving out Coalin the Philippines: Stranded Coal Plant Assets and the Energy Transition', **http://ieefa.org/wp-content/uploads/2017/10/Carving-out-Coal-in-the-Philippines_IEEFAICSC_ONLINE_12Oct2017.pdf**.

E3G

a low carbon transition. Government holds a majority stake in thousands of state-owned enterprises and retains control over a number of key sectors including energy, banking and construction. Private business actors tend to focus on technology and innovation, with some interest in clean energy. Certain international businesses with important supply chains in Vietnam, such as Samsung,[127] are voicing interest in sourcing renewable energy for in-country operations. Overall, business does not push for or against a low carbon transition and plays a limited role in shaping the debate.

In Indonesia, state-owned enterprises are the most influential politically, particularly those involved in the energy sector. Given the importance of achieving national electrification targets and the scale of PLN's coal power assets (15 GW in 2018), the SOE receives some of the largest government subsidies. In 2017, PLN received USD 3.6 billion in government support and IEEFA estimates that this could increase to USD 9.5 billion annually by 2021.[128] Indonesia's SOEs are particularly vulnerable to corruption (e.g. scandal around the approval of the Riau-1 coal plant)[129] and recent proposals to weaken the anti-corruption agency KPK is causing widespread public concern.[130] Clean energy companies, on the other hand, are mostly privately owned and less politically engaged. FinTech is seen as a potential solution for energy distribution, aligning with Indonesia's vision of becoming a leader in digital energy by 2020. Overall, the most influential business actors are linked to high carbon development, thereby hindering a low carbon transition.

In the Philippines, large (often family-run) conglomerates have high economic value and close ties to government, making them more influential in shaping a debate around a transition. Like government, they take a technology neutral approach resulting in investments in both high and low carbon development. San Miguel Corporation, the Philippines' largest corporation by revenue, held nearly 30 per cent of the country's total coal assets in 2018, with a stranded asset risk

[127] The Economist (2018), 'Why Samsung of South Korea is the biggest firm in Vietnam', **https://www.economist.com/asia/2018/04/12/why-samsung-of-south-korea-is-the-biggest-firm-in-vietnam**.

[128] IEEFA (2018), 'Research Brief: PLN's Coal IPP Funding Gap Suggests Tariffs Must Rise in 2020', **http://ieefa.org/wp-content/uploads/2018/05/PLNs-Coal-IPP-Funding-Gap-Suggests-Tariffs-Must-Rise-in-2020.pdf**.

[129] Mongabay (2019), 'Indonesia electricity chief charged with bribery over coal-fired power plant', **https://news.mongabay.com/2019/04/indonesia-electricity-chief-charged-with-bribery-over-coal-fired-power-plant/**.

[130] The Jakarta Post (2019), ' Forget KPK, we need a sharper weapon to fight graft', **https://www.thejakartapost.com/academia/2019/09/17/forget-kpk-we-need-a-sharper-weapon-to-fight-graft.html**

E3G

of USD 3.4 billion.[131] Its portfolio also includes petroleum, mining and infrastructure, but it also plans to launch at least 800 MW of renewable energy in March 2020.[132] Smaller renewable energy developers have limited political influence and corruption restricts business efficiency; the Philippines scored 118th on the Irregular Payments and Bribes Index in 2017.[133] Overall, the technology neutral approach and vested interests in high carbon assets amongst the very influential, large privately-owned businesses hinder a low carbon transition in the Philippines.

Public discourse assesses key actors and forms of communication involved in raising public debate within the political system, including citizen action and social movements. Across the three countries, public discourse was found to play a relatively small role in shaping the debate around a low carbon transition, especially in Vietnam. In Indonesia and the Philippines, its role was divided on a transition, while in Vietnam it was more supportive. While these countries have well developed civil society networks around environment and climate and increased citizen engagement on environmental pollution issues, public discourse has limited influence within the political system.

The use of social media has grown rapidly in Vietnam, Indonesia and the Philippines, helping to raise the public debate on environmental pollution – linked but not entirely focused on climate change. For example, in Indonesia images of rivers blocked by plastic waste led to a presidential response on the issue. However, the rise of social media has also brought fake news as seen with the spread of misinformation around Indonesia's presidential election.[134] Litigation is emerging as a vehicle for raising the public debate, especially in countries with strong and independent judicial systems, but again cases focus on broader environmental concerns indirectly linked to climate change, primarily poor air quality in urban areas. In terms of civil society, there are well developed groups and networks advocating for sustainable development, which are at times consulted by government, but which rarely influence final decision-making.

[131] Carbon Tracker (2018), 'Economic and financial risks of coal power in Indonesia, Vietnam and the Philippines', **https://www.carbontracker.org/reports/economic-and-financial-risks-of-coal-power-in-indonesia-vietnam-and-the-philippines/**.

[132] GMA News (2019), 'San Miguel to launch 800-MW renewable energy in March 2020', **https://www.gmanetwork.com/news/money/companies/697363/san-miguel-to-launch-800-mw-renewable-energy-in-march-2020/story/**.

[133] The World Bank (2017), 'TC Data 360: Irregular payments and bribes', **https://tcdata360.worldbank.org/indicators/h4b41d0c6?country=PHL&indicator=668&countries=VNM,IDN&viz=line_chart&years=2010,2017**.

[134] The Guardian (2019), 'Fake news spikes in Indonesia ahead of elections', **https://www.theguardian.com/world/2019/mar/20/fake-news-spikes-in-indonesia-ahead-of-elections**.

E3G

Freedom of speech remains a challenge to public discourse in these three countries. According to Global Witness, the Philippines was the deadliest country for environmental and land activists in 2018, with a total of thirty recorded deaths.[135] In addition, the Philippine government revoked the operating license of the independent news website Rappler in 2018, which openly criticised government.[136] Consequently, it ranked low on the 2019 World Press Freedom Index (134th). [137] In Indonesia, local reporters increasingly practice self-censorship to avoid possible prosecution under the country's defamation laws, which includes defamation on the internet.[138] Indonesia ranked 124th on the 2019 World Press Freedom Index.[139] Vietnam has one of the lowest World Press Freedom rankings (176th in 2019) due to state control over media and closely monitored civil society.[140] Overall, there are both opportunities and challenges around the role of public discourse in shaping the debate around a low carbon transition.

External projection and choice

External projection and choice refer to a country's external positioning and how it communicates its interests abroad. Within the PEMM there are two aspects of external positioning that were assessed their level of influence, maturity and role in shaping the debate around a low carbon transition. These include **foreign policy** and **climate diplomacy**. The overall assessment of these two aspects of external projection and choice are illustrated in Figure 15. As shown in the PEMM summary visualisation, foreign policy priorities tend to overshadow climate diplomacy. In none of the countries was foreign policy found to be supportive of a low carbon transition, though support has been shown in international climate change negotiations. This points to a disconnect in their external positioning.

[135] Global Witness (2018), 'Enemies of the state?' **https://www.globalwitness.org/en/campaigns/environmental-activists/enemies-state/**.

[136] The Guardian (2018), 'Philippines revokes licence of leading news website Rappler', **https://www.theguardian.com/world/2018/jan/16/philippines-revokes-licence-news-website-rappler-free-press**.

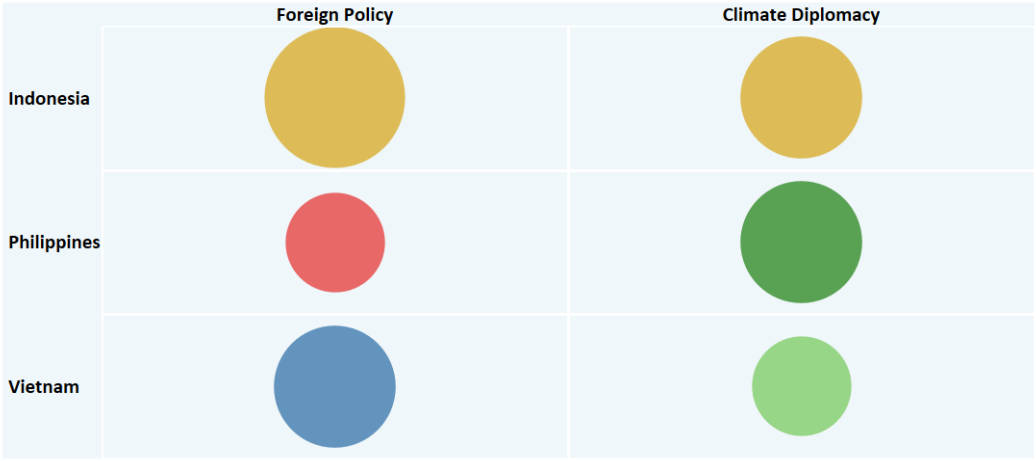
[137] Reporters Without Borders (2019), '2019 World Press Freedom Index', **https://rsf.org/en/ranking**

[138] Mondaq (2016), 'Indonesia: Cases Of Defamation Through Social Media In Indonesia: Is It Possible For A Company To Make A Report To The Police?', **http://www.mondaq.com/x/460464/Libel+Defamation/Cases+of+Defamation+through+Social+Media+in+Indonesia+Is+it+Possible+for+a+Company+to+Make+a+Report+to+the+Police**.

[139] Reporters Without Borders (2019), '2019 World Press Freedom Index', **https://rsf.org/en/ranking**

[140] Reporters Without Borders (2019), '2019 World Press Freedom Index', **https://rsf.org/en/ranking**

Figure 15: High-level PEMM summary – External projection and choice in relation to a low carbon transition in Vietnam, Indonesia and the Philippines



Foreign policy assesses how a country approaches and interacts with other nations. In Vietnam and Indonesia, foreign policy was found to be significant in the country's external projection and choice, though Vietnam played a moderately mature and neutral role in shaping the national debate around a low carbon transition, while Indonesia played a moderately mature and divided role. In the Philippines, foreign policy was found to be relatively smaller in the country's external projection and choice and playing an increasingly opposing role.

Vietnam ranks 34th in the world (9th in Asia) on the Global Diplomacy Index.[141] While not a leading country on foreign affairs, it is supportive of multilateralism and its foreign policy approach focusses on making positive alliances with countries across the globe, especially on trade. It is a member of the World Trade Organisation (WTO), The Association of Southeast Asian Nations (ASEAN) and has completed bilateral agreements with the U.S., Japan, South Korea, the European Union and has joined the revived Comprehensive and Progressive Trans-Pacific Partnership (TPP).[142] At the regional level, it participates in securing economic and political stability in Mekong River countries and looks for best practices on the application of economic policy, including South Korea and China. However, the rise of China's power in the Asia region has created some tension, further complicated by Vietnam's involvement in the Belt Road Initiative (BRI) which provides an important source of funding for infrastructure development. Overall, its foreign policy neither pushes for or against a low carbon transition,

[141] Lowy Institute (2017), 'Global Diplomacy Index', **https://globaldiplomacyindex.lowyinstitute.org/**.

[142] Export.Gov (2018), 'Vietnam – Trade Agreements', **https://www.export.gov/article?id=Vietnam-Trade-Agreements**.

E3G

through there are concerns about future high carbon development through the BRI.

Indonesia ranks 19th in the world (5th in Asia) on the Global Diplomacy Index.[143] It is the economic and political heavyweight of the Southeast Asia region and its status as G20 country gives it an important voice in geopolitics. However, it has a non-alignment approach to foreign policy. Under the current President, it has become more inward focused reflecting the government's pro-people agenda. There is a desire to participate in certain multilateral platforms, including ASEAN, and was recently elected as a non-permanent member of the UN Security Council. Maritime policy is an emerging pillar of Indonesian foreign policy, which seeks to safeguard natural resources in the South China Sea and position itself as an interface between different regional initiatives, such as the BRI, TPP and Indian Ocean Rim Association. Economic diplomacy is a major feature of Indonesian foreign policy and strongly protects its economic interests, particularly commodity exports. The importance of trade in high carbon goods, including oil, gas and coal, contributes to its divided role on the transition.

The Philippines ranks 41st in the world (11th in Asia) on the Global Diplomacy Index.[144] Its diplomatic capacity is relatively low and its foreign policy approach has recently undergone changes. Under the current President, there has been a significant shift in foreign policy priorities and diplomatic relations, including a stronger focus on national security, weakening of the traditional alliance the U.S. and closer relations with China, particularly on offshore oil and gas development. It also pursues economic diplomacy with China through the BRI, which pledged USD 24 million for infrastructure development in the Philippines and aligns closely with domestic priorities.[145] Regionally, the Philippines has strong relations with ASEAN countries; as the chair of ASEAN in 2017 it advanced maritime defence mechanisms and launched the ASEAN Science-Based Disaster Management Platform (ASDMP). Volatile foreign relations and an emerging trend of fossil fuel diplomacy, however, contribute to its opposing role on a low carbon transition.

Climate diplomacy assesses how a country positions itself and interacts with other nations in international climate negotiations. In the Philippines, climate diplomacy was found to play a significant and relatively mature role in its

[143] Lowy Institute (2017), 'Global Diplomacy Index', **https://globaldiplomacyindex.lowyinstitute.org/**.

[144] Lowy Institute (2017), 'Global Diplomacy Index', **https://globaldiplomacyindex.lowyinstitute.org/**.

[145] Belt & Road News (2019), 'What lies ahead for the Philippines on China's BRI?', **https://www.beltandroad.news/2019/01/22/what-lies-ahead-for-the-philippines-on-chinas-bri/**.

E3G

external projection and choice, and supportive of a low carbon transition. Vietnamese climate diplomacy was also found to play a supportive role on the transition, though relatively smaller and less mature. In Indonesia, climate diplomacy was found to play an important and relatively mature role in its external projection and choice, though divided on a low carbon transition.

The Philippines has long been engaged on climate negotiations within the United Nations Framework Convention on Climate Change (CCC). It has participated in several formal and informal negotiating groups, most notably the High Ambition Coalition (HAC) which was critical in reaching the Paris Agreement. In the run up to Paris, the Philippines acted as the Chair of the Climate Vulnerable Forum (CVF) and it was under their leadership that the group developed a clear negotiation strategy focused on 1.5°C; the ambition mechanism, climate financing, and loss and damage. Under the CVF, they also led the formation and first meeting of the Vulnerable Twenty Group of Ministers of Finance (V20). The Philippines ratified the Paris Agreement in 2017, pledging ambitious GHG emissions reductions of 70 per cent by 2030 relative to a 2000–2030 business as usual (BAU) scenario.[146] While dynamics within the UNFCCC have changed since 2015, the Philippines remains a strong advocate of climate action and highly supportive of a low carbon transition.

Vietnam was also a founding member of the Climate Vulnerable Forum (CVF) and plays an important role in the negotiating group due to its position as a middle-income country. It was also quick to ratify the Paris Agreement, pledging GHG emissions reduction of eight per cent compared to BAU levels by 2030, or 25 per cent with international financial support.[147] The highest level of support will be required in the agriculture and energy sectors. Vietnam is supportive of a low carbon transition within international climate negotiations, though it plays a relatively small role in their external positioning.

Indonesia is an important actor within international climate negotiations, helping to build consensus between nations through its alliances with other G20 countries and the G-77 and China group. As host of COP 13, it contributed to the development of the Bali Action Plan; an important milestone for securing long term cooperation on global climate action. It also joined the ambitious HAC

[146] Republic of the Philippines (2015), 'Intended Nationally Determined Contributions', **https://www4.unfccc.int/sites/submissions/INDC/Published%20Documents/Philippines/1/Philippines%20-%20Final%20INDC%20submission.pdf**.

[147] Government of Vietnam (2016), 'Intended Nationally Determined Contribution', **https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Viet%20Nam%20First/VIETNAM%27S%20INDC.pdf**.

E3G

group in the run up to Paris. Indonesia ratified the Paris Agreement in 2016, pledging GHG reductions of 29 per cent by 2030, or 41 per cent with international financial support, mostly focusing on GHG reductions in the forestry and energy sectors.[148] Norway and Indonesia continue to cooperate closely on reducing forest-based GHG emissions, though progress in Indonesia has been slow with few funds actually dispersed. Similar to its foreign policy approach, Indonesian climate diplomacy plays a divided role on a low carbon transition.

Conclusion

The political systems of these three countries, mostly dominated by the choices made by government and business, strongly influence the core interests that shape the national debate around a low carbon transition. Energy security and energy transition are especially challenging areas. All are on a high carbon development pathway shaped by the development objectives and energy access concerns of their governments. Climate risk presents an opportunity to raise the national debate on a low carbon transition, yet it receives little political attention at the highest levels of government or amongst influential businesses.

Citizens in these countries are increasingly concerned about their health and safety, and while public discourse on broader environmental issues may help to raise the debate on sustainable development, there are differing views of development within each country and public discourse has limited influence in the political system. The interaction between their economic and political systems also has implications on how they position themselves in the world. Domestic priorities strongly shape their foreign policy priorities, but they rarely support a low carbon transition and at times conflict with their positioning in international climate negotiations. As seen in the PEMM analysis of several countries around the world, there is often a disconnect in what a country communicates externally in international climate negotiations and actual progress made in the real economy. As climate diplomacy shifts from regime building to implementation by real economy actors, this gap will become increasingly important in the ability for countries to increase their climate ambition.

[148] Republic of Indonesia (2016), 'First Nationally Determined Contribution', **https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Indonesia%20First/First%20NDC%20Indonesia_submitted%20to%20UNFCCC%20Set_November%20%202016.pdf**.