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Report

Financing South East Asia's energy transition

Wednesday 18 - Friday 20 July 2018 | WP1612

In association with:









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The 2015 Paris Climate Agreement created a global imperative to reduce emissions and deliver clean growth. South East Asia is on the cusp of transformational change as governments, business and individuals increasingly recognise the urgent need to reduce emissions and transition to clean growth by turning their Nationally Determined Contributions (NDCs) into viable investment plans for clean energy infrastructure.

This dialogue provided a forum for stakeholders to discuss shared and transformative options to drive increased flows of green finance in the region and the benefits of rapid deployment of clean energy. For South East Asian countries, these benefits include access to new pools of capital, diversified sources of energy, balanced economic growth, avoided health costs and mitigated environmental damage. However, like all countries, those in South East Asia face the energy trilemma: how to ensure secure, affordable and lower carbon energy supply. They also face a set of shared pressures. Economic growth and strong energy demand have placed considerable stress on the region's energy infrastructure and, thus, on ambitions to increase energy access while reducing fossil fuels and carbon emissions. In a region particularly vulnerable to the effects of climate change, tackling the energy trilemma will necessitate increased investment in infrastructure and renewables. This will require significant resources, with the demand for additional green investment in South East Asia from 2016 to 2030 estimated at US\$3 trillion.

This investment requirement is far beyond the scale of governments or international donor institutions alone and represents an unprecedented opportunity for private sector investors. Green finance, which encompasses both specific 'green' financial instruments, such as green bonds, and ensuring investments are climate friendly, low carbon and socially responsible, can play a major role in meeting the significant demand for investment. Yet, concerns about the risks associated with green finance, the broader investment environment in South East Asia and the need for amplified focus in financial institutions could potentially restrict the region's potential as a growing market for green investment. There is also a need to standardise definitions, boost skills and knowledge in project development and policymaking communities and expand the number of bankable projects in the region. Despite some notable barriers, there is growing appetite and ambition in the region to achieve clean growth, while supportive international agreements offer significant opportunities to align national development and poverty reduction goals with climate and sustainability objectives.

In particular, there is an increasing desire in the region to engage with private sector actors to help deliver the clean energy infrastructure the region needs. Strong economic growth makes South East Asia an attractive destination for green investment and, on a wider level, there is a growing sense that the energy market is changing. Innovation means that renewables are now capable of competing with traditional energy sources, with the International Renewable Energy Agency predicting that renewable energy will be cheaper than fossil fuels in most countries by 2020, if regulatory frameworks allow. Thus, as the region continues to open its market to investment, there is a pressing need to both make the business case for green finance and forge new partnerships between investors and regional stakeholders. More broadly, South East Asia stands to benefit from a more coordinated political vision and diplomatic strategy for achieving clean growth.

This senior level dialogue was held at a politically and economically opportune moment. It brought ASEAN finance, energy, economic planning and environment ministries together with project developers and with investors from the City of London and elsewhere to develop a roadmap towards full financing of the sector's needs. The event also gathered insights from bilateral partners, NGOs, philanthropists and multilateral institutions. Building on the impetus of recent agreements and summits, the event helped to create momentum for upcoming events, including Governor Brown's Global Climate Action Summit in September 2018 and COP24 in December 2018. The circumstances, both globally and in South East Asia, are propitious for harnessing green finance to deliver sustainable green growth.

The Wilton Park dialogue provided a platform for the UK Government to announce a £15 million Prosperity Fund South East Asia Low Carbon Energy programme, running from 2018 to 2022 in Indonesia, Malaysia, Thailand, Vietnam, the Philippines and Burma. A major objective of this Prosperity Fund programme is to support economic development and poverty reduction by identifying and mitigating barriers to green finance and by supporting project developers and governments in the region to access the funding they need to move to a low carbon future.

Philanthropies have also rallied around these opportunities, this dialogue provided a discreet space to shape next steps, share understanding and ownership of the opportunities in South East Asia and identify the key levers needed to increase levels of green finance in the region. The dialogue shaped a set of recommendations with regard to strengthening the 'pipeline' of finance into the region and identifying where Governments and philanthropies should be aligning better to have even greater impact.

Key points

The three days of dialogue started with a discussion of the growing tension between legacy power systems and the reality of increasingly severe climate risks, as well as the new economics of clean energy. The dialogue sought to identify the problems that have created barriers to the energy transition in South East Asia and identify where there is confidence in solutions that can help the region to move forward. The issues were explored with a focus on five separate areas, resulting in a detailed examination of the following barriers and proposed solutions:

- Policy and markets: Policy challenges framed the initial discussion, with a focus on the need for governments to develop more transparent clean energy roadmaps to reduce the reliance on unstable incentives for renewables. In the absence of forward-looking regulatory structures, renewables project developers often face a double penalty of higher regulatory risk and expensive financing. With the goal of creating a more level playing field, the following proposals attracted interest: greater use of reverse auctions for new capacity, more transparency on land availability and grid connections, policy support to manage offtake risks for renewables projects, improved analytics to highlight the risk of asset stranding for regulators and to disseminate renewables performance information to the market, and policy support for distributed power and rooftop solar solutions.
- Financial system capacity: There was a strong consensus that the lack of policy commitment to energy transition reflects poor transparency around the cost of material climate risks. Green financing initiatives are making headway, but legacy practices by banks continue to restrict access to bank debt for renewables developers. These sub-optimal market outcomes were addressed by the following proposals: more active convening with regulators, bank CEOs and credit risk committees; targeted research on emissions data; development of power purchase agreement (PPA) templates to improve access to finance; more risk mitigation for early stage renewable project developers; and better analytics to support green bond market development.
- Private sector alignment: Industry representatives and government officials found common ground on the barriers that often advantage legacy market players over innovative clean energy providers. There is no single solution that applies across Association of Southeast Asian Nations (ASEAN) countries, as the barriers often reflect local market conditions and regulatory structures. Priorities for enhancing private sector alignment include strategies to develop more effective private sector platforms that can amplify the industry voice in negotiation with policymakers, regulators and donors. Philanthropy can assist in this by aligning with local industry groups and supporting efforts to improve the analytics needed to accelerate the evolution of appropriate policy initiatives.
- Market innovations: Participants discussed the potentially disruptive nature of ASEAN's energy market transition, exploring the conditions under which it could break out from a linear pathway of incremental change towards a process of rapid transformation driven by new market entrants. Potential solutions to barriers in the current scenario include data-rich models that map out pathways for rapid change, incubation platforms for early stage clean energy and transportation project promoters, and a focus on distributed island grids that can be used to trial new clean energy operating models.
- Leadership, alliances, and strategic communications: A number of ASEAN countries are facing the clean energy transition at a time when they rely heavily on domestic fossil fuels and face the challenge of energy poverty. This has resulted in policy conflicts concerning the need to address climate change risks and to create a durable new political consensus supporting a cost-effective transition to cleaner energy. The dialogue focused on the following potential solutions: the importance of coalition-building, active convening at ASEAN leadership and financial regulatory events, as well as support for timely analytical work backed up by sophisticated communications strategy that can highlight the potential impact of country-specific policy and technology choices.

Setting the Stage: Get ready for exponential change

1. The Financing South East Asia's Energy Transition dialogue at Wilton Park started with an important discussion of the urgent need for progress on new clean energy strategies

- in South East Asia. As governments weigh up complex policy choices, there is naturally pressure on resources and the political capital needed to support dynamic system change. This can make business as usual a comfortable option for those not aware of the changes now taking place in China, India, and most developed country power markets, where technology innovation is rapidly driving a system-level redesign of power sector economics.
- 2. The combination of cost reduction, new data solutions which facilitate the real-time analysis of weather trends, optimization of variable sources of power generation and better load management means that baseload power systems which used to support stable 25-year PPAs and asset values will no longer be the technologies of choice. As new technologies increase system transparency, and as new mobility and city design opportunities are explored, the pace of change is likely to accelerate.
- 3. With the potential for more flexible, low cost power systems on the horizon, South East Asian stakeholders have strong incentives to address a mix of legacy risks and new opportunities. Success will require more awareness of the many technical issues that influence the decisions of regulators, bankers, and investors. For example, the project finance tools used to mobilise large pools of institutional capital require a thorough rethink given the new power system dynamics that are emerging. To summarise one speaker in the opening session, we shouldn't think of renewable energy as a small thing: a changed system is a big thing. We think of solar as a little thing attached to a big thing, but it's a system change which is a big thing. In too many parts of South East Asia, the guarantees which support PPAs are doing nothing more than subsidising coal and acting as a barrier to more cost-effective new systems.

Policy and markets: can power markets be better structured to mobilise capital?

- 4. Meeting the challenge of creating more sustainable power markets will require a dramatic reorientation of power sector regulation and incentives in most South East Asian markets. ASEAN members have supported an aspirational target to have renewables account for 23% of total primary energy supply by 2025. Meeting this goal will require a meaningful redirection of policy and new approaches to funding. Existing renewables capacity in the region is largely dominated by hydro (with bioenergy a distant second) rather than solar and wind, where innovation and cost-reductions are now reshaping market outcomes in China, India and elsewhere.
- 5. ASEAN governments are committing to a limited policy menu of incentives, however, and have turned to feed-in-tariffs and technology-specific tenders to kick-start solar and wind capacity. For policymakers seeking motivation, there was a strong consensus that the justification for renewables has gained momentum thanks to the case to be made on energy security and reduced reliance on technologies dependent on inflationary foreign currency-denominated fuels paired with innovation-driven cost reductions for wind and solar. The modularity of renewables, especially when combined with storage, is also a good fit for governments under pressure to increase energy access in remote regions.
- 6. The question is whether policymakers have the confidence to address the full slate of conflicts between legacy and future system requirements. Power sector financing patterns in South East Asia have been shaped by expensive and inflexible project financing structures that do not currently adapt themselves easily to the operational characteristics of variable renewables. An exploration of these gaps between power market structures and financial market capacity resulted in a detailed discussion of the following problems:
 - Government guarantees for capacity payments effectively over-compensate providers of capital, crowd out funding for renewables (which typically lack the same access to guarantees), and often result in over-capacity of inflexible, high-

- cost baseload units which act as a barrier to needed system reform.
- Capital to accelerate the clean energy transition requires longer-term policy commitment to transparent market structures such as auctions that fully price externalities, clear standards on carbon accounting, and improved collaboration on blended and green finance policies that can mobilize long-term risk capital.
- Policymakers need to be much more alert to the market impact of conflicts between legacy power sector players and new competitors that have resulted in unstable incentives for renewables, resistance to commercial PPAs for rooftop solar and storage solutions, poor grid management strategies for integrating variable supply, and opaque planning disciplines related to transmission and distribution capacity.
- The energy transition will also require retraining and economic adaptation initiatives in response to changing employment needs, as well as politically sound solutions to the cost of energy inefficiency in the built environment, the impacts of large-scale biofuels, and ongoing conflicts related to land acquisition.
- 7. A number of solutions to these barriers were discussed in detail, with support emerging for high-level market design strategies as well as more targeted policy moves that could unlock capital in specific areas. As a general rule, the participants were in strong agreement that policy structures which result in over-reliance on negotiated PPAs undermine sustainable market outcomes. There was a consensus that more policy support for reverse auctions would improve price discovery and permit regulators to accurately price system-specific market features such as dispatch and land availability.
- 8. There was strong support for country-focused research on the exposure of the financial system to the risk of asset stranding. Many South East Asian governments and pension systems have significant, unanalysed exposures both to fossil fuels and related generating assets that are at risk of being priced out by renewables in the near future. It's important to draw financial regulators into the clean energy transition discussion to ensure that risks can be managed proactively, particularly by properly analysing exposure and by discouraging the issuance of further bonds or other long-term debt linked to at-risk assets such as new thermal power plants.
- 9. Finally, tailored country strategies on the right structure for corporate PPAs for rooftop solar and other behind-the-meter strategies would be a cost-effective way to unlock bank financing for new renewable capacity.

Financial system capacity: green finance progresses, but banks are holding back

- 10. A conversation on financial system capacity benefited from active participation by senior regulators, project developers, bankers, green finance experts, and market analysts, resulting in a 360□ view of the barriers to clean energy finance and potential solutions. There is currently a mismatch between the large pools of Export Credit Agency (ECA)-backed capital made available to fossil fuel independent power projects (IPPs) and the funding required by new renewables investments to rapidly scale in higher risk parts of South East Asia. In a sign that more bankable sponsors are emerging, corporate investors with established banking relationships and balance sheet capacity are beginning to enter the renewables market in some countries, along with a growing group of regional developers that have tapped a mix of blended and conventional finance. Nevertheless, the renewables project pipeline is not as healthy as it should be because few market participants can access the capital needed to nurture projects through the development stage when technical, regulatory, and land acquisition risks must be addressed.
- 11. Well-structured green finance initiatives are beginning to gain traction in South East Asia. Indonesia and Malaysia have developed positive USD green issuance track records with well received sovereign green sukuk (bond) issuances. Moving forward,

the focus will be on local currency issues and the effectiveness of steps taken to invest the funds. At a diplomatic level, ASEAN has played a constructive role in establishing green bond standards and there are important convening opportunities related to the International Organization of Securities Commissions (IOSCO) and the ASEAN Capital Market Regulators Forum. In the meantime, green stock market initiatives—particularly enhanced carbon disclosure by listed companies—remain a high priority.

- 12. As with the policy and market discussion, where poor power market transparency was identified as a barrier to the clean energy transition, transparency was also cited as a systemic barrier to rapid scale-up of financial market capacity for renewables in South East Asia, resulting in a number of linked problems:
 - Financial sector leaders and their regulators as well as finance policymakers seem not to appreciate the full extent of relevant climate risks due to limited and unfocused implementation of Task Force on Climate-related Disclosure (TCFD)style processes.
 - This lack of awareness of climate risks has been reinforced by ineffective
 policies and subsidies—often with adverse incentives—that add to the market
 barriers that innovative projects face.
 - In markets where banks and capital providers continue to reference fossil fuel PPA norms, clean energy developers are often penalised by a lack of access to equivalent treatment from governments and grid operators needed to unlock capital, resulting in complex negotiations and often punitive pricing.
 - Many of the financial tools needed to hedge project financing risk—covering FX
 or insurance—are either expensive or unavailable to smaller renewable project
 developers, obligating them to take additional financial risk which can
 compromise returns and project viability.
 - Green finance markets are evolving, but too slowly for market needs due to a
 lack of skilled professionals, a market gap which is in turn inhibiting the
 development of financial products that can be scaled to provide banks with the
 type of market opportunity they often require to be able to commit resources.
- 13. Solutions to these problems build on the proposals in relation to policy and markets, but have a sharper focus on strategies to mobilise key financial sector players and fill information gaps. There was a strong consensus that bank CEOs and credit and risk committees are not yet fully engaged in the type of strategic decision-making which is urgently needed to guide capital in a more sustainable way in South East Asia. While sustainability and communications teams have become more accessible, the business decision-makers who approve credit risk decisions must be drawn into high trust settings to discuss more pragmatic credit decisions that will shape the region's clean energy outcomes.
- 14. To reinforce this engagement, regulators and data analysts also have a role to play by providing greater insight into the impact of financed emissions and how new strategies for cities and power system reform can reduce transition risks. Innovative blended finance solutions can address the funding gap for early stage projects. This would result in a more robust pipeline of projects that would then be ready for other forms of green finance. To reinforce the need for improvements in regulatory implementation and market innovation, public interest research which makes each country's policy initiatives more transparent and compares market outcomes could be used to encourage a race to the top, giving policymakers and bankers better insights into the strategies needed to establish bankable renewable energy projects.

Private sector alignment: it's not just policy and finance

15. The dialogue was fortunate to have a number of participants with experience in project development and finance in South East Asia to help stress test the policy- and finance-

- driven solutions that emerged from the group. There are, of course, significant differences across South East Asia related to resource endowments, power market structures, grid planning disciplines, policy flexibility, and business culture which determine local realities. The case for greater private sector engagement rests on the view that if public policy formation is one leg of the stool, financial market capacity is the second leg, and the private sector is the crucial third leg—often providing valuable insights into the real-world impacts that must be factored in.
- 16. The participants provided crucial insights into how developers and business partners actually manage policy and market risks. While bankers may lack a sense of urgency and wait for policy to remove market risks, business may nevertheless perceive opportunity, but must balance a range of market risks. Problems with PPA structure—flagged by all groups—were well noted, but can be an academic concern compared to the challenge of navigating markets which rely on land and license brokers to gain access to project opportunities and needed regulatory approvals. This "swamp" can be difficult for experienced local business groups to assess, but it is even more challenging for groups with global funding that require a high awareness of corruption risks.
- 17. For private sector participants, rapid technological innovation is creating new clean energy opportunities that have the potential to be transformative, with better policy coordination, but the following barriers remain noteworthy:
 - Each market has its own DNA—with a mix of regulatory and market considerations—and policymakers must be alert to the overwhelming need for greater transparency and fairness in policy formation, implementation, and regulation. Inside deals for special businesses may not engender confidence regardless of how green the technology.
 - Policymakers need to be realistic about the strategic priorities and funding capacity of legacy market participants as opposed to the interests of new players. The latter may be less well funded but have a long-term stake in more competitive clean energy market outcomes unlike some of the state-backed power companies.
 - PPAs require greater policy clarity on offtake obligations, grid connections, and the status of behind-the-meter solutions.
 - Biofuels remain an area of interest to the clean energy business community in South East Asia given the size of the plantations sector, but more work needs to be done to address important risk factors, including life cycle CO2 emissions and other environmental concerns.
- 18. There is significant scope to more effectively mobilise the business community across South East Asia to support the clean energy transition given the high stakes for power sector participants and businesses as consumers. Collaboration with existing and possibly new business organisations at the local level holds promise, especially when greater stakeholder alignment and high-level networking can support needed policy changes. This effort would also benefit from more support with regard to the local economic case for successful transition to cleaner energy. Business groups and their government counterparts need more sophisticated and relevant analysis of market developments and policy choices to stay on track with existing Paris commitments. Other models such as the UK's Clean Growth Strategy and Green Finance Strategy could be used to cement greater partnership between the business sector and other stakeholders working toward clean energy solutions.

Market innovations: this is not business as usual

19. Any discussion of energy market transformation benefits from an exploration of the new technologies and market strategies that have the potential to radically reshape sources of electricity, the way consumers and producers are incentivised, and the boundaries

- between them. The discussion of market innovations involved a careful look what disruptive change could look like in South East Asia and how existing policy and financing patterns might need to change to support progress on corporate PPAs, rooftop solar, battery storage, electric vehicles, and business-to-business block chain data-sharing and payment strategies.
- 20. Given the legacy baseload orientation of most power systems in South East Asia, the innovation discussion focused on two opportunities for rapid change: rooftop solar in cities and industrial parks and the potential for renewable energy plus storage solutions in remote locations where distributed grid technology could support a rapid scale-up. Rooftop solar is making its way into the energy landscape in the region, but progress has been limited by mixed policy signals. Regulators are more likely to work with the market to find accommodating tariff structures in power-scarce markets where commercial users have a strong political voice and can take the lead on investment in efficient rooftop solar units. In the meantime, the technology needed to deliver competitively priced distributed grid installations for small solar and wind paired with battery storage has been demonstrated in remote areas and for island grids.
- 21. These appear to be innovations that could be scaled across multiple markets, but there are barriers to overcome, largely due to the ways in which these new technologies threaten the market position of incumbent players:
 - It is notable that in South East Asian countries with surplus baseload capacity, incumbents are motivated to discourage corporate PPAs, rooftop solar, and any form of net metering which would create a payment obligation.
 - In underserved remote areas of South East Asia, off-grid power has often been provided by expensive diesel gen-sets but grid operators often resist solutions that involve off-grid technologies and unfamiliar equipment providers that may disrupt existing procurement relationships. In many markets, stronger regulatory mechanisms could enable new entrants to compete more effectively with the established electricity utilities, or to bring connections to those who remain without access to modern energy services.
 - Although corporate PPAs and blockchain payments solutions are often
 mentioned as new options for distributed grid solutions, remote grid strategies
 must address local political and community interests to ensure that local needs
 are met.

The urgent message that comes through from any discussion of disruptive innovation is that existing regulatory and market structures must be future-proofed in ways that will support the development of new low-cost clean energy systems. To do this effectively, power sector policymakers and planners need new analytical and policy tools to help them understand the economic impact of new technologies and how they will create viable pathways for rapid change. Many South East Asian policymakers may benefit from fostering innovation at a manageable scale first in order to understand the regulatory and market structures that will be needed. Well-designed public-private incubators can build confidence in locally appropriate solutions and ensure that both the hardware and 'software' necessary for reliable power systems are well understood. A related opportunity may exist to incubate business models that can align local interests in support of distributed renewable power solutions for remote island grids.

Leadership, alliances, and communications: getting the right message to the right audience

22. One overarching theme that framed much of the dialogue was how important it is for the many stakeholders working on the clean energy transition in South East Asia to work from credible sources of information concerning the risks that the region faces. At the top of the list in most markets is a correct understanding of the actual cost of fossil fuel-based generation versus new renewables technologies. This region is not alone in

needing to work hard to avoid a politicised understanding of the issues. Developing clear principles to guide diplomacy, alliance-building, and communications is crucial when rapid change puts pressure on fragile systems. To build coalitions effectively in South East Asia requires a mix of detailed local knowledge and a focus on the common aspirations of a young and fast-growing region. This supports a focus on innovation and openness to change, but disciplined messages targeting economic competitiveness and the risks associated with inaction are also needed to mobilise key constituencies.

- 23. The challenges that deserve attention when developing new green financial diplomacy strategies include the following:
 - There is an urgent need for the best possible technical data and analytical tools
 to support coalition-building in the region. The policy discussion is too often
 disconnected from market behaviour and too many governments are unaware of
 the ways that climate risk can be a threat multiplier which is likely to negatively
 impact upon broader economic development outcomes.
 - Existing policy forums provide a comfortable setting for policy debate, but it
 remains difficult to raise the bar on national ambition when political leaders judge
 that the benefits of the energy transition would largely be delivered beyond their
 own political lifespans.
 - This is a dynamic region in which geostrategic cross-currents have arguably increased in the past year, creating a situation whereby some donor nations remain willing to underwrite fossil fuels in South East Asia despite growing climate risks.
 - Commentators must be alert to the way that developed-market messages and
 even regional messages may not support the consensus-building needed at the
 country level, where urban populations and rural communities may have very
 different expectations.
- 24. The many sensitive issues that arise when building coalitions to address systemic change should not be underestimated, but the dialogue highlighted a number of promising areas for action. There was consensus around the importance of building on existing forums in ASEAN to develop more robust diplomatic activity, supported by clearer communication about donor capacity and future initiatives that can accelerate change. At the same time, there is more potential for leadership by ensuring that high level channels are used to bring senior policymakers and politicians into dialogue with global policy and business leaders who can speak with confidence about the benefits of a more rapid transition. It is crucial to draw on the experience of high-profile industry groups such as electronics companies that want cost-effective renewables in order to stay competitive and to green their supply chains. Meanwhile, we have strong energy efficiency and clean energy preferences being expressed by universities, schools, religious and community groups that can help shape the message about how the transition to clean energy relates to their long-term interests.

Conclusion and next steps

South East Asia faces a complex array of policy and market choices about the best way to tackle climate risks and to make a successful transition to clean energy. While no one underestimates the challenge, the Wilton Park dialogue offered encouraging signs that many of the region's leading policymakers and experts are ready to examine pressing marketplace realities, alongside system vulnerabilities and regional opportunities. The collaborative approach to problem-solving that characterised this event will—it is hoped—lead to a new cycle of policy and project implementation that can remove the most problematic barriers to South East Asia's urgent transition to clean energy.

The dialogue ended on a note of optimism, with the recognition that expediting the inevitable transition to a renewables-powered economy would bring enormous economic

benefits to this rising region, helping to deliver the Sustainable Development Goals (SDGs) while meeting commitments under the Paris Agreement.

We now have a caravan of actors moving in the same direction. There is great potential for ever-closer alignment between the range of stakeholders and interests represented at this dialogue - it's important that we make this count....

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Wilton Park | August 2018

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Annex

Areas	Barriers	Solutions
Policy and markets	PPA flaws, bankability, market design, transition risk management	Model PPAs, market design, policy goals, analytics & Technical Assistance to support this
Financial system capacity	Banks and governments	Green bonds/Sukkuks, early stage project finance, green investment banks, blended finance, insurance and risk products, fin' tech, data, disclosure rules, standards & Technical Assistance to support this
Private sector alignment	Scale, political access, incumbents	New industry groups - capacity boosting to support this
Market innovations	Innovative regulation, market structures, capital	Solar rooftop, floating solar, brownfield development, corporate PPAs
Leadership, alliances, and strategic communications	Analytics, legacy interests, incumbents, myths and beliefs	Coalitions, alignment platforms, strategic evidence building, public affairs, outreach and constituency building