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Regulatory Frameworks and Political Risk Mitigation: Overcoming Barriers to Attract Private Sector Investment into the ASEAN Power Grid

Xueyong Chin[1], Richard Guit[2], & Nick Wright[3*]

[1]DBS Bank Ltd
[2]Baker Botts
[3]Sarawak Energy Berhad

Corresponding Author: Nick Wright, Sarawak Energy Berhad.

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Abstract

ASEAN has long recognized the potential benefits for energy security and resilience from the cross-border transmission of electricity. The ASEAN Power Grid ("APG") aims to develop a regional cross-border transmission and integrated power market across its member states. More recently, the upside of sharing renewable power resources across borders, has triggered a surge in the investigation of opportunities for expansion of the APG as part of regional decarbonization efforts.

Unlike purely domestic projects however, the APG's cross-border nature faces significant challenges in attracting the substantial private sector capital required to develop the APG to its full potential. This paper analyses the critical barriers to unlocking such participation, focusing on regulatory and political risks that private sector market participants cannot manage in isolation from host governments. Policy and regulatory stability, and ideally consistency across jurisdictions, will be essential to both private investors and their lenders, particularly where power is moving through "transit countries", and not merely between jurisdictions.

While ASEAN must chart its own course, this paper draws parallels with the European Energy Charter Treaty framework that successfully underpinned investments in cross border energy infrastructure, and examines how elements of the inter-governmental agreements (IGAs) and host government agreement (HGA) structure could address critical "bankability" and "investability" issues for projects, thereby enabling a more conducive environment to attract private investment into the APG and facilitating the much-needed energy transition in Southeast Asia.

Keywords

ASEAN Power Grid, Cross-Border Transmission, Interconnectors, Treaties, Private Finance, Change-In-La; Energy Charter Treaty

Introduction

The International Energy Agency (IEA) forecasts that electricity demand in Southeast Asia will (roughly) double from current levels by 2035, and quadruple by 2050 [1]. This demand is driven by population growth, desire by governments in the region to enhance electricity security, the need to improve resilience against climate impacts, and to facilitate integration of renewable energy from resource-rich areas to demand centres. This will necessitate development of large- scale transmission infrastructure – both terrestrial and undersea - requiring large amounts of capital investment.

Around the world, constrained manufacturing capacity and increasing costs of raw materials for new transmission infrastruc-

ture, are driving the capital investment requirements even higher. Accordingly, the IEA estimates that annual grid investment requirements to meet this demand would need to increase from USD 10 billion currently, to USD 29 billion in 2035 and USD 43 billion in 2050 [2]. Development of the ASEAN Power Grid (APG) will need to progress in this context.

The massive financial scale means that public utilities and national governments in ASEAN will not be able to support the development of APG on their own. A mix of public and private capital, together with broader public and private collaboration – will be required to develop the APG to its fullest potential.

There is material private sector appetite to participate in the development of cross border transmission in Southeast Asia. In particular, Singapore has proposed the import of electricity through regional power grids as one of four "Supply Switches" proposed to meet the island's need for renewable power. Several consortia have been granted Conditional Approvals or Conditional Licenses to import renewable energy into Singapore from generation sources spread across different countries [3].

However, the necessary regulatory and policy building blocks are not yet in place in ASEAN to allow these projects to progress beyond feasibility assessment and planning and into the stage of committed financing. There are certain risks that the private sector is not able to absorb, manage or price. The risks in this category, will need to be absorbed by governments. The necessary policy alignment can only be secured on a government-to-government basis; a fundamental building block to creating an environment that is sufficiently robust to facilitate private sector capital being deployed into cross border transmission projects in Asia.

Uncertainty for investors is particularly acute where the APG will transport electrons through, and not merely between, ASEAN member states. The self-interest that underpins the underlying decision to buy or sell power directly between two countries would typically drive adequate policy stability, cemented in one or both the Power Exchange Agreement and local regulations on both sides of the interconnector. However, the rationale to commit to stability is not so clear for 'transit' countries.

The Investment Environment

The APG is one of the key strategic regional initiatives for ASEAN. APG's aim is to eventually connect the power grids of all 10 member nations, perhaps as a preparatory step towards an integrated market. The first APG Memorandum of Understanding (MOU) was signed in 2007 and subsequently extended until 2025 pending the finalization of the successor agreement. More recently, in December 2023, ASEAN officially launched the ASEAN Power Grid Advancement Programme (APG-AP) which will mainly support the APG in advancing multilateral power trade implementation and support the renewal of the APG MoU as the key legal foundation to realize the APG [4].

The current master plan for the APG as set out in the ASEAN Interconnection Master Plan Study (AIMS) outlines 18 planned transmission projects; ranging from the Lao PDR-Thailand- Malaysia-Singapore Power Integration Project (LTMS-PIP) initiated in 2014, to the Brunei Darussalam, Indonesia, Malaysia and the Philippines Power Integration Project (BIMP-PIP) launched in 2023 [5], as well as the recently announced aim by Singapore to import up to 6 GW of low-carbon electricity by 2035 [6] with proposals from various developers and consortiums to import power via bilateral connections from neighboring countries including Australia, Cambodia, Indonesia, Malaysia (from both the Peninsula and Sarawak) and Vietnam. Curiously, Singapore's initial communications regarding the Power Import Program did not refer explicitly to the APG.

Typically, electricity transmission assets are monopolies which operate under a regulatory regime, owned by public utilities or by private companies. The private companies tend to be listed on stock exchanges or owned by infrastructure investment funds. The domestic regulatory regime in which public and privately owned networks operate, governs network expansion and customer charging to enable recovery of expansion costs.

In the cross-border context, interconnectors have historically been developed by the monopoly regulated utilities in the exporting jurisdiction and the importing jurisdiction, and funded through their own balance sheets. These regulated utilities have typically been government owned or listed entities. There are more recent examples of independent cross-border transmission developments that have been developed by sponsors that are not grid network owners/operators and that have been specifically financed through a regulatory framework and revenue model that allows such projects to recover development and investment costs from end users (which are typically the end customers of public utilities) [7].

The independent (or "merchant") cross-border interconnectors (developed by sponsors that are not utility companies that own/operate the transmission network in the exporting/importing country) are often financed through a mixture of "equity" which is invested in the development, and "debt" which is money borrowed to develop the asset [8]. There is (in reality) a continuum of different private sector financing sources/types including the emerging market for non-bank lending and private credit.

The differences between the sources/types of private sector capital are not important for present purposes. What is important is the one critical question for any decision to allocate private capital to the development of a new asset: will the investment be repaid (with a return) and what are the risks to repayment (with a return)?

Assessing and Managing Risk

The private sector is recognized for its ability to efficiently assess, price and manage risks on the development and operation of major capital assets to maximize investment returns. Delivering on time and to budget (or minimizing cost and schedule over-runs); in conjunction with long term asset management to keep assets operating efficiently – underpin investment returns.

In any typical project development lifecycle, risks are assessed and scoped in the early stages of developing a project and prior to finally committing to proceed in full (i.e., before taking final investment decision). Once identified – contracts, processes and budgets are used to allocate and manage the risks under the basic guiding principle that risks should be allocated to the party that

is best placed to handle such risk. This can include technical and technology risks, construction and supply chain delivery risks, environmental risks, weather risks, the risks of the physical environment in which a project is being undertaken such as geological and sub- surface conditions, including bathymetry and ocean-met conditions for projects traversing the marine environment, political and regulatory risks, operating risks and reputational risks.

The private sector investors' and financiers' analysis of risk is viewed through a simple lens: what are the risks to getting my money back? This can evolve into "how much will it cost to transfer this risk to someone else" and "if transferred is that party able to manage the risk and who can price the risk most efficiently?". In the context of the APG, the cost/price to transfer risk must result in an end-user tariff that remains within the affordability envelope for the end consumers who are ultimately paying for the transported electrons. At its core, the revenue that a project/asset generates must be enough to cover its expected operating cost and provide for a reasonable rate of return on the capital deployed by both the investor (i.e., cost of equity) and the lenders (i.e., repayment of loan principal amount and interest) over the project's lifecycle.

As a rule of thumb, the risks that are manageable by the private sector tend to revolve around a category of "commercial risks" which can be allocated to the right party, "for the right price" and within an affordability envelope. However, some risks cannot be adequately transferred to contract counterparties even for a price.

The Private Sector has Limitations

The limitations on private sector assumption of risk, differ between jurisdictions. Risks that are perceived in developing economies are not always an issue in developed economies. The assessment is legal, political, economic and increasingly, geopolitical.

In many countries in the world including in Asia, it is routinely accepted that investors and financiers cannot assume (for any price) the risk of changes in laws, political acts, expropriation of assets by governments, actions or failures to act by government bodies without justifiable cause as these are risks that could materially jeopardize the commercial viability of a project arising from events that fall outside the control of the private sector. Consequently, investors and financiers receive "protections" against such risks. These protections also typically extend to insulation against delays in granting or denial of consents, permits or licenses being cancelled for no justifiable cause (or failures to renew) or in some countries breach of specific government guarantees or contractual obligations. These "protections" recognize that while governments can (and should be able to) take government actions such as changing their laws, such actions may have a direct financial or performance impact on a project and may correspondingly require compensation or adjustments to payments [9]. Such "political risks" relating to uncertainty resulting from possible changes in government and political landscape are further magnified given the long investment horizon, payback period, and specialized nature for capital intensive infrastructure projects which naturally prohibit investors and lenders from tapping into alternative revenue streams during such incidents.

This is not a sector specific issue and such issues have been addressed in electricity generation projects with private sector investment (in developing economies), the energy sector more broadly and in major infrastructure developments too. In some countries, the protections also cover the ability to convert currency, and to extract currency (transfer and convertibility of currency) or investment returns from a particular jurisdiction as a means of attracting foreign investment. In financial terms, this is often reflected in the form of a so-called country risk premium, whereby the required rate of return for a similar project may differ across different countries to be commensurate with the risk of non-repayment. One such methodology is adopted by the export credit agencies within the Organization for Economic Co-operation and Development (OECD) [10] countries which are in the business of providing credit insurance or similar financial products to support their respective host country's suppliers and exporters whereby the country risk encompasses:

- transfer and convertibility risk – the risk that a government imposes capital or exchange controls that prevent an entity from converting local currency into foreign currency and/or transferring funds to creditors located outside the country; and
- cases of force majeure (FM) such as war, expropriation, revolution, civil disturbance, floods and earthquakes.

The protections are typically accorded to project investors and lenders via incorporation of certain protective clauses into the contracts entered into by governments with the private sector [11]. The specific approach depends on the market or jurisdiction. What is consistent is this: investors and financiers require the protection. The protection can take different forms but generally manifests as preservation of an income stream and/or compensation in some form based on predetermined trigger events and calculation methods.

If investors and lenders perceive that the fiscal and regulatory environment of a country does not require government to own or support a risk – it will not be specifically addressed. For instance, major infrastructure investments in most developed economies do not touch on many of the aforementioned risks – as investors and financiers do not require them to be addressed and take comfort from factors such as stability of government policies, or a clear and robust legal and regulatory framework which serves to protect investors from unjust or discriminatory changes in law.

The ability for investors to apply for adjustments to contracted tariffs (or usage charges or other fees that provide the income for an asset) such that their returns are made whole (e.g., allowance for an increase in charges to account for new taxes that have been introduced such that overall cashflow to the project remains unchanged) may be the mitigant to changes in law and investors and lenders can take comfort that the country's courts or judicial system can act as the safeguard if government bodies are perceived to act without justifiable cause.

Bankability Issues

The risk appetite of project investors also differs from the risk appetite of project lenders. Lenders that finance (energy and other) infrastructure have minimum bankability requirements. These requirements could differ across jurisdictions and typically reflect the legal, political and regulatory landscapes of the

jurisdiction where the project is based. Within the same jurisdictions, there can be slight variations in "bankability requirements" between different asset types and also between lending institutions (e.g., local lenders might perceive local government risks differently from international lenders).

There are different "bankability requirements" across ASEAN. This should be no surprise, given the diverse legal, political and regulatory landscapes across the member nations. However, and critically, the desire to mobilize capital into "green" or "energy transition" projects will not mitigate lenders' minimum bankability requirements.

As noted above, in power projects in ASEAN [12], sovereign states, or in some cases, state- owned enterprises, will insulate the private sector against certain risks to make an investment "bankable". This insulation is afforded in contracts. Indonesia and Vietnam provide good examples. Each has a track record of large-scale power generation assets being developed by the private sector with project financing from international lenders. Using such projects as an example:

- in some ASEAN countries, state-owned power companies (in their capacity as contracting party or off-taker providing revenue) provide protection to the private investor (and by extension its lenders) against a range of matters including (if it occurs without just cause and there is increased material cost) government failing to grant or revoking approvals or delays in permits to import equipment or supplies, as well as changes in law. Those state-owned companies continue to pay if electricity dispatch is affected by their actions or inactions (albeit the regime is nuanced) and will pay compensation in certain termination scenarios. These protections are found in the power purchase agreements entered into by state entities with the private sector and have been refined over time to an acceptable "bankable" regime; and
- in other countries in ASEAN, the contractual protections given by the state-owned power companies and related government departments are further supported by government guarantees and undertakings issued by the sovereign state, addressing specific issues such as convertibility of foreign currency and change in law risk. These further protections are country specific and constitute minimum "bankability" requirements for banks to lend to projects in that country.

Each country has its "norms" in the context of institutional debt capital and what is required by lenders (by way of contractual protection) to address legal, political and regulatory risks in that country.

The "bankability requirements" of lenders are not limited to electricity generation assets. Many public-private-partnership (PPP) contracts contain protections against changes in law and government actions, and provide compensation if projects are terminated.

Oil & gas projects are different again; but in most ASEAN jurisdictions the private sector has a contractual agreement with the sovereign state which provides for protections and a right to take the government to a dispute [13].

The examples above relate to infrastructure investments in a specific country. For APG, the infrastructure will span two or more countries but the issues are the same. The fundamental "bankability" question is this: How do lenders protect against the same risks, but for a project that spans more than one country?

Investment Protection and Treaties

What of bilateral investment and other relevant treaties? Do these make a project "bankable" on their own? The short answer is no. Member states of ASEAN have a range of investment protection treaties with other countries. Likewise, under some conditions, the owners of undersea cables are afforded some limited protections by the United Nations Convention on the Law of the Sea (UNCLOS) [14]. If these were sufficient (on their own) to address "bankability" concerns – financiers would not be insisting on additional protections in specific contracts.

For many years, countries wishing to promote private investment flows between them have been entering into agreements with each other - to provide reciprocal protections to private investors from the other country. This practice is over 100 years old. An agreement between two governments that establishes these protections is typically referred to a bilateral investment treaty (BIT) but there are numerous descriptions.

Today, there are over 2000 BITs in force globally and a number of ASEAN member states have entered into BITs with different countries (and each other, in some cases). Investment protection can also be found in multi-lateral treaties or wider trade agreements between countries.

The type(s) of mutual promise have become relatively customary. The typical protections are:

- a right to fair and equal treatment (FET);
- standards for any expropriation and prompt and adequate compensation;
- a right to move funds in and out of the country; and
- a right for investors to take legal action against the host state under investor-state dispute resolution (commonly through the "International Centre for Settlement of Investment Disputes" (ICSID) established by the World Bank).

Over time, customary international law has given additional context to these typical protections, due to the nature and extent of investor-state disputes that have been resolved through formal proceedings [15]. Types of investor-state dispute are inevitably wide ranging and this is not surprising given the broad concept of "fair and equal" treatment. For example, a company has challenged the German government earlier this year on the imposition of a super-profit tax on energy companies (implementing an European Union (EU) wide response to the energy market disruption caused by Russia's invasion of Ukraine) [16] and over time there have been a large number of cases that have evolved out of various European countries that have wound back or reduced subsidies for renewable energy [17].

BITs are an important piece of the protective jigsaw – but in the context of APG, the critical point to note is this: standard BITs alone, do not make projects bankable.

A standard BIT does not provide certainty of protection against specific political, regulatory or policy risks in a jurisdiction, especially in the context of a cross-border project that spans two or more jurisdictions. The types of protection(s) found in a power

generation project (as mentioned above) or embedded in a natural gas project and the contract with the host government – are not addressed in a BIT. A standard BIT also does not address:

- progression and prioritization of permitting and approvals across host governments;
- harmonization of technical standards (very important in the context of electricity grids/transmission);
- non-interruption of project activities (by either country); nor
- taxation (noting this may form part of other provisions or tax treaties).

Consequently, something more than a standard BIT is needed to allow APG to attract private capital on a bankable basis.

For clarity, it is also worth noting that the existence of a BIT between two countries that host a transmission link is one thing – but the investment capital or lending for that asset may come from a different country altogether. Investors often (and if well advised, will) structure their inbound investments into a country with this in mind and by reference to the existence of appropriate BITs. ASEAN member states have a multitude of BITs and these span the globe [18] and this analysis is typically a feature of structuring in the context of energy infrastructure investments into assets (new or existing).

Political Risk Guarantees

Political Risk Guarantees (PRG) and Political Risk Insurance (PRI) are forms of protective instrument that are deployed on projects (including energy projects) in developing countries. PRGs or PRIs cover similar ground to BITs in many ways, typically extending to expropriation, currency convertibility (including repatriation of dividends offshore), war, terrorism, acts of political violence, breach of contract by a host government and circumstances where a host government does not honour an arbitral award. The issuer of the instrument will pay out debt and investors. The issuers of these instruments are typically bilateral government agencies (such as export credit agencies), and multi-lateral institutions like the Asian Development Bank or members of the World Bank Group.

This type of political risk cover is a "bankability" fix to the political-risk issues outlined above. However, for this cover to be written, the beneficiary of the cover must have a contract with the government in question. The cover relates to that specific contract. In the context of cross- border transmission – the question is: What contract could this be? If there is no contract with the host state (of the transmission asset) or no offtake contract between the transmission asset and a state utility – there is nothing for this form of political risk protection to apply to. PRGs and PRIs will not apply to conventional permits, authorisation or approvals/licenses. These are not contracting with a state. They manifest rights granted by a state.

If an APG cross-border project was to have (i) host government agreements in place, or (ii) a power offtake agreement with a state-owned utility or (iii) a power offtake with another sovereign owned entity in a host country where part of the asset is located – then some form of political risk protection could be attached to "that specific agreement". This would potentially enhance bankability but it would not, on its own, make an entire transmission line project "bankable" if there were gaps in coverage in other countries where that same asset was located [19] That specific agreement alone is unlikely to extend may not provide contractual protections against impacts in other countries.

These scenarios are only likely to prevail in bilateral greenfield projects and not where "transit" countries are involved.

Cross-Border Assets

Risks inherent in a domestic project are inherently multiplied in cross-border projects. The risk assessment (and bankability critique) must not just be done from the perspective of each country the asset is located in or passes through (whether under the sea or on land), but also be considered from how the possible action or inaction of one country's government could affect the project from the perspective of the other country (or countries) and what this means for cashflow, capital investment/returns, and asset performance. As with a domestic project, potential investors and financiers will ask: What are the risks to getting my money back?

There are many questions: Is there a perceived risk of changes in laws, political acts, expropriation of assets, actions or failures to act by government bodies without justifiable cause, delays in granting or denial of consents for no justifiable cause (or failures to renew consents or permits), changes in technical/operating parameters in local grids? What happens if one or more of these risks occurs? What happens if this occurs in one country the asset is located in, but not another? Can this be passed on to a state utility who has been paying for use of the line? Can this be passed on to private entities using the line?

Such risks are relatively easier to manage in the context of a bilateral project with state-owned utilities on both sides of the border as the counterparties, i.e., a transmission project between an energy exporting country to an energy importing country given mutual benefits to both the exporting and importing nation, further considerations have to be taken into account for "transit country risk" where such a project transits multiple countries and borders and these transit countries do not directly benefit from such transmission.

Any cross-border risk assessment is further complicated by energy assets that purely "transit" a third country. For electricity transmission, this transit could be over-head transmission on land, or sub-sea transmission. There is a need to understand all the same risks; but without a power offtaker "in the mix" in the transit country.

Key Considerations for Regulatory and Political Risk for Cross-border Transmission Projects
Changes in law, political FM, government breach of contract
Issues include:
loss of ability to export/import power if licences/permits are revoked or not renewed;

loss of ability to maintain cable routing onshore or in respective territorial waters;
changes in law and regulations arising post-final investment decision;
additional costs levied by different regulatory bodies during the tenure of the contracts (taxes, levies, imposts for permits/licences) leading to increased costs;
changes in tax or ability to repatriate currencies if local entities are involved; and
increases in decommissioning costs at the end of the License period.

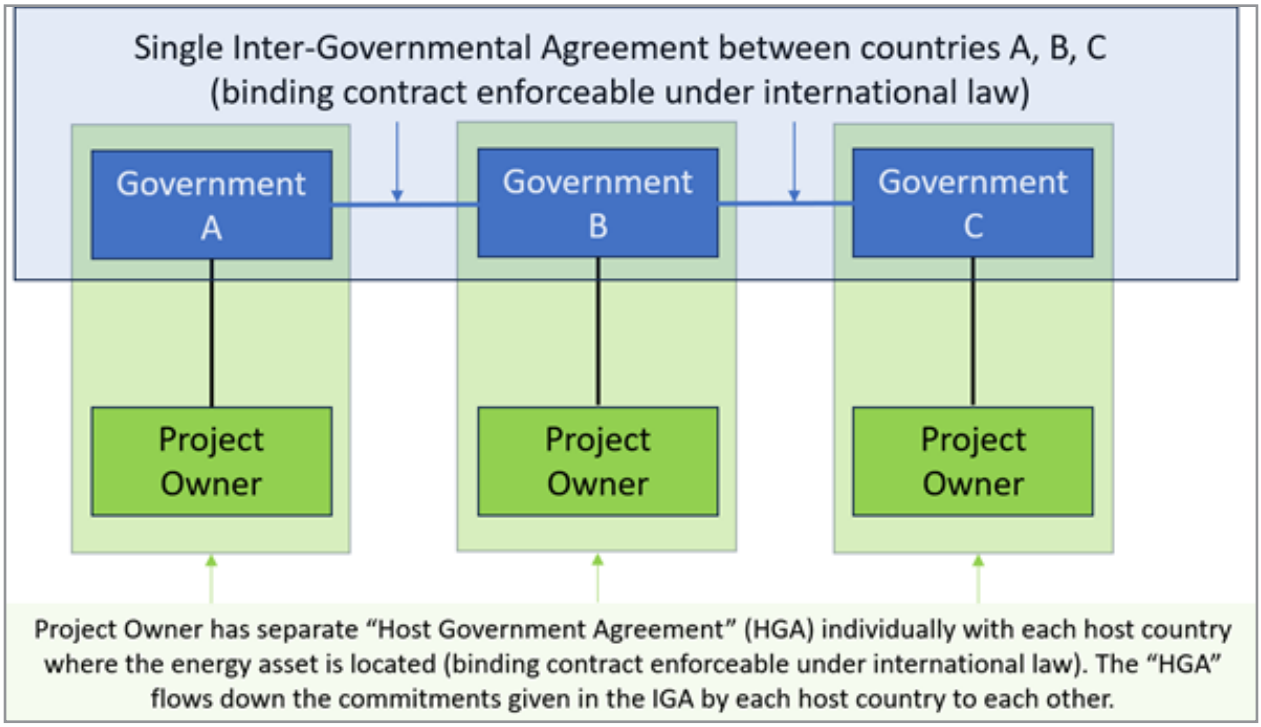
Cross-border risks were recognized and solved in Europe, in the early 1990s – when Europe sought to unlock the mutual benefits of allowing energy (in the form of gas) to transit across countries through pipelines. Energy become a new and galvanizing focus of co-operation as the iron curtain fell. Governments understood that unlocking this potential co-operation required a common framework between countries, with energy security being one of the founding tenets of the EU. Following the signing of the European Energy Charter in in 1991, the Energy Charter Treaty (ECT) was signed in 1994.

The ECT is a legally binding multilateral agreement covering investment promotion and protection, trade, transit, energy efficiency and dispute resolution. This treaty has set the benchmark and model for cross-border energy infrastructure development.

The model involves contracts between governments and contracts between each government and the asset owner (typically the developer) in the form of:

- Inter-Governmental Agreement (IGA): for a specific project the relevant governments enter into an IGA between them. The IGA contains mutual promises in relation to risks that private investors are not able to manage or assume. Governments agree between them to equal treatment, progress of permits, protection of the asset, and more.
- Host Government Agreement (HGA): the developer of the specific project enters into separate agreements with each host government – thereby obtaining the protections and benefits of the IGA in each specific country.

This can be represented simply as:



The ECT became the founding basis of the IGA and HGA structure. The ECT spawned the HGA and IGA architecture that made cross border pipelines investable across countries with different political and regulatory risk profiles. The architecture (if not the treaty itself) continues to apply and is now used for cross-border electricity infrastructure [20].

The legal and policy architecture was essential for the investment to occur. The logic behind that legal and policy architecture is agnostic as between hydrocarbons and electrons. For this reason, HVDC cross border projects in Europe have equally been preceded by IGAs!

Stakeholders in the EU cross-border infrastructure market continue to recognize that some of the biggest barriers and challenges to cross-border infrastructure projects can only be addressed by regulators and governments, as they stem from the complex regulatory environment and a lack of political support [21]. Or put another way, in the EU a stronger supportive regulatory framework is required to entice private capital investments and that complex regulations hinder private capital access [22]. These observations provide a contextual point of reference: mature markets with existing cross-border energy assets continue to recognize the need for common approaches on regulatory and

policy settings to enable the private sector to deploy capital into cross-border infrastructure projects.

The Case for New Inter-Governmental Agreement(s) to Underpin the APG

The EU is the high-water mark of cross-border collaboration in the area of power transmission. The very new Connecting Europe Facility (CEF) program provides an enabling framework of financial support to foster EU Member State cooperation in the field of renewable energy and introduces the concept of cross-border projects in the field of renewable energy (CB RES project) [23] and the revised Renewable Energy Directive further introduces an obligation for Member States in the EU to establish a framework for cooperation on joint projects by 31 December 2025. These frameworks are leading to IGAs for cross-border HVDC. Some recent IGAs are publicly available [24].

ASEAN countries cannot and should not look to replicate the approach in the EU. Truncating 50+ years of post-world war co-operation on energy policy is not achievable. However, even within this framework – the cross-border electricity transmission projects are underpinned by IGA or government-to-government agreements which afford protection for progression of permits, non-discrimination and establishment of governance arrangements.

Turning away from Europe, there are cross-border electricity transmission projects in Asia, Africa and the Americas. Typically, these projects transition a single border with generation assets in one country feeding supply into another country. Many of these do not have an IGA in place but have a state utility developing the asset to export its own power, or a state utility as a customer of the transmission line. However, they usually have a state utility underpinning or assuming key bankability risks in their home country.

For cross-border electricity transmission in ASEAN to attract private capital and be financeable, there will need to be a state-entity or government that assumes risks like changes in law and government FM in each jurisdiction and accepts the consequence of those risks for the entire project, or there will need to be an IGA between the relevant countries. The risks that are addressed in a domestic only project will need to be addressed across the chain of countries involved. These risks cannot be adequately priced or transferred to insurers or other private sector participants. Risks that cannot be transferred to the private sector for purely domestic projects, cannot be assumed by the private sector on cross-border projects.

This is not an ASEAN specific conclusion (though some of the risks to be addressed might be), as evidenced by the need for such agreements in other jurisdictions as part of the material capital outlay for such projects.

What to Address in an IGA for the APG?

There are examples of "model" IGAs for cross-border electricity transmission [25] that are potentially applicable to the APG. An IGA in the context of an ASEAN cross-border electricity transmission project should address the same "bankability" issues that investors and financiers perceive to be risks in the domestic markets that the transmission asset transits. As a minimum, changes in law and government FM will need to be adequately addressed for each country for projects to be investable/financeable. But the agreements should also take the opportunity to address permitting, co-ordination and implement a governance/steerco framework for the life of the asset. Decommissioning is also an important topic.

Conclusion

Unlocking the potential of the APG will require collaboration between public and private sectors and the deployment of private capital. This private capital will be financing by way of investment and debt. An investable and financeable project will require certain risks, including changes in law and government FM, to be assumed by government(s) and this will require intergovernmental agreements or frameworks. This approach is more critical in developing economies where the same risks are addressed for in-country domestic energy projects. To unlock the full potential of the APG, governments should therefore engage on these areas as a matter of priority. If the premise laid out in this Paper is accepted, the identification, mandating and resourcing of the institution or institutions tasked to do this important work would be a logical next step.

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6. Energy Market Authority. (n.d.). *Regional power grids*. Retrieved March 3, 2025, from https://www.ema.gov.sg/our-energy-story/energy-supply/regional-power-grids
7. Examples include (1) NeuConnect from Germany to England which is under construction and being developed by infrastructure investor, Meridian; (2) Greenlink from Ireland to Wales which finished construction in August 2024 and is being developed by the Partners Group; and (3) Champlain Hudson Power Express from Quebec to New York developed by TDI which is currently under construction.
8. Equity capital is invested by project sponsors/developers and debt is loaned by banks and other financial institutions. Equity is typically more expensive because investors take greater risk and benefit from potential investment upside, whereas lenders receive fixed returns such as loan interest and fees.

9. PwC. (n.d.). *Investing in the ASEAN infrastructure asset class – Infrastructure series report 3*. Retrieved March 3, 2025, from https://www.pwc.com/sg/en/publications/assets/cpi-report-3-infrastructure-asset-class.pdf
10. Organisation for Economic Co-operation and Development. (n.d.). *Participants' country risk classification*. Retrieved March 3, 2025, from https://www.oecd.org/en/topics/sub-issues/country-risk-classification.html
11. Typically, for power generation, these protective clauses can be found in power purchase agreements (PPAs) with state utilities or implementation agreements with host governments.
12. Singapore, as the only liberalized power market, is different as the state is not the purchaser of electricity, although the system operator pays the half-hourly power price to generators.
13. The rights to extract and monetize, the treatment of costs, and host-state participation are typically defined in contractual arrangements, often through production sharing contracts.
14. United Nations Convention on the Law of the Sea (UNCLOS) grants member states freedom to lay submarine cables in exclusive economic zones and on the high seas; however, such rights are enforced between states rather than directly by investors.
15. A central component of the fair and equal treatment (FET) standard is the concept of investors' legitimate expectations, including stability and transparency obligations.
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19. A different conclusion would apply if a single country made contractual commitments and agreed to cover risks in other jurisdictions where the asset is located.
20. In recent years, the Energy Charter Treaty (ECT) has faced scrutiny because it protects fossil fuel investments, leading several countries to withdraw in 2024.
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