

RENEWABLE ENERGY MARKETS ASIA 2024 PANEL DISCUSSION

ENERGY MARKET BOUNDARIES AND CLAIMS



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Tuesday, 30 April 3:30-4:20 PM



**Renewable Energy
Markets™ Asia 2024**

3DEGREES INTRODUCTION

About 3Degrees

Global climate solutions provider and certified B Corporation

- + Founded in 2007
- + 300+ employees globally



*Headquartered in
San Francisco, CA*



*Employees in
North America
and Europe*

3DEGREES BY THE NUMBERS

95+

Countries where we buy, sell,
or consult on clean energy

475+

Consulting engagements

516M+

EACs delivered to clients

14K+

Facilities supported

3DEGREES INTRODUCTION Business Units

UTILITY PARTNERSHIPS

Build and deliver effective
voluntary programs



INTERNATIONAL CLIMATE CONSULTING & PPAS

Set and meet climate goals with
a global team of advisors



ENVIRONMENTAL MARKETS

Procure high-quality global EACs,
including RECs



CLEAN FUELS & TRANSPORTATION DECARBONIZATION

Get clarity and solutions in
the transportation
decarbonization journey



CARBON MARKETS

Support and develop carbon
reduction and removal
projects



SETTING THE SCENE

Market Boundaries

RE100 and CDP define market boundaries as geographies that meet the following criteria:

- + The laws and regulatory framework governing the electricity sector are consistent between the areas of production and consumption;
- + Electricity grids are substantially interconnected, indicating a level of systemwide coordination; and
- + Utilities/suppliers recognize each other's energy attributes and account for them in their trade of energy and energy attributes.



Regional Power Integration








Ir. Nirinder Singh Johl
Founder and CEO,
Asia Carbonx Change.



SINGAPORE 2024
30 April 2024

Regional blueprint for the ENERGY cooperation in the ASEAN

ASEAN Plan of Action for Energy Cooperation (APAEC) 2016-2025 Phase 2: 2021-2025

 <p>ASEAN Power Grid</p>	<p>To expand regional multilateral electricity trading, strengthen grid resilience and modernisation, and promote clean and renewable energy integration.</p>	 <p>Energy Efficiency and Conservation</p>	<p>To reduce energy intensity by 32% in 2025 based on 2005 levels and encourage further energy efficiency and conservation efforts, especially in transport and industry sectors.</p>
 <p>Trans-ASEAN Gas Pipeline</p>	<p>To pursue the development of a common gas market for ASEAN by enhancing gas and LNG connectivity and accessibility.</p>	 <p>Renewable Energy</p>	<p>To achieve aspirational target for increasing the component of renewable energy to 23% by 2025 in the ASEAN energy mix, including through increasing the share of RE in installed power capacity to 35% by 2025.</p>
 <p>Coal and Clean Coal Technology</p>	<p>To optimise the role of clean coal technology in facilitating the transition towards sustainable and lower emission development.</p>	 <p>Regional Energy Policy and Planning</p>	<p>To advance energy policy and planning to accelerate the region's energy transition and resilience.</p>
		 <p>Civilian Nuclear Energy</p>	<p>To build human resource capabilities on nuclear science and technology for power generation.</p>

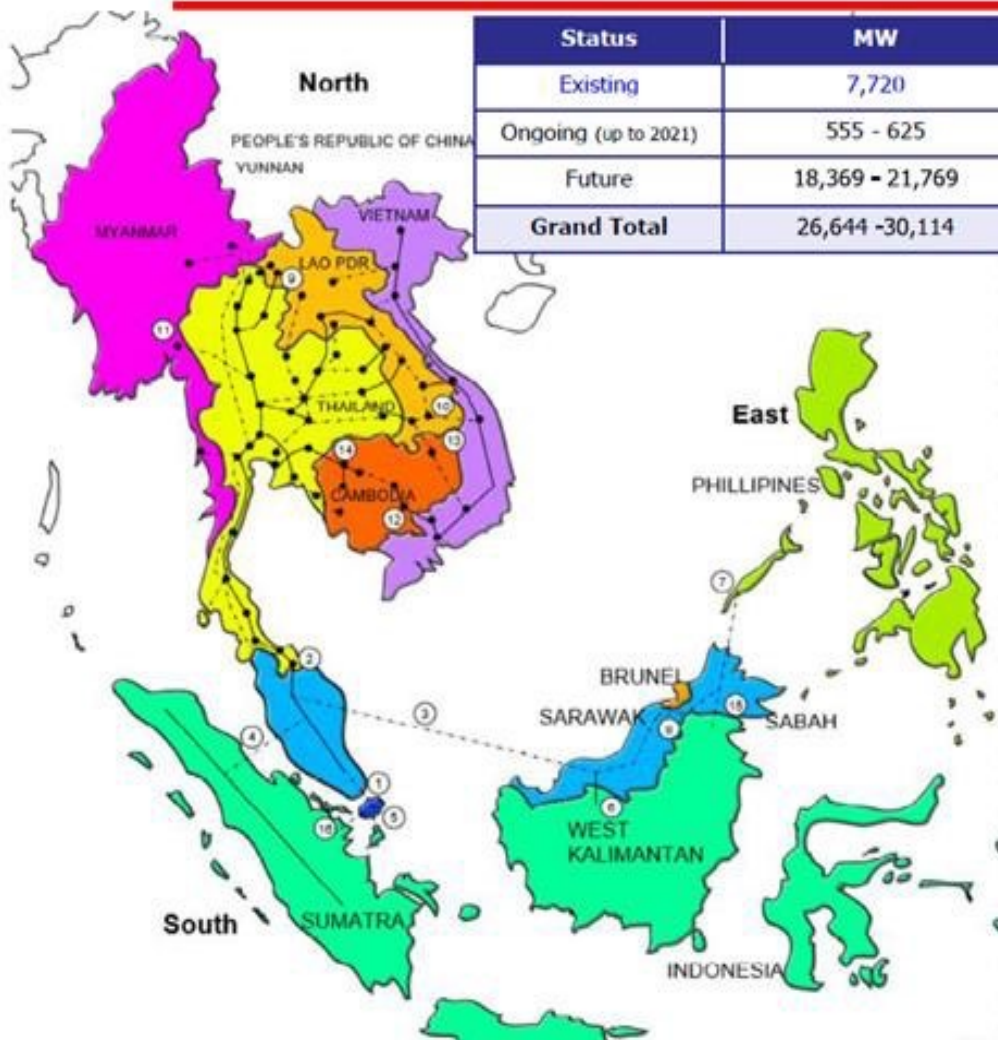
ASEAN PLAN OF ACTION FOR ENERGY
COOPERATION (APAEC) 2016-2025
PHASE II: 2021-2025



One Community
for Sustainable
Energy

Infrastructure projects that are shaping regional electricity integration

ASEAN Power Grid (APG)



Status	MW
Existing	7,720
Ongoing (up to 2021)	555 - 625
Future	18,369 - 21,769
Grand Total	26,644 -30,114

- 1) **P. Malaysia – Singapore**
 - Plentong – Woodlands Existing 2020
 - P. Malaysia – Singapore (2nd link Plentong – Woodlands)
- 2) **Thailand – P. Malaysia**
 - Sadao - Chuping Existing
 - Khlong Ngae – Gurun Existing
 - Su Ngai Kolok – Rantau Panjang TBC
 - Khlong Ngae – Gurun (2nd Phase, 300MW) TBC
- 3) **Sarawak – P. Malaysia**
- 4) **P. Malaysia – Sumatra**
- 5) **Batam – Singapore**
- 6) **Sarawak – West Kalimantan**
- 7) **Philippines – Sabah**
- 8) **Sarawak – Sabah - Brunei**
 - Sarawak – Brunei 2021
 - Sarawak – Sabah 2022
- 9) **Thailand – Lao PDR**
 - Nakhon Phanom - Thakhek - Theun Hinboun Existing
 - Ubon Ratchathani 2 - Houay Ho Existing
 - Roi Et 2 – Suvannakhet - Nam Theun 2 Existing
 - Udon Thani 3 - Na Bong - Nam Ngum 2 Existing
 - Nakhon Phanom 2 – Thakhek – Then Hinboun (Exp.) Existing
 - Mae Moh 3 – Nan2 – Hong Sa (3Units) Existing
 - Udon Thani 3 – Nabong (converted to 500KV) Existing
 - Ubon Ratchathani 3 – Pakse – Xe Plan Xe Namnoe Existing
 - Khon Kaen 4 – Loi 2 – Xayaburi Existing
 - Thailand – Lao PDR (New) TBC
- 10) **Lao PDR – Vietnam**
 - Xekaman 3 – Thanh My Existing
 - Xekaman 1 – Pleiku 2 Existing
 - Nam Mo - Ban Ve TBC
 - Luang Prabang - Nho Quan TBC
- 11) **Thailand – Myanmar**
- 12) **Vietnam – Cambodia (New)**
 - Chau Doc – Takeo – Phnom Penh Existing
 - Tay Ninh – Stung Treng TBC
- 13) **Lao PDR – Cambodia**
 - Ban Hat - Kampong Sralao Existing
 - Ban Hat - Stung Treng Existing
- 14) **Thailand – Cambodia (New)**
 - Watthana Nakhon – Aranyaprathet – Banteay Meanchey Existing
 - Thailand – Cambodia post 2020
- 15) **East Sabah – North Kalimantan**
- 16) **Singapore – Sumatra**

LEGEND

- Existing
- - - Under Construction
- - - Future

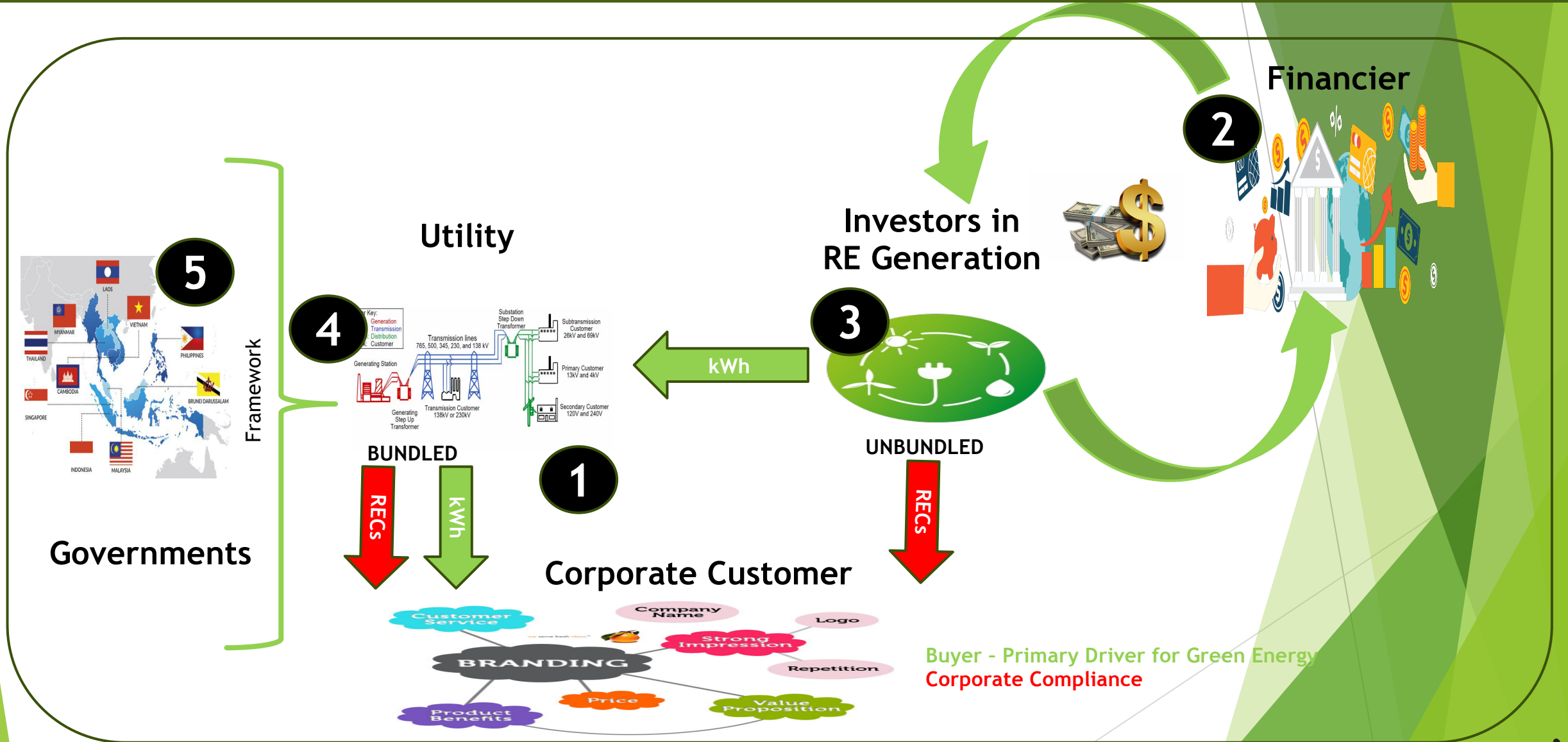
TBC stands for to be confirmed

The Existing Project as of April 2020

The Priority Projects, which refer to the APAEC 2016-2020, are underlined and indicated in Red.

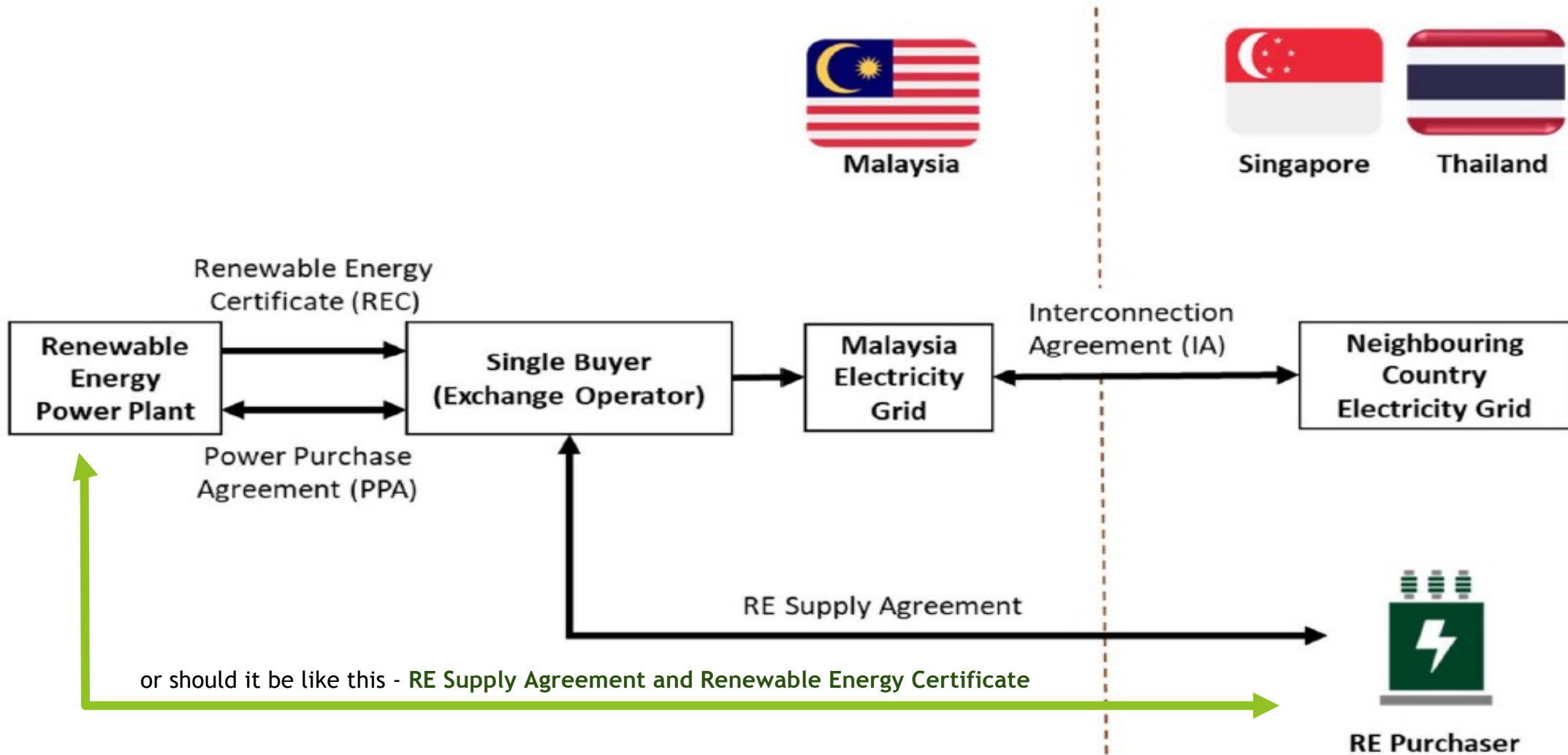
Understanding Regional Stakeholder's Needs ?

For a REC market to thrive we need to address the major stakeholder's need



Latest in Regional Integration - Malaysia's CBES RE Scheme

Cross Border Electricity Sales RE Scheme





Ir Nirinder Singh Johl
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Thank You



**The International
Tracking Standard
Foundation**

Founder of I-REC

Cross-border Transactions: Progress and Next Steps

30 April 2024

Roble P. Velasco-Rosenheim
Director, Global Partnerships & APAC

Two Topics for Today

- **Context and Current Rules**
- **Working Group Structure and Next Steps**



Context and Current Rules

I-TRACK currently allows cross border RECs to be delivered into Singapore, and so does SS673.

That is not enough for (advanced) buyers.

Reporting frameworks don't recognize
cross-border transactions in ASEAN.

(Context on RE100, GHGP, and the rest)

What was proposed in March 2022

- PPAs only (broadly defined)
- Physical electrons cross borders
- Uniform EAC tracking instrument
- Bilateral agreement on reporting



Why it was rejected

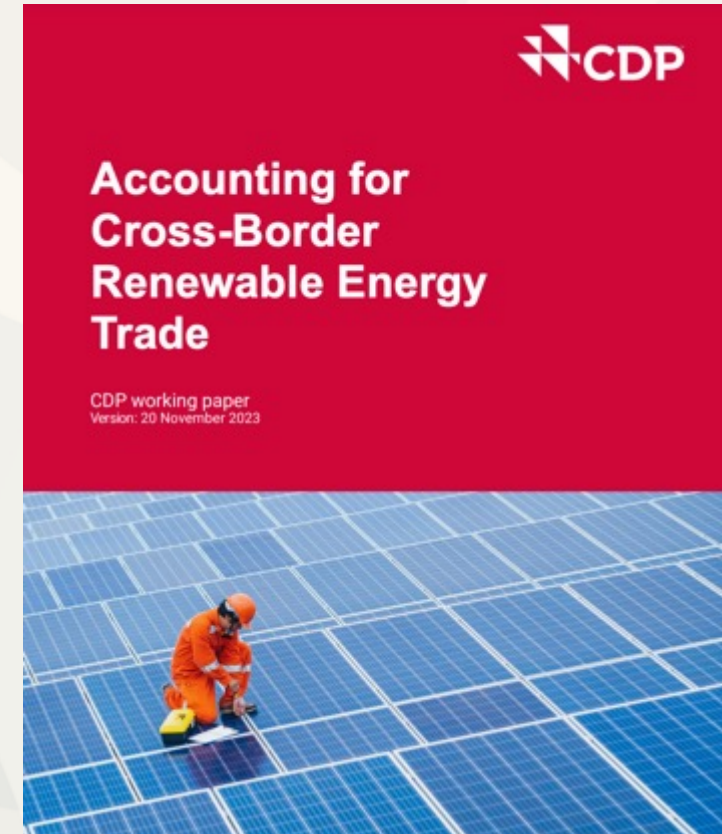
- **Lack of government support/engagement**
- **No clear way to demonstrate *meeting* best practices**
- **Fear of “lowering the bar” and being criticized**
- **BUT...**

Almost all actors want to make *credible* cross-border transactions possible.

Framework discussions have led to release of a Working Paper and a (mostly) clear forward path.

Approval Pathway:

- **Bilateral government approval. Case-by-case PPAs.**
 - G2G MOUs
- **Physical electrons must cross borders.**
 - Need to define sufficient evidence of delivery.
- **Uniform EAC tracking instrument.**
 - Need to be uniformly recognized/enforceable.
- **Bilateral agreement on carbon accounting.**
 - Residual mix.



https://cdn.cdp.net/cdp-production/comfy/cms/files/files/000/008/649/original/Accounting_for_cross-border_renewable_energy_trade.pdf



**The International
Tracking Standard
Foundation**

Founder of I-REC

Working Groups and Next Steps



The I-TRACK Working Group on Cross Border Transactions was formed independent of RE100, but with their (much appreciated) engagement.

It seeks to facilitate the bilateral (between nations) achievement of best practices for cross-border renewable energy trade, collect and express national endorsement, and result in framework recognition of select projects.

Put simply, the working groups...

- Bring together key actors.
- Explain best practices.
- Identify which ones are/not met, and help address.
- Capture the above in MOUs that governments can sign.
- Socialize framework approval, where MOUs exist.



How the Working Groups are addressing this:

- **Bilateral approval. Case-by-case recognition.**
 - G2G MOUs
 - Join public and private stakeholders around core topics, and support national engagement.
 - First WG met in November 2023, with 80+ delegates, including presentations from RE100.
- **Physical electrons must cross borders.**
 - Appendix 1: Need to define sufficient evidence of delivery.
 - Second held in March, 100+ delegates, including Local Issuer/UNESCAP/and ACEC delegates.
- **Uniform EAC tracking instrument.**
 - Appendix 2: Need to be uniformly recognized/enforceable.
 - Next to be held in June/July, focused on EAC recognition.
- **Bilateral agreement on carbon accounting.**
 - Appendix 3: Residual mix.
 - To be held in Aug/Sep.

Next Steps

- **Populating the Appendices**
 - Ap1: Data to evidence electron delivery. In progress. (Needs inputs)!
 - Ap2: Structures for EAC recognition. In progress.
 - Ap3: Uniform residual mix. In progress. (External review requested).
- **National Engagement**
 - Working with key actors to identify potential signatories and support them in engaging in the process—namely, reviewing the MOUs and appendices.
 - Further stakeholder identification and appointment of Local Issuers to manage the process nationally can support considerably.
- **Stay tuned for deeper regional integration...**



Thank you!

Roble P. Velasco-Rosenheim

Director, Global Partnerships and APAC
The International Tracking Standard Foundation

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