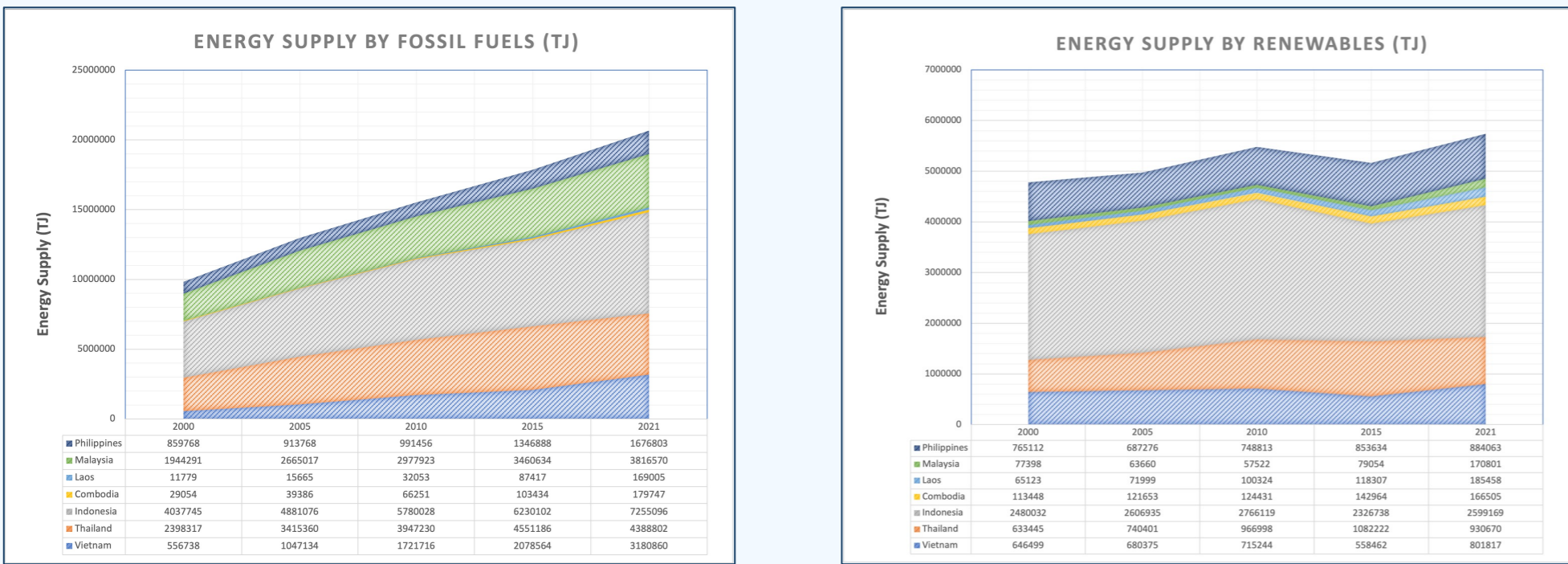


## PROBLEM STATEMENT & OBJECTIVE

The transition to a low-carbon economy is essential in combating climate change, but developing nations dependent on coal and heavy fossil fuels face significant financial barriers. These countries require substantial capital for necessary infrastructure changes, highlighting the need for innovative financing strategies to support inclusive and sustainable development. Our project aims to identify country and industries where capital can be channelled to provide maximum impact, to identify blended finance opportunities in Southeast Asia and what potential negative impacts the industrial transition have on environment and people and how can we maintain awareness of these impacts.

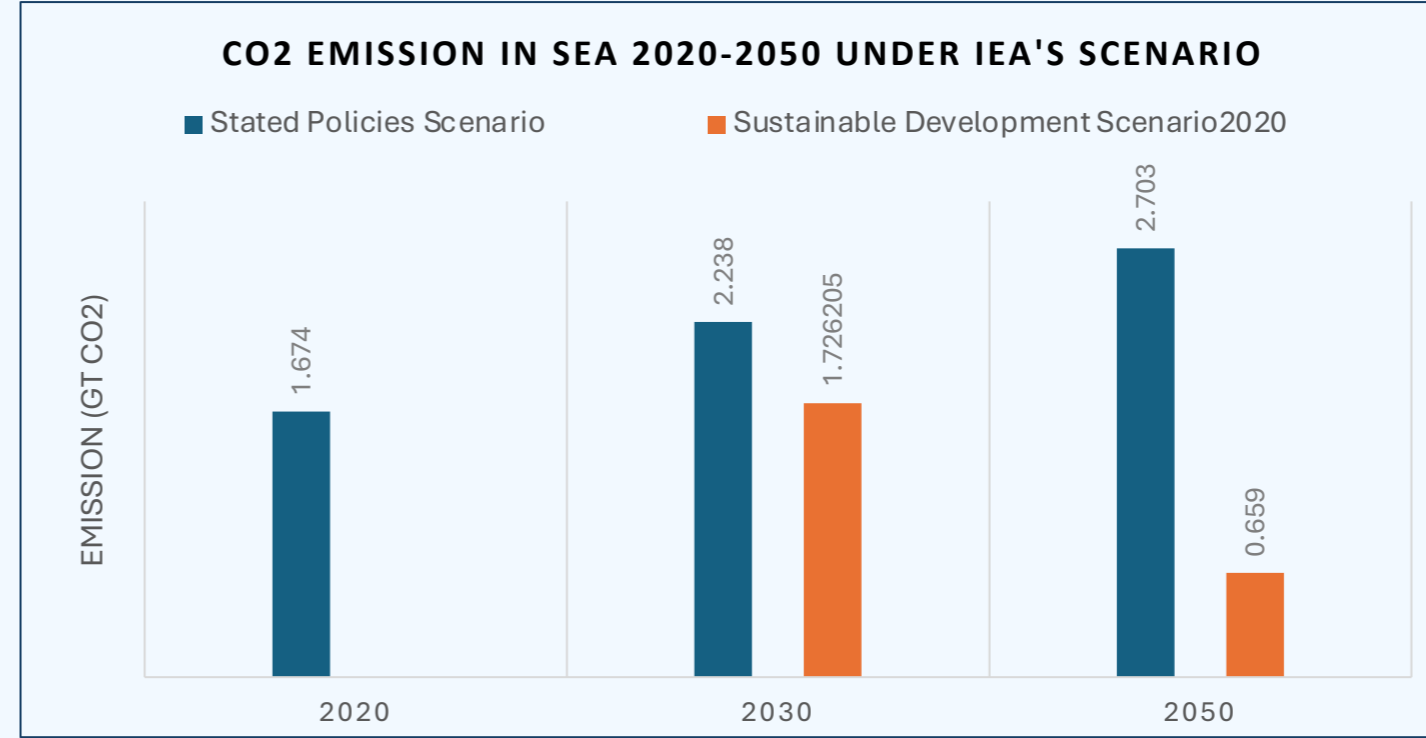
### ENERGY USAGE IN SOUTHEAST ASIA

Southeast Asia's demand for energy grew by 80% from 2000 to 2019 (IEA, 2019), and this increase in demand has been achieved by increased usage of fossil fuel which constitutes 80% of regional energy mix while remaining 20% fulfilled by renewables.



### ESTIMATED CO<sub>2</sub> EMISSIONS (BY INTERNATIONAL ENERGY AGENCY)

In line with this rapid growth, energy demand is expected to triple by 2050 and the emission if region were to continue rely on fossil fuel for development (EU-ASEAN, 2023).



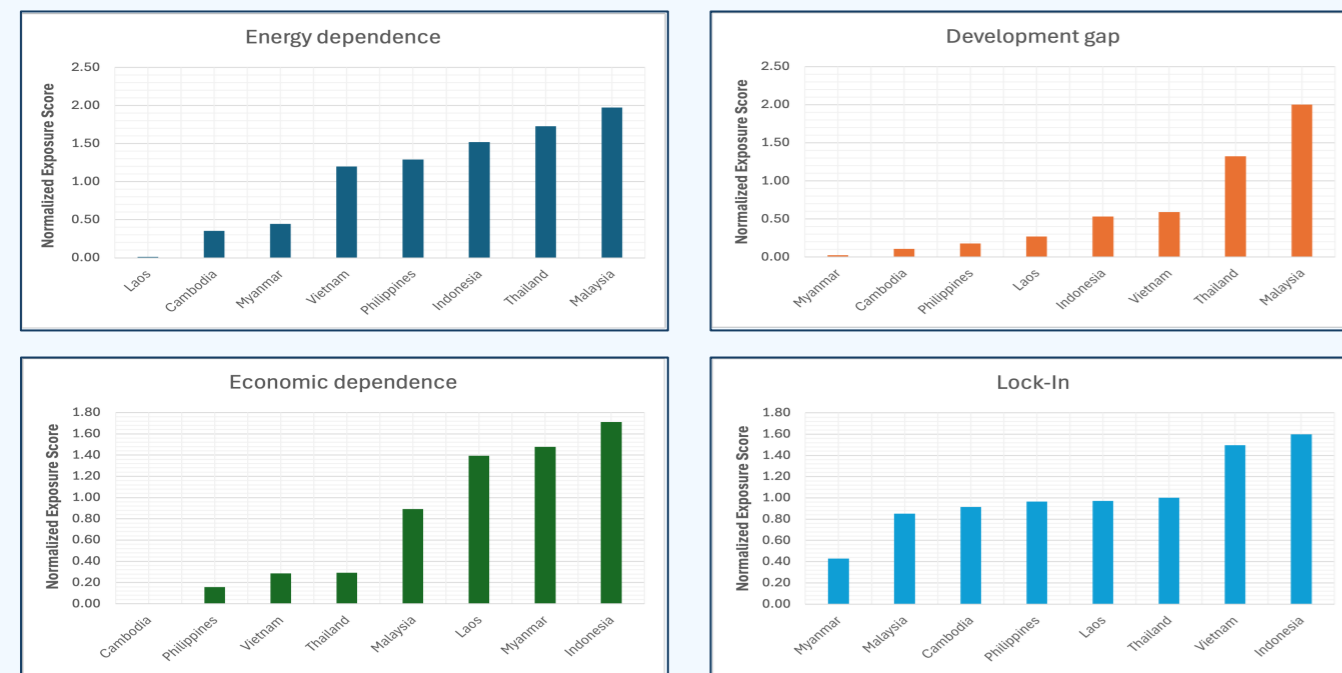
Renewable is estimated to supply ~1120 TWh of energy by 2050 in Stated Policy Scenario (business as usual), which must increase to ~2608 TWh in sustainable development scenario. Consequently, this shift will help reduce CO<sub>2</sub> emission from base of 1.6 Gt in 2020 to 0.6 Gt in 2050.

## Deciphering Energy Transition Investment Opportunities

### SCREENING OF COUNTRIES AND INDUSTRIES TO PROVIDE MAXIMUM IMPACT

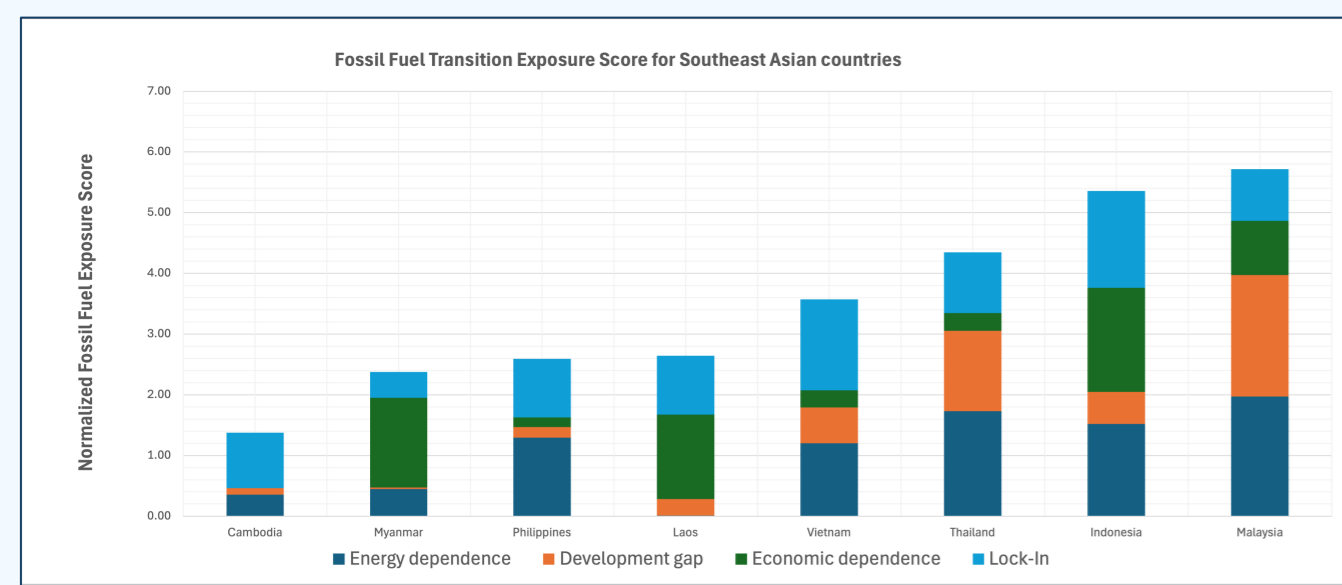
**STEP 1:** Fossil Fuel Transition Exposure Index evaluates, and rank countries based on their energy reliance, economic dependence, development gap and infrastructure lock-in to guide investments in sustainable energy transition.

Category	Indicator 1	Indicator 2
Energy dependence	Share in Total Energy Mix	Share in Electricity Generation
Development gap	GDP per capita (PPP)	Energy consumption per capita
Economic dependence	Share of FF in Goods Export	Domestic vs Consumption of FF
Lock-In	Age of Coal Fired Power Plant	Age of Integrated Steel Mill

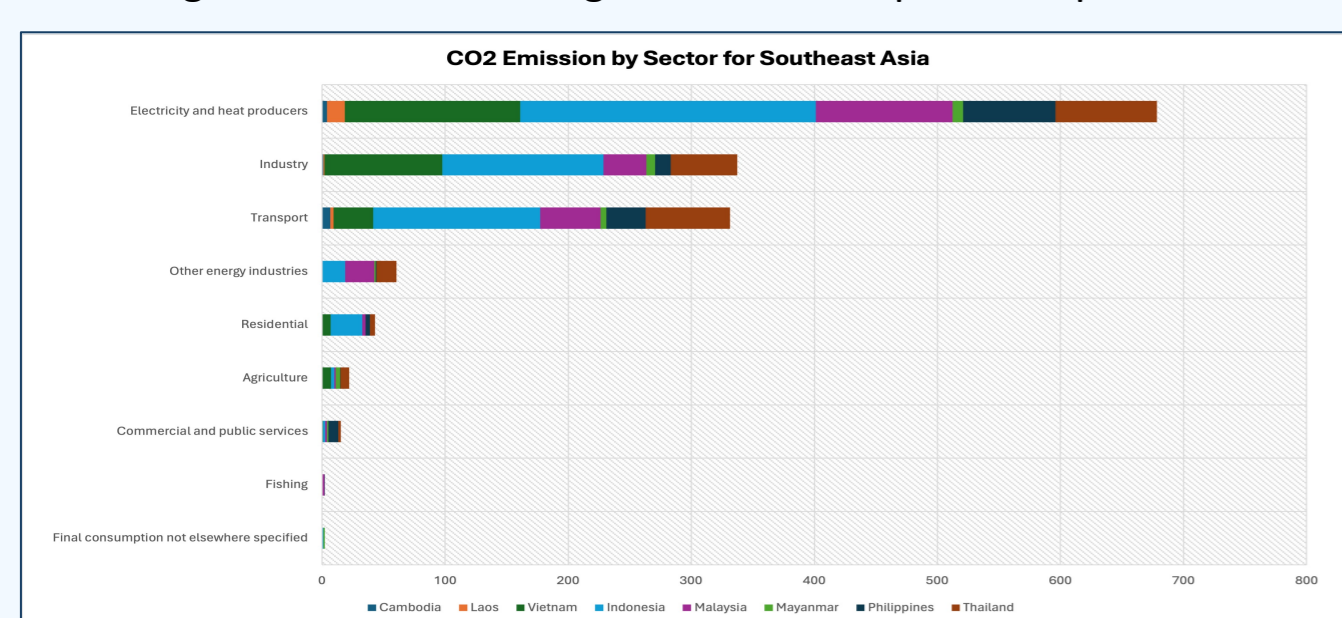


Overall Ranking

Development Agenda → Impact Creation Agenda



**STEP 2:** Emission is used as the direct indicator of dependence of sector on fossil fuel and sectors for investment. Electricity, Industry (Cement, Steel) and Transportation are the highest CO<sub>2</sub> emitting sectors and have significant development aspirations.



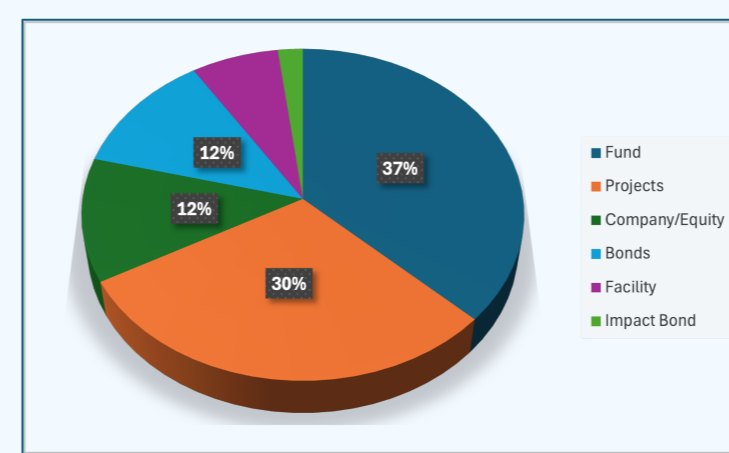
### RECOMMENDATIONS

Importance of transitioning to low-carbon economies in Southeast Asia cannot be overstated and Prudential's strategic focus to support this transition is both timely and critical.

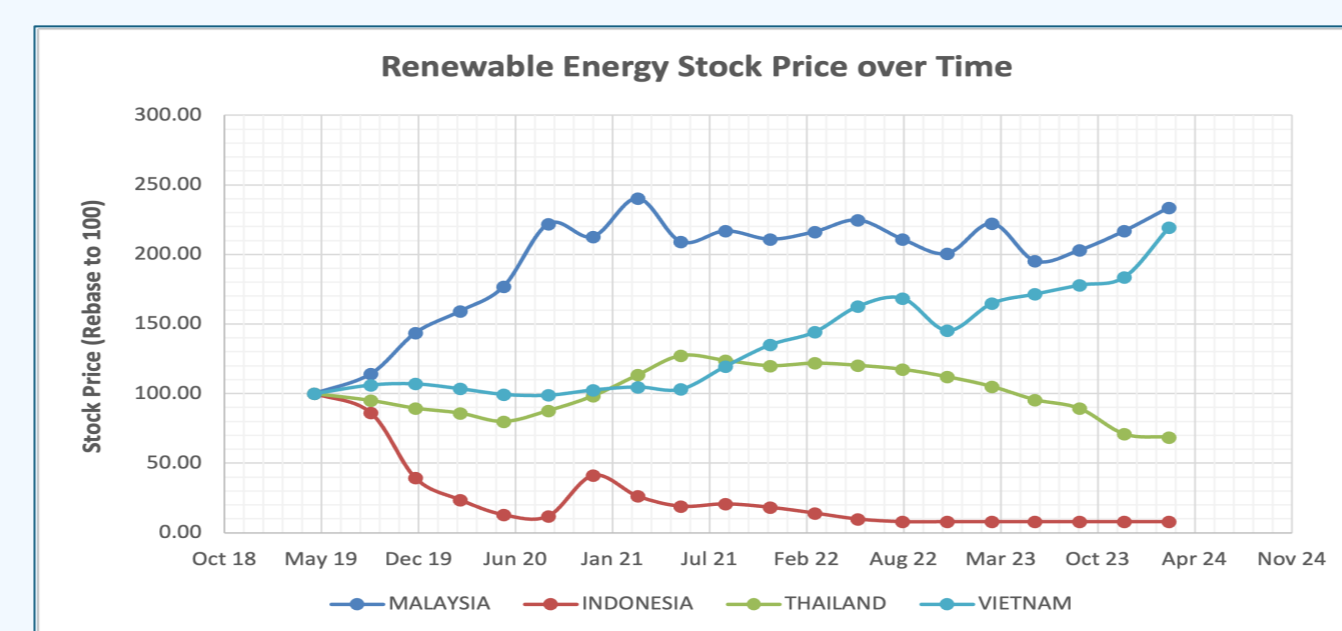
- Fossil Fuel Transition Exposure Index provides a holistic screening of countries in Southeast Asia. Understanding the categories and indicators will help investors strategize specific economic, technological and social contexts.
- Blended Finance is a key tool for policymakers in Southeast Asia; choosing the investment vehicle specific to country will help mitigate market risk.
- Integrating robust ESG criteria along with implementation of negative and positive screening will enable company to navigate complexities fostering sustainable growth.

### SCREENING THE INVESTMENT VEHICLE FOR BLENDED FINANCE

The choice of investment vehicle in Blended finance can significantly affect the risk, return, and impact profile of an investor. Funds and projects account for most transactions in Southeast Asia.



**COMPANY/EQUITY:** Southeast Asia renewable energy stock market shows it emerging market status, with high volatility seen in prices. Malaysia and Vietnam shows a positive increase, whereas Thailand and Indonesia stock market have shown less confidence.

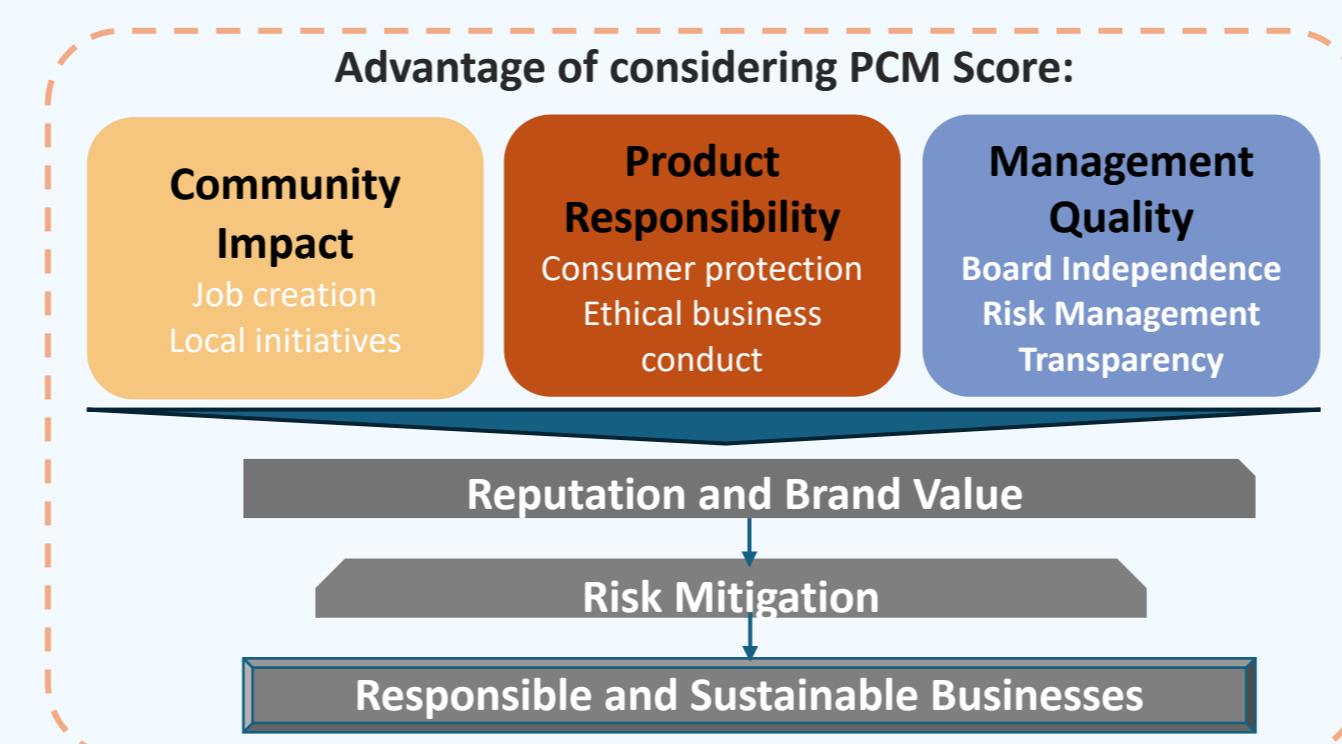


**GREEN BONDS:** Scoring and ranking of bonds is mainly done by ESG scoring methodology. ESG scores tend to focus on how well companies manage their internal processes, rather than real world impacts of their products and services.

Proposed Scoring -

$$70\% \times ESG\_Score + 30\% \times \left( \frac{1}{3}P + \frac{1}{3}C + \frac{1}{3}M \right) = ESG\_PCM\ Score$$

P = Product responsibility score  
C = Community score  
M = Management score

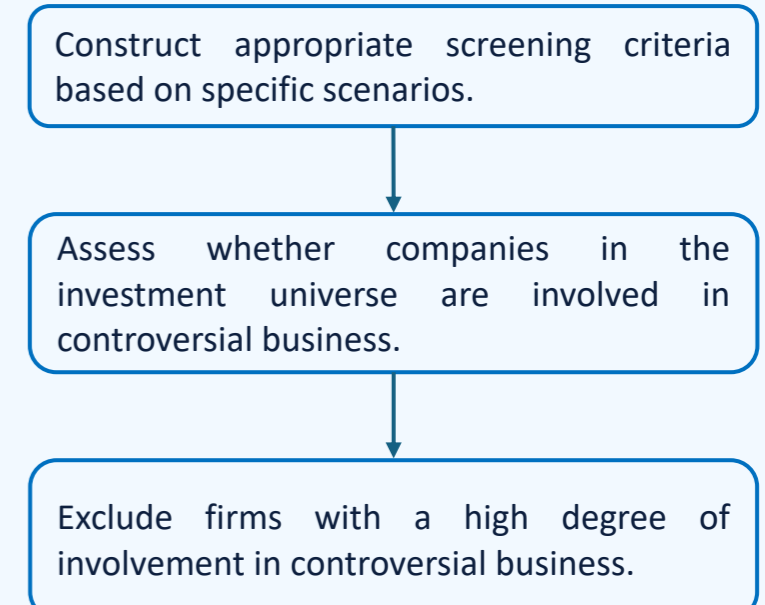


### POSITIVE AND NEGATIVE SCREENING

To ensure that financing does not support unsustainable business practices, screening of project and/or company is required.

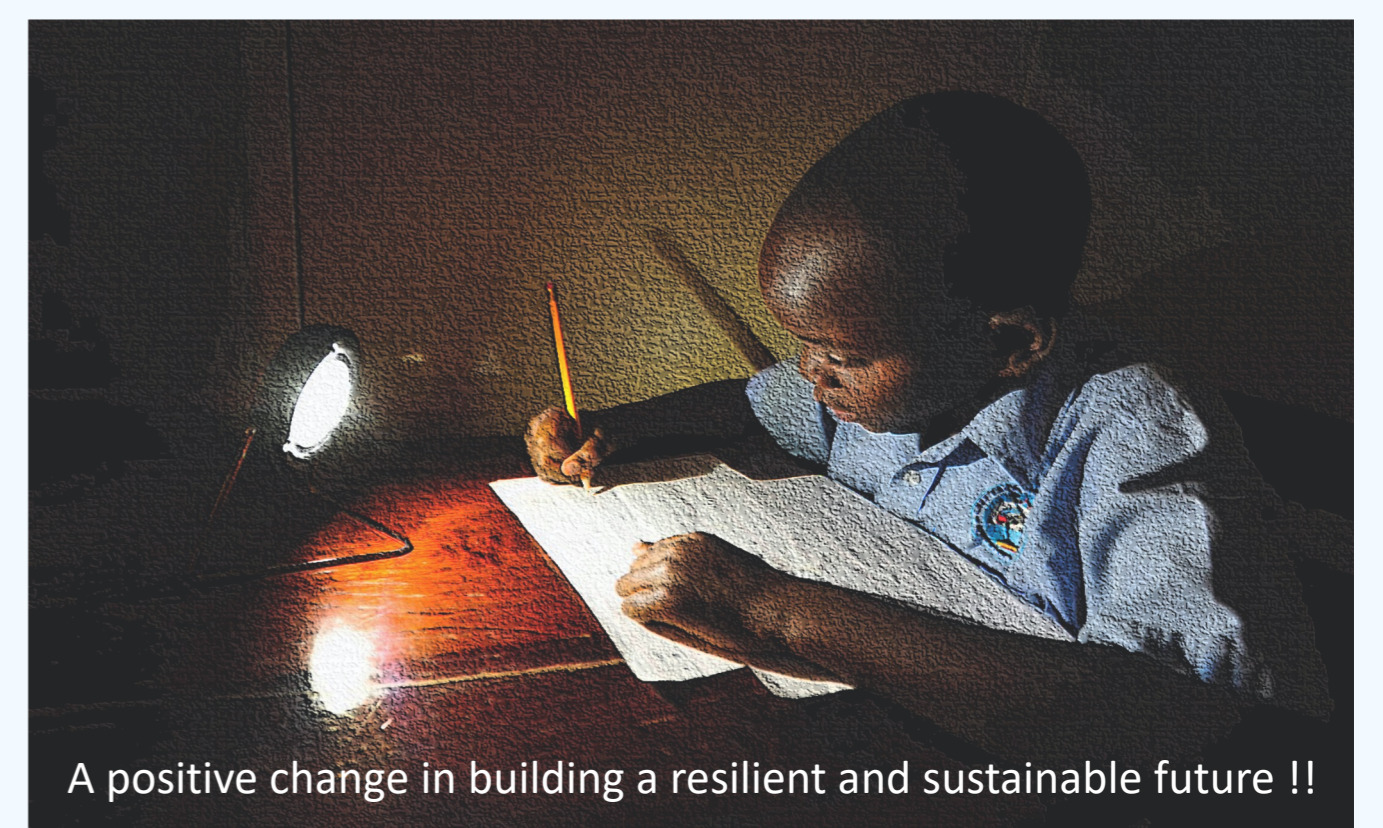
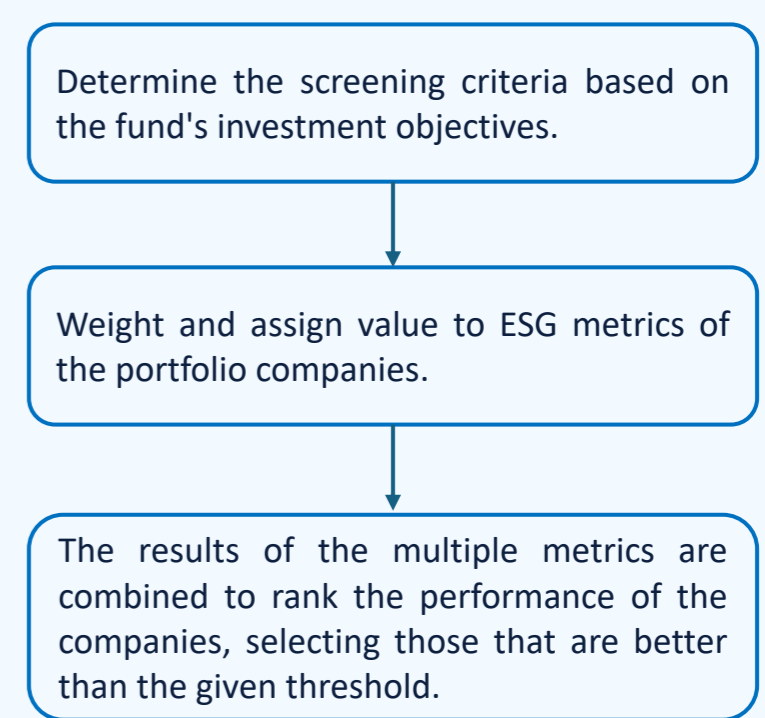
#### NEGATIVE SCREENING:

It is the process of excluding projects/company from investment universe which can pose significant ethical and financial risk for investor.



#### POSITIVE SCREENING:

It is the process of selecting projects/company that shows strong commitment to sustainability and ethical practices.



A positive change in building a resilient and sustainable future !!

### REFERENCES

- IEA (2021), World Energy Outlook 2021, IEA, Paris. Referred from <https://iea.blob.core.windows.net/assets/4ed140c1-c3f3-4fd9-acae-789a4e14a23c/WorldEnergyOutlook2021.pdf>
- IEA (2022), Southeast Asia Energy Outlook 2022, IEA, Paris. Referred from <https://iea.blob.core.windows.net/assets/e5d9b7f7-559b-4dc3-8faa-42381f80ce2e/SoutheastAsiaEnergyOutlook2022.pdf>
- ADB (2015), Southeast Asia and the Economics of Global Climate Stabilization, ADB, Philippines. Referred from <https://www.adb.org/sites/default/files/publication/178615/sea-economics-global-climate-stabilization.pdf>
- IEA (2021), World Energy Outlook Special Report, Coal in Net Zero Transition, IEA, Paris. Referred from <https://iea.blob.core.windows.net/assets/4192696b-6518-4fc4-acc9312bf4b2/CoalInNetZeroTransitions.pdf>
- DBS (2017), Green Finance Opportunities in ASEAN, DBS, Singapore. Referred from [https://www.dbs.com/wv-resources/images/sustainability/insights/Green\\_Finance\\_Opportunities\\_in\\_ASEAN.pdf?pid=sg-group-pweb-sustainability-pdf-Green\\_Finance\\_Opportunities\\_in\\_ASEAN](https://www.dbs.com/wv-resources/images/sustainability/insights/Green_Finance_Opportunities_in_ASEAN.pdf?pid=sg-group-pweb-sustainability-pdf-Green_Finance_Opportunities_in_ASEAN)
- IEA (2021), Financing Clean Energy Transitions in Emerging and Developing Economies, IEA, Paris. Referred from <https://www.iea.org/reports/financing-clean-energy-transitions-in-emerging-and-developing-economies>
- Bayliss, K., Bonizzi, B., Dimakou, O., Laskaridis, C., Sial, F., & Van Waeyenberge, E. (2020). The use of development funds for de-risking private investment: how effective is it in delivering development results? <https://doi.org/10.2861/09434>
- Samans, R. (2016). Blending public and private funds for sustainable development. *Diseases of the Colon & Rectum*, 67-82.
- Holland, H., Dixon, A.D., In, S.Y., Monk, A.H., & Sharma, R. (2018). Governing Blended Finance: An Institutional Investor Perspective.
- Zimmermann, F., & Drechsler, D. (2007). Facing Complexity in Development Finance: Challenges for a Donor Darling. *Research Papers in Economics*.
- Christensen, J. (2021). Fixing fictions through blended finance: The entrepreneurial ensemble and risk interpretation in the Blue Economy. *Geoforum*, 120, 93-102.

Disclaimer: The content of the poster is part of the Capstone Project done by NUS student mentioned above from MSc Sustainable and Green Finance, and not Prudential.