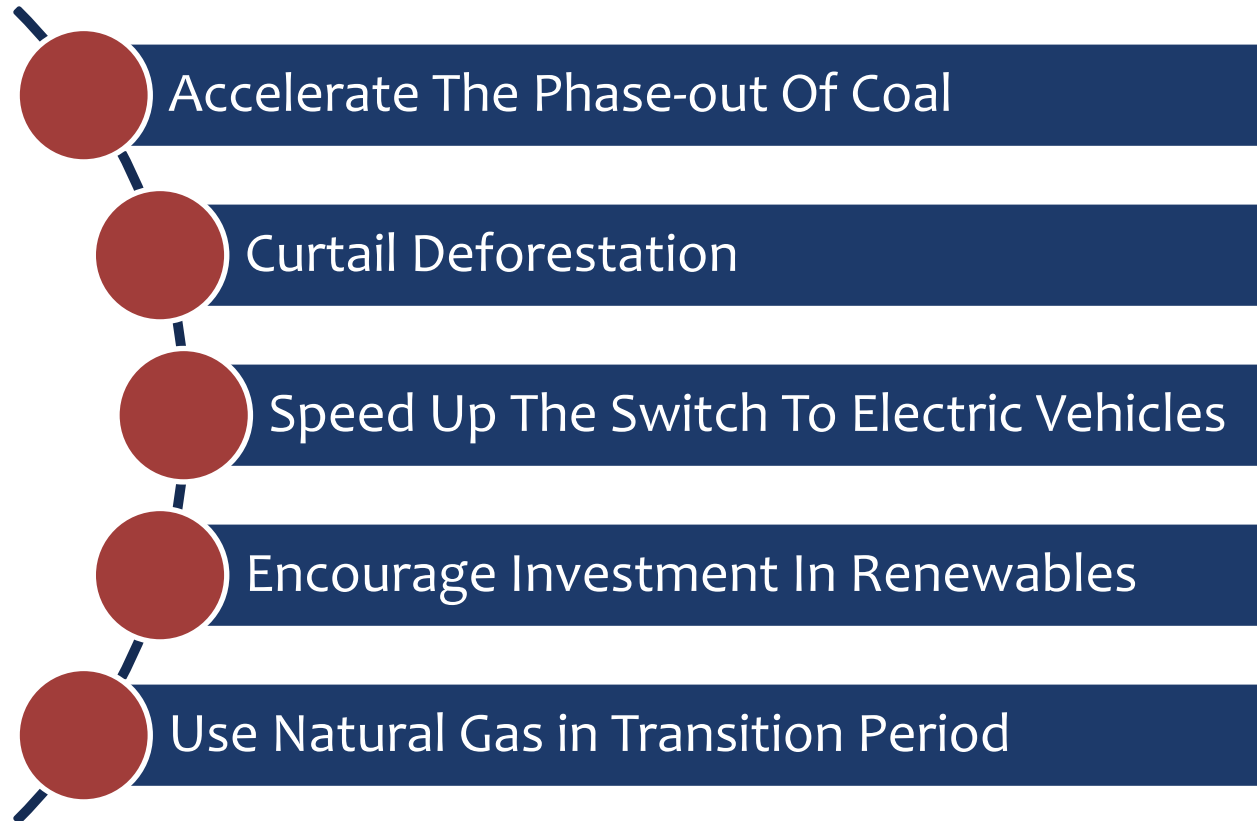


Outlook Energi Fosil serta Energi Terbarukan

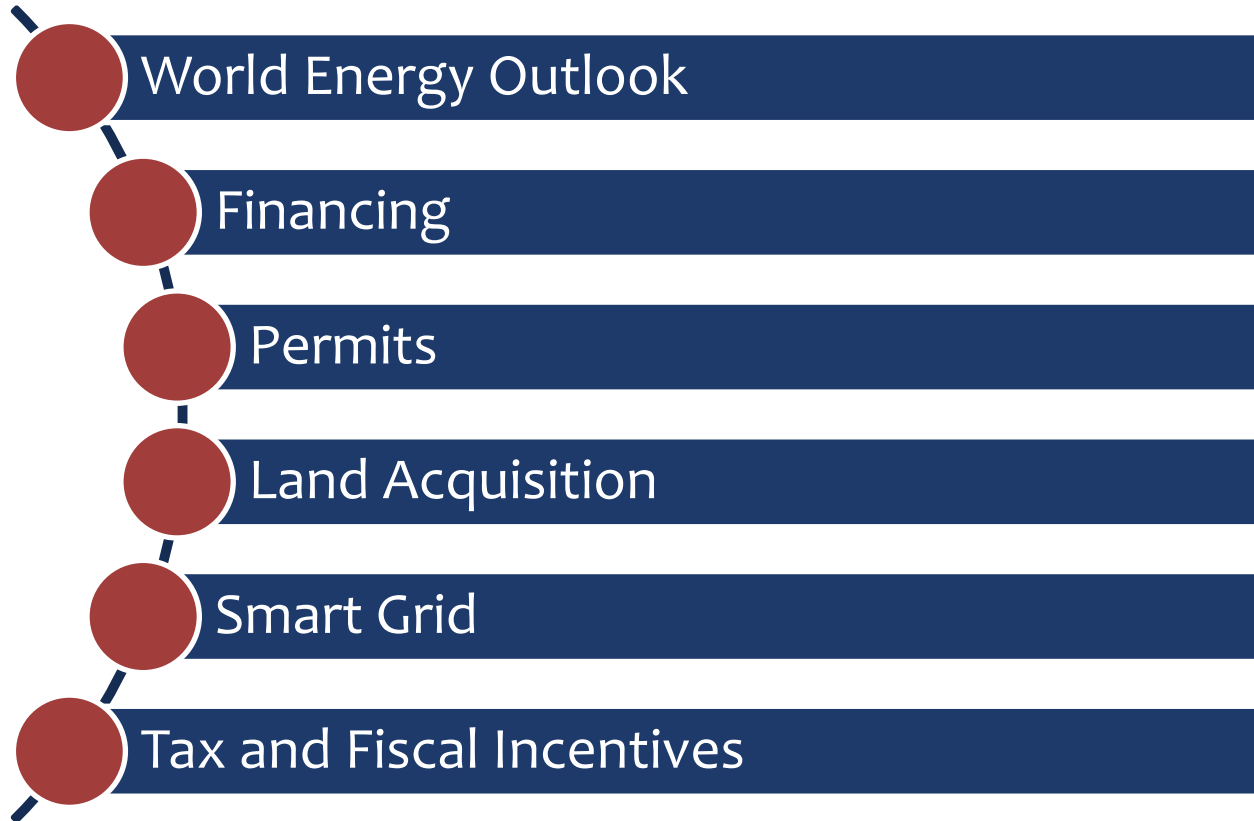


Arcandra Tahar – July 2022 – BNI

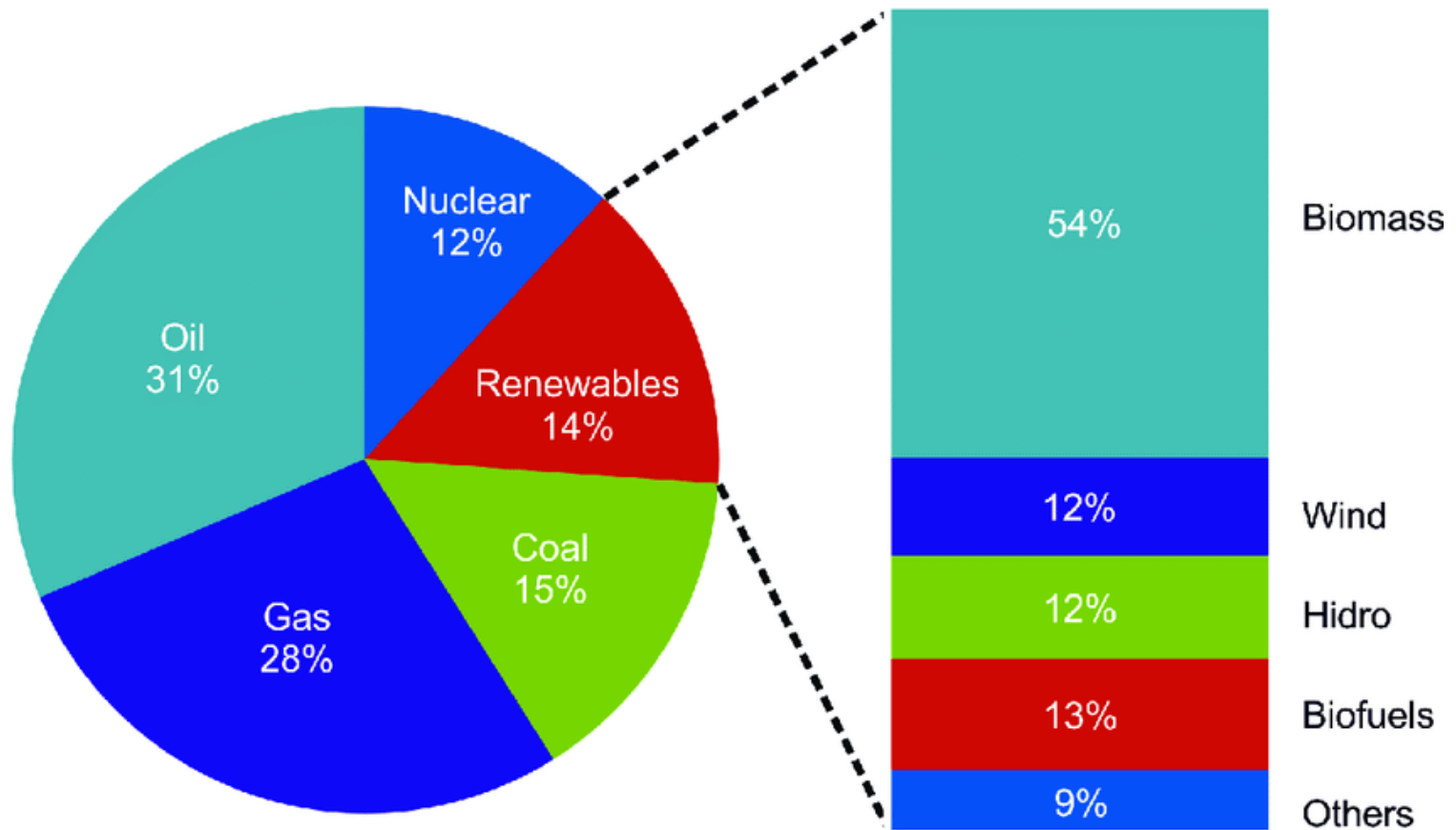
Five Key Pillars To Net-Zero Emission



Renewable Energy Development Challenges



European Union Energy Mix



Financing Challenges

Tariffs

Considered to be not competitive and makes renewable energy investments unprofitable in many cases

Interest Rates

High and further reducing the returns of typically capital-intensive renewable energy investment

Collateral

Required and absence of project finance, making it difficult to raise debt financing for renewable energy investment

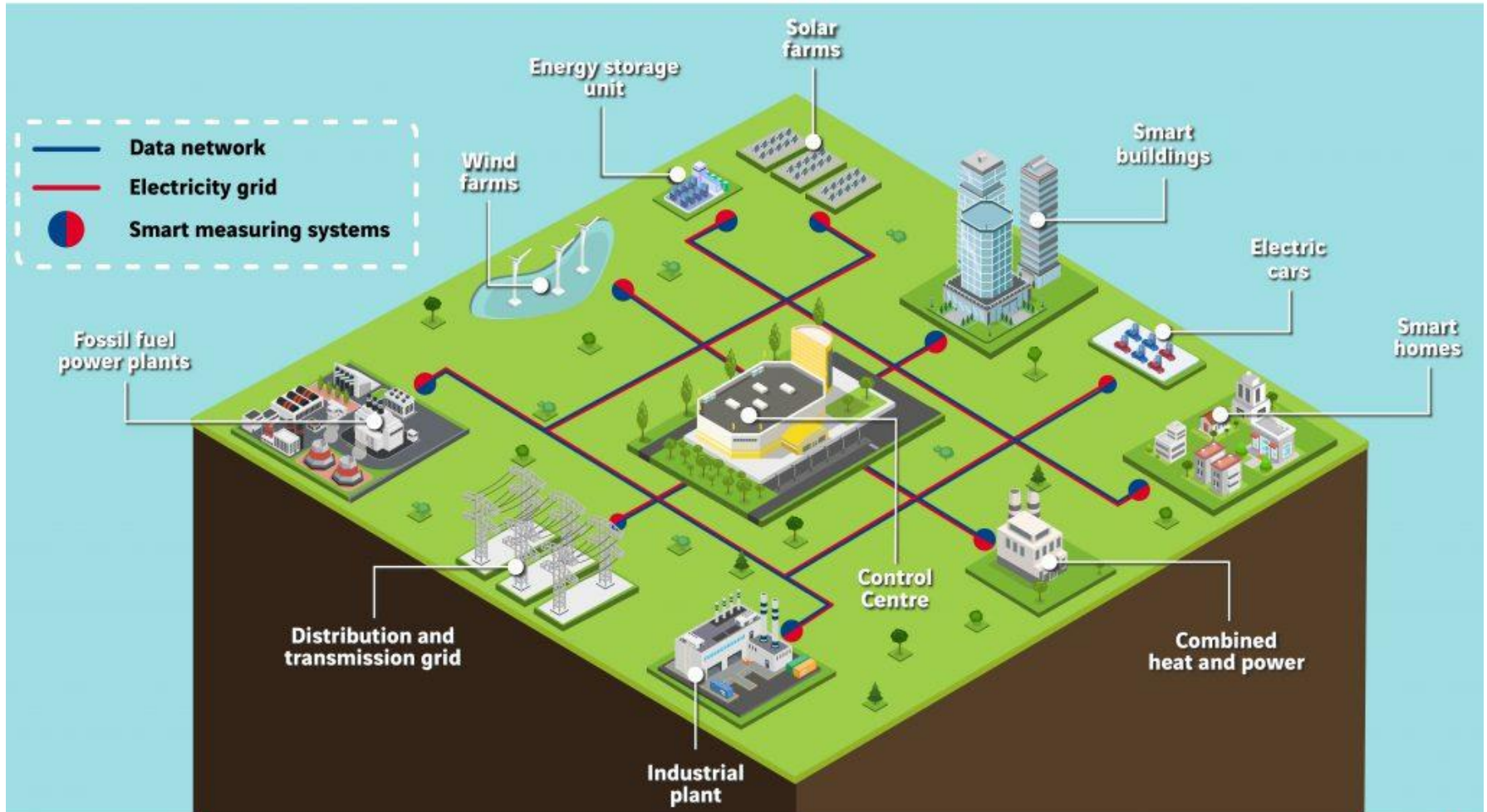
Project Scale

Small and medium, increases the project development and transaction cost and related risks in relation to investment cost

Capacity of Project Developer

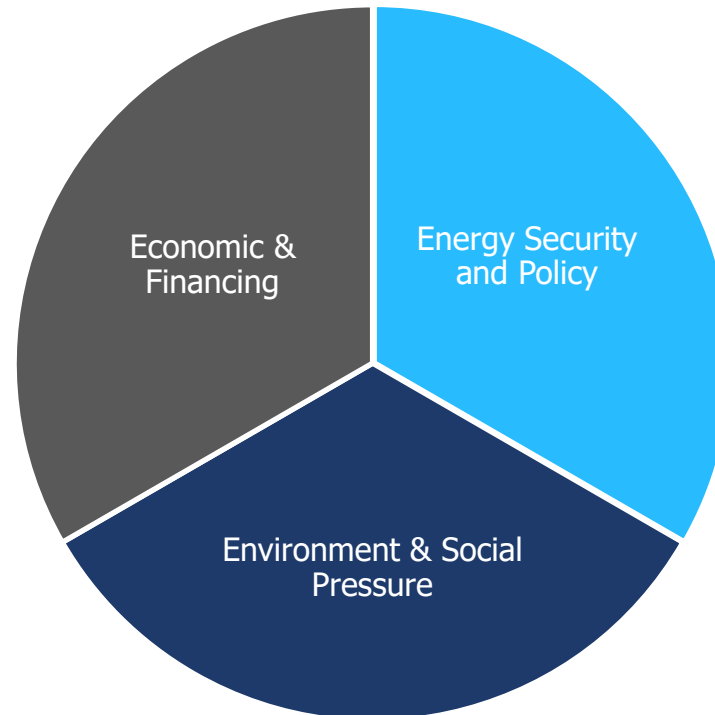
Too limited on average, make it challenging to develop high-quality projects

How a smart grid works



Government Dilemma

Balancing between Economic Priority and Environmental Pressure



- Developing countries are having difficulties to replace their state revenue from development of fossil energy
- Affordability of renewable energy price for developing countries
- Limited international funding to date for green energy development

- Meeting basic needs for people
- Energy subsidy to support the poorest section of society
- Domestic Energy security policy may have conflict with the International policy on climate change

- Natural resources for the greatest benefit of people
- Opposition from interest group to those who maximize the use of natural resources which produce high carbon emissions
- Lack of legal sanction to nations who do not comply with environmental regulations

Where are we now?

The OLD

Primary production in Oil and Gas

The NOW

Secondary and Tertiary
production in Oil and Gas

Shale Oil and Shale Gas

Petrochemical

The NEW

Renewable Energy

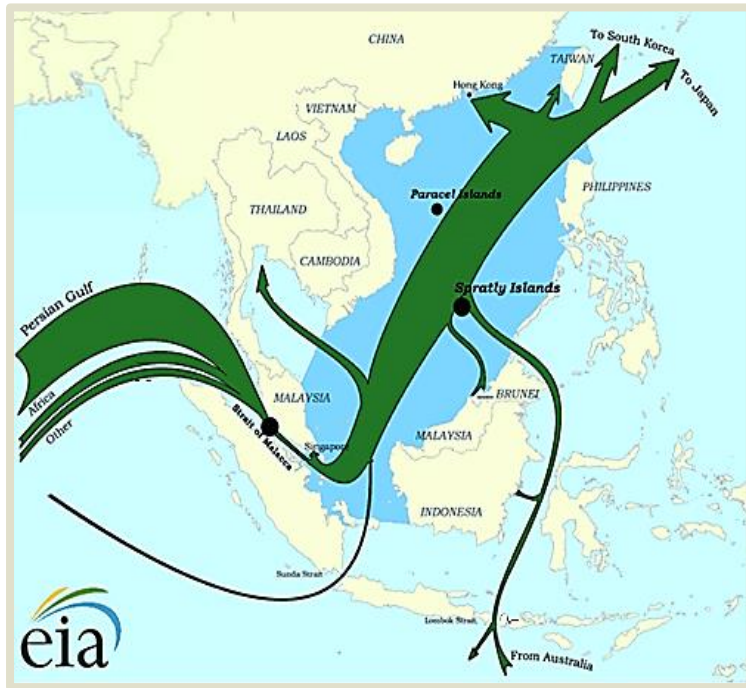
Electric vehicle and Battery

Biofuel



Energy Security Strategy for Indonesia

FOREIGN BASE SUPPLY



Malaka Strait, Congested Shipping Route for Tankers

DOMESTIC BASE SUPPLY

Oli & Gas

- Short terms: IOR
- Mid terms: EOR
- Long terms: Exploration
- Refinery dan Petrochemical
- Biofuel (B30)
- City Gas

Electricity

- Fuel to Gas Conversion
- Renewable Energy
- Electric Vehicle
- Electric Stove
- Battery (Nickel, Cobalt and Vanadium)

Questions



Arcandra Tahar

<https://www.youtube.com/channel/UCARABtnysTE9b8ocoSHQjig>