

Challenges and Opportunities in Implementing Nationally Determined Contributions (NDCs)

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Paris Agreement- Beginning of a New Clean Energy Paradigm?



- Bottom up architecture for climate change mitigation, with some top down supervision
- Broad participation – 196 countries; all EAS countries
- Large variety of Nationally Determined Contribution (NDC) targets - Different forms and ambitions
- Uncertainty beyond 2030 – tied with international flow of technology and capital
- Opportunities for harmonization?
 - Part of broader clean energy policy reform agenda!
 - Part of greening the growth agenda!

NDC - 2030 National Emission Reduction Targets of Asia

Common But Differentiated Responsibilities

| | High Income | Upper-Middle | Lower-Middle |
|----------------------|--|--|---|
| Reductions below BAU | Brunei: 63% Korea: 37% Taiwan: 50% | Georgia: 15% (25%) Fiji: 10% (30%) Maldives: 10% (24%) Mongolia: 14% Thailand: 20% (25%) | Bangladesh: 5% Indonesia: 29% (41%) Cambodia: (27%) Vietnam: 8% (25%) Sri Lanka: 7% (23%) |
| Absolute Reductions | Australia: 26-28% below 2005. Japan: 26% below 2013. NZ: 30% below 2005. | Azerbaijan: 35% below 1990 Kazakhstan: 15% (25%) below 1990 | Philippines: 70% by 2030 relative to its BAU scenario of 2000-2030. Micronesia: 28% (35%) below 2000 levels by 2025 |
| Emissions Intensity | Singapore: 36% below 2005. | China: 60-65% below 2005. Malaysia: 35% (45%) below 2005. | India: 33-35% below 2005 |

What NDC indicates - The Great Energy Transition?

Energy Efficiency



Decarbonization of Electricity

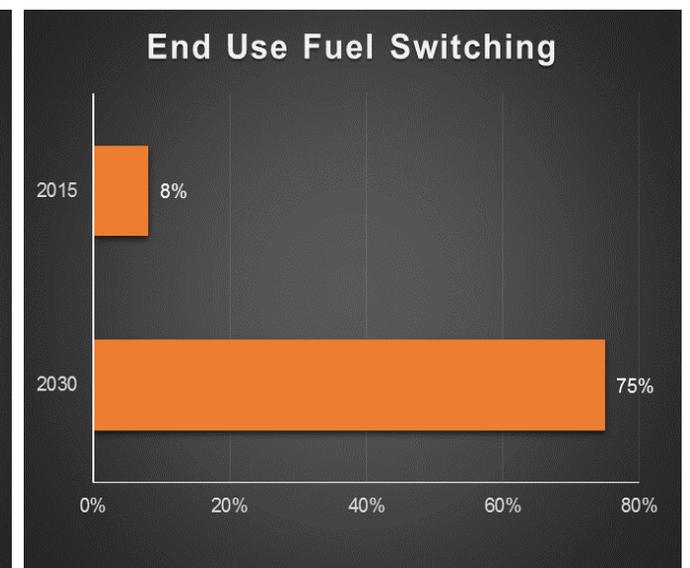
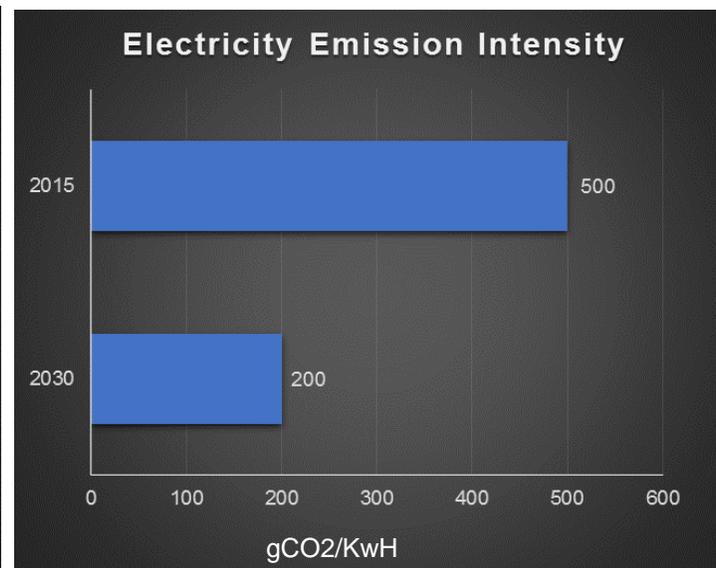
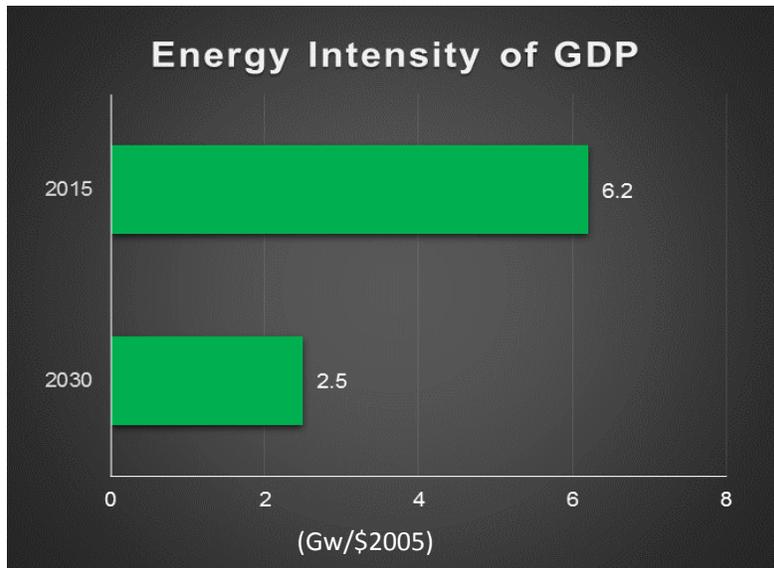


End Use Fuel Switching

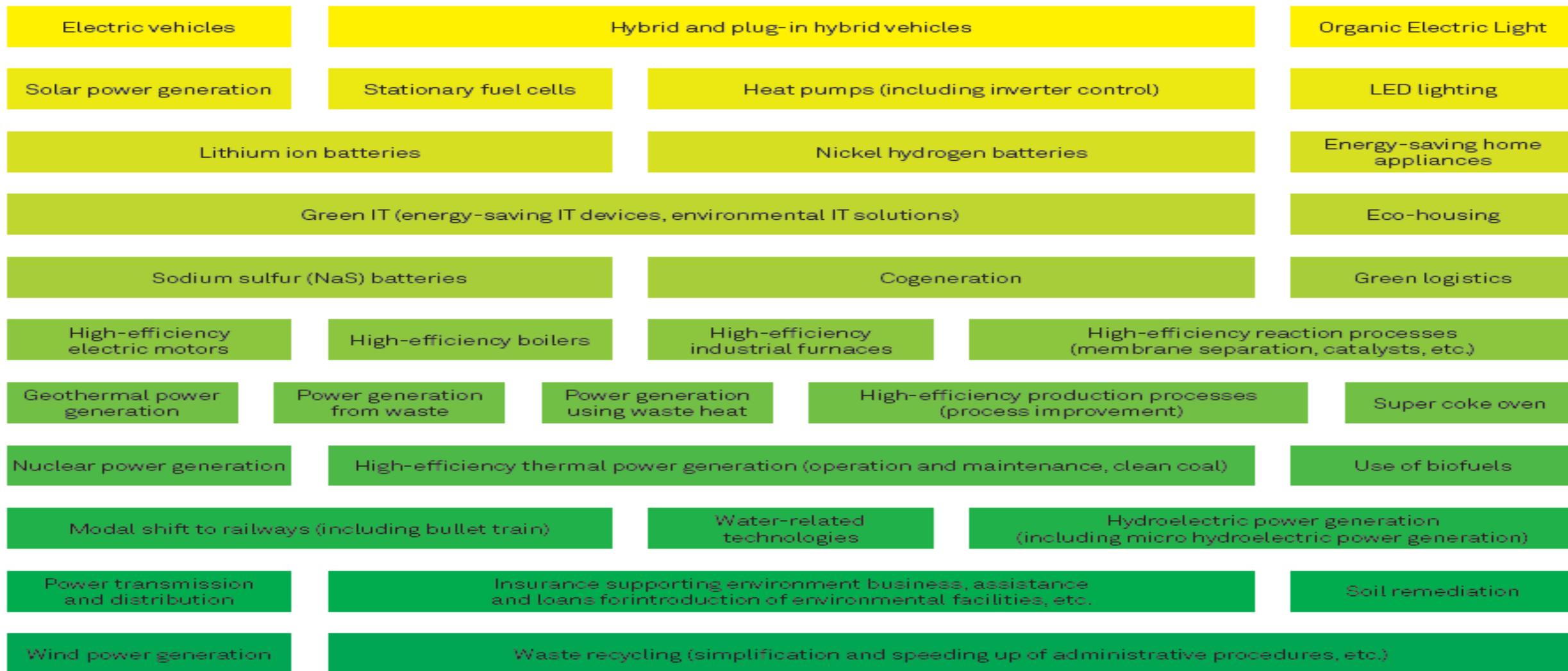


Strategy

Key Metrics of Transformation



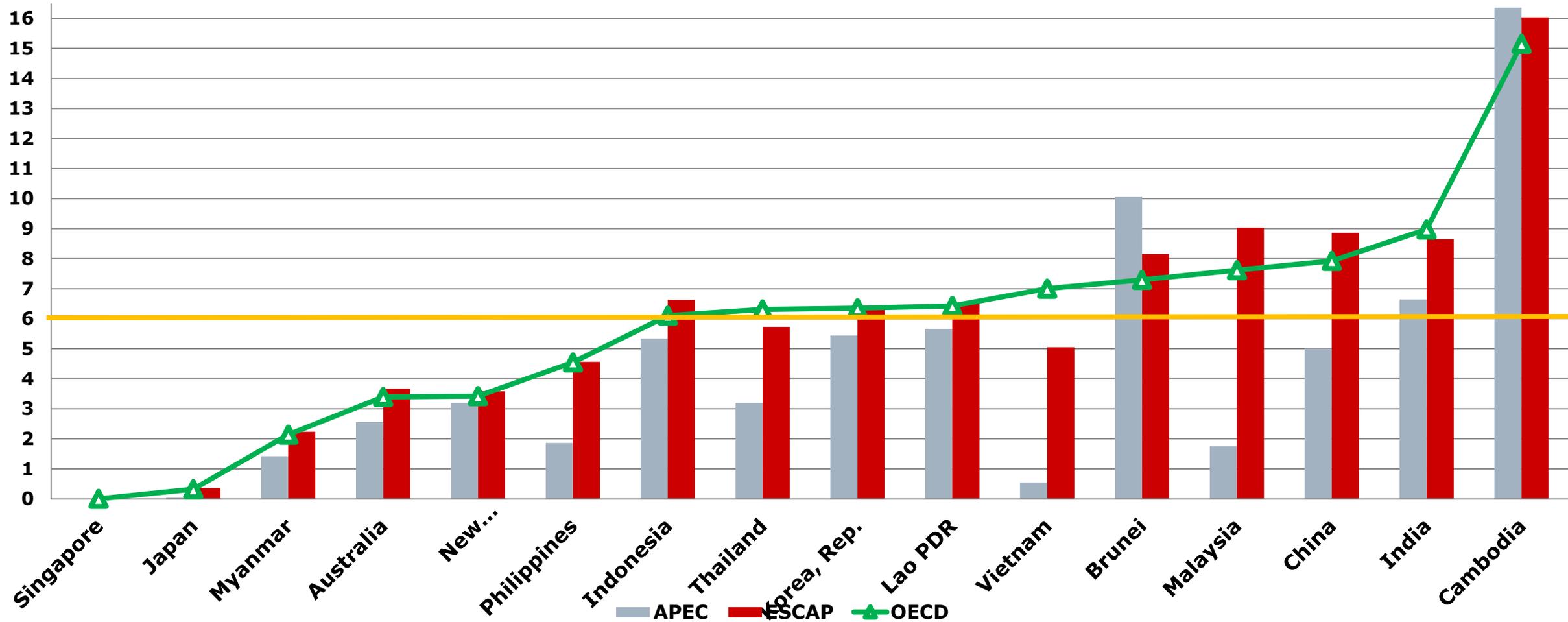
35 Made in Asia LCTs - Enough to meet NDC targets?



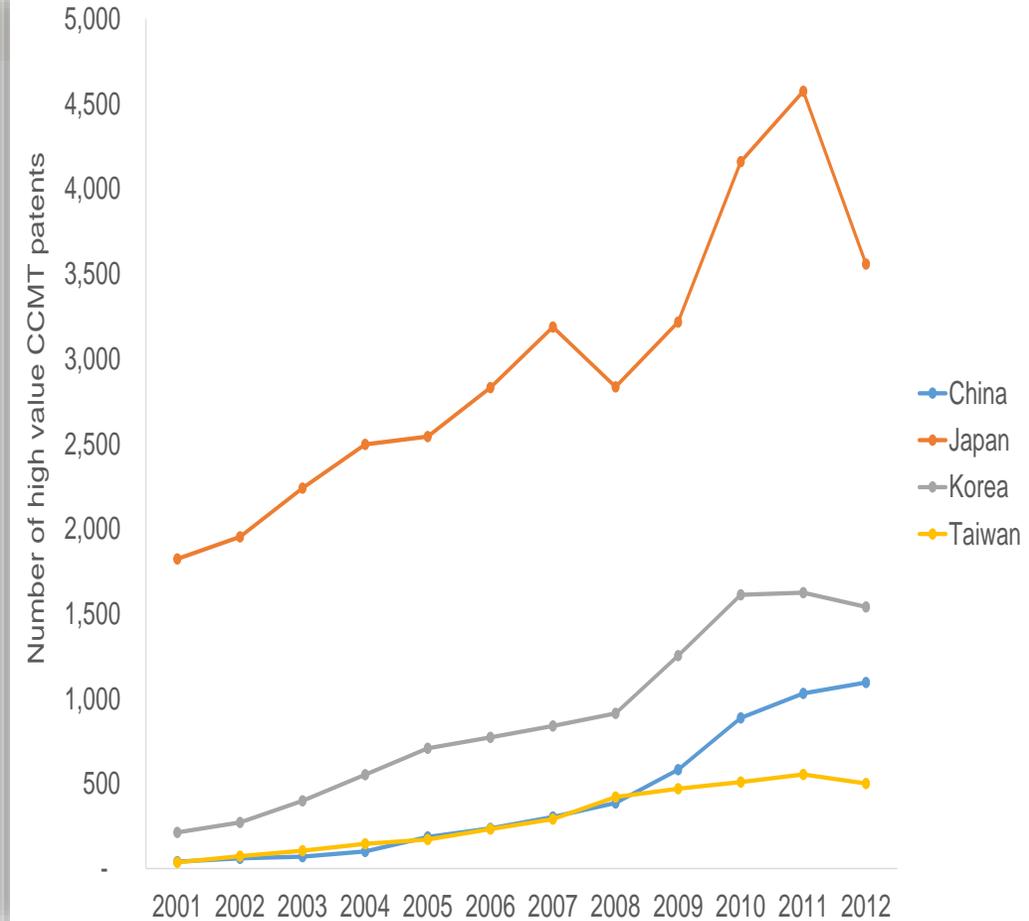
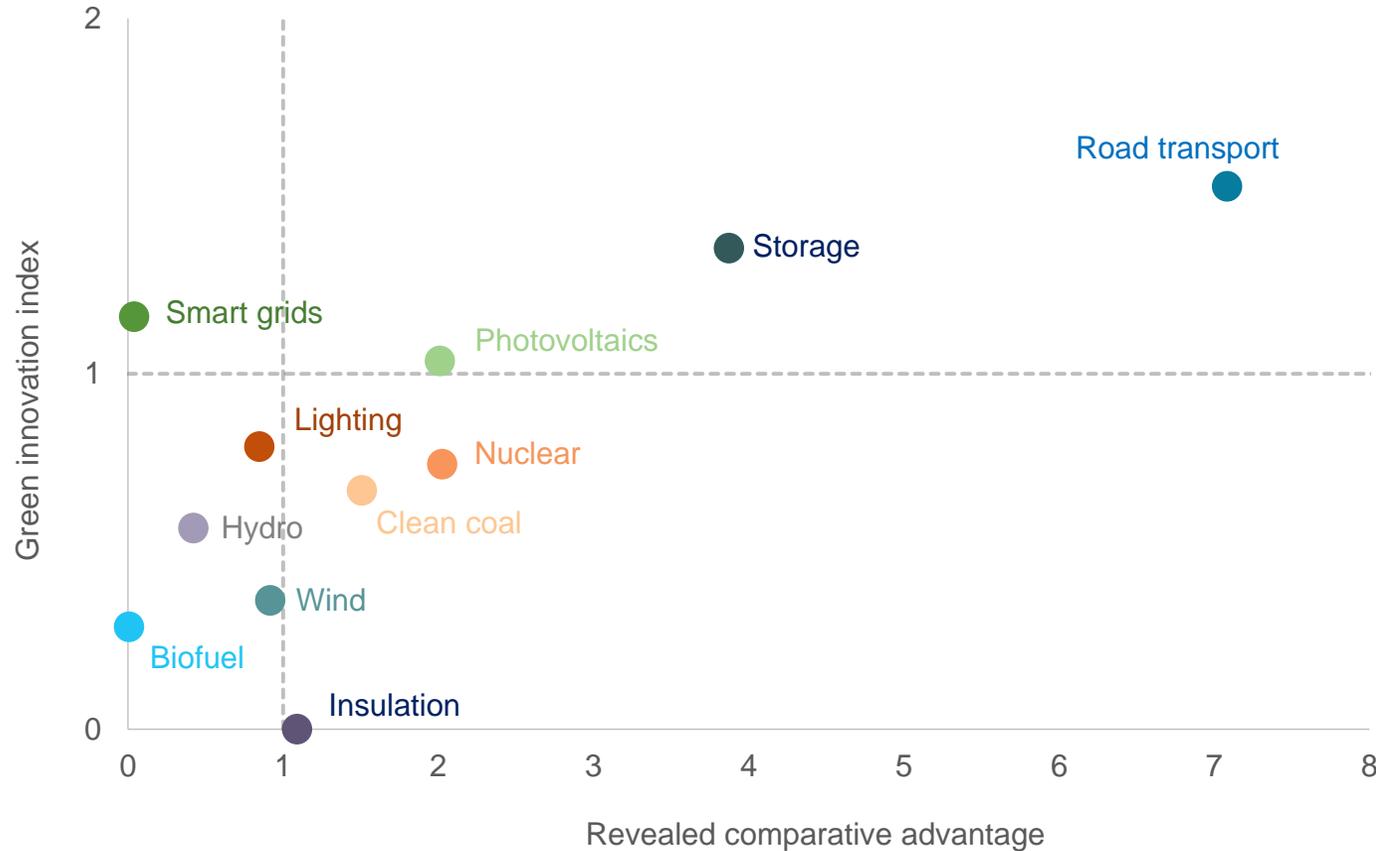
Challenge 1: Cost of Priority LCTs at National Level

| Country | Emission mitigation pledged to meet NDC targets (MtCO ₂ eq) | Prioritized technology | Capacity required for 100% mitigation (GW) | Installed capacity | | Resource potential | | Mitigation Achievable by top prioritized RET (%) | Cost of Deployment NPV (Billion USD) |
|--------------------|--|------------------------|--|--------------------|---------------------------|--------------------|----------------|--|--------------------------------------|
| | | | | (MW) | Source | (GW) | Source | | |
| Cambodia | 1.8 | Solar PV | 0.555 | 2 | ADB, 2015 | 8 | ADB, 2015 | 100 | 0.194 |
| Malaysia | 343 | Solar PV | 102 | 257 | SEDA, 2016 | 6.5 | Solangi, 2011 | 6.4 | 12 |
| Philippines | 105 | Biomass | 13.5 | --- | --- | 0.25 | Dalusung, 2016 | 1.85 | 3.5 |
| Thailand | 81 | Solar PV | 29 | 2,000 | Solar Policy Update, 2015 | 22.8 | ADB, 2013 | 78.6 | 39.3 |
| Vietnam | 54 | Wind | 15.5 | 50 | ADB, 2015 | 27 | ADB, 2012 | 100 | 18.4 |

Challenge 2: Removing Tariff and Non-Tariff Barriers



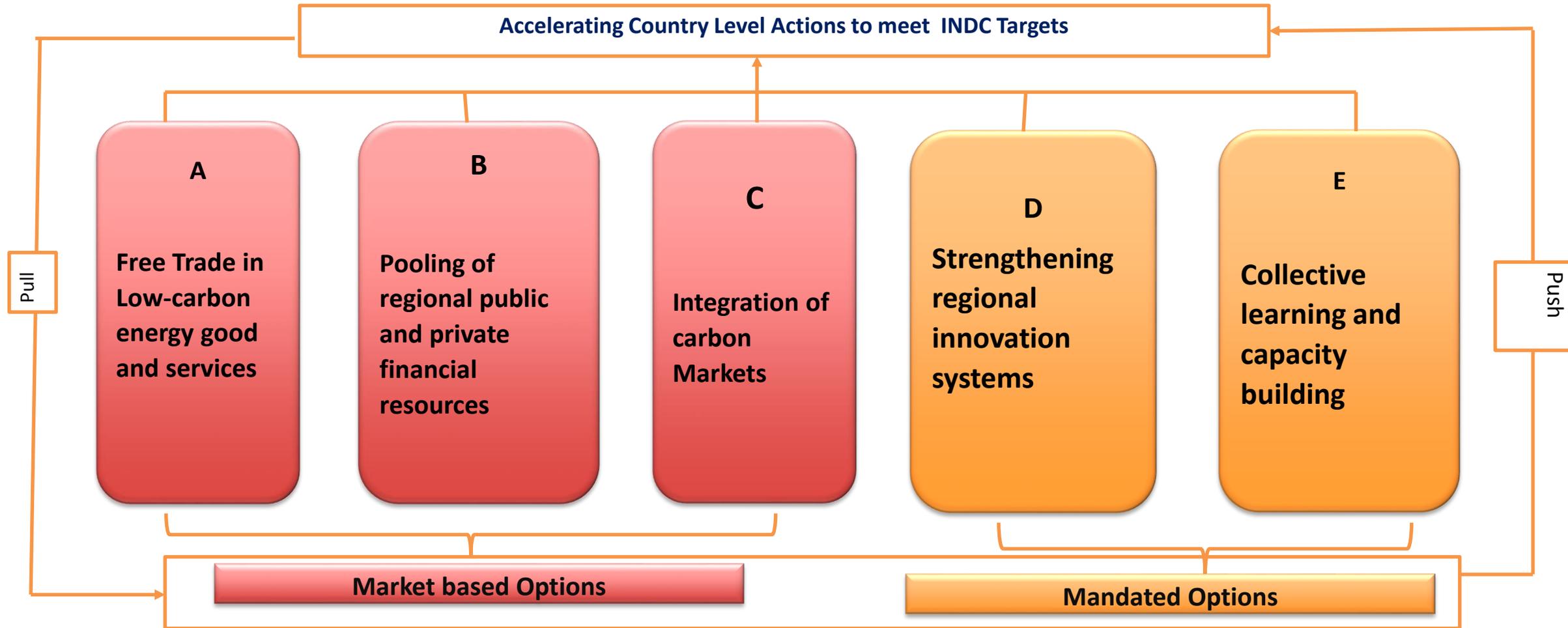
Challenge 3: Nurturing LCT Innovation



Japan has developed an innovation and export specialisation in multiple key low-carbon energy sectors



Opportunity: Regional Cooperation Framework for Accelerated Technology Transfer



Moving Forward: What should be done?

- **NDCs are a starting point for decarbonization of global energy systems**
 - Shared understanding on the potentials of current policy instruments on clean energy mix, energy efficiency, and switching the end fuel use are needed to deploy LCTs, at a scale required.
- **Deep accelerated deployment of LCT needs economic and energy policy integration**
 - Energy policy must be nested with other economic - trade, innovation and tax policies, to reduce the cost of LCTs.
- **COP 21 Postulates a regional cooperation framework for LCTs as a cumulative problem solving in each country**
 - Leverage NDCs as a driving force for structural change, new low carbon growth and to achieve other environmental co-benefits.