



ESCAP's Work to Advance Sustainable Energy in Asia and the Pacific

Michael Williamson

Energy Division

The Economic and Social Commission for Asia and the Pacific

- | | | | |
|--|--|--|---|
|  Afghanistan |  Guam |  Mongolia |  Singapore |
|  American Samoa |  Hong Kong, China |  Myanmar |  Solomon Islands |
|  Armenia |  India |  Nauru |  Sri Lanka |
|  Australia |  Indonesia |  Nepal |  Tajikistan |
|  Azerbaijan |  Iran (Islamic Rep. of) |  New Caledonia |  Thailand |
|  Bangladesh |  Japan |  New Zealand |  Timor-Leste |
|  Bhutan |  Kazakhstan |  Niue |  Tonga |
|  Brunei Darussalam |  Kiribati |  Northern Mariana Is. |  Türkiye |
|  Cambodia |  Kyrgyzstan |  Pakistan |  Tuvalu |
|  China |  Lao PDR |  Palau |  Turkmenistan |
|  Cook Islands |  Macao, China |  Papua New Guinea |  Uzbekistan |
|  DPR Korea |  Malaysia |  Philippines |  Vanuatu |
|  Fiji |  Maldives |  Republic of Korea |  Viet Nam |
|  French Polynesia |  Marshall Islands |  Russian Federation | |
|  Georgia |  Micronesia (F.S.) |  Samoa | |

59% of the world's population
49% of global energy demand
57% of global fuel-related GHG emissions



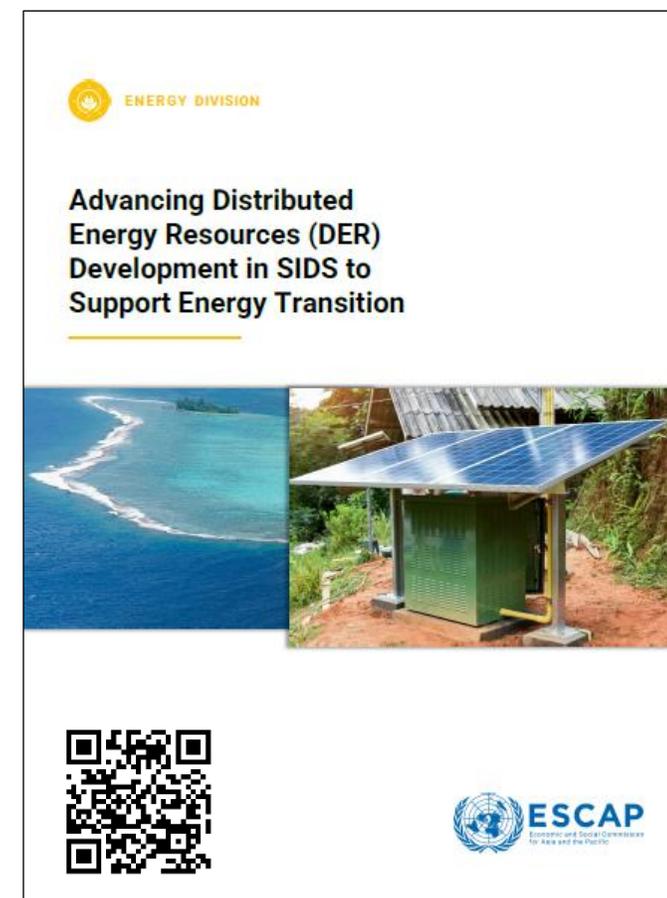
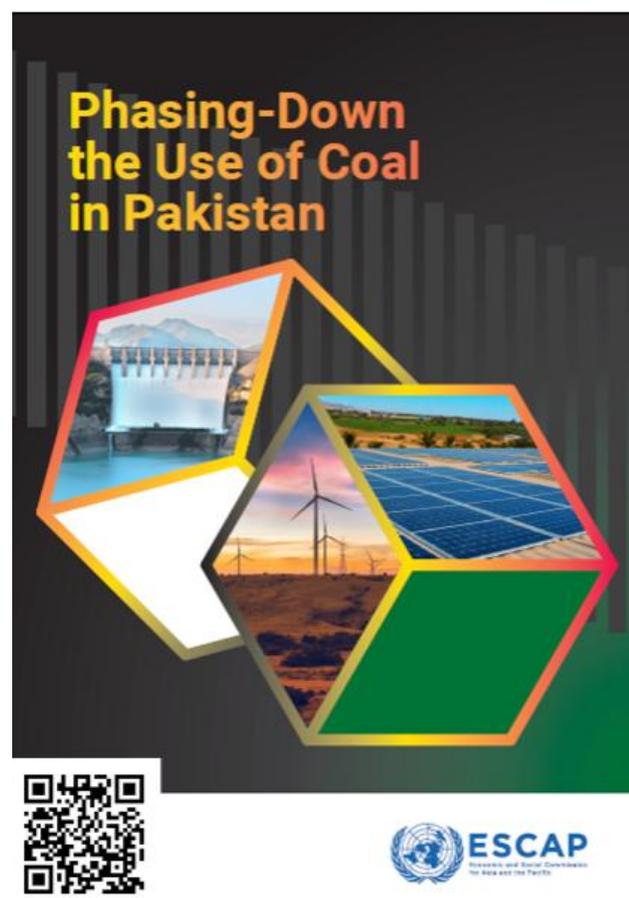
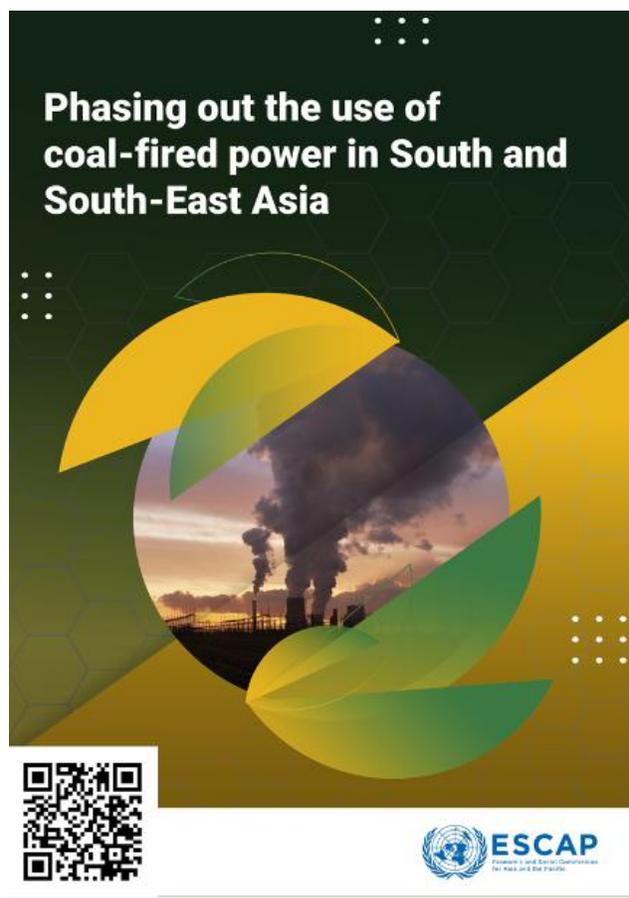
Energy Division

ESCAP's Energy Division covers two core areas and one emerging topic:

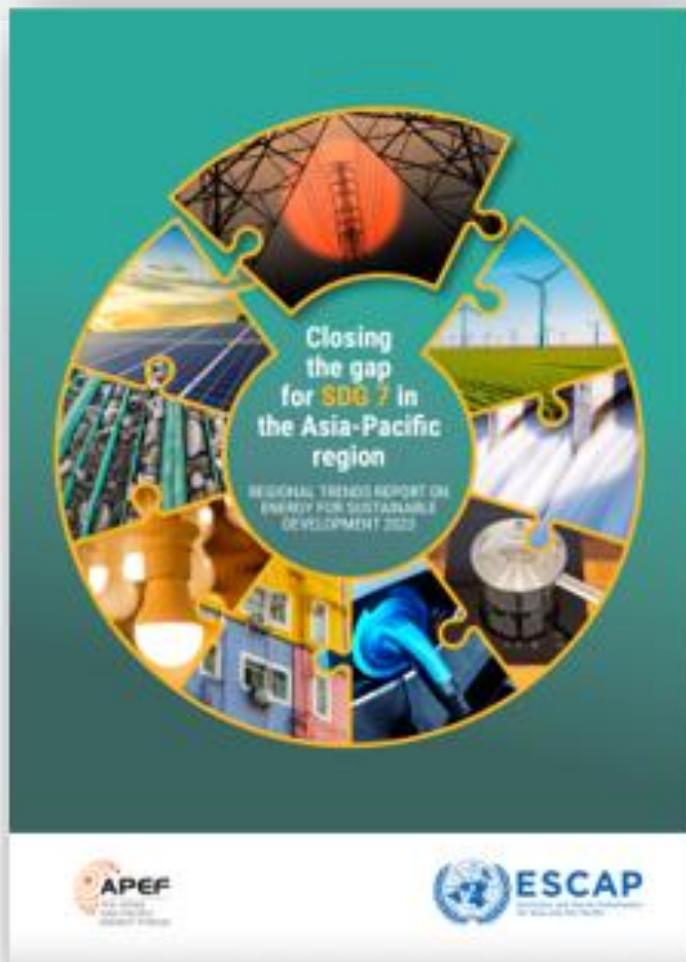
- **Sustainable Development Goal 7:**
Access to modern energy resources
- **Energy Connectivity** (focus on power sector)
- Emerging issues: **critical raw material supply chains; cooling; AI**



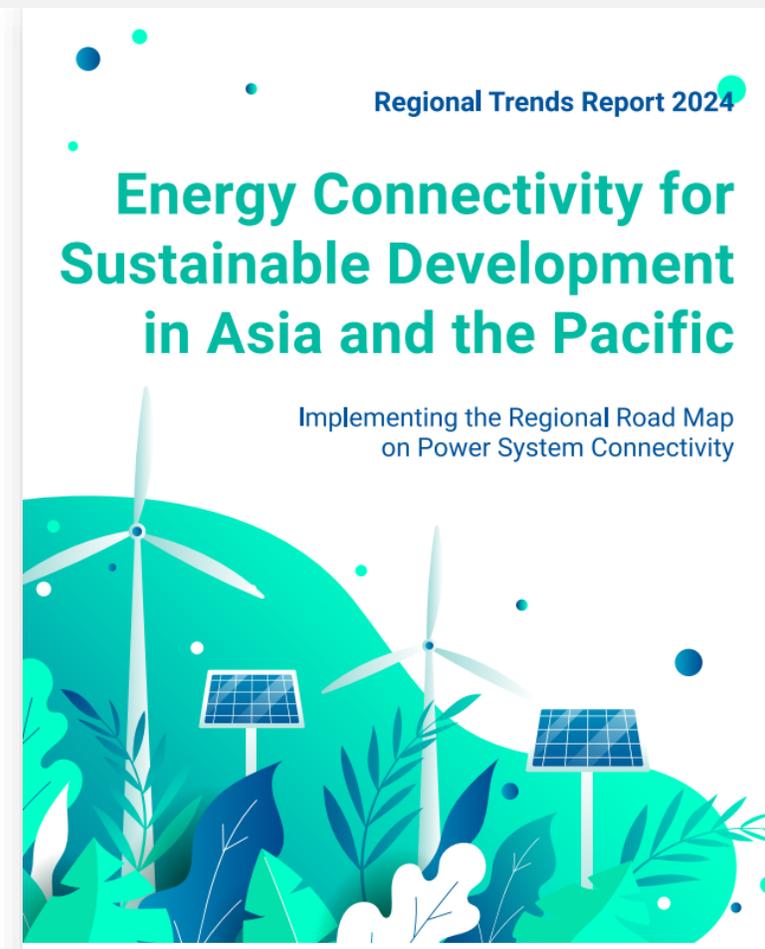
Recent publications



Regional Trends Reports



2023

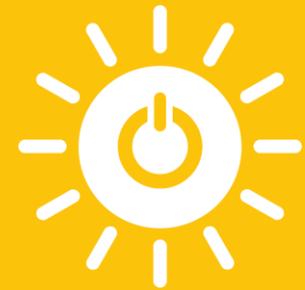


2024



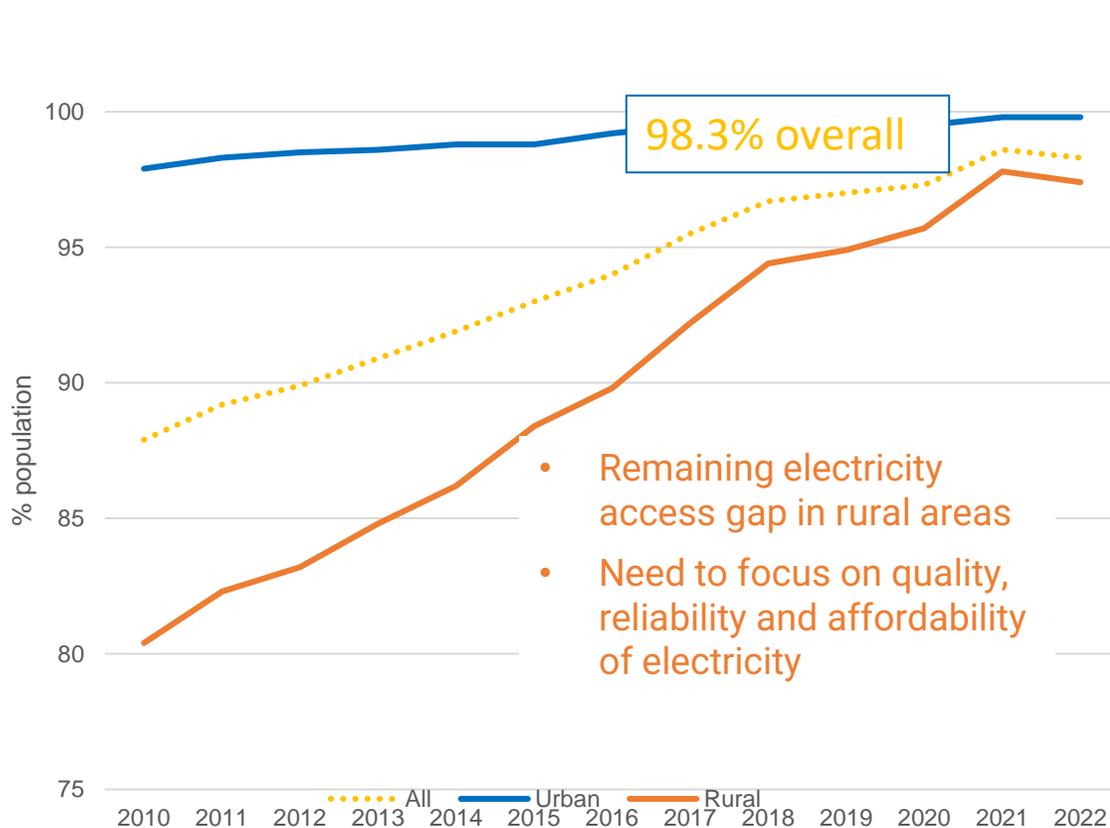
Progress on SDG 7 and the Energy Transition

7 AFFORDABLE AND
CLEAN ENERGY

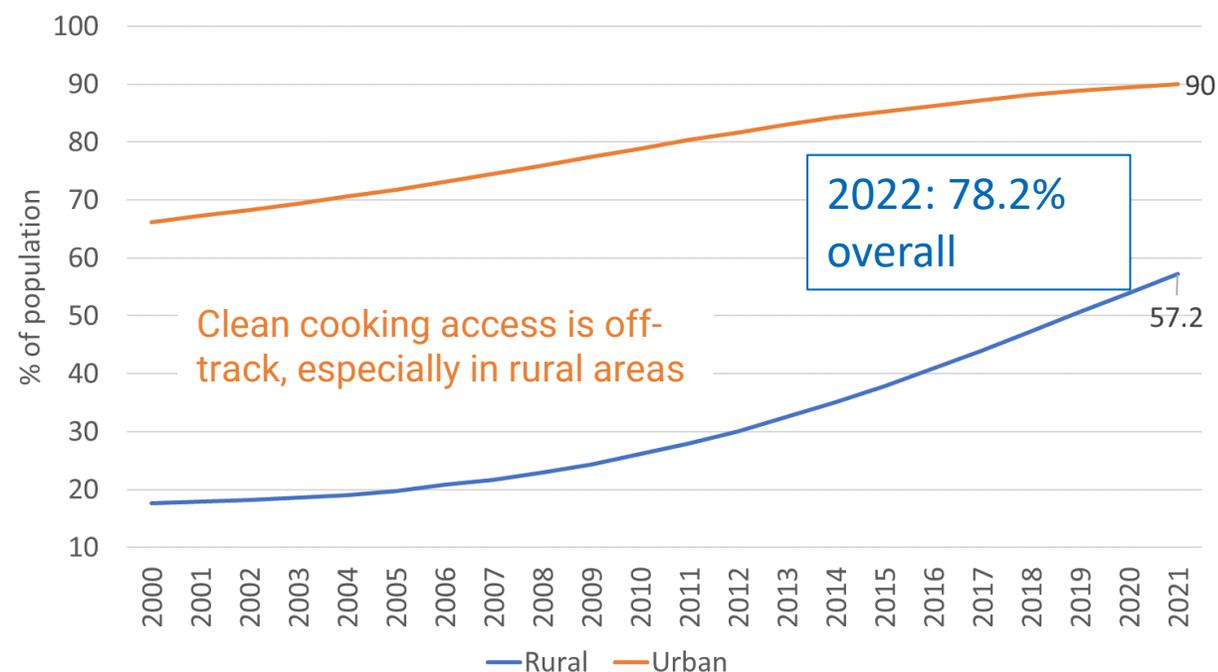


Energy Access – electricity progressing but clean cooking is the greatest SDG 7 challenge

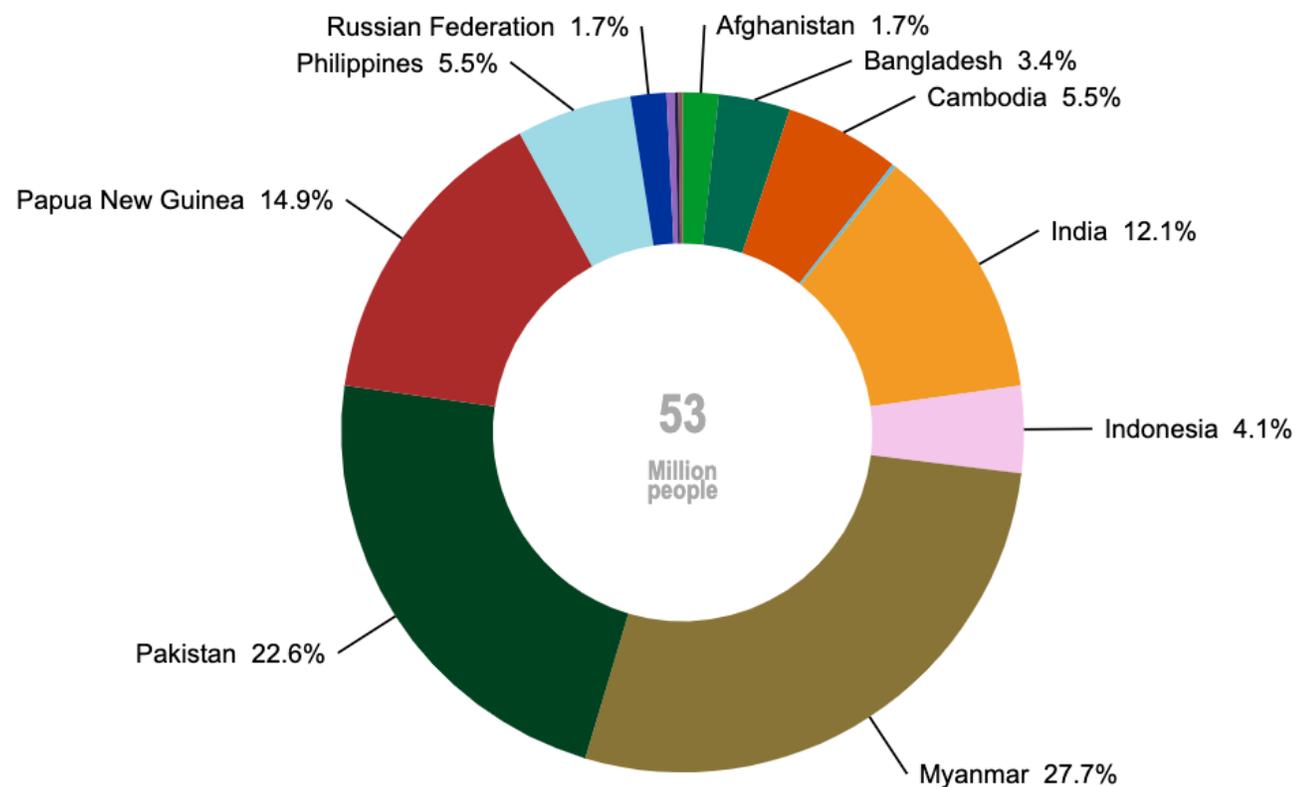
Proportion of population with access to electricity in Asia and the Pacific



Proportion of Population with Access to Clean Cooking in Asia and the Pacific, 2000-2021



Population without access to electricity, 2021



Much progress.
Most of the
53 million
people without
access to
electricity live in
just a few
countries.

Source: World Bank, United Nations Statistics Division

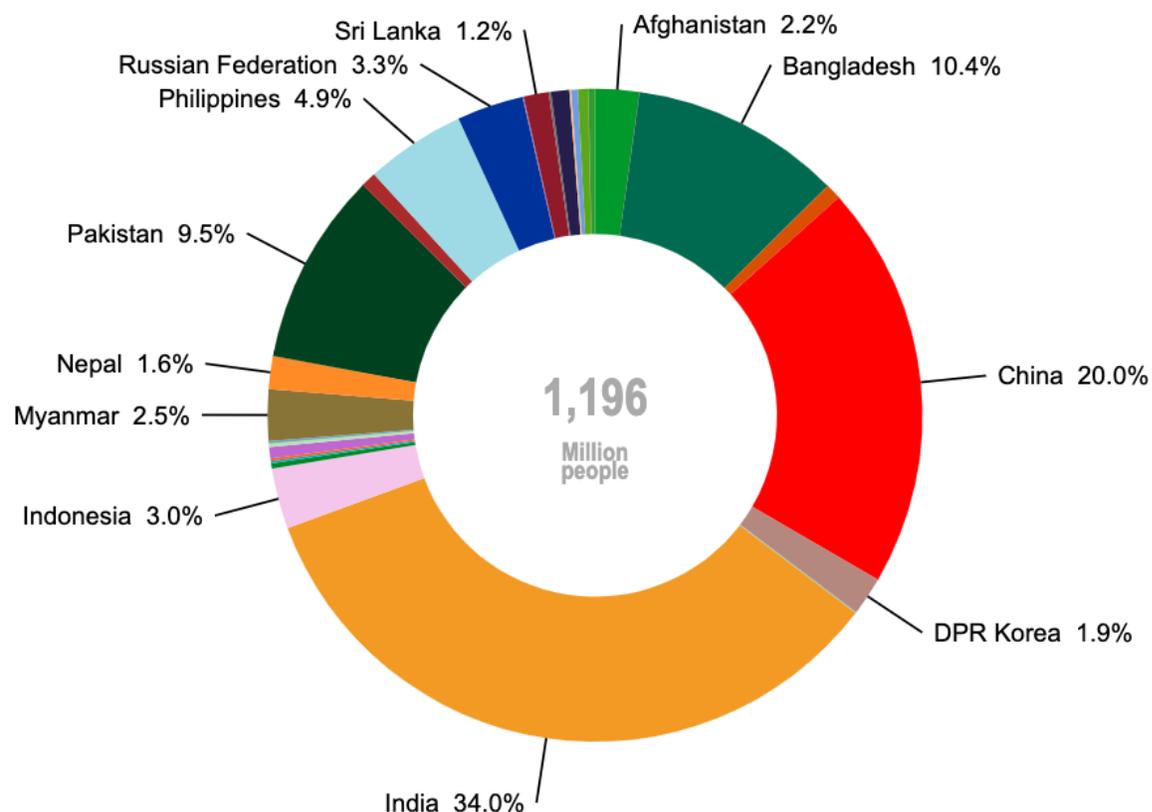
Challenges: Electrification

- Energy service falls short of levels needed to meet social and economic development needs
- Higher-tier levels of access needed
- Standardization of off-grid solutions to deliver quality services and facilitate ongoing operations and maintenance

TIER 0	TIER 1	TIER 2	TIER 3	TIER 4	TIER 5
	Task lighting + Phone charging	General lighting + Phone Charging + Television + Fan	Tier 2 + Any medium-power appliances	Tier 3 + Any high-power appliances	Tier 2 + Any very high-power appliances

Source: ESMAP

Population without primary reliance on clean cooking fuels and technologies, 2021



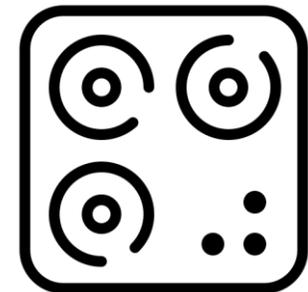
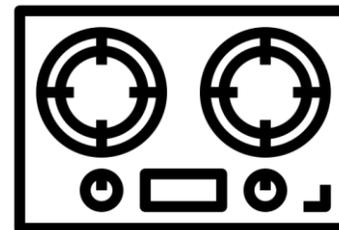
Source: WHO, United Nations Statistics Division

Lagging... nearly
1.2 billion
people continue to
rely on unhealthy
and polluting
cooking fuels and
technologies.

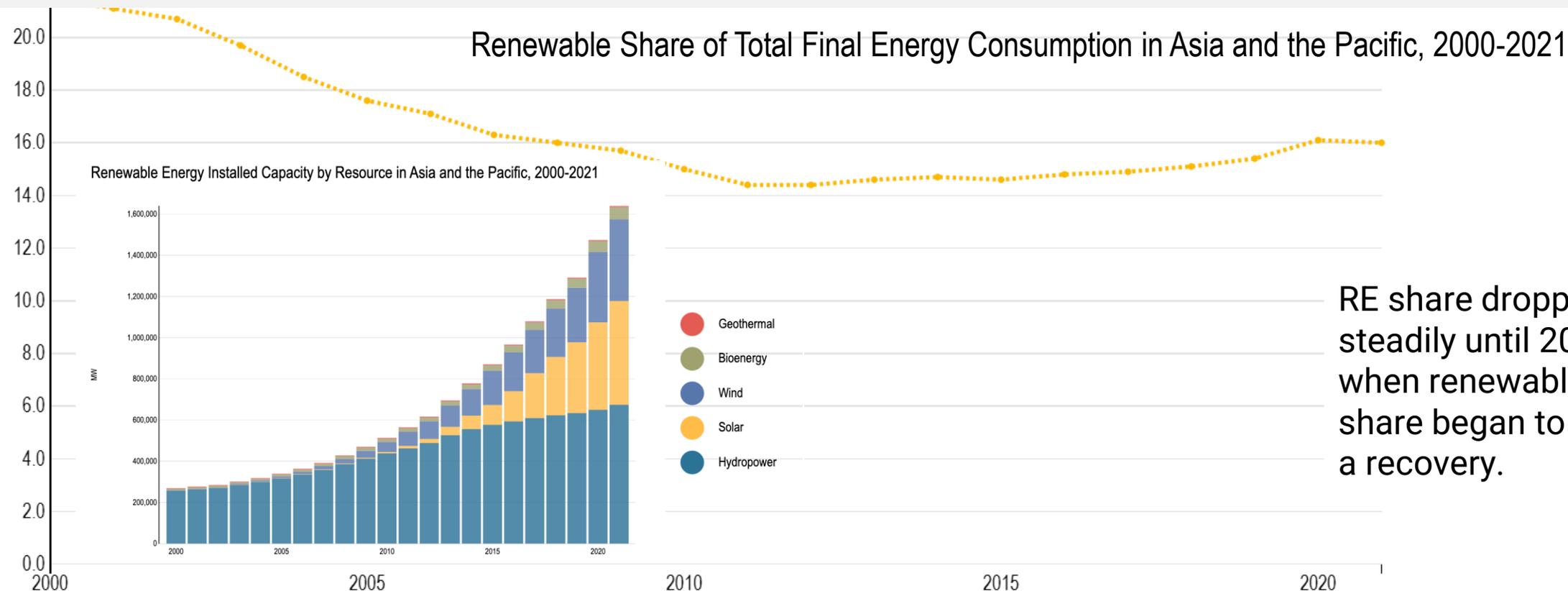
Driving factors: Clean Cooking

- Increasing policy and programme focus on clean cooking
- With strengthened power systems, electric cooking is emerging as an increasingly feasible and convenient option

Between 2010 and 2021, the proportion of people with access to clean cooking fuels and technologies increased from only 50 per cent to 76 per cent.



Renewable Energy – gaining... but not fast enough

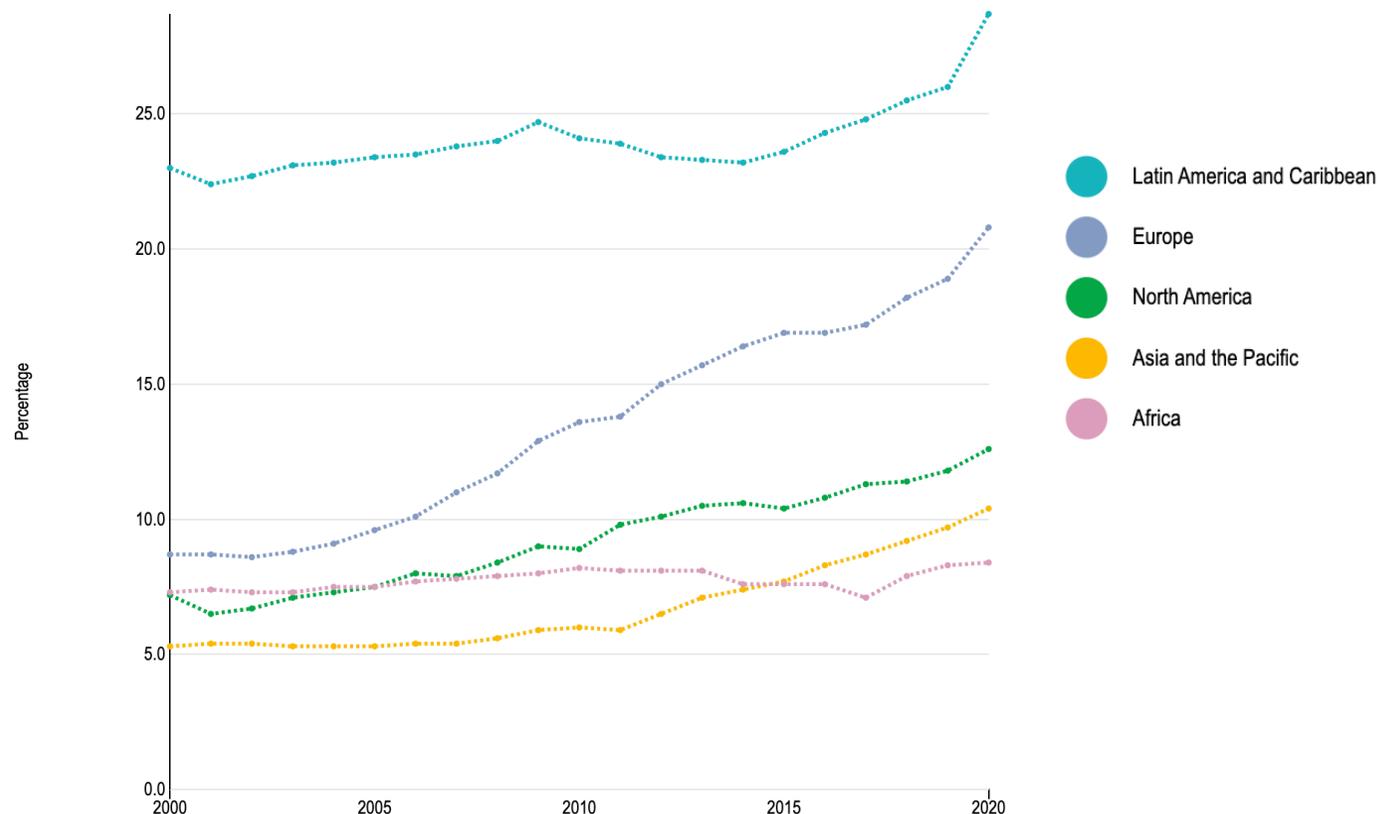


RE share dropped steadily until 2011 when renewables share began to make a recovery.

Challenges: Renewable Energy

- Asia-Pacific share of modern renewable energy in final consumption lags behind Latin America, Europe, and North America
- Concentrated deployment in a few economies
- Perceptions of investment risks, low technical capacity, and lack of favourable policy environments

Modern Renewable Share of Total Final Energy Consumption, 2000-2020

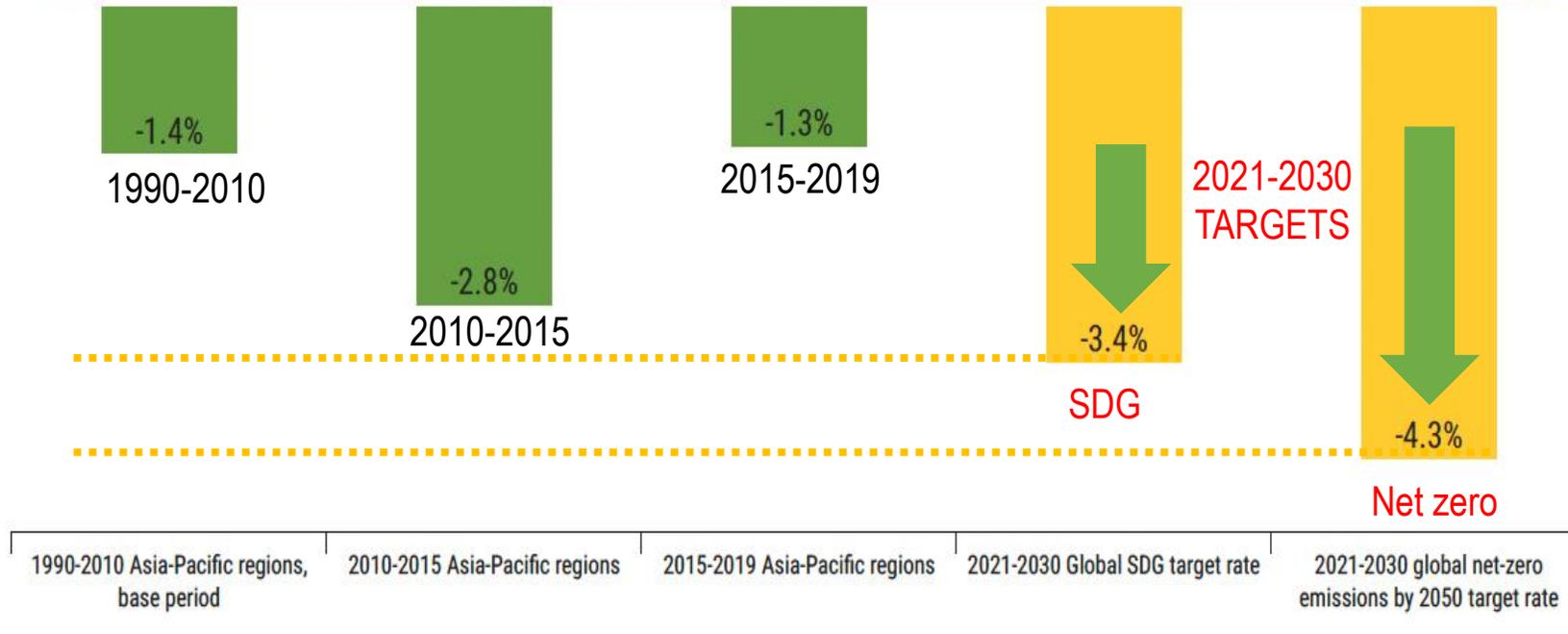


Source: IEA, UNSD, IRENA
 Chart generated from Asia Pacific Energy Portal (asiapacificenergy.org)

Energy Efficiency

Figure 21/

Asia-Pacific growth rate of primary energy intensity, by period, and global 2021–2030 Sustainable Development Goals and net-zero targets



Failing to keep pace... and slowing...

Other global regions demonstrate lower and improving energy intensity levels

Sources: ESCAP based on IEA and UN Statistics Division

Opportunities to Enhance Energy Efficiency

- **Electrification of end uses, including EVs**
- **Introduction of Minimum Energy Performance Standards (MEPS) and labelling**
- **Regional initiatives to harmonize MEPS and labels**
- **Building energy efficiency**



Challenges: Energy Efficiency

- **Insufficient policy across sectors, at the scale needed**
- **Low power prices that disincentivize energy efficiency**
- **Rising passenger vehicle ownership and expansion of road freight**
- **Lack of robust building energy codes**
- **Poor coverage and enforcement of standards**

ESCAP Support for SDG 7 and the Energy Transition



SDG 7 Road Maps

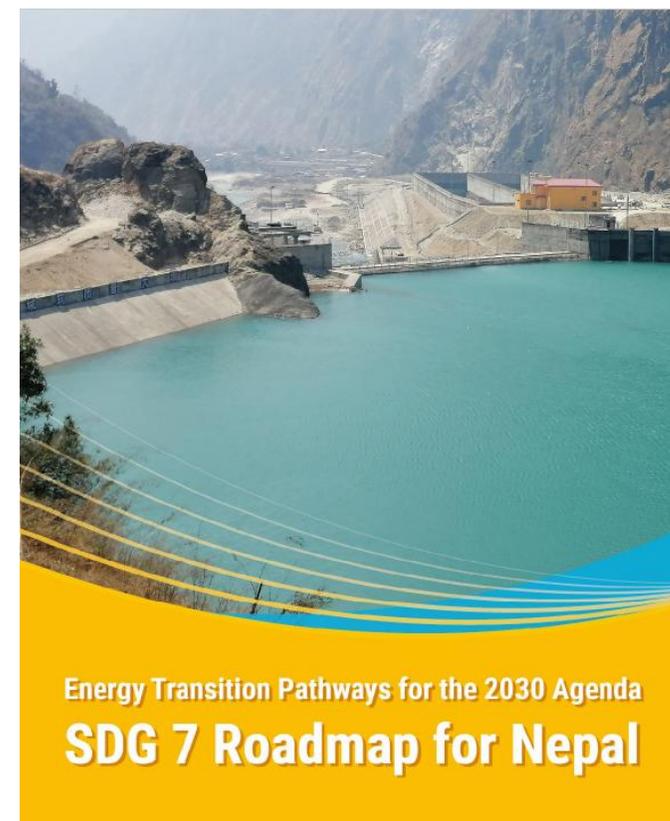


NEXSTEP

National Expert SDG Tool for Energy Planning

- An integrated tool to assist policymakers make informed policy decisions that help achieve SDG7 targets and NDC.
- 16 countries engaged to date
- Focused policy recommendations for each country.

<https://www.unescap.org/projects/nexstep>



SDG 7 roadmaps developed

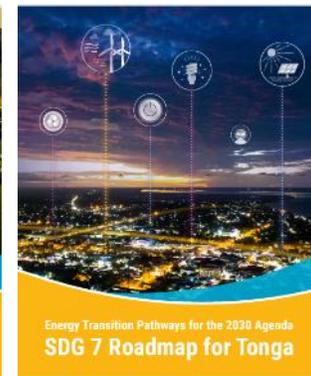
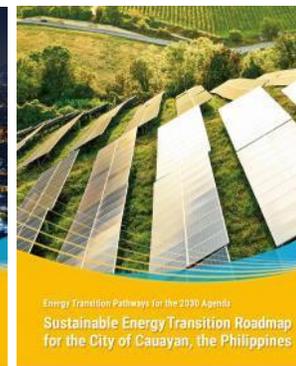
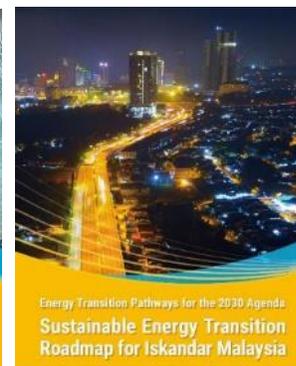
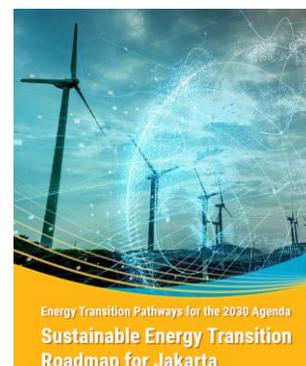
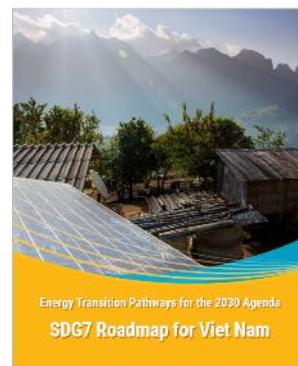
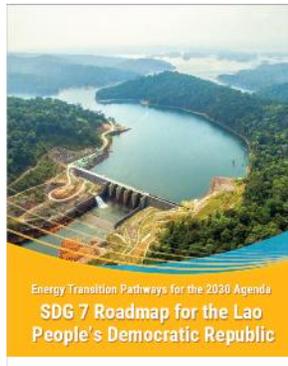
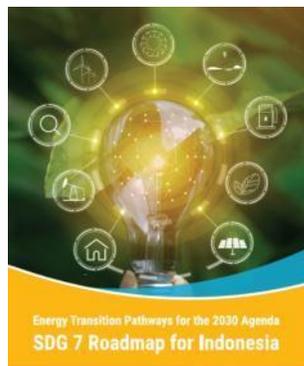
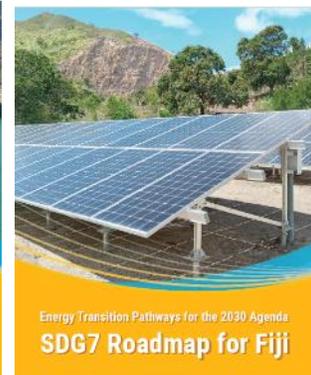
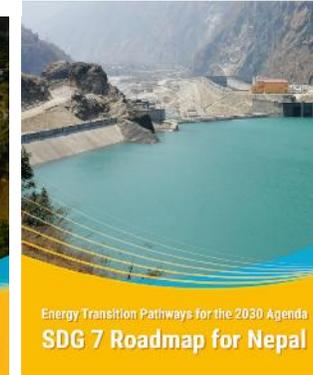
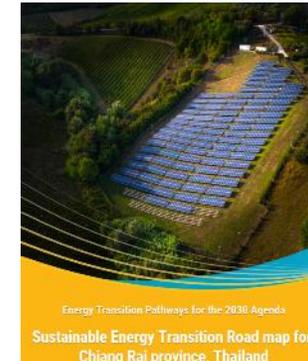
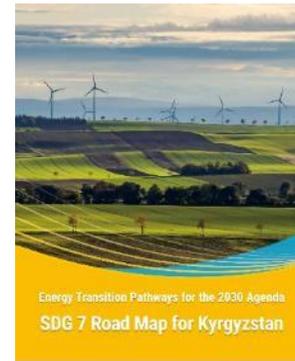
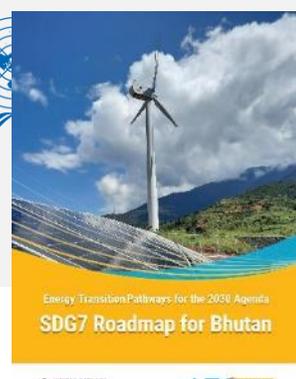
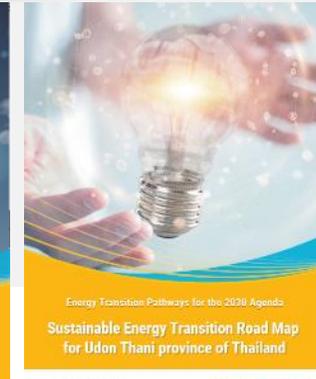
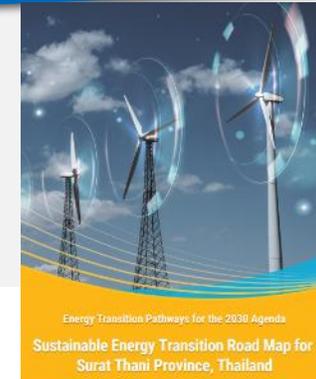
Countries

- Bhutan
- Fiji
- Georgia
- Indonesia
- Lao PDR
- Nepal
- Tonga
- Viet Nam
- Kyrgystan
- Pakistan

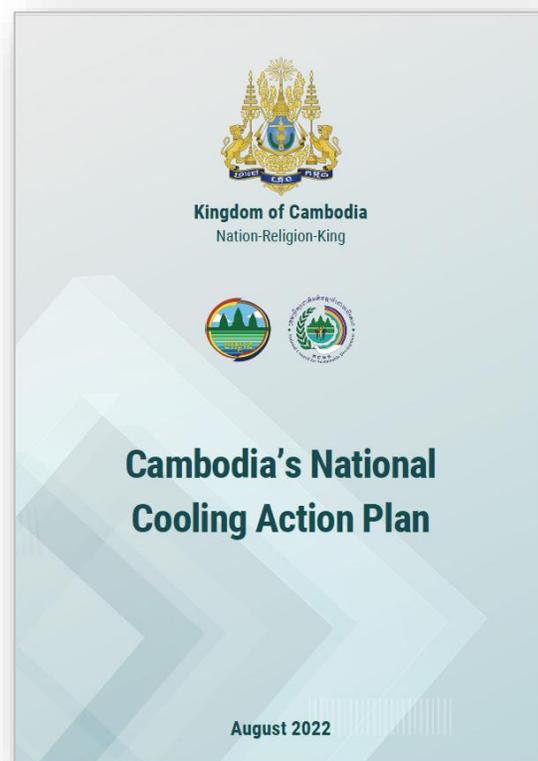
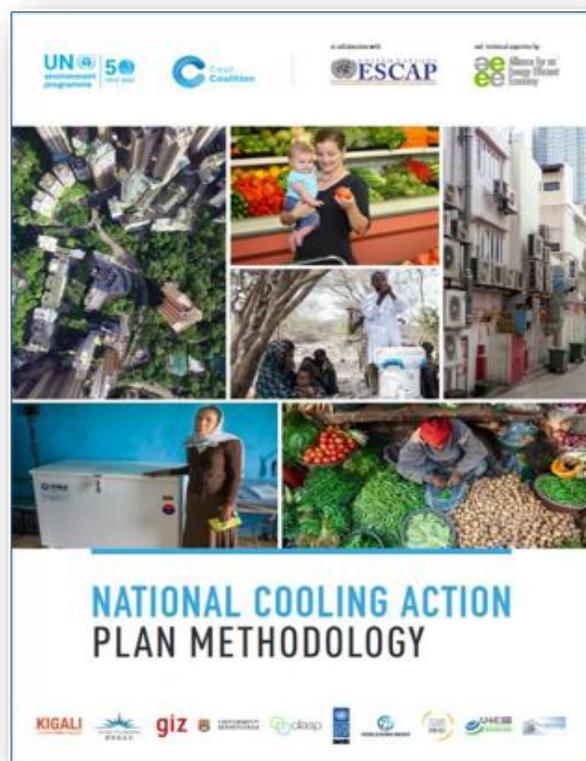
Cities

- Armenia
- Kazakhstan
- Kiribati
- Micronesia
- Mongolia
- Uzbekistan
- Thailand
- City of Jakarta, Indonesia
- Iskandar, Malaysia
- City of Cauayan, Philippines
- Provinces of Thailand - Surat Thani, Udon Thani and Chiang Rai

- Ongoing**
- Cities of the Philippines – Borongan, Ormoc

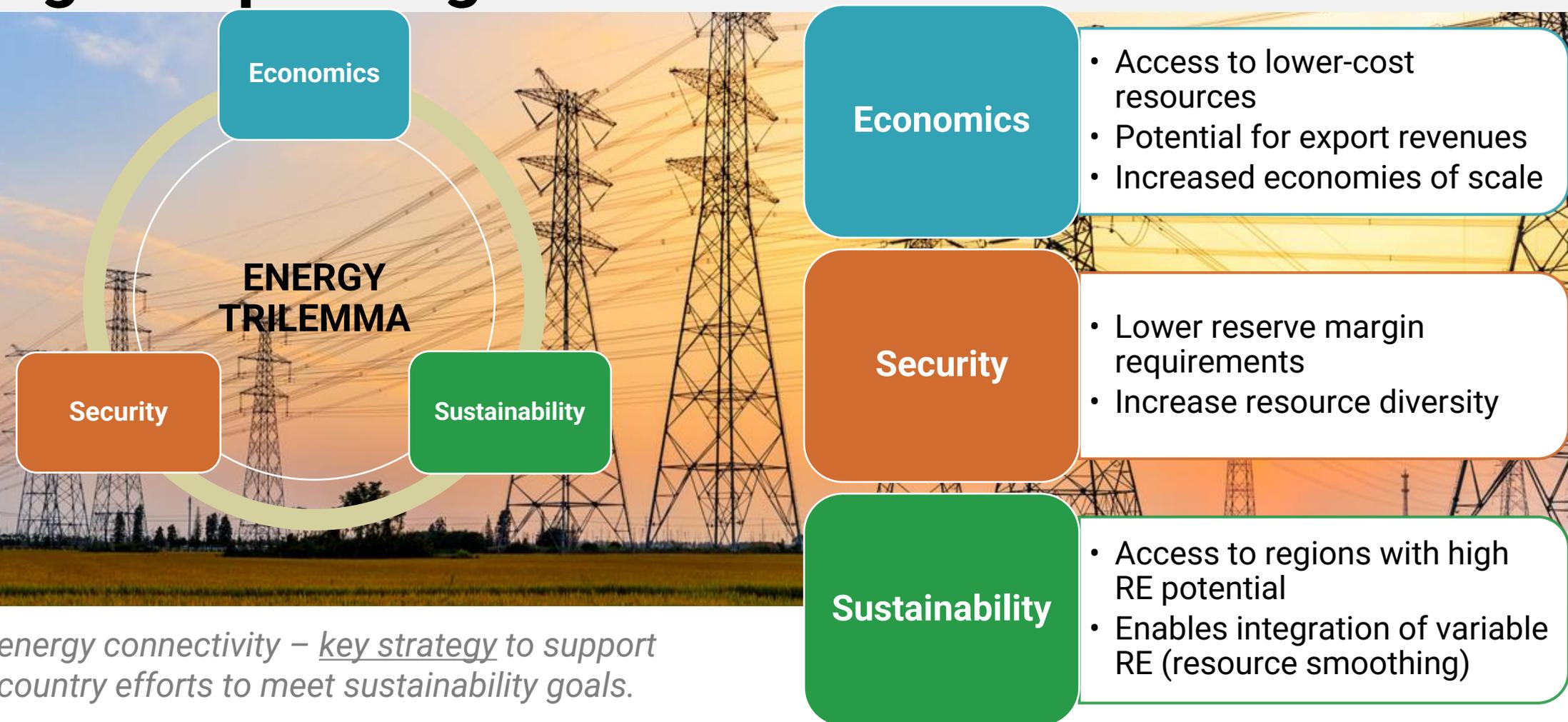


National Cooling Action Plans (NCAPs)



- NCAP completed in Cambodia
- Ongoing NCAP work in Indonesia and Viet Nam

Power system connectivity – connecting the region's power grids



energy connectivity – key strategy to support country efforts to meet sustainability goals.

Regional Roadmap on Power System Connectivity

Vision, principles and **nine strategies** to enable sustainable connectivity

Planning

- Develop a regional master plan (Strategy 2)
- Coordinate cross-border transmission planning (Strategy 6)

Financing and development

- Mobilize investment in cross-border infrastructure (Strategy 7)

Operations

- Move toward multilateral trading and competitive markets (Strategy 5)
- Co-ordinate cross-border system operations (Strategy 6)

Cross-cutting

- Build trust and political consensus (Strategy 1)
- Develop intergovernmental agreements (Strategy 3)
- Coordinate, harmonize, and institutionalize policy and reg frameworks (Strategy 4)
- Build capacity and share information, data, best practices (strategy 8)
- Ensure coherence of connectivity with the SDGs (Strategy 9)

Conclusions

1. SDG 7 achievement is a “mixed bag” across the vast Asia-Pacific
2. Access to electricity mostly on-track, but focus needed on quality, reliability and affordability. Clean cooking requires increased policy attention.
3. Better energy efficiency performance needed across sectors to lower energy demand, reduce the need for additional energy supplies, and increase the affordability of energy services.
4. Vast untapped renewables potential - greater investments in supply and grid infrastructure needed. Proactive policy framework needed to reduce risk and kick-start investment.
5. Improved grid infrastructure and cross-border connectivity can increase energy access, supply efficiency, and renewables deployment, while supporting national energy security and decarbonization objectives.

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