Regional Scenario on SDG7 and the Energy Transition in Asia and the Pacific

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Some Opening Questions

1. Why do we need an energy transition? How is it related to SDG7 on energy?
2. What state are we transitioning to?
3. How are we tracking on SDG7 as a region?
4. What principles should guide progress on sustainable energy?
5. What role for ESCAP in progressing SDG7 and accelerating the transition?

Image courtesy Grattan Institute

Global Energy Realities – *fossil fuels still dominate*

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The global energy system has enormous inertia which is resisting change

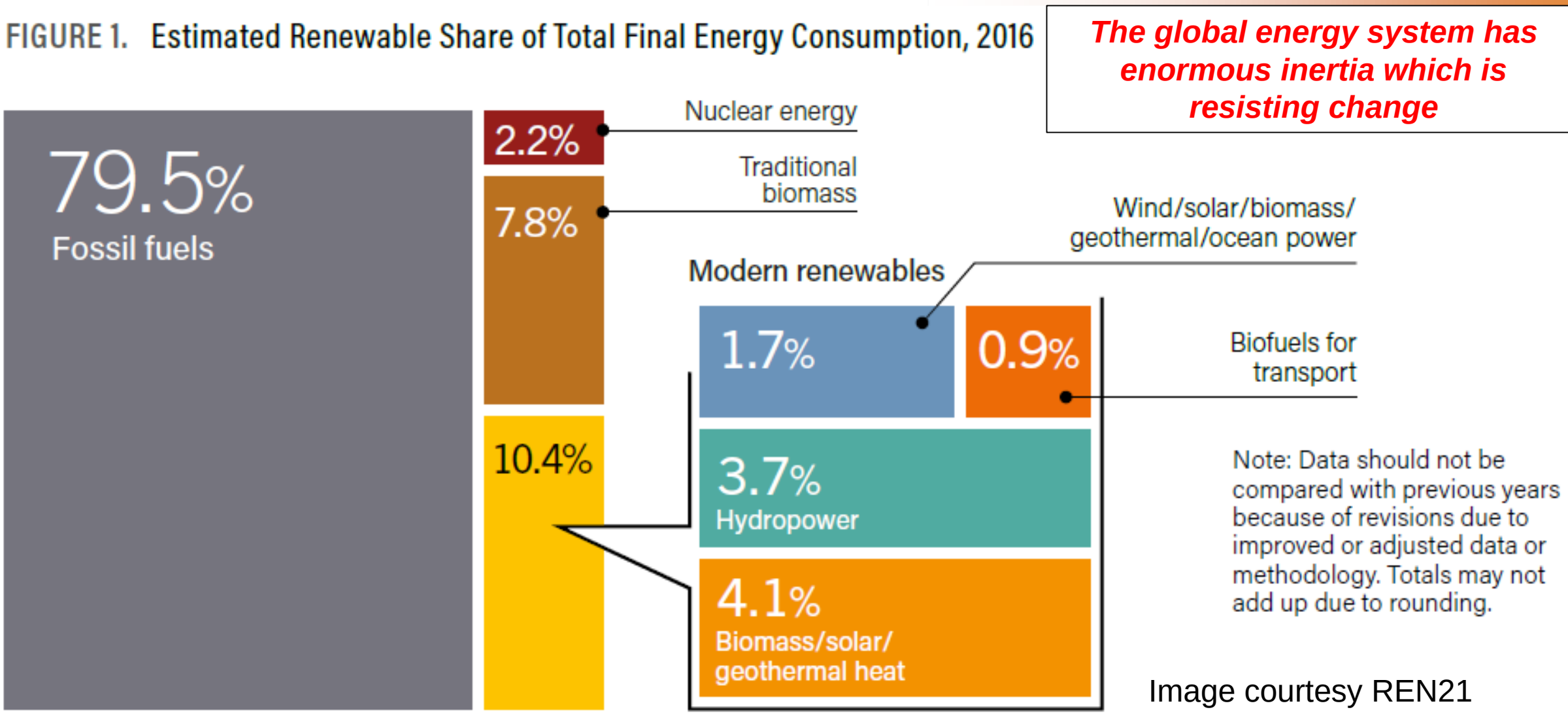

Image courtesy REN21

Energy Transition Defined

- *passage from one state, stage, subject, or place to another*
- *a movement, development, or evolution from one form, stage, or style to another*

Image courtesy Sangamon Valley Collection

The Energy Transition
(from the 2018 G20 Energy Ministers' Communique)

"…..there are different possible national paths to achieve cleaner energy systems ….under the term "transitions" ….. each G20 member — according to its stage of development — has a unique and diverse energy system as starting point, with different energy resources, demand dynamics, technologies, stock of capital, geographies and cultures"

Image courtesy G20

Convergence of Energy Transition Messages from Contemporary Thinkers?

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Bill Gates: 'Right now, the world spends only a few billion dollars a year on researching early-stage ideas for zero-carbon energy. It should be investing two or three times that much. Why should governments fund basic research? For the same reason that companies tend not to: because it is a public good.'

Joe Romm: "Key climate solutions have been advancing considerably faster than anyone expected just a few years ago …. These solutions include such core enabling technologies for a low-carbon world as solar, wind, efficiency, electric cars, and battery storage."

Liu Zhenya: "the fundamental solution is to accelerate clean energy, with the aim of replacing coal and oil…. The only hurdle to overcome is 'mindset', there's no technical challenge at all."

Michael Liebreich There is now a new orthodoxy in energy and climate …. in the world of 2040, one third of power will come from wind and solar, one third of vehicles will be electric, and the economy will be one third more energy-efficient than today.

What a Sustainable Energy Transition Entails

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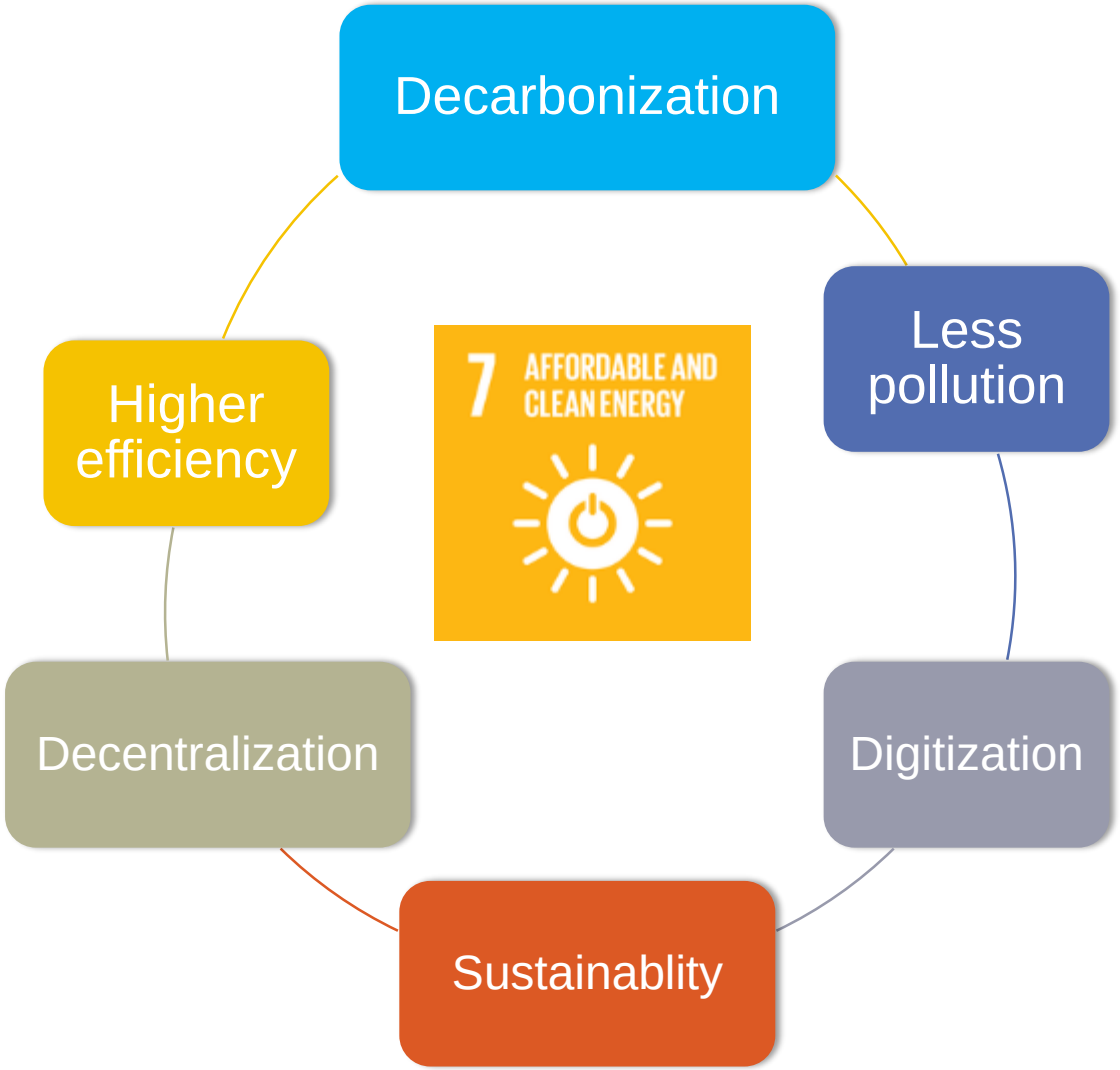
1. Principal Directions



2. Development Pathways

- Renewables
- Advanced energy efficiency
- Electrification of end uses
- Smart grids
- Energy internet of things
- Peer to peer energy exchange
- Cross-border energy

Is there Evidence an Energy Transition is Taking Hold?

- **2008-present**: Power utilities show long term devaluations – energy efficiency and distributed energy slow demand
- **2008:** Investment in renewables exceeded fossil fuel investment for the first time
- **2012–present**: Multiple coal company bankruptcies in USA
- **2013**: Peak coal surpassed in China, now in long term decline (but rose in 2017)
- **2013**: World Bank moves away from coal fired power investment
- **Feb 2018:** Tesla's market capitalization exceeds Ford's
- **Sep 2018:** Japan's Marubeni exits from coal generation business

Coal demand to remain flat to 2022, resulting in a decade of stagnation
18 December 2017

Image: IEA

SDG7: Three Targets for the Energy Sector

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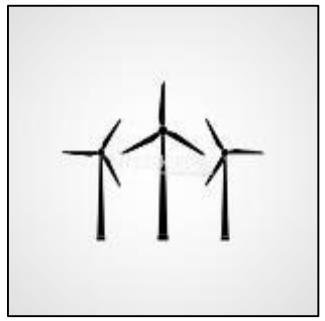


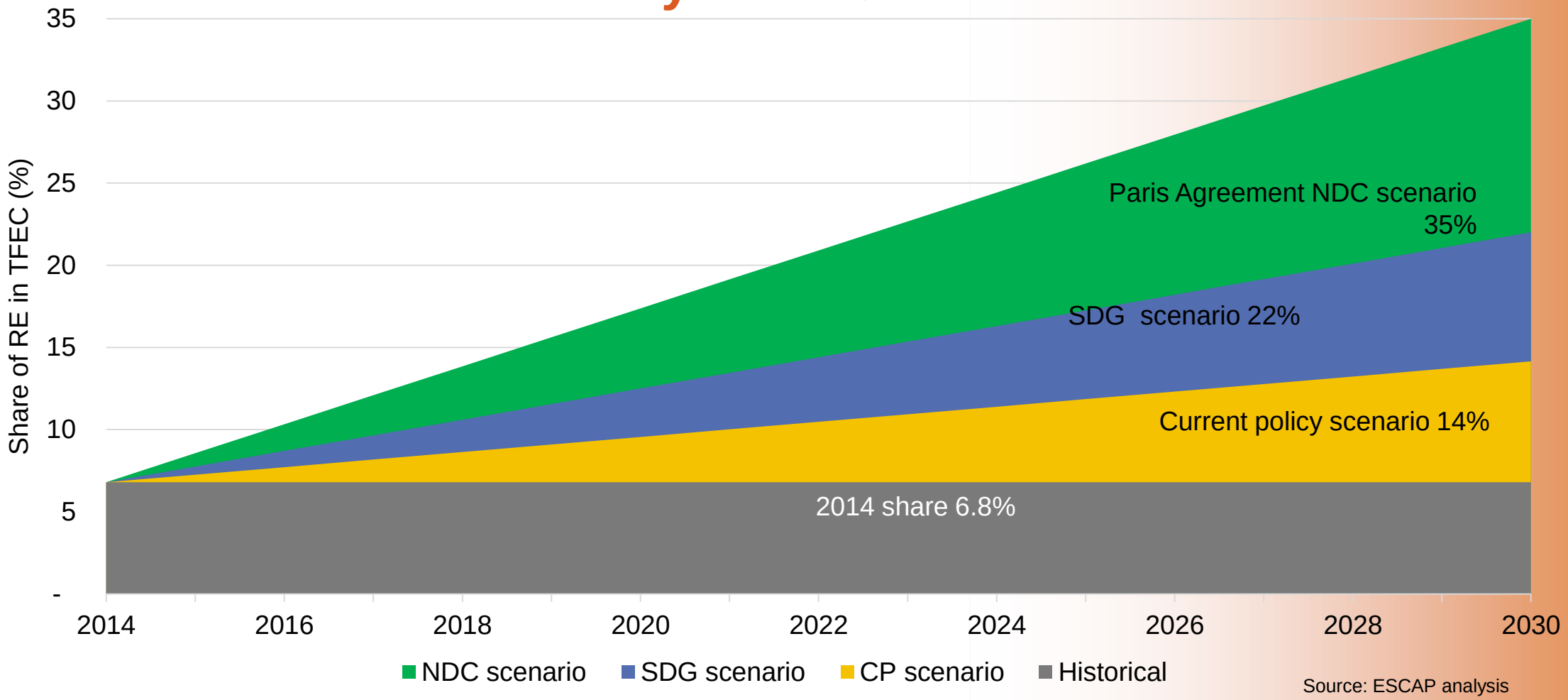
1. ensure universal access to affordable, reliable and modern energy services

2. increase substantially the share of renewable energy in the global energy mix

3. double the global rate of improvement in energy efficiency

Can we achieve this in 12 years?

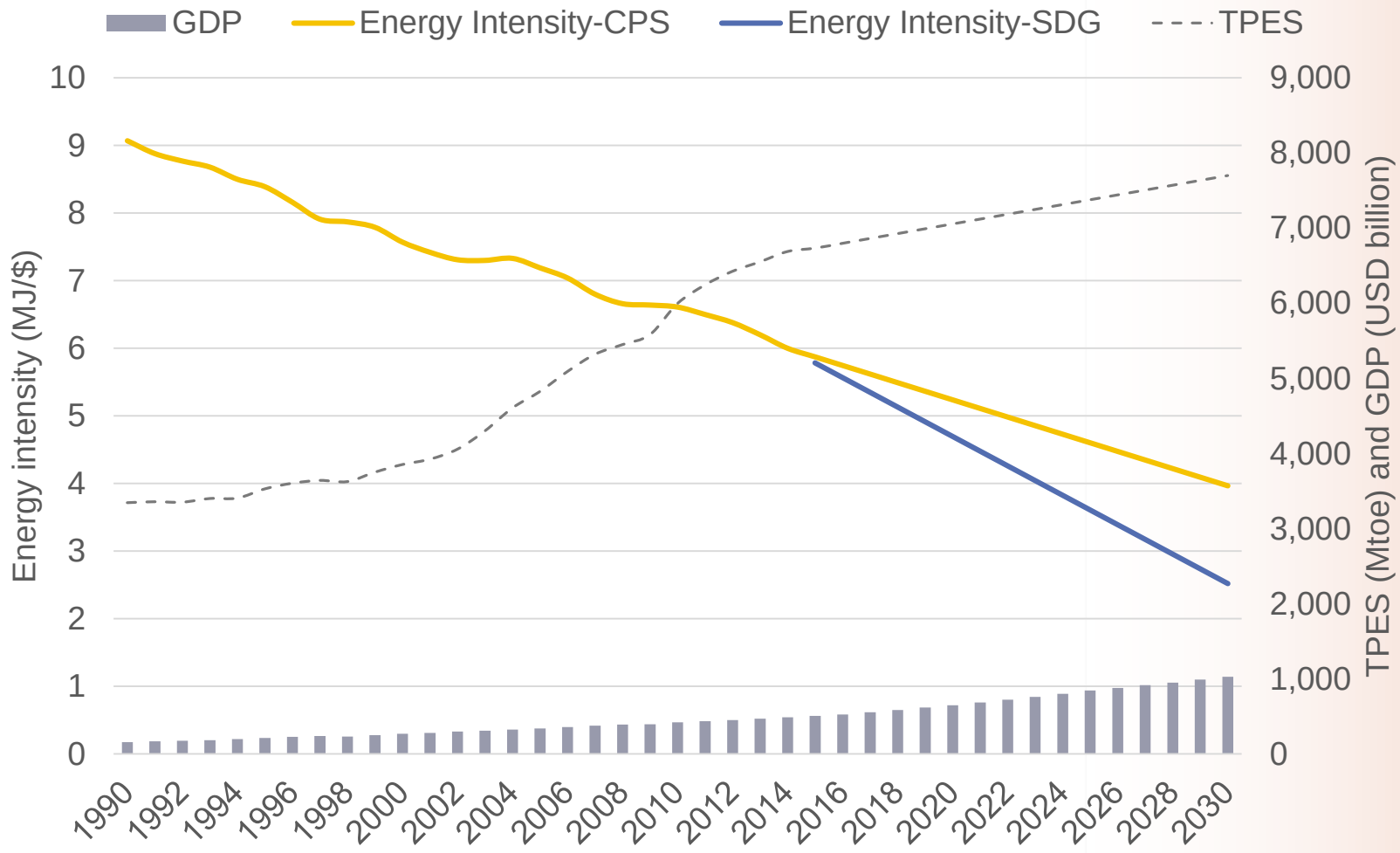
Growth in Modern Renewables in the Asia-pacific: Three Pathways to 2030



Source: ESCAP analysis

Achieving the SDG7 target means speeding up the deployment of modern renewable energy, across the region

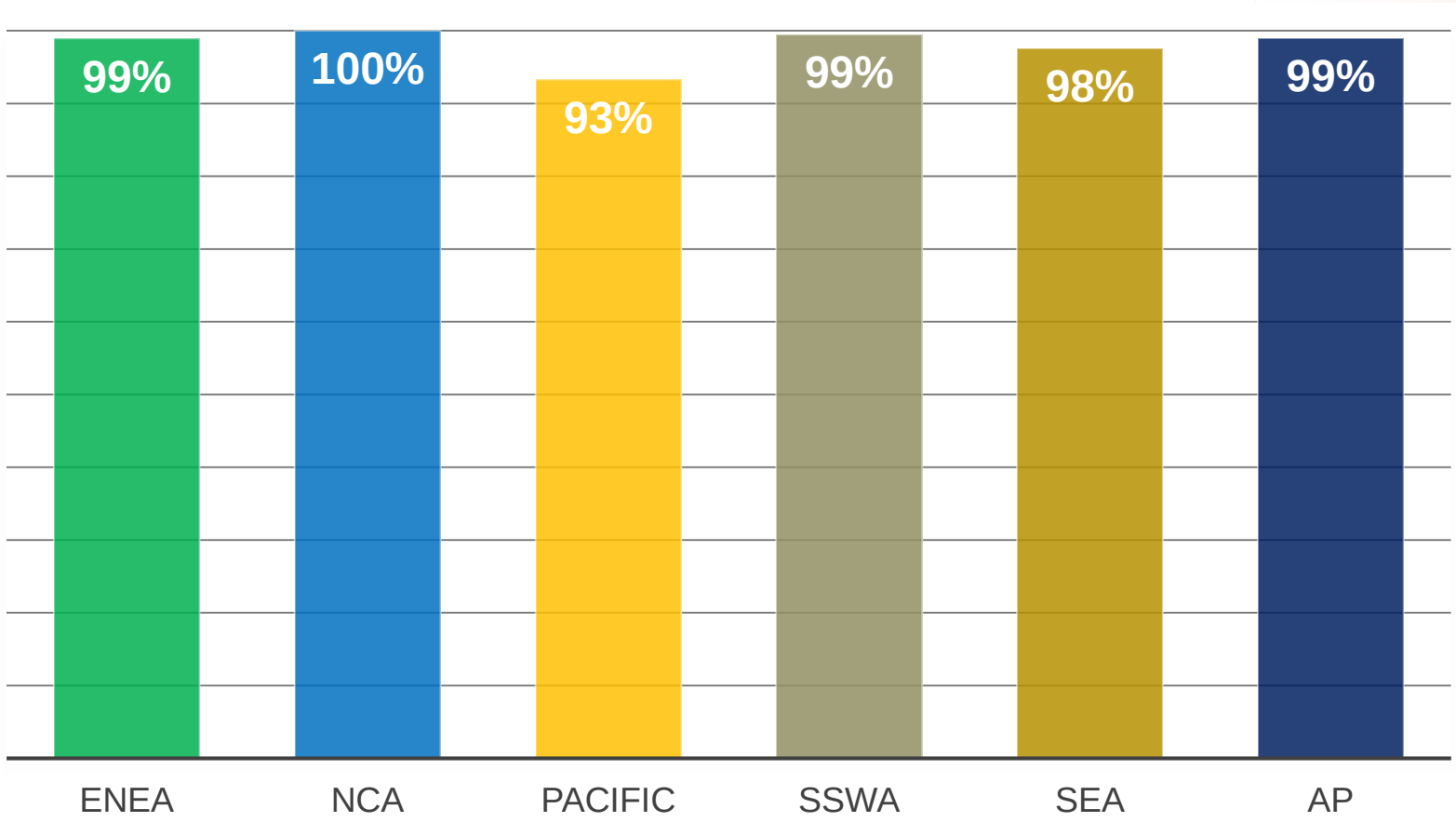
Energy Intensity Under Current Policies Scenario - Close to SDG7 Target in 2030



Source: ESCAP analysis

Energy efficiency needs further action

Access to Electricity Under Current Policy Scenario (2030)



Source: ESCAP analysis

Investment of between $0.33 billion and $1.7 billion annually is needed to achieve the SDG7 target for universal access to electricity by 2030

Pathways to Universal Access to Clean Cooking by 2030 (Global and Asia-Pacific)

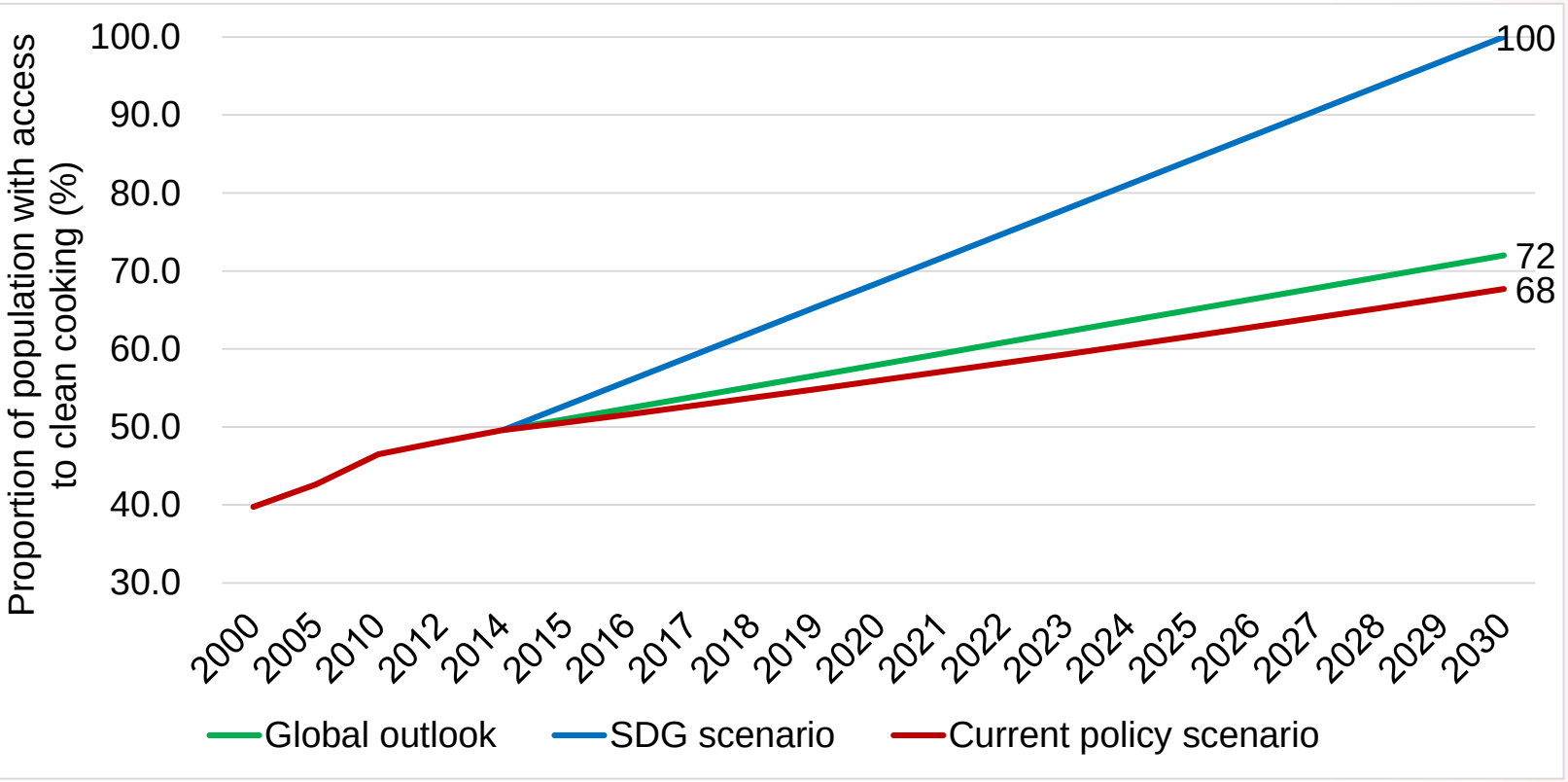


Image: Global Alliance for Clean Cookstoves

Source: ESCAP analysis

Determined action is required to bring the target on clean cooking systems back on track which requires exploring locally appropriate solutions

Asia-Pacific's 3 Major SDG7 Challenges

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1. Clean cooking falls below policy radar - progress well below achievement of universal access.

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2. Electricity access - many countries will still have significant unelectrified populations by 2030 – Pacific, South-East Asia and South Asia.

3. Renewable energy under current trajectory may not reach "substantial increase" by 2030

Pathways to Address these Challenges

Clean cooking

- Raise visibility and policy priority – link to uncosted externalities
- Mobilize more public funding
- Expand LPG networks into rural areas
- Develop and disseminate appropriate biomass and cookstove technologies
- Find modalities to engage the private sector

Electricity access

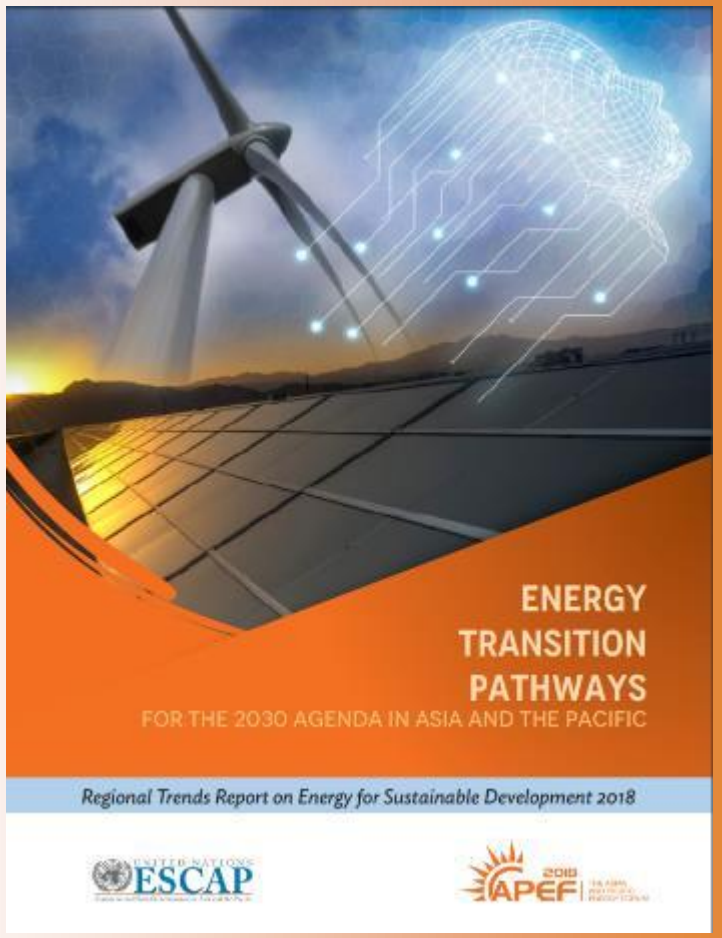
- Enhance national capacity to identify least cost solutions
- Transfer off-grid technologies and build local capacities.
- Innovative financing
- Private sector engagement

Renewable energy

- Boost renewable electricity – policy support, investment, technology development, access to grid
- Promote cross-border power grid interconnection for higher RE penetration
- Expand renewables to other sectors such as transport, heating and cooling (road, rail, aviation, shipping, industrial heat)
- Link renewable energy policy to more ambitious NDCs
- Phase out fossil fuel subsidies

Enabling the Energy Transition - Recommendations from ESCAP

1. Institutionalizing the energy transition – *national energy policies need to align with SDG7*
2. Prioritizing technology and sectoral scoping – *identify the technologies to address, access, energy efficiency and renewable energy targets*
3. Financing the energy transition – *mobilize enhanced funding, level the playing field for sustainable options*
4. Developing and implementing a regulatory framework – *regulations are key to address energy market failures*
5. Leveraging regional cooperation - *regional cooperation can help countries navigate the complexity of the energy transition*



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Thank You