ADB

Energy Sector Group

9 December 2021

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Sector Advisory Service Cluster–Energy Sector Group

BUSINESS OPPORTUNITIES

Energy Sector Operations Guiding Principles

- Increased deployment of renewable energy and energy efficiency
- Integration of advanced technologies, innovative business models, and financing instruments
- Creating and enabling regulatory frameworks for effective market and sector development

GLOBAL COMMITMENTS TO UNIVERSAL ACCESS AND CLIMATE ACTION

SDG 7: Universal Energy Access by 2030

Paris Agreement: Nationally Determined Contributions (NDCs)

ADB STRATEGY 2030

7 Operational Priorities

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Energy Sector Contributions to S2030

7 Operational Priorities

Increased access to clean energy to meet basic needs, income generation through RE employment	OP 1: Addressing **remaining poverty and reducing inequalities**
Job creation and skills development for women in RE; productive use of women's time for income generation	OP2: Accelerating **progress in gender equality**
Climate change mitigation and **adaptation**, air quality improvement, energy water nexus	OP3: Tackling **climate change, building disaster resilience**
Supporting energy smart buildings, electric vehicles, **microgrids, waste-to-energy, and demand-side energy efficiency**	OP4: Making **cities more livable**
Distributed renewable energy applications in irrigation and agriculture (e.g. solar pumping), biomass-to-energy	OP5: Promoting **rural development and food security**
Promoting energy sector reforms and enabling clean energy development	OP 6: Strengthening **governance and institutional capacity**
Promoting energy connectivity, cross-border clean energy trade, and knowledge exchange	OP 7: Fostering **regional cooperation and integration**

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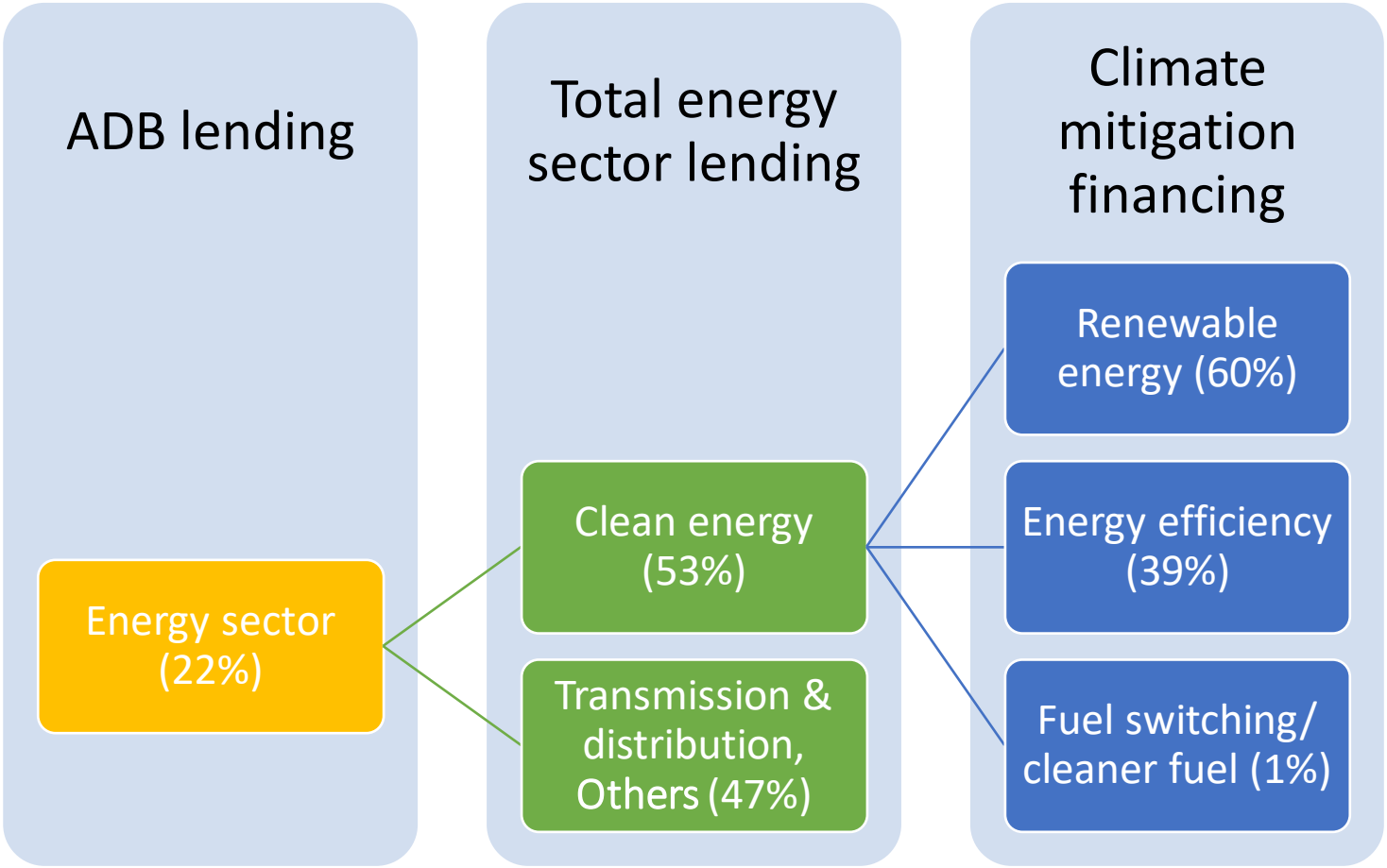
Energy Sector Lending, 2011–2020
(annual average share)



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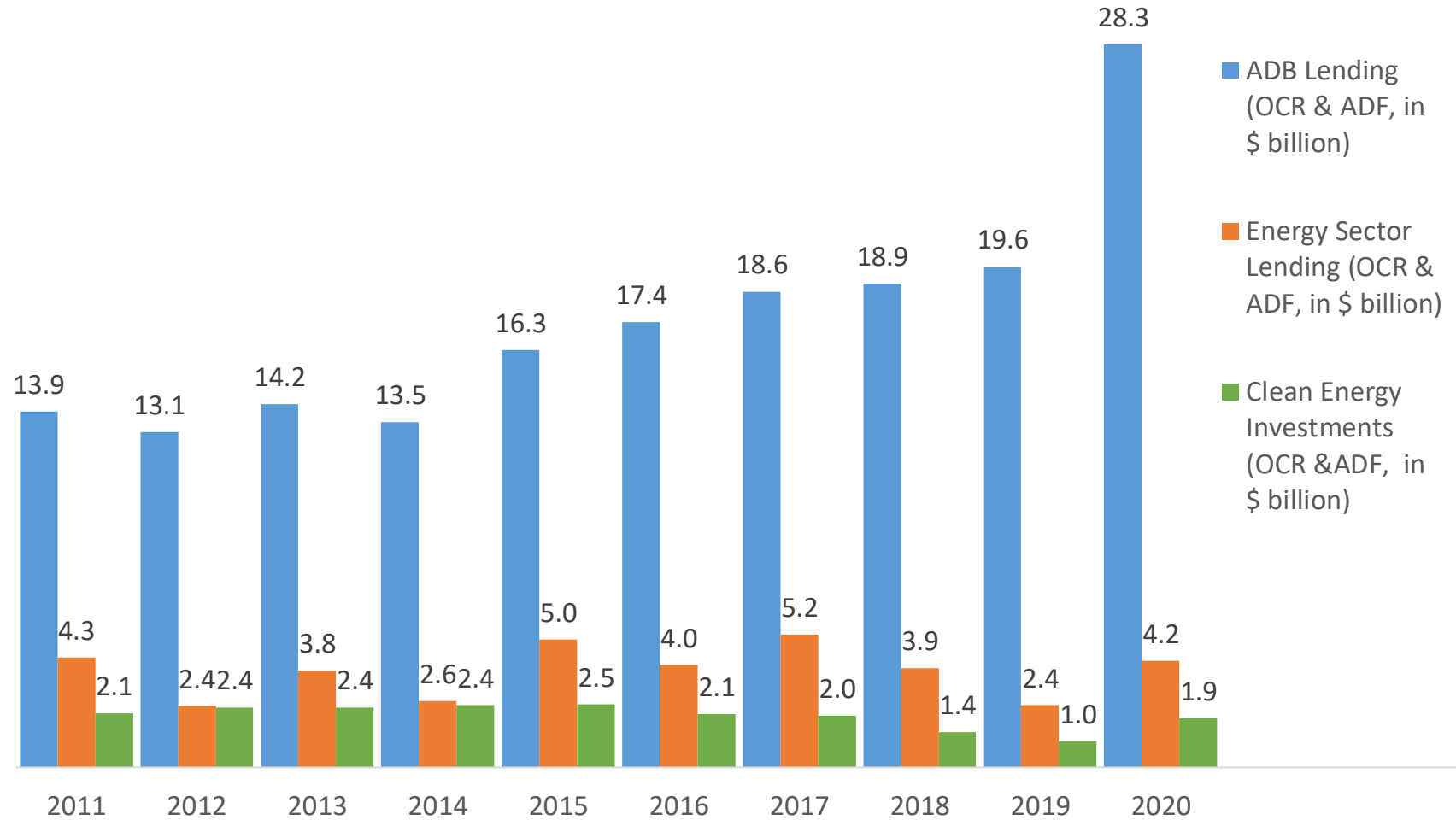
ADB Lending, Energy Sector Lending and Clean Energy Investments



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Energy Sector Lending by Sub-Region in 2020 ($ millions)

	Central and West Asia	East Asia	Pacific	South Asia	Southeast Asia	Private Sector	TOTAL
Climate Finance	174	264	6	839	443	272	1,997
- Mitigation	161	264	6	794	424	269	1,917
- Adaptation	13	0	0	44	19	4	80
T & D, Others	277	186	7	838	756	119	2,184
Total	**451**	**450**	**13**	**1,676**	**1,199**	**392**	**4,181**

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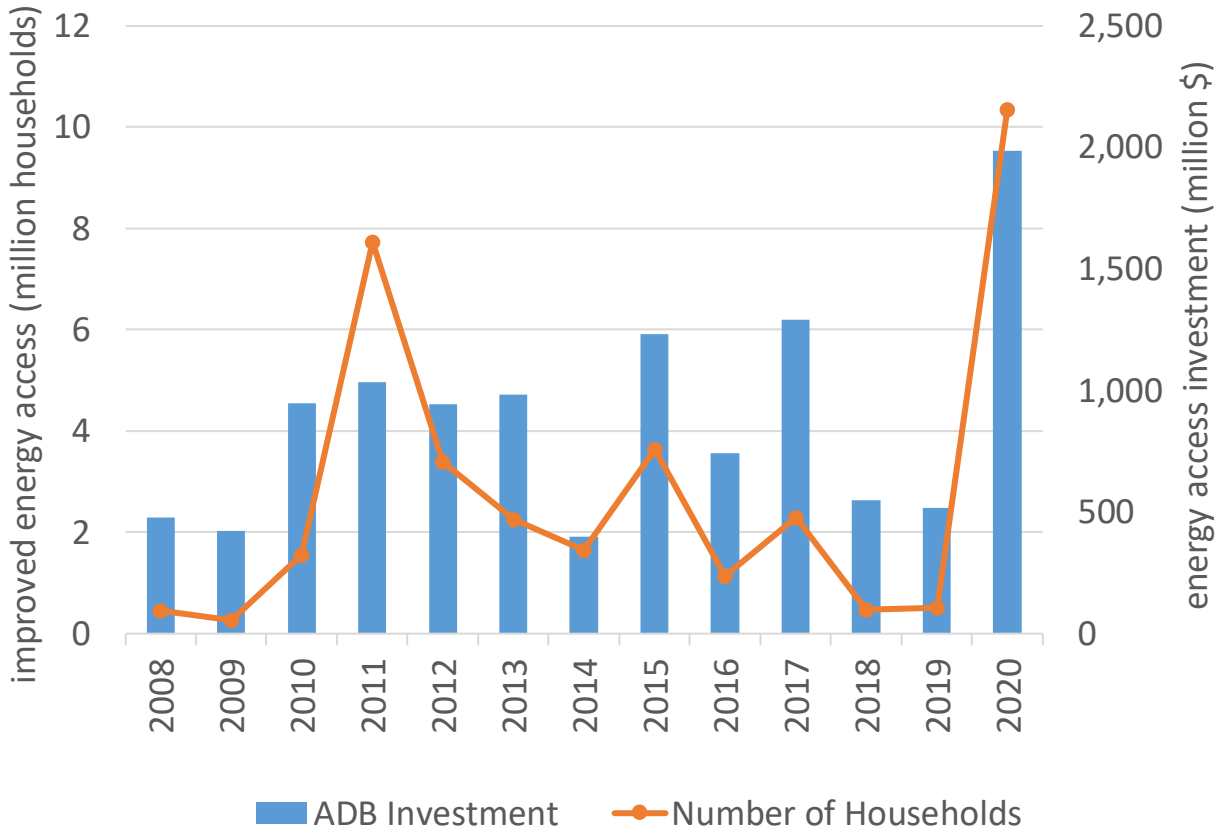
Outcomes from Operations:

Progress in Energy Access



ADB has invested a total of **$2.0 billion** in energy access in 2020, and $10.3 billion cumulatively from 2008 to 2020

It provided energy access (electricity, clean cooking) to **10.3 million households** in 2020, and 35.6 million households cumulatively from 2008 to 2020

Transmission and distribution projects in Afghanistan, Bangladesh, India, Indonesia, Myanmar and Nepal contributed to this upsurge

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Outcomes from Operations:

Climate Impact of Energy Projects

Estimating greenhouse gas emission reduction

- 6.9 million tons of CO_2 equivalent per year—emission reduction (2020)

Assessing climate change impact of projects

- 3.4 GW additional RE capacity installed (2020)
- 8.3 TWh/year RE electricity generation (2019)
- 1.1 TWh/year electricity savings (2019)

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ADB Energy Sector Knowledge Work

Handbooks, Cases, Guide Notes

- Carbon Capture, Utilization and Storage
- Clean Cooking
- Distributed Renewable Energy Solutions
- Energy Storage
- Hydrogen
- Microgrids
- Smart Grids
- Waste-to-Energy
- Energy Sector Perspective for the Reopening of the Economy (COVID-19)
- Financing Clean Energy in Developing Asia

Technical Notes, Op-ed, Blogs

- No Place for “Dirty Energy” in ADB’s Climate Vision
- The Pandemic May Break Value Chains, But Solar Energy Can Still Shine
- Covid-19 is an Opportunity to Retool Health Sector's Energy Supply
- It’s Clean, Powerful And Available: Are You Ready For Hydrogen Energy?
- Artificial Intelligence and Human Education, Needed to Advance Energy Efficiency
- Managing Infectious Medical Waste During COVID-19 Pandemic

Workshops, Forum, Collaborations

- Asia Clean Energy Forum
- Cooling, Heating, and Cooking Technologies and Business Models
- Green and Low-Carbon Hydrogen Energy
- Carbon Capture, Utilization, and Storage Technologies
- Collaborations with SEforALL and IEA

Innovative Technologies for Clean Energy

- **EMERGING TECHNOLOGIES**
- smart grids
- energy storage
- carbon capture, utilization, and storage
- green and low-carbon hydrogen
- smart technologies and digitalization

KIRIBATI: South Tarawa Renewable Energy Project ($8 Mn grant)

THAILAND: 10-MW wind power with an integrated 1.88 MWh battery energy storage system ($7.2 Mn equivalent loan)

MONGOLIA: First Utility Scale Energy Storage Project ($100 Mn loan)

INDIA: Bengaluru Smart Energy Efficient Power Distribution Project ($190 Mn loan)

UZBEKISTAN: Navoi Solar Power Project ($13 Mn loan)

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Projected Energy Sector Lending in 2021–2022

In 2020, energy sector lending is about $4.2 billion

- 48% clean energy
- 52% transmission & distribution, others
- challenges due to COVID-19—resource allocation priorities of developing member countries, field work constraints

In 2021–2022, projected average energy sector lending is $5 billion per year

- clean energy representing about 40–50% of the lending

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Indicative Clean Energy Projects for 2021–2023

INO: Sustainable Transition Project – DAMRI E-buses

INO: Geothermal Power Expansion Project

CAM: Energy Efficiency Sector Development Program

CAM: Energy Efficiency Sector Development Program

BAN: Renewable Energy Development and Efficiency Improvement Project

BHU: Renewable Energy Project

BHU: Hydropower Rehabilitation Project

PRC: Low Carbon Transformation in Urban Areas

PRC: Shanxi Low-carbon and Beautiful Village Development

IND: Scaling Up Demand Side Energy Efficiency Sector Project-Additional Financing

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For more information, please refer to https://www.adb.org/projects

Energy Sector: The Way Forward

Increase clean energy investments

- Help develop and demonstrate viability of new renewables beyond solar PV and onshore wind in ADB DMCs
- Develop projects with other sectors to reap scale and scope economies in energy efficiency

Support for more flexible, resilient and smarter energy systems

- Support the deployment of ICT, digital applications, and energy storage in the T&D subsector and the wider circular economy

Strengthen multi-sectoral approach

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Energy Policy Review 2021

MANILA, PHILIPPINES (20 October 2021) — The Asian Development Bank (ADB) has approved a new energy policy to support universal access to reliable and affordable energy services, while promoting the low-carbon transition in Asia and the Pacific.

Policy Principle 1: **Securing Energy for a Prosperous and Inclusive Asia and the Pacific.**

Policy Principle 2: **Building a Sustainable and Resilient Energy Future.**

Policy Principle 3: **Supporting Institutions, Private Sector Participation, and Good Governance.**

Policy Principle 4: **Promoting Regional Cooperation and Integration.**

Policy Principle 5: **Integrated Cross-Sector Operations to Maximize Development Impact.**

ADB will facilitate the transition to sustainable, lower-carbon, and resilient energy systems by assisting DMCs in

(i) accelerating the deployment of renewable energy,

(ii) pursuing strategic decarbonization and the phase-out of coal,

(iii) increasing the climate resilience of energy infrastructure, and

(iv) ensuring a just transition.

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Energy Policy Review 2021

Implications for waste to energy Projects - Right sizing of Wte Projects

ADB will support waste-to-energy investments for as long as the feedstock to be used comes from prudent order of waste to energy management priorities. By removing the environmental hazards caused by open waste dumping and open burning, waste to energy investments can improve local environments in cities and rural areas. ADB will support projects that promote ***circular economy*** *and consider* ***waste*** *to energy* ***hierarchy****. ADB support to waste to energy investments will promote* ***livelihood opportunities*** *especially for the poor who are working on the waste value chains including landfills. The environmental and social impacts of these investments will be managed through the use of* ***best internationally available technologies*** *in the design and operation of such projects in accordance with* ***international conventions*** *(from para 71).*

Other Impacts

Increased use of **Eco-Industrial Parks** to foster recycling and value creation
Increase use of **biofuels**, **biogas** and other **bio-renewable value additions** to waste and biomass
Digitization to allow for acceleration of value creation

Target Best Practice for Large Cities

8% landfilled, 30% waste to energy, balance in recycling, **bioenergy,** upcycling and reuse.

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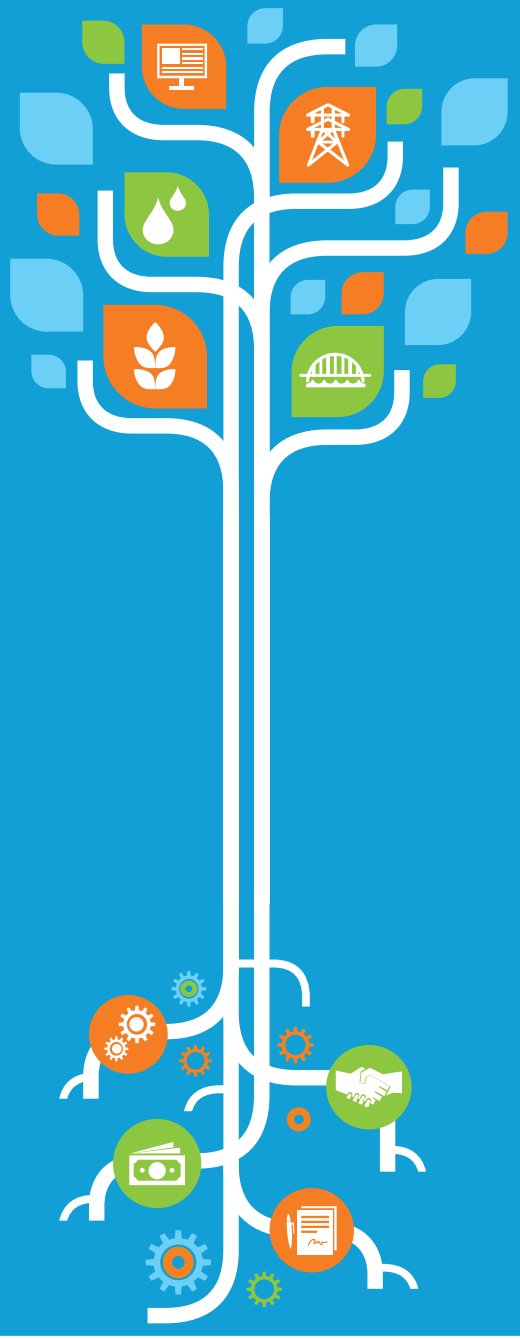

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Thank you!

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