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ADB

Energy Sector Group

3 November 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



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

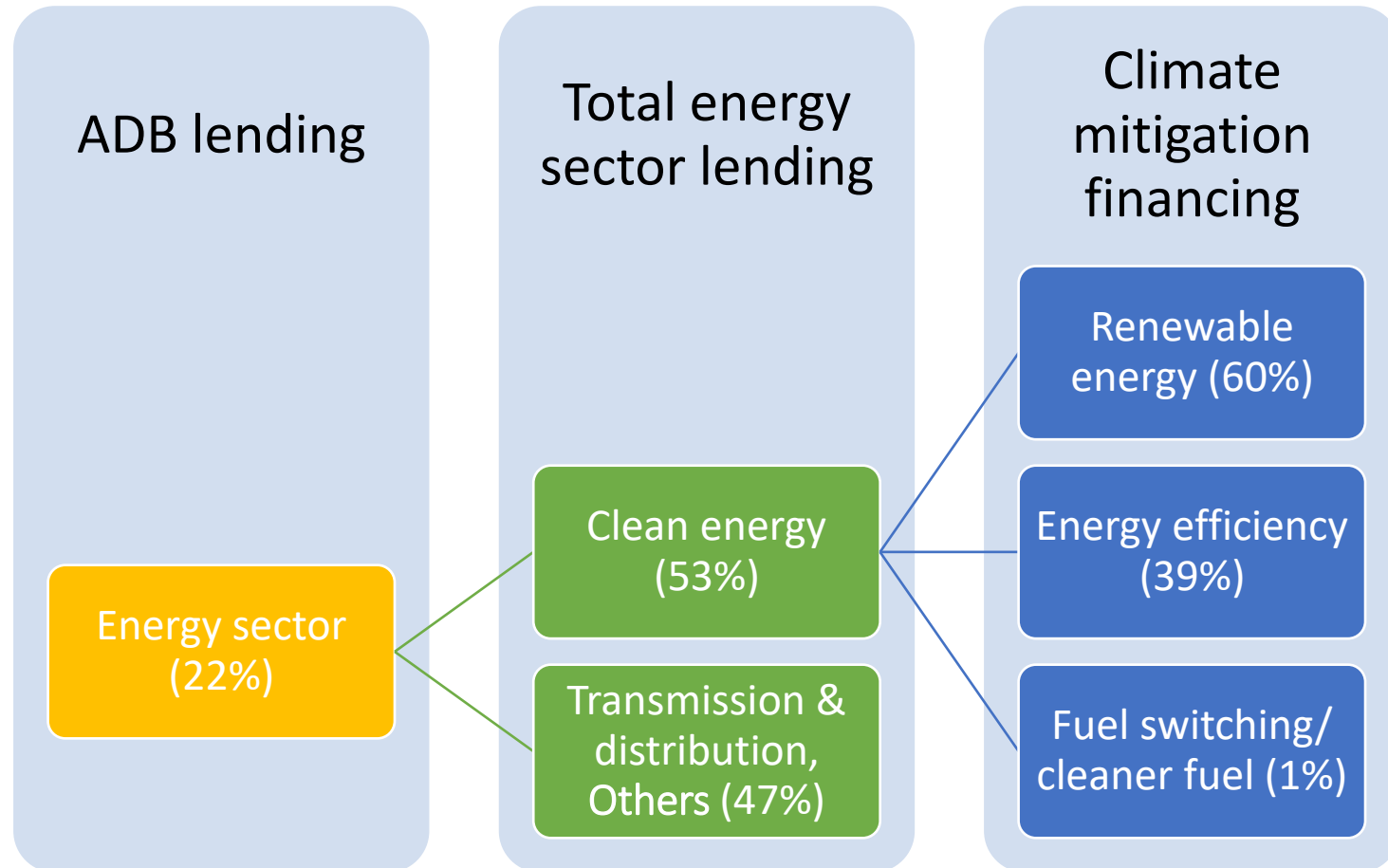
Promoting energy sector reforms and enabling clean energy development

OP 6: Strengthening governance and institutional capacity

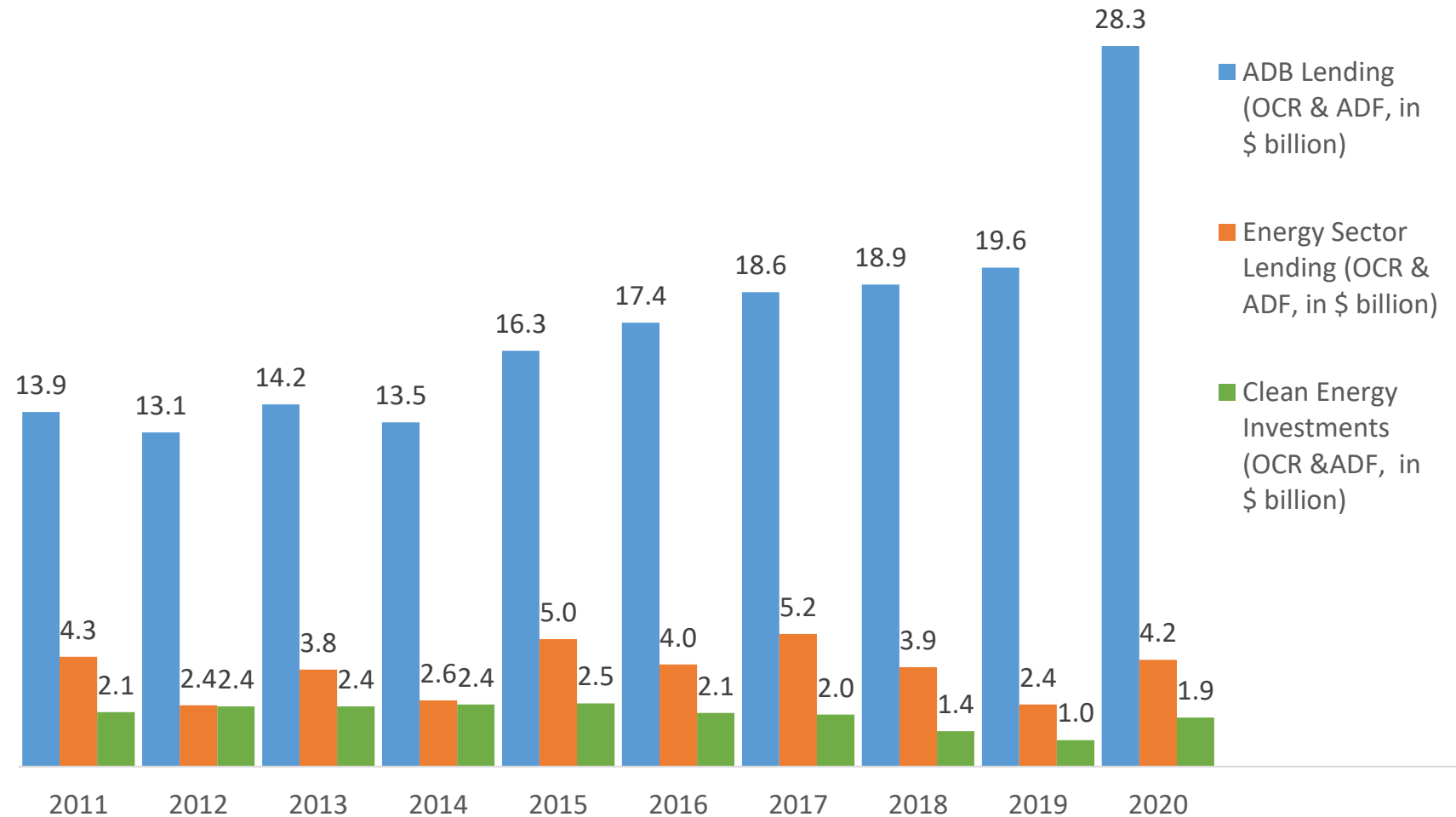
Promoting energy connectivity, cross-border clean energy trade, and knowledge exchange

OP 7: Fostering regional cooperation and integration

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



ADB Lending, Energy Sector Lending and Clean Energy Investments

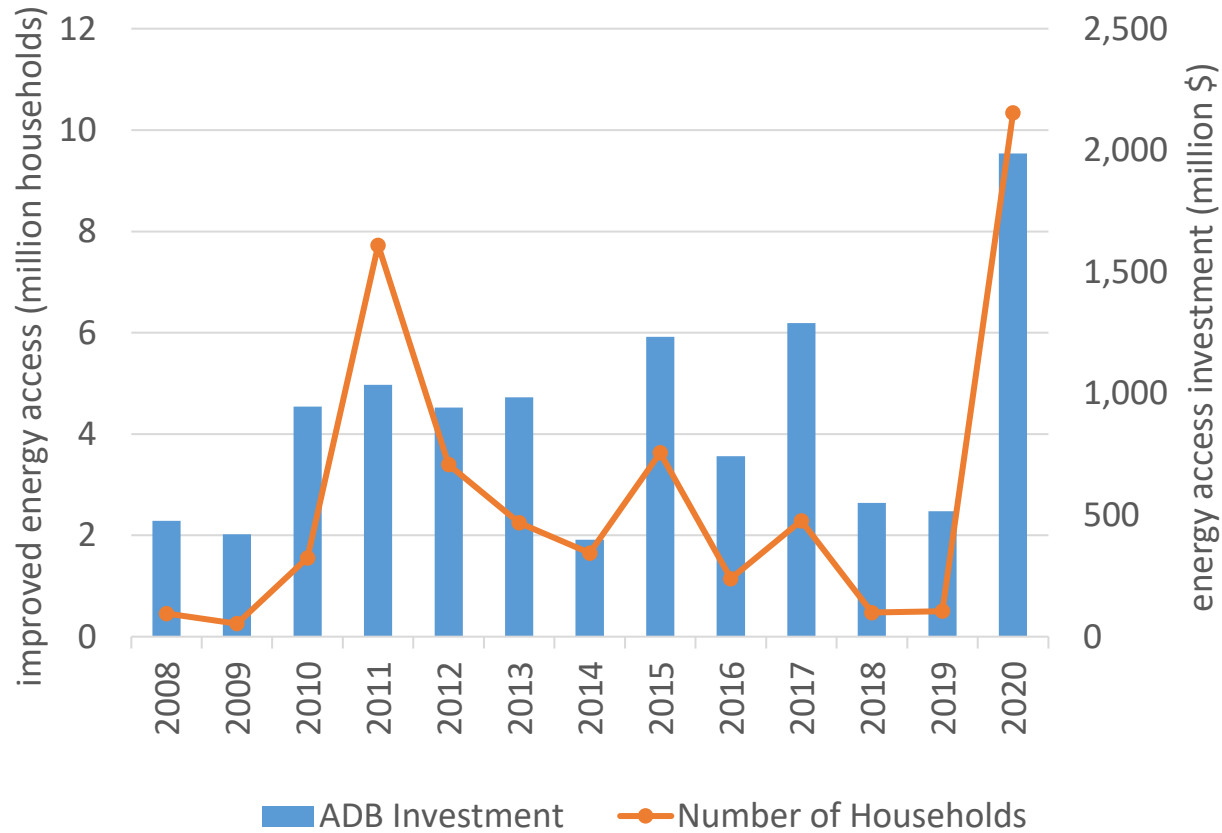


Energy Sector Lending by Sub-Region in 2020

(\$ 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

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



Outcomes from Operations:

Climate Impact of Energy Projects

Estimating greenhouse gas emission reduction

- 6.9 million tons of CO₂ 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)

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



Renewable Energy Projects – South Asia

BANGLADESH: Spectra Solar Power Project
(\$20 Mn non-sovereign loan)

BHUTAN: Alternative Renewable Energy Pilot Project
(\$3 Mn grant)

INDIA: Promoting Advanced Biofuels through High Technology
(\$2.5 million technical assistance)

MALDIVES: Preparing Outer Islands for Sustainable Energy Development Project - Additional Financing
(\$2.73 million grant, \$7.74 Mn sovereign loan)

SRI LANKA: Promoting Increased Renewable Energy Deployment, Energy Efficiency, and Power System Resilience
(\$1 Mn technical assistance)

SOUTH ASIA REGION: Deploying Solar Systems at Scale
(\$2 Mn technical assistance)

Renewable Energy Projects – Southeast Asia

CAMBODIA: Prime Road
National Solar Park Project
(\$13.1 Mn non-sovereign loan)

INDONESIA: Geothermal
Power Generation Project
(\$335 Mn sovereign loan)

THAILAND: Green Loan for
Renewable Energy and Electric
Vehicle Charging Network
(\$47.62 Mn equivalent non-
sovereign loan)

SOUTHEAST ASIA REGION:
Accelerating the Clean Energy
Transition in Southeast Asia
(\$4.05 Mn technical
assistance)

Innovative Technologies for Clean Energy – CCUS and Hydrogen

CARBON CAPTURE, UTILIZATION AND STORAGE (CCUS)

- People's Republic of China: CCUS roadmap (publication in progress); Study in Yanchang petrochemicals for full-scale project and CCUS policy support
- India: Prefeasibility study on cement and refinery sector
- India, Indonesia, Viet Nam: CCUS as a decarbonization option in oil and gas sector
- Carbon Capture, Utilization, and Storage Game Changers in Asia: 2020 Compendium of Technologies and Enablers – published in 2021

HYDROGEN

- People's Republic of China: Air Quality Improvement in the Greater Beijing–Tianjin–Hebei Region—Regional Emission-Reduction and Pollution-Control Facility – Subproject 5: Hydrogen-based Low-emissions Transport for deploying H2 fuel cell bus in Zhangjiakou
- Pakistan: Prefeasibility study on deployment of renewable hydrogen energy
- Hydrogen Energy Handbook – covers technologies & products, business models, challenges and risks (ongoing)

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

Indicative Clean Energy Projects for 2021–2023 (1 of 2)

AFG: Renewable Energy Development (Solar and Wind) Project

BAN: Renewable Energy 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

Indicative Clean Energy Projects for 2021–2023 (2 of 2)

INO: Geothermal Power Expansion Project (formerly Geothermal Power Generation Project (Phase 2))

INO: Sustainable Transition Project - DAMRI E-buses

KIR: South Tarawa Renewable Energy Project (Phase 2)

MON: Supporting Renewable Energy Development

MON: MFF Smart grid system development

MON: MFF Smart grid system development (Tranche 1)

FSM: Renewable Energy Development Project, Phase 2

SAM: Alaoa Multi-Purpose Dam Project

TON: Nukualofa Electricity Network Project (Solar Plus Project)

TUV: Increasing Access to Renewable Energy Project - Phase 2

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

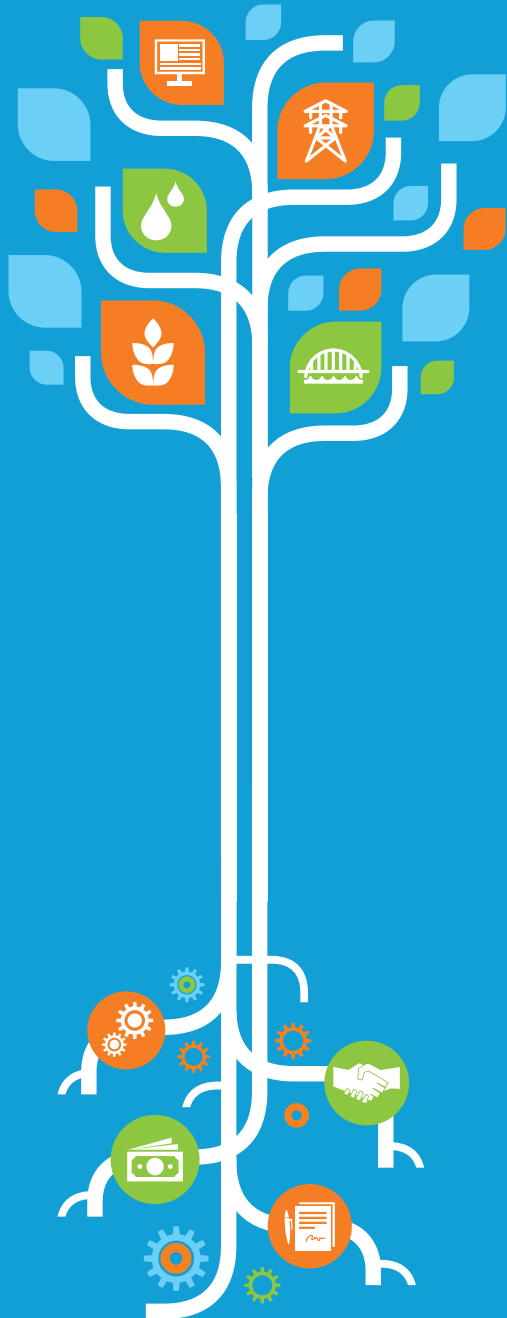
Support for more flexible, resilient and smarter energy systems

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

Strengthen multi-sectoral approach

2021 Energy Policy: Guiding Principles

1. Securing Energy for a Prosperous and Inclusive Asia
2. Building a Sustainable and Resilient Energy Future
3. Engaging with Institutions and Framing Policy Reforms
4. Promoting Regional Cooperation to Enhance Energy Security
5. Cross Sectoral Operations to Maximize Development Impact



Thank you!

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