

# Partnerships for Sustainable Development

A view from Asia

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Asian Development Bank



# ADB's broad reach



- 67 members; 48 in the region
- 40 borrowing members
- Japan and the United States are the two largest members

# ADB private sector finance: key sectors

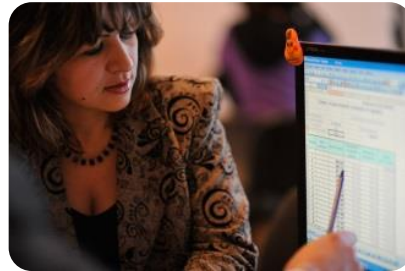
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## Infrastructure & Natural Resources



**Generation** (particularly renewables), **transmission, distribution, water/waste, transport and associated services** (airports/airlines, roads, ports/shipping, logistics, rail/rolling stock), **natural resources**

## Finance & Capital Markets



**Access to finance** (rural, microfinance, housing, SMEs, climate, inclusive business and gender mainstreaming), **insurance, digital finance, filling market gaps via trade and supply chain financing**

## Agribusiness



**Inputs** (seeds, irrigation, cold storage), **farming** (crop, livestock, dairy), **processing** (grains, meats, packaging), **distribution** (wholesale/retail markets)

## Health & Education



**Suppliers** (pharmaceuticals, medical equipment), **Providers** (hospitals, clinics), distributors (pharmacies, supply chain), **e-health**, and in person and online **education**

# Achieving development goals in Asia remains a major task

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## Development progress has been significant...

### Strong economic growth accompanied by poverty reduction

- 700+ million people lifted out of extreme poverty during 2000-2013, <sup>1</sup>
- 95% of the Asian population now lives in middle-income countries

### World's economic center of gravity is shifting to Asia

- Asia's share of GDP risen from 29% in 2000 to 41% in 2016
- Asia and Pacific now a global engine of economic growth

## ...but large challenges remain

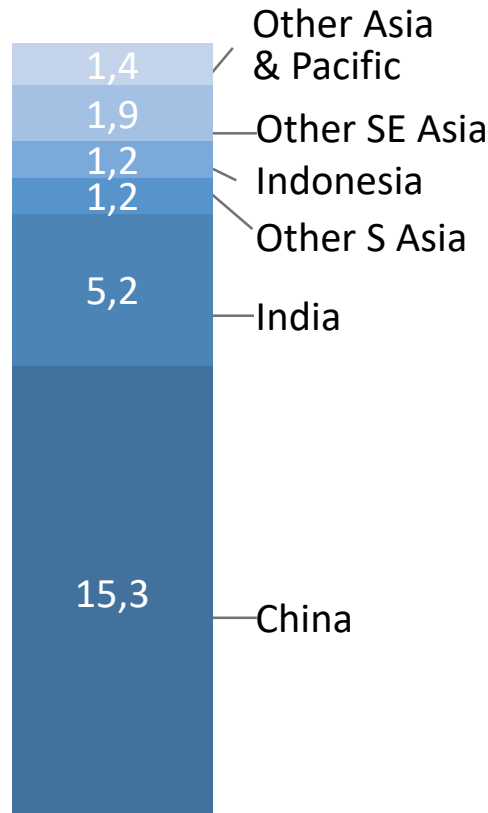
- 330 million remain in **extreme poverty**
- **Demographic changes:** some populations young and growing, others aging rapidly
- **Cities ever larger and more complex**
- Huge **infrastructure investment gaps**
- **Rapid technological change**, affecting jobs, inequality, and social disruption
- **Risks from external shocks**
- Vulnerable to **climate change**
- **Disparities in access to energy**, including electricity

<sup>1</sup> As measured by \$1.90 per day poverty line (2011 purchasing power parity exchange rate)

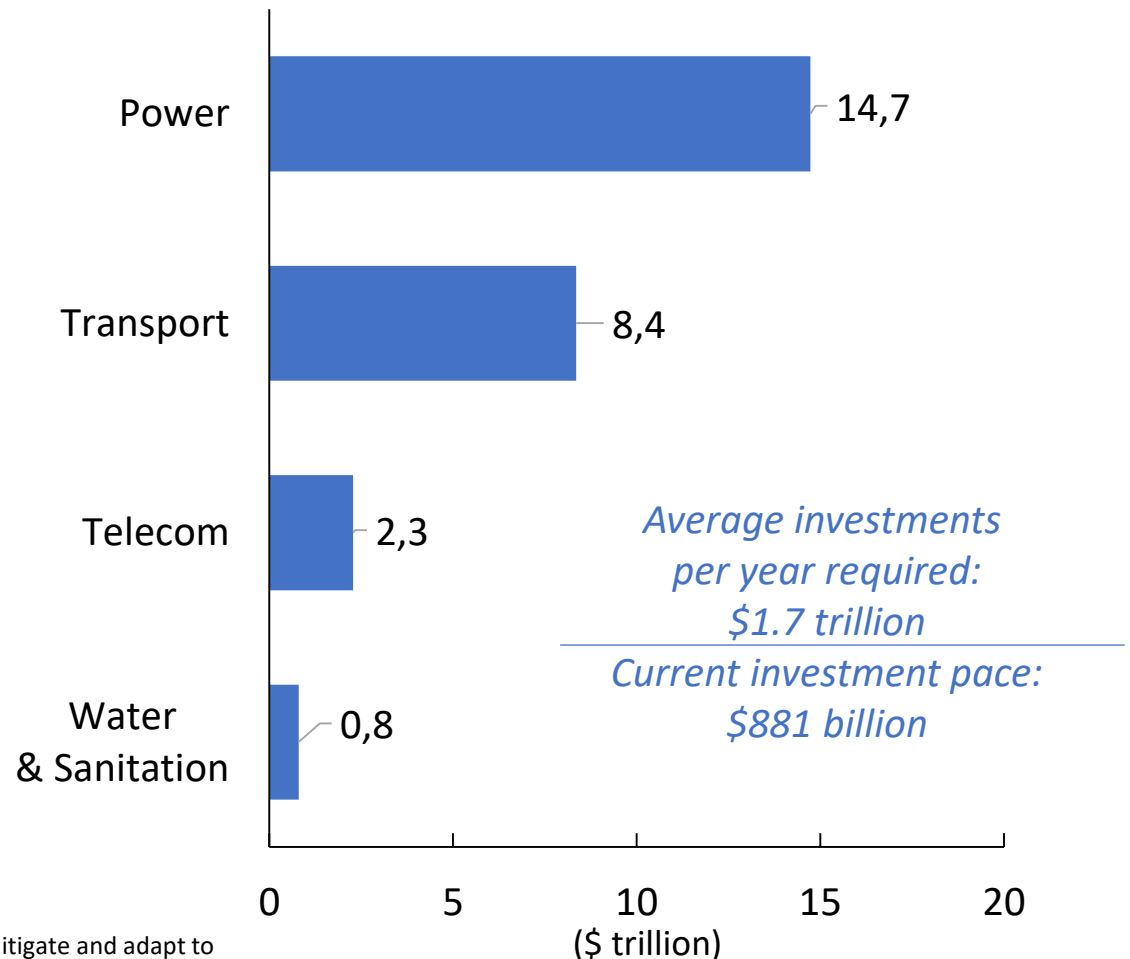
# Over the next 15 years, \$26T of infrastructure investment needed

## Infrastructure investment need, 2016-2030

(\$ trillion)



## Infrastructure investment need by sector 2016-2030

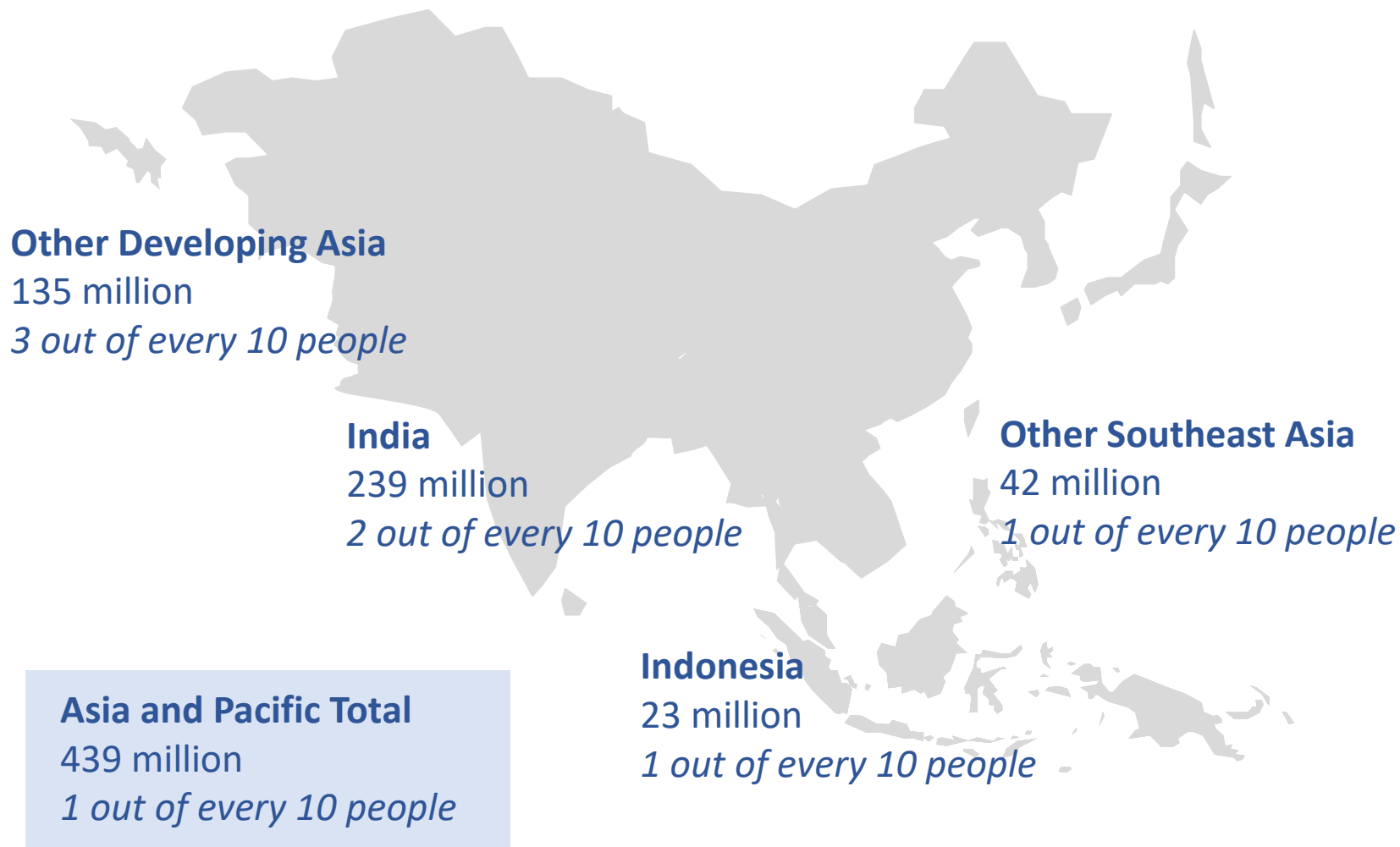


Note: 2015 prices; includes investments required to mitigate and adapt to climate change

Source: ADB (2017) *Meeting Asia's Infrastructure Needs*.

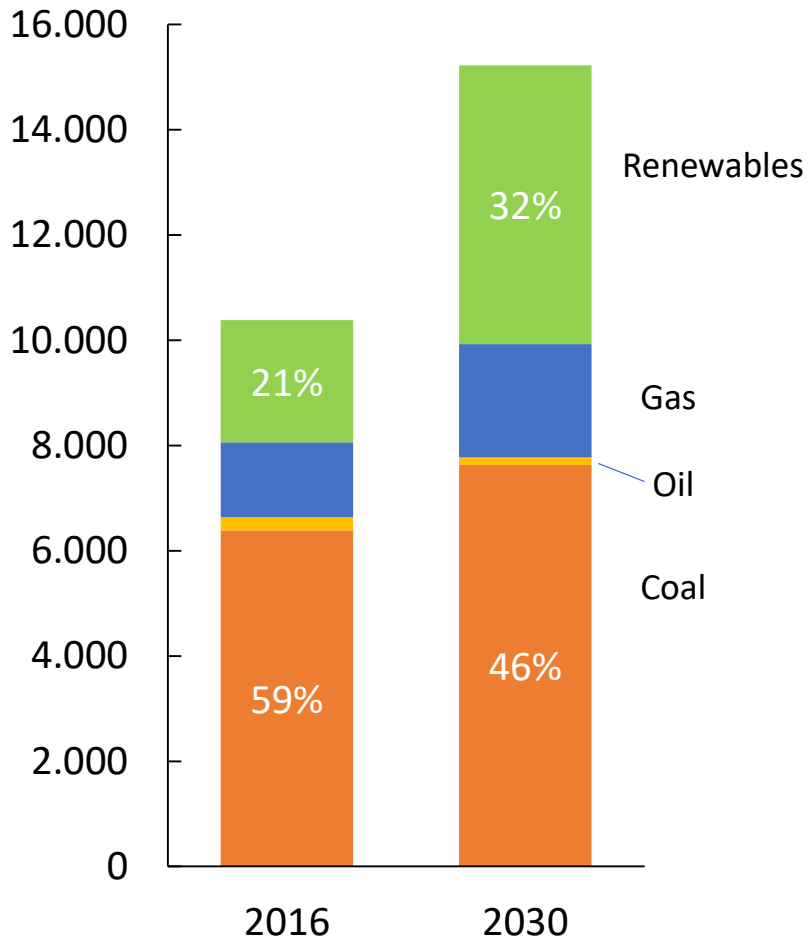
# Over 400 million Asians are still without electricity

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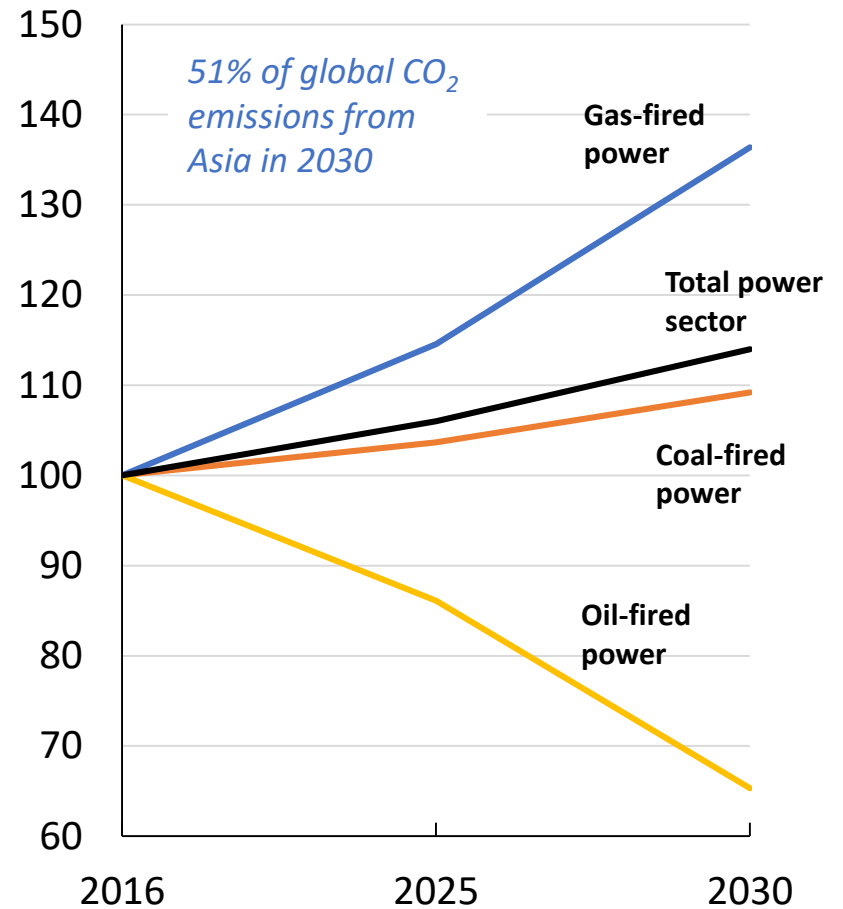


# Electric power buildup will have enormous environmental impact

**Asia's Power Generation Mix (TWh)**



**Asia's Power-related CO<sub>2</sub> Emissions (2016=100)**



*51% of global CO<sub>2</sub> emissions from Asia in 2030*

*Power sector CO<sub>2</sub> emissions to rise from 7.4B tons to 8.1B tons by 2030 ...less than half of total CO<sub>2</sub> emissions*

Source: IEA (2017) World Energy Outlook.

# Climate change impacts will hit Asia and Pacific hard

## Most-severely affected countries<sup>1</sup>

ADB developing country

Droughts	Floods	Storms	Sea Level Rise	Agriculture
Malawi	Bangladesh	Philippines	Low-lying Island States	Sudan
Ethiopia	China	Bangladesh	Viet Nam	Senegal
Zimbabwe	India	Madagascar	Egypt	Zimbabwe
India	Cambodia	Viet Nam	Tunisia	Mali
Mozambique	Mozambique	Moldova	Indonesia	Zambia
Niger	Laos	Mongolia	Mauritania	Morocco
Mauritania	Pakistan	Haiti	PRC	Niger
Eritria	Sri Lanka	Samoa	Mexico	India
Sudan	Thailand	Tonga	Myanmar	Malawi
Chad	Viet Nam	PRC	Bangladesh	Algeria
Kenya	Benin	Honduras	Senegal	Ethiopia
Iran	Rwanda	Fiji	Libya	Pakistan



<sup>1</sup>Impact severity as measured by both absolute effects (e.g., total number of people affected) and relative effects (e.g., impact as share of GDP).

Source: IPCC



# ADB's climate change finance agenda

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**\$4.5  
billion**

**in climate change-related investments in 2017**

**\$6+  
billion**

**in climate investments per year targeted by 2020**

**\$4  
billion**

**for mitigation**

scaling up support for renewable energy, energy efficiency, and sustainable transport

**\$2  
billion**

**for adaptation**

sustainable urban development, resilient infrastructure, climate-smart agriculture, and preparation for disasters

**30%**

**share of climate finance in all ADB investments by 2020**

# Case study: Geothermal district heating in PRC

News and Events > News Releases >

## ADB Signs Landmark Project with Icelandic, Chinese Venture to Promote Zero-Emissions Heating

News Release | 22 March 2018 中文



REYKJAVIK, ICELAND (22 March 2018) — The Asian Development Bank (ADB) today signed facilities of a total of \$250 million in loans to Arctic Green Energy Corporation (AGE) and Sinopec Green Energy Geothermal Company Limited (SGE) to expand environmentally sustainable district heating services in the People's Republic of China (PRC).

Coal-based heating is one of the major causes of air pollution in the PRC, including in the Beijing-Tianjin-Hebei region. Geothermal district heating extracts thermal energy from beneath the earth's surface for delivery to households and business through dedicated pipelines. It offers an alternative which is sustainable, stable, and cost-competitive to coal and gas, has zero-emissions, and can be integrated into existing networks to replace heat sources.

"This is a landmark project for Asia. Geothermal district heating can provide millions of citizens with

### Partners:

- Arctic Green Energy Corporation (AGE)
- Sinopec Green Energy Geothermal (SGE)

### Background:

- SGE, the world's largest geothermal district heating company, is 51% owned by Sinopec Group of the PRC and 49% by AGE of Iceland
- SGE operates in 40 concessions, and is the PRC's technical leader in reinjection, other advances

### ADB's assistance:

- \$250m equivalent in loans

### Partnership goals:

- Combat air pollution in PRC
- Establish more confidence in private sector geothermal district heating in Asia
- Demonstrate higher standards for industry

**Date Signed:** 21 March 2018

# ADB and geothermal power: selected private sector examples

*ADB geothermal financing  
2013-2018:  
\$1.14B*

## **Tiwi-MakBan Green Bonds - 2015**

- 676MW at two sites
- \$263m refinancing
- World's 4<sup>th</sup> and 7<sup>th</sup> largest geothermal plants, refinanced with ADB-backed Climate Bonds (Asia's first)

### • **ADB's role**

- \$170m bond guarantee
- \$38m loan

## **Sarulla (Indonesia) - 2013**

- 320MW
- \$1.6 billion project cost
- First geothermal IPP in Indonesia in more than a decade

### • **ADB's support**

- \$250m loan
- \$100m of ADB-managed donor funds

## **Rantau Dedap (Indonesia) - 2018**

- 91MW
- \$701m project cost
- At exploration stage, ADB channeled donor funds to help defray drilling risk

### • **ADB's role**

- \$175m loan
- \$50m concessional loan

## **Muara Laboh (Indonesia) – 2016**

- 80MW
- \$586m project cost
- First project under Indonesia's new Geothermal Law; first geothermal project to renegotiate PPA and tariff after explorations.

### • **ADB's role**

- \$70m loan
- \$39m donor funds

# Creating effective partnerships for sustainable development

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