

# ADB's Approach in Supporting Low-Carbon Development

## *Investing in Climate Change Mitigation*

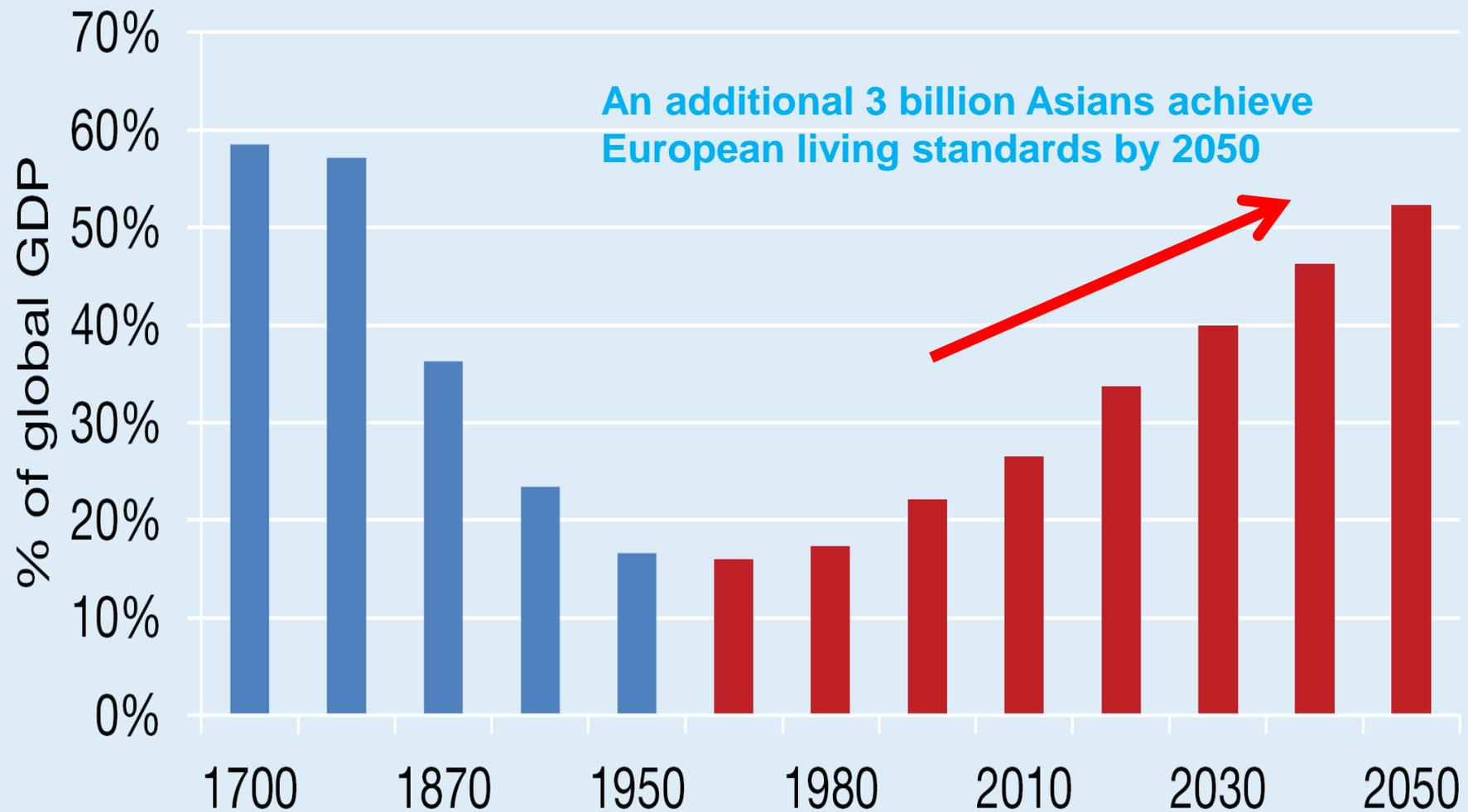
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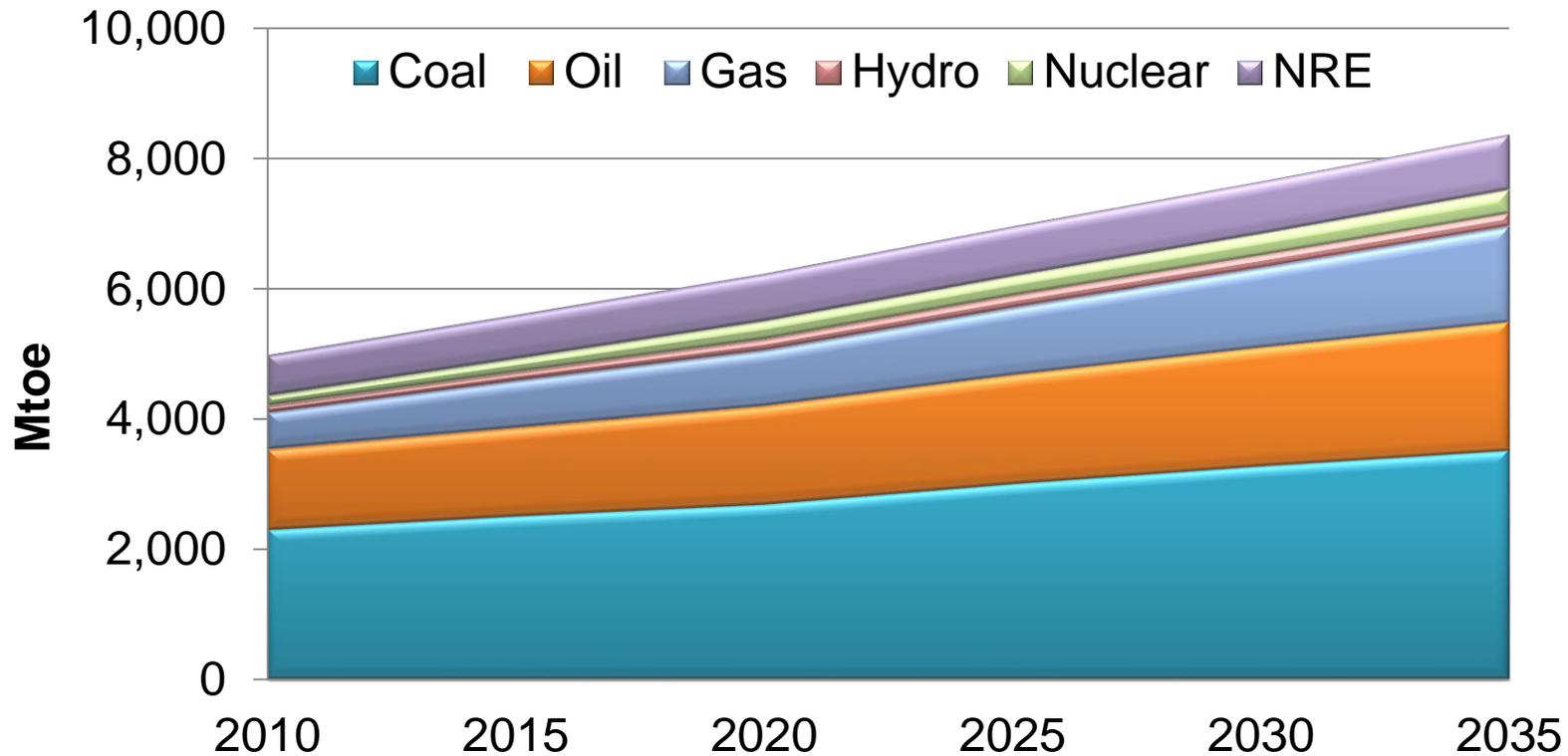
# Asia's Share of Global GDP, 1700-2050



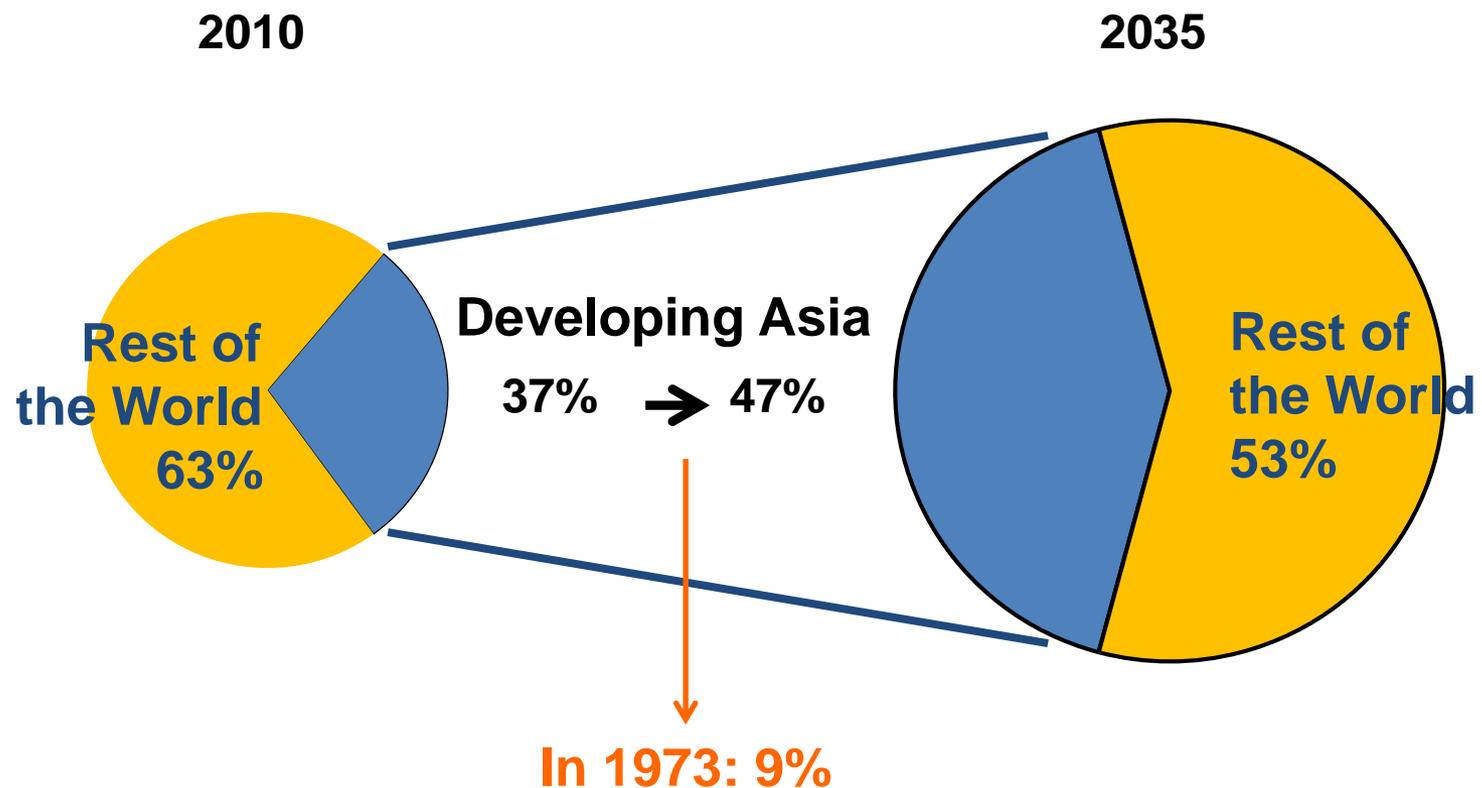
Source: Maddison (1700–1950) (2007); Centennial Group International estimates (1951–2050) (2011). Data for 1750–1790 are PPP and data for 1991–2050 are market prices.

# Fossil Fuels Will Continue to Dominate

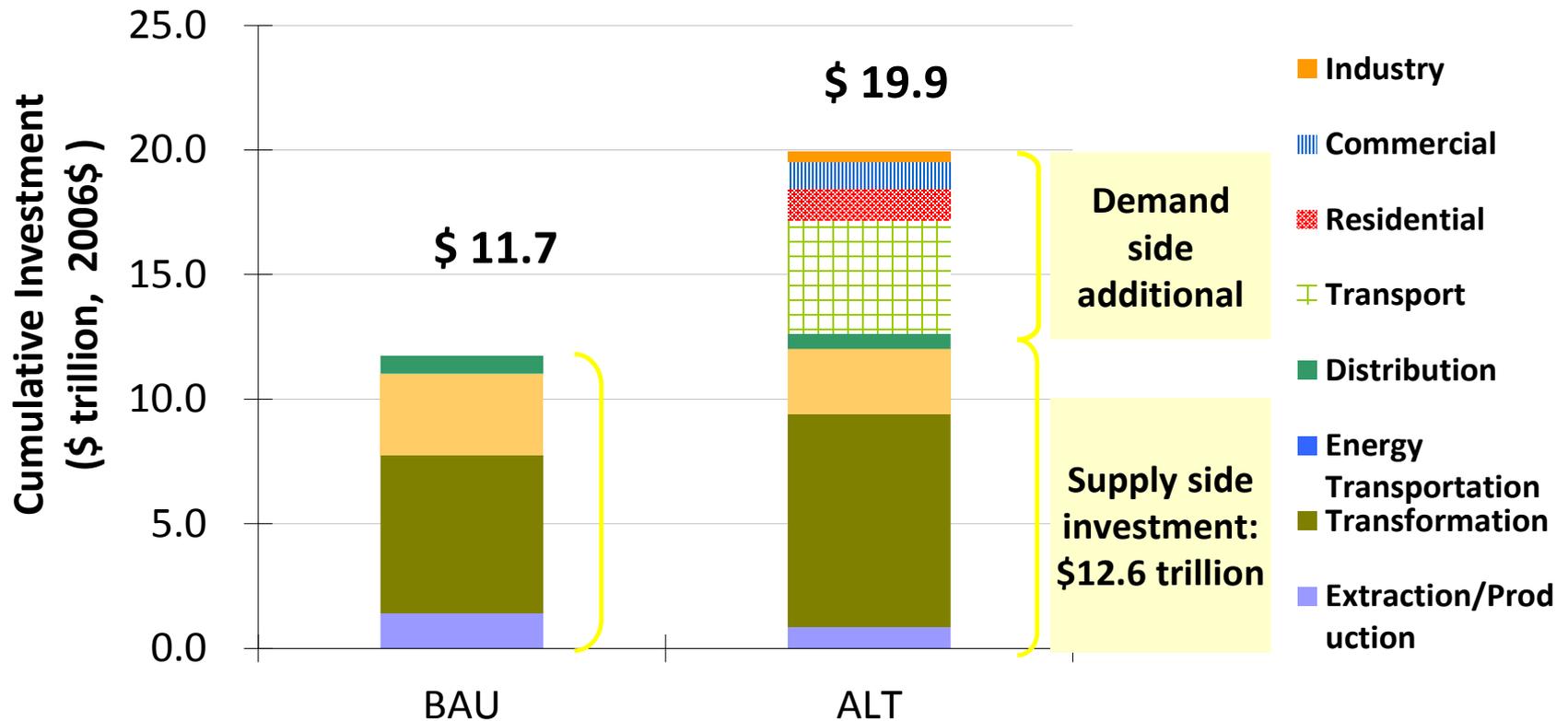
## Primary Energy Demand in the Asia-Pacific



# Developing Asia's Share in Global CO<sub>2</sub> Emissions from Energy Consumption



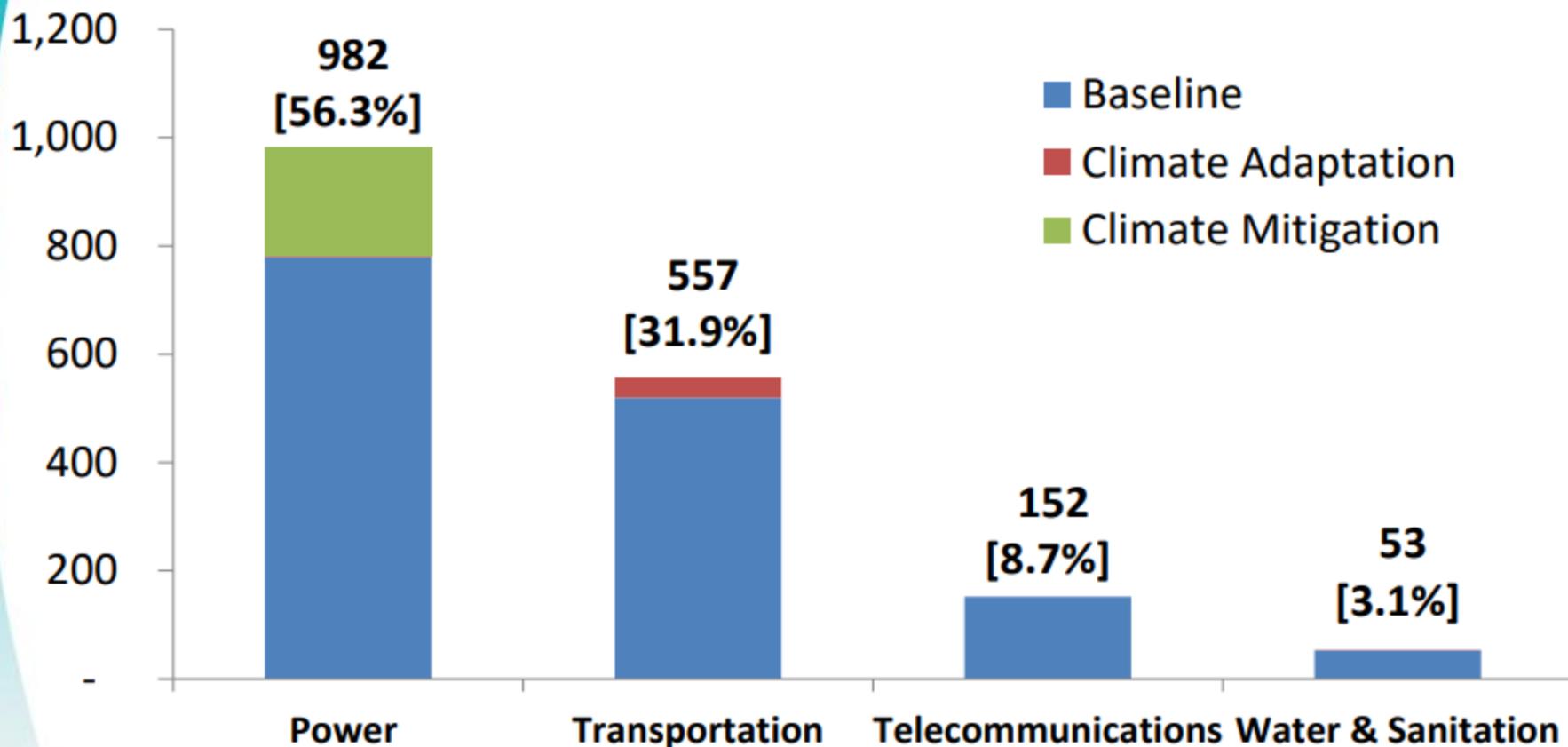
# Investment Requirements: *BAU vs Alternative*



# Meeting Asia's Infrastructure Needs

Development in Asia requires **\$26 trillion** (in 2015 prices), or **\$1.7 trillion** of annual investments to sustain its growth, eliminate poverty and address the impacts of climate change

# Infrastructure Investment Needs by Sector, Annual Average through 2016-2030 (\$ billion in 2015 prices)

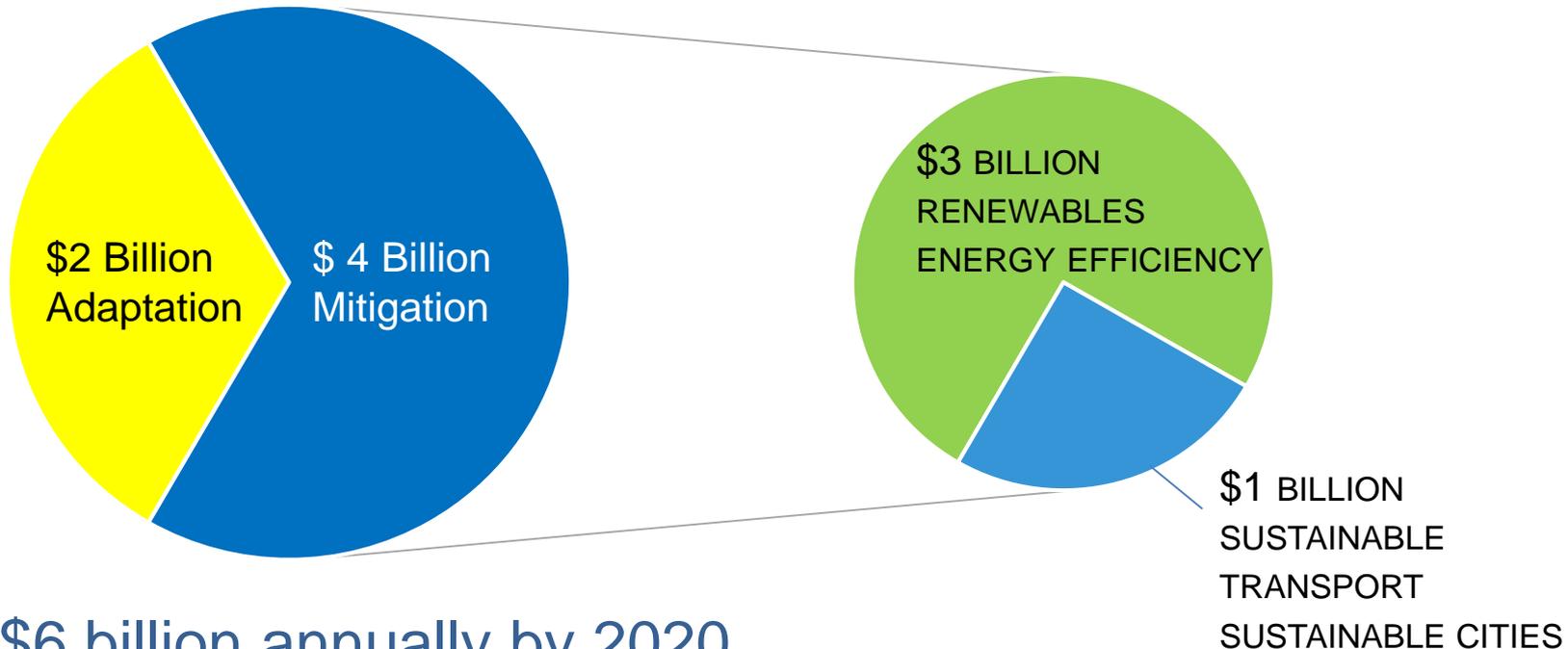


# Implementation of the Nationally Determined Contributions under the Paris Agreement

- Will increase demand for renewable energy
- Will require huge investments in the energy sector
- Presents opportunities for investments in low-carbon technologies and energy efficiency to complement RE investments

# ADB's Support for Low-Carbon Development in Asia

## *Climate Finance Targets*



\$6 billion annually by 2020  
(effectively doubles ADB's financing levels)

# 2017 Contribution of the Energy Sector Operations to ADB's Climate Financing

- Climate financing investments in the sector amounted to **\$2.04 billion**
- The climate financing will result to:

**11.7 million** tons  
of CO2  
emissions  
reduced

**738.1 GW/h** of  
energy savings  
per year

**1565.6 MW** of  
installed  
renewable  
energy capacity

**4.799 GWh** of  
electricity  
produced from  
renewable  
sources per year

# ADB's Role in Unlocking Investment

Multilateral development bank lending is small in scale, "a drop in the bucket", relative to total infrastructure investment needs but our lending provides added value in growing clean energy in Asia.

# Attracting Private Sector Investments

- ADB lending attracts private sector investments by:
  - improving project design and structure
  - addressing risk variables and risk perception
  - promoting policy and institutional reforms in the developing member countries
- ADB is expanding its knowledge operations to provide a full range of benefits: financing, knowledge solutions, and leverage
- ADB expects a growing proportion of its financing to focus on the private sector, with non-sovereign lending projected to grow to 22% by 2019 from current level of 17%
- For comparison, the private sector operations lending accounted for about 40% of the clean energy lending in 2017



# ADB's Clean Energy Lending

- From 2003 to 2007, ADB's annual average lending for clean energy was \$500 million
- In 2009, ADB published its Energy Strategy which underlined clean energy as a pillar of energy operations
- Since 2010, ADB annual lending for clean energy always exceeds \$2 billion

# All Energy Projects in 8 DMCs which were clean energy projects designed for climate mitigation or adaptation, 2017

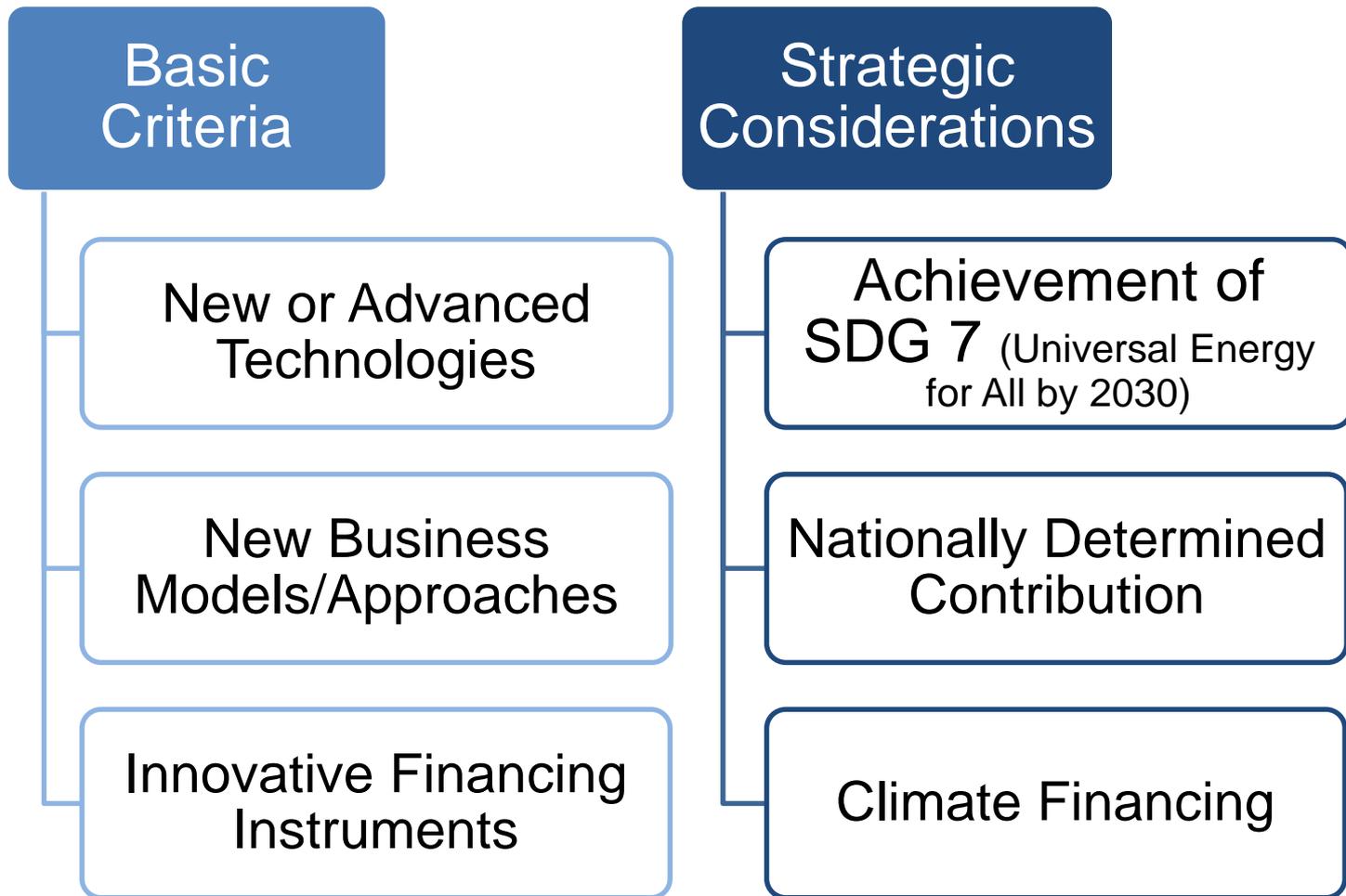
Country	Project Technology or Focus Area	CO <sub>2</sub> emissions reductions
Samoa	<ul style="list-style-type: none"> <li>• First private sector energy deal in the Pacific subregion to develop solar power</li> <li>• 1.8 MW expansion to existing solar power installation</li> </ul>	1644 tons/year
Cook Islands	<ul style="list-style-type: none"> <li>• Builds ~3MW solar power plants on five of the Cook Islands</li> <li>• Designed to eliminate the Cook Islands' reliance on diesel fuel</li> </ul>	2,930 tons/year
Vanuatu	<ul style="list-style-type: none"> <li>• Will construct a hydropower plant to provide more than 90% of the total generated energy for the grid through to 2040</li> <li>• Connects 1,050 additional households to electricity</li> </ul>	2,900 tons/ year
Papua New Guinea	<ul style="list-style-type: none"> <li>• Retrofits existing hydropower plants to extend operational life</li> <li>• Funds new 3MW run-of-river plant for increased energy access</li> </ul>	105,000 tons/year*
Armenia	<ul style="list-style-type: none"> <li>• Improve private sector electricity distribution and cut distribution losses and electricity waste</li> </ul>	11,400 tons/year
Viet Nam	<ul style="list-style-type: none"> <li>• Waste-to-energy project to treat municipal solid waste and supply electricity to the local electricity grid in multiple cities in Mekong Delta</li> <li>• The country's first W-T-E PPP</li> </ul>	787,000 tons/ year
Nepal	<ul style="list-style-type: none"> <li>• Improve reliability and efficiency of electricity supply and distribution</li> <li>• Lay groundwork for introduction and deployment of advanced distribution system and smart metering technology</li> </ul>	54,400 tons/year
India	Supports improved and new transmission networks to convey electricity generated from new solar parks to the national grid.	7 million tons/ year

## Details of the projects where climate financing was greater than 50% of the total energy investments, 2017

Country	Project Technology or Focus Area	CO <sub>2</sub> emissions reductions
Republic of the Marshall Islands (57%)	<ul style="list-style-type: none"> <li>• Installs advanced metering infrastructure to identify and reduce losses in the major power system</li> <li>• Plans for the installation of distributed renewable energy generation to replace diesel generation</li> </ul>	1,745 tons/annum
Sri Lanka (90%)	<p>Two projects:</p> <ul style="list-style-type: none"> <li>• Constructs a 100MW wind power park</li> <li>• Supports up to 50 MW of increased rooftop solar to address energy poverty</li> </ul>	<ul style="list-style-type: none"> <li>• 265,000 tons tons/year</li> <li>• 55,600 tons/year</li> </ul>
Regional (ASEAN) (68%)	Supports widespread deployment of renewables: distributed and utility-scale solar, wind, biomass, waste-to-energy, gas-fired power, energy storage) in the ASEAN region	61,056 tons/year
People's Republic of China (60%)	<ul style="list-style-type: none"> <li>• Supports a pollution control facility for the Beijing-Tianjin-Hebei urban region's major CO<sub>2</sub> emitters</li> <li>• Emissions reduced through advanced technologies, including hydrogen-based low-emission transport, geothermal-based district heating, biogas and organic fertilizer production facilities, and smart micro-grids</li> </ul>	5 million tons/year (plus additional reductions to industrial pollutants including SO <sub>2</sub> , NO <sub>x</sub> , and PM2.5 rated emissions)
Indonesia (52%)	<p>Two projects:</p> <p>Constructs a 72MW wind power plant in South Sulawesi</p> <p>Supports the country's transition to natural gas-fired power stations</p>	<ul style="list-style-type: none"> <li>• 159,000 tons/year</li> <li>• 51,490 tons/year</li> </ul>

# Way Forward for ADB's Energy Sector

# Priority Areas for Energy SG Support



# Draft ADB Strategy 2030 – Integrated Approach

Operational Priorities	How energy contributes
Addressing remaining poverty and reducing inequalities	Increasing access of rural and urban poor to modern forms of energy paves the way for additional sources of livelihood
Accelerating progress in gender equality	Access to modern forms of energy eliminates fuel gathering tasks which allows women more time to pursue income-generating activities while children can spend more time studying
	Increasing women’s participation in energy projects through employment or inclusion in capacity building activities
Tackling climate change, building climate and disaster resilience, and enhancing environmental sustainability	Reducing CO <sub>2</sub> emissions through the increased use of clean energy
	Helping governments achieve their Nationally Determined Contributions (NDCs)
	Supporting projects that promote clean energy leading to a more sustainable environment
Making cities more livable	Providing energy security to households, institutions, and businesses while reducing pollution
Promoting rural development and food security	Access to energy improves rural education, health, and other social services by enabling the use of modern technologies
	Promoting the use of renewable energy technologies in rural livelihood (eg. off-grid solar irrigation system)
Strengthening governance and expanding institutional capacity	Providing capacity building on clean energy project development and implementation to government and relevant institutions while also assisting on policy reforms
Fostering regional cooperation and integration	Exploring regional partnerships in clean energy projects
	Sharing lessons learned, best practices, and new business models across the region

Thank you

