7

AFFORDABLE AND CLEAN ENERGY

Ensure access to affordable, reliable, sustainable and modern energy for all

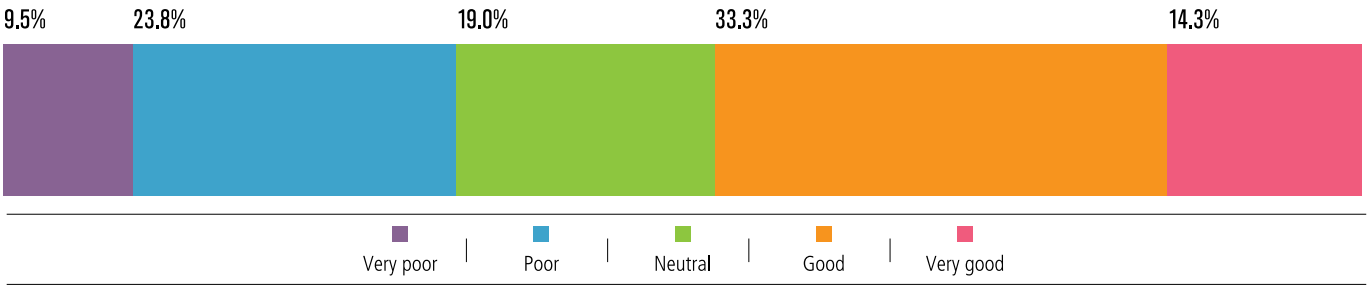
I. SUMMARY

Asia-Pacific countries are progressing across the three main pillars of sustainable energy – access, efficiency, and deployment of renewable energy. Bringing electricity to growing populations of Asia-Pacific is among governments' priorities and most countries have established clear policy targets that are increasingly backed by supportive programmes and economic measures. However, many challenges remain, especially with regards to bridging the gap between urban and rural areas. Other challenges include low quantity, quality, and reliability of the power supply, implementation of and compliance with regulations, as well as affordability of energy. Further, almost half of the population is lacking access to clean fuels and technologies for cooking. The region has demonstrated notable progress in improving its energy efficiency indicators, however large and sustained improvements, in both supply- and demand-side energy efficiency are still needed to meet the Sustainable Development Goal (SDG) 7 energy intensity targets. More attention is needed for final energy consumption across end-use sectors to be covered by standards supporting the uptake of latest technologies, with improved enforcement. Asia-Pacific has emerged as the global leader in renewable energy investments, installed capacity, and consumption. Modern renewables are rapidly gaining traction and promising upward trends in production are being observed, underpinned by with large increases in hydropower production. Wind and solar power production are also increasing at exponential rates, though have yet to compete with more conventional energy sources. As a result of rapid demand growth, the share of renewable energy in the energy mix is declining rather than increasing in the region.

UNITED NATIONS ASIA-PACIFIC REGIONAL COORDINATION MECHANISM
UNITED NATIONS ESCAP Economic and Social Commission for Asia and the Pacific
ADB
UNDP
UN environment
SUSTAINABLE DEVELOPMENT GOALS

II. CURRENT STATUS

Perception on progress made on **SDG7**, based on a multi-stakeholder ESCAP survey



- In 2014, the average total electrification rate reached 92 per cent in the region, up from 75 per cent in 1990. Since 2000, the proportion of the region's population with primary reliance on clean fuels and technology for cooking has remained steady, at a 0.8 per cent annual growth rate.[1] However, in 2014, the regional rate of primary use of clean cooking fuels and technology was just 51.2 percent, with only a few countries demonstrating significant efforts or improvement.[2]

- Notwithstanding the growth of renewable energy utilization in the region in absolute terms, its share in the total final energy supply is in a steady downward trajectory, with a decrease from 23 per cent in 1990 to 18,3 per cent in 2014 of the region's total final energy consumption.[3] Fossil fuel-based economies in Asia have a relatively low rate of renewable energy uptake, and have tended to further decrease the renewable energy share in the energy mix due to rapid growth in energy consumption. Even though renewable energy installation is making significant gains in power production, data on renewable energy may be slightly distorted by limited data on off-grid renewable energy as well as the fact that reductions in using fuel wood for cooking (aimed for by SDG 7.1) will have a negative effect on the share of renewable energy in the final energy use.

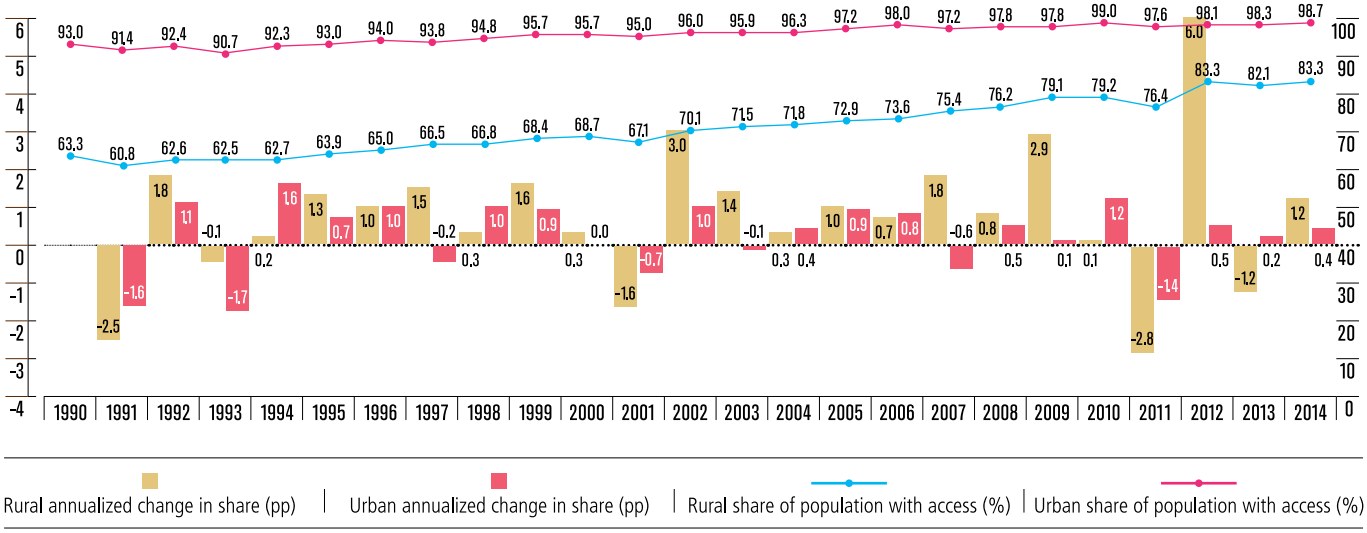
- The region has demonstrated a long-term, steady decline in energy intensity, resulting in a decoupling of energy use from gross domestic product.[4] This could however be the result from structural changes of economies, e.g. moving from industry to more service oriented economies, as it should be noted that primary energy intensity is only an imperfect proxy to measure energy efficiency. Region-wide, rapidly growing energy consumption is observed in residential areas and in the transport sector, as income levels rise and people adopt more energy-intensive lifestyles. On the other hand, supply-side energy efficiency is showing improvement through the use of advanced power plant technology, as well as transmission and distribution upgrades. However, losses as a percent of output remain high in many countries. The lack of incentives to invest in energy efficient measures was highlighted by the respondents of the ESCAP multi-stakeholder survey[5] as a major challenge. The increased use of technologies such as advanced forecasting and demand response, has the potential to further bolster efficiency in power production.

A. AREAS WHERE GOOD PROGRESS IS MADE

Access to energy services (target 7.1)

Universal access to electricity has been achieved in many countries within the region, resulting in significant gains in the average electrification rate regionally, notwithstanding very diverse rate of electrification from country to country. Between 2012 and 2014, an estimated 93.1 million people in Asia and the Pacific gained access to electricity as the population grew by 83.8 million.[6] 31 out of 53 ESCAP member States, have reached 100 per cent electrification, while some other States need time to finalize the electrification process under self-sustainment.

Figure 1: Access to electricity in Asia and the Pacific increased over the past 25 years, with the gap between urban and rural access gradually narrowing[7]



Note: pp, percentage point.

Renewable energy (target 7.2)

In the last decade, the Asia-Pacific region has emerged as the global leader in renewable energy with more investment, installed capacity, and consumption than any other region of the world. Renewable energy has been progressively mainstreamed with growing support from regional policymakers. Most member states have adopted ambitious targets backed up by decreasing technology prices that make renewables an increasingly viable option. In 2014, modern renewables, which exclude traditional biomass, composed 6.8 percent of total final energy consumption, compared to 6.2 percent in 2012. Once dominated entirely by hydropower, renewables are experiencing growth accompanied by increased diversification as wind, solar, biomass, and, to a lesser extent, geothermal power gain shares. Regional investments in renewable energy (excluding hydropower over 50 MW) rose from $115.2 billion in 2013, reached an all-time high of $171.1 billion in 2015 and installed capacity continued its upward trend.[8] Market liberalization and growing maturity and acceptance of renewable energy and energy efficiency technologies have led to the expansion of investment sources. Green bonds have emerged as a new asset class in Asia-Pacific. Foreign direct investment (FDI) flows to the energy sector are on the rise for both conventional and renewable energy, with interest moving towards advanced industries.

Energy efficiency (target 7.3)

The region's energy intensity decreased by an average of 3.1 per cent per year between 2000 and 2014, compared with 1.3 per cent per year globally. During the years 2012-2014, the region demonstrated accelerated progress in terms of energy efficiency. It has achieved a short-term annual average energy intensity drop that outpaced other global regions. However, Asia and the Pacific continues to rank the highest of regions in terms of energy intensity, with sharp increases in energy consumption from residential areas and the transport sector, as people adopt more energy-intensive lifestyles.

Improved regulatory frameworks

Nearly all ESCAP member States have adopted and implemented policy incentives that will support attainment of the SDG 7 targets, such as those regarding energy access, energy efficiency and renewable energy. Most top performing countries with regards to SDG 7 have introduced specific measures and programmes that facilitate further improvements in national energy systems while intensifying actions towards achievement of the targets. Favorable economic measures that have been adopted include the creation of lower-risk investment environments and an increase in the availability of financing for energy. Incentives for clean energy project developers and consumers include capital grants, tax reductions, rebates, risk guarantees, and low-interest loans. Fuel and carbon taxes are also being used to increase