

Regional Trends Report on Energy for Sustainable Development in Asia and the Pacific

2016 edition



East and North-East Asia	North and Central Asia	South-East Asia	South and South-West Asia	Pacific	Associate Members	Non-regional Members
China Japan Korea, DPR Korea, Rep. Mongolia	Armenia Azerbaijan Georgia Kazakhstan Kyrgyzstan Russian Federation Tajikistan Turkmenistan Uzbekistan	Brunei Darussalam Cambodia Indonesia Lao PDR Malaysia Myanmar Philippines Singapore Thailand Timor-Leste Viet Nam	Afghanistan Bangladesh Bhutan India Iran, IR Maldives Nepal Pakistan Sri Lanka Turkey	Australia Fiji Kiribati Marshall Islands Micronesia, FS Nauru New Zealand Palau Papua New Guinea Samoa Solomon Island Tonga Tuvalu Vanuatu	American Samoa Cook Islands French Polynesia Guam Hong Kong, China Macao, China New Caledonia Niue Northern Mariana Islands	France United Kingdom Netherlands United States of America

Member states listed in blue are considered "Asia-Pacific Developed Countries". Other member States are considered "Asia-Pacific Developing Countries".

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion on the part of the United Nations concerning the legal status of any country, territory, city or area, or of its authorities, or concerning the delimitation of its frontier or boundaries.

Regional Trends Report on Energy for Sustainable Development in Asia and the Pacific 2016

United Nations publication

Copyright © United Nations 2016

All rights reserved

Printed in Bangkok

ST/ESCAP/XXXX

This publication may be reproduced, in whole or in part, for educational or non-profit purposes without special permission from the copyright holder, provided that the source is acknowledged. The ESCAP Publications Office would appreciate receiving a copy of any publication that uses this publication as a source.

No use may be made of this publication for resale or any other commercial purpose whatsoever without prior permission. Applications for such permission, with a statement of the purpose and extent of reproduction, should be addressed to the Secretary of the Publications Board, United Nations, New York.

Table of Contents

Chapter 1: Energy Scene and Emerging Trends in Asia and the Pacific.....	7
Key Messages.....	7
1.1 Overview.....	8
1.2 Emerging Trends on the International Energy Market.....	8
1.3 Regional cooperation on energy connectivity.....	14
1.4 Incorporating social, environmental, and economic dimensions.....	16
Chapter 2: Transboundary Power Trade.....	21
Key Messages.....	21
2.1 Introduction.....	23
2.2 Drivers and Benefits.....	25
2.3 Barriers.....	31
2.4 Strategy.....	38
2.5 Conclusions.....	46
Chapter 3: Developing Effective Policies for Widening Access to Energy Services.....	50
Key Messages.....	50
3.1 Issues and Barriers with Energy Access.....	52
3.2 Policies and effective institutional framework for successful program on energy access.....	58
3.3 Strategies to mobilize financing that engage various stakeholders.....	66
3.4 Conclusions.....	78
Chapter 4: Sustainable Energy - Regional Snapshots.....	80
A. Establishment of a platform for facilitating continuous dialogue and cooperation among ESCAP member States on enhanced energy security and the sustainable use of energy.....	81
B. Work towards universal access to modern energy services.....	82
C. Advance the development and use of new and renewable sources of energy.....	84
D. Improve energy efficiency and conservation and observe sustainability in the supply, distribution and consumption of energy.....	87
E. Diversify the energy mix and enhance energy security.....	90
F. Improve energy trade and investment opportunities to optimize the development and utilization of current and emerging energy resources.....	93
G. Improve fiscal policy and financing mechanisms to incentivize and strengthen markets for sustainable energy.....	95
H. Improve energy statistics and facilitate data and information sharing.....	97

I. Minimize the environmental impact of the energy sector	98
J. Promote more efficient and cleaner use of oil	103
K. Promote the efficient and clean use of coal	104
L. Promote expanded production, trade and use of natural gas as a low-emission fuel	106
M. Promote the development of advanced energy technologies	109
N. Develop common infrastructure and harmonized energy policies with a view to increasing regional economic integration	111
O. Promote capacity-building, education and knowledge-sharing in the field of energy	113
Conclusions - The Way forward	114
5.1 Background	114
5.2 The Way Forward	114
Chapter 1 References	120
Chapter 2 References	123
Chapter 3 References	125
Chapter 3 Annex:	128

DRAFT

Chapter 1: Energy Scene and Emerging Trends in Asia and the Pacific

Key Messages

- A. Significant changes have taken place in the global economy and the international energy market in 2015. Fossil fuels dominate energy supply in the region. The dependency on fossil fuels will continue to rise in order to meet energy demands for enhanced economic activities for years to come, highlighting the implications on energy security, and the impacts on climate change.
- B. The prevailing low oil prices present both opportunities and challenges for countries in Asia and the Pacific. Oil-importing countries are reforming fossil fuel subsidies, from which government savings could be re-allocated to a more sustainable infrastructure. No evidence has shown there is negative impact on renewable energy development at present due to the declining cost of renewable energy, and concerns over environmental sustainability, climate change and energy security.
- C. Demand for natural gas is likely to increase in Asia and the Pacific through 2020, due to continuous economic growth while transitioning to cleaner fuel sources. Buyers in Asia and the Pacific are paying higher prices for natural gas than customers in other places and pricing structure reform is becoming a critical area of concern for countries in region.
- D. Coal dominates electricity generation in this region and will continue its role in the foreseeable future. It is also a major source for GHG emissions and environmental pollution such as NO_x and SO_x. The challenge of increasing environmental concerns and continuing reliance on coal requires a transition to cleaner coal technologies that are of high efficiency and low emissions.
- E. Renewable energy investment and installation reached historical high in 2015. It also plays an important role in energy access and development of Pacific island countries.
- F. Energy connectivity has potential for optimizing the use of all energy resources, including renewable energy resources, gas and other sources, has been well recognized in the region and could contribute to the energy access in the border areas. Emerging new initiatives on regional energy connectivity is shaping the energy scene of the region.
- G. Energy development needs to take into consideration the social, environmental and economic aspects as they are the fundamental inputs to sustainable development. The newly adopted Sustainable Development Goals in which energy is one of the goals as well as cross-cutting issues and the Paris Agreement under the UNFCCC will shape the future of energy development.
- H. The poor are living without access to affordable, reliable and modern energy services, which are crucial for livelihood improvement and development, thus are deprived of such opportunities.

1.1 Overview

Significant changes have taken place in the global economy and the international energy market in 2015. The global as well as regional economies face declined growth rate of and deflation. The Asian Pacific region grew by 4.5% in 2015, the lowest rate since 2010, and only a modest rebound to 5 percent forecasted for 2016 (ESCAP, 2016). The slowdown is a major factor influencing growth prospects and energy profile of this region.

Fossil fuels have been and will continue to be the primary energy sources in the region, while renewable energy investment and installation reached historical high in 2015. Fossil fuels accounted for 80.0% of TPES in 2000 and 85.6% in 2013, with oil decreased from 30.0% to 23.6%, natural gas kept the same percentage and coal increased from 32% to 44%, nuclear reduced from 4.0% to 1.9%, hydro increased from 1.7% to 2.1% and renewable energy (exclude hydro) decreased from 14.2% to 10.4% (Asia Pacific Energy Portal, 2016). The prevalent low oil prices, demand for a cleaner fuel, and increasing reliance on coal generations all contribute to the continuous domination of fossil fuels in the region, making many developing countries in this region depend on energy imports.

Energy access has remained as the major challenge and the energy poverty is acute in the region impeding development process and economic growth. In this region, there are 455 million populations live without access to electricity and 2.06 billion relying upon solid fuels for cooking and heating. Mostly the rural populations in the region are deprived of energy access due to unaffordability, low per capita consumption, lack of technological capacity and high capital investment required.

On-going regional and subregional initiatives will bring opportunities as well as challenges for regional energy trade and development.

1.2 Emerging Trends on the International Energy Market

1.2.1 Impact of Low Oil Prices

The prevalent low oil prices present both opportunities and challenges for countries in Asia and the Pacific. International crude oil prices have dropped significantly since 2014: Brent crude oil decreased from US\$114.9 per barrel in June 2014 to US\$47.9 per barrel in January 2015.

预览已结束，完整报告链接和二维码如下：

https://www.yunbaogao.cn/report/index/report?reportId=5_3303



ce of
n oil-
and
al oil
ers a
rient
, Lao