

The background of the cover features a photograph of wind turbines and solar panels. The image is split diagonally: the top-left portion shows a close-up of a wind turbine's blades and tower against a cloudy sky, while the bottom-right portion shows a row of solar panels. A large, faint, diagonal watermark reading 'SAMPLE' is overlaid across the entire image.

GlobalData»

**ASIA-PACIFIC RENEWABLE ENERGY POLICY
HANDBOOK 2015**

Executive Summary

Policy Instruments Support Renewable Energy Deployment in Asia-Pacific

Burgeoning energy demand, limited fossil fuel reserves, and global warming concerns have forced Asia-Pacific countries to increase the share of renewable energy in their energy mix. The region has made significant investment in renewable energy projects in recent years, and this is expected to continue. Many countries have adopted policy instruments such as Feed-in Tariffs (FiTs), Renewable Portfolio Standards (RPS), soft loans and tax incentives to promote renewable energy. Most of the government measures that have been introduced have received a positive response and played a vital role in the development of the renewable energy industry.

Investment in renewable energy projects increased following the introduction of the Kyoto Protocol in 1997. This protocol sets binding obligations for industrialized countries to reduce Greenhouse Gas (GHG) emissions by XX% against 1990 levels by 2012 (the first commitment period) and by XX% against 1990 levels by 2020 (the second commitment period).

Australia, Japan and New Zealand have signed the Kyoto Protocol, thereby committing to the reduction of carbon emissions. India and China, as participants in the Copenhagen Accord in 2009, pledged to work towards respective binding carbon intensity reduction targets of XX% and XX% by 2020, in comparison with 2005 levels.

The following table provides details of the policy measures in place for the promotion of renewable energy.

Executive Summary

Renewable Power Policy Framework, Asia-Pacific, Major Policy Instruments Supporting the Renewable Energy Industry, 2014

Policy instrument	Australia	China	India	Japan	South Korea	New Zealand	Thailand
FIT							
RPS							
Capital subsidies, grants or rebates							
Energy production payments							
Investment or other tax credits							
Sales tax, energy tax, excise tax or VAT reductions							
Tradable RECs							
Net metering							
Public investment, loans and financing							
Public competitive bidding							

Source: GlobalData

REC: Renewable Energy Certificate; VAT: Value Added Tax

China is rapidly becoming a major player in the global renewable energy industry. In recent years, it has developed its wind turbine and solar PV manufacturing industries. The government has shown commitment to renewable energy through the introduction of a series of new laws and financial support measures.

India and Australia have also implemented a number of support measures for the development of renewable energy. The efficiency with which these measures are implemented will determine growth in both countries. The new programs related to solar power development announced in India are expected to significantly increase the share of solar power in the renewable energy portfolio.

The Japanese government has shown commitment to renewables through the introduction of a FiT for renewable energy. It also announced plans to entirely rebuild its energy policy following the Fukushima nuclear disaster in March 2011. The policy now recommends gradually reducing dependence upon nuclear power while enhancing the share of renewable energy and efficient fossil fuel power generation.

Thailand, which has announced a number of measures to support the growth of its renewable industry, is aiming at renewable energy accounting for XX% of overall power within the next 10 years.

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Introduction

2 Introduction

2.1 Renewable Energy Policy Framework, Global, Overview

There has been large investment in the renewable energy sector by the US, Germany, Spain and the UK since the late 1990s, with the aim of enhancing renewable power generating capacity. Renewable energy provides an answer to two major issues: global warming and diminishing fossil fuel reserves.

Renewable energy is clean energy, the production of which generally emits no or very small amounts of CO₂, and its renewable nature ensures a sustainable energy supply. These factors have forced a number of major countries to shift their focus towards the development of renewable energy sources, which currently represent the fastest growing energy industry in the world and have the potential to meet half of the world's energy requirements by 2050.

Renewable energy has the potential to transform the global economy, and policy-makers will be responsible for bringing about this change. One major challenge associated with the deployment of renewable energy is the fact that it is expensive in comparison with conventional fuels. In order to make renewable energy competitive, it is necessary for governments to provide support in the form of favorable policies and incentives.

In this context, governments are establishing regulatory frameworks, policies and incentives for the development of the renewable sector. Many countries are supporting renewable sources in order to aid their recovery from the economic recession. Renewable Portfolio Standards (RPS), or quota obligations, and Feed-in Tariffs (FiTs) are the two prominent support mechanisms implemented by countries around the world to drive the development of the renewable energy market. Most of the countries promoting renewable energy offer either one or both of these policy measures. The major difference between the two policy processes is that RPS is quantity-oriented, while the provision of FiTs is a price-oriented policy.

Other incentives, such as capital subsidies, grants, rebates, tax credits, tax exemptions, loans at reduced interest rates (financing), net metering, Renewable Energy Certificates (RECs) and public competitive bidding are also offered by major countries to promote renewable sources.

Introduction

2.4 GlobalData Report Guidance

- The report starts with an executive summary capturing the current and future outlook of renewable policy frameworks and renewable energy production.
- Chapter two provides an overview on the renewable energy policy framework, as well as an overview and comparison of the major policy instruments for renewable sources.
- Chapter three discusses the major renewable policies in Australia and provides details of the major state financial incentives driving renewable energy production.
- Chapters four to 11 discuss the major renewable policies and state financial incentives in Japan, India, South Korea, Vietnam, Taiwan, Thailand, New Zealand, and China.

Renewable Energy Regulatory Framework, India

5.2.8 Renewable Energy Certificates

India's Central Electricity Regulatory Commission (CERC) introduced a national-level regulation on RECs and tradable energy instruments in January 2010. The objective of the regulation is to strike a balance between rapid economic growth and lower carbon emissions. Under this regulation, renewable energy generators participating in the scheme will be registered with the CERC. The generators will have the following two options:

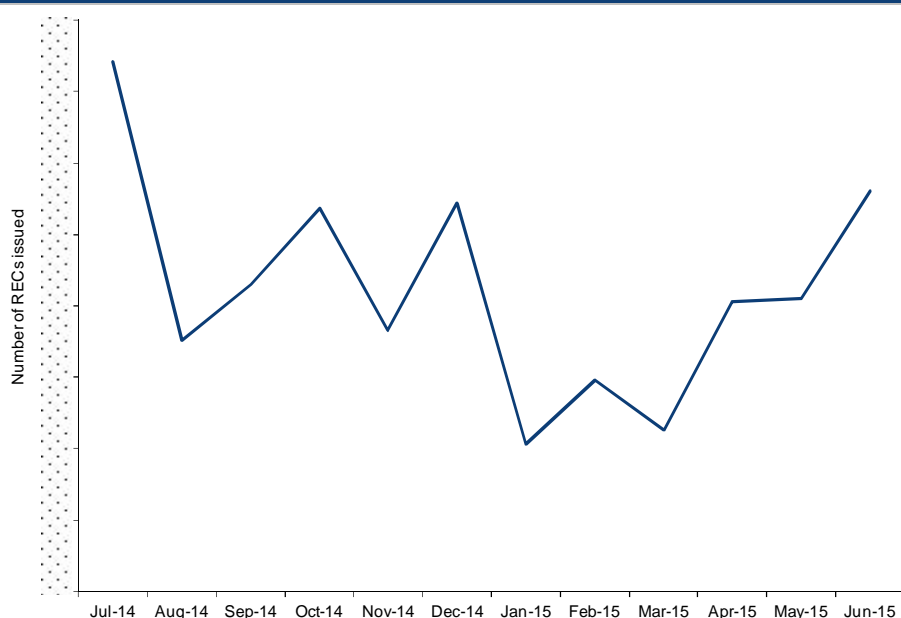
- To sell renewable energy at preferential tariffs fixed by the power regulatory commission
- To separately sell renewable-energy-related power generation and environmental attributes

If the generator opts for the second alternative, the environmental attributes could be traded in a national-level market in the form of RECs, the value of which will be equivalent to XX MWh of renewable power fed into the grid. Utility companies and power generators that exceed their renewable energy targets can sell surplus certificates to companies that do not achieve their targets. These RECs are exchanged in power exchanges on the Indian Energy Exchange and Power Exchange of India Limited. They are approved by the CERC within predetermined floor and ceiling prices. Company compliance with REC requirements is monitored by compliance auditors.

The following figure and table illustrate market clearing volumes and market clearing prices collectively for both solar and non-solar RECs on the power exchanges approved by the CERC.

Renewable Energy Regulatory Framework, India

Figure 11: Renewable Power Market, India, Number of Renewable Energy Certificates Issued, 2014–2015



Source: GlobalData; IEX, 2015

Table 9: Renewable Power Market, Renewable Energy Certificate Trading, 2014–2015

Date	Opening balance	RECs issued	RECs redeemed	Closing balance
July 2014				
August 2014				
September 2014				
October 2014				
November 2014				
December 2014				
January 2015				
February 2015				
March 2015				
April 2015				
May 2015				
June 2015				
Total:				

Source: REC Registry India, 2015

Appendix

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12.1 Abbreviations

Table 45: Abbreviations

ACT	Australian Capital Territory
AD	Accelerated Depreciation
AEDP	Alternative Energy Development Plan
AEMC	Australian Energy Market Commission
AER	Australian Energy Regulator
ARENA	Australian Renewable Energy Agency
BIPV	Building Integrated PV
BoE	Bureau of Energy
Bol	Board of Investment
C	Capacity
CAGR	Compound Annual Growth Rate
CCS	Carbon Capture and Storage
CEFC	Clean Energy Finance Corporation
CEI	Clean Energy Initiative
CERC	Central Electricity Regulatory Commission
CFA	Central Financial Assistance
DEDE	Department of Alternative Energy Development and Efficiency
ECBC	Energy Conservation and Building Codes
EECA	Energy Efficiency and Conservation Authority
EGAT	Electricity Generating Authority of Thailand
EIA	Environmental Impact Assessment
ENCON	Energy Conservation Promotion Fund
EPG	Ethanol Production Grant
ESCO	Energy Audit and Energy Service Company
ETS	Emissions Trading Scheme
FIDA	Forest Industry Development Agenda
FIT	Feed-in Tariff
GBI	Generation-Based Incentive
GHG	Greenhouse Gas
GRIHA	Green Rating for Integrated Habitat Assessment
GW	Gigawatt
GWh	Gigawatt hour
HVAC	Heating, Ventilating and Air Conditioning

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IFC	International Finance Corporation
IGBC	Indian Green Building Council
IPP	Independent Power Producer
IREDA	Indian Renewable Energy Development Agency
IRR	Internal Rate of Return
JNNSM	Jawaharlal Nehru National Solar Mission
JREPP	Japan Renewable Energy Policy Platform
KOREC	Korea Electricity Commission
ktoe	kilotons of oil equivalent
kW	kilowatt
kWh	kilowatt hour
kWp	kilowatt peak
LEED	Leadership in Energy and Environmental Design
LGC	Large-scale Generation Certificate
LGEEP	Local Government Energy Efficiency Program
LPG	Liquefied Petroleum Gas
LRET	Large scale Renewable Energy Target
MEA	Metropolitan Electricity Authority
METI	Ministry of Economy, Trade and Industry
MI	Megaliter
ml/d	milliliters per day
MNRE	Ministry of New and Renewable Energy
MoEA	Ministry of Economic Affairs
MoEN	Ministry of Energy
MoU	Memorandum of Understanding
MRET	Mandatory Renewable Energy Target
MSW	Municipal Solid Waste
MW	Megawatt
MWh	Megawatt hour
NAPCC	National Action Plan on Climate Change
NBC	National Building Code
NDRC	National Development and Reform Commission
NEA	National Energy Administration
NEDO	New Energy and Industrial Technology Development Organization
NEM	National Energy Market
NGV	Natural Gas for Vehicle
NPC	National People's Council
NSW	New South Wales
NVVN	NTPC Vidyut Vyapar Nigam Limited

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NSM	National Solar Mission
NZEECS	New Zealand Energy Efficiency and Conservation Strategy
NZES	New Zealand Energy Strategy
ORER	Office of the Renewable Energy Regulator
PEA	Provincial Electricity Authority
PEC	Partial Exemption Certificate
PFC	Power Finance Corporation
PJ	Petajoules
PPA	Power Purchase Agreement
R&D	Research and Development
RD&D	Research, Development and Deployment
REC	Renewable Energy Certificate
REDA	Renewable Energy Development Act
REDP	Renewable Energy Demonstration Program
REEEP	Renewable Energy and Energy Efficiency Partnership
RET	Renewable Energy Target
RMA	Resource Management Act
RPP	Renewable Power Percentage
RPS	Renewable Portfolio Standards
SBCVC	Softbank China Venture Capital
SCER	Standing Council on Energy and Resources
SERC	State Electricity Regulatory Commission
SMP	System Marginal Price
SPP	Small Power Producer Program
SRES	Small-scale Renewable Energy Scheme
STC	Small-scale Technology Certificate
STP	Small-scale Technology Percentage
SXVP	Southern Cross Venture Partner
TERI	The Energy and Resource Institute
TWh	Terawatt hour
USASEC	US Solar Energy Collaboration
US DoE	US Department of Energy
VAT	Value Added Tax
VEEC	Victorian Energy Efficiency Certificate
VSPP	Very Small Power Producer Program
W	Watt

Source: GlobalData

Appendix

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12.3 Methodology

GlobalData's dedicated research and analysis teams consist of experienced professionals with advanced statistical expertise and marketing, market research and consulting backgrounds in the energy industry.

GlobalData adheres to the codes of practice of the Market Research Society (www.mrs.org.uk) and Strategic and Competitive Intelligence Professionals (www.scip.org).

All of GlobalData's databases are continuously updated and revised. The following methodology has been followed for the collection and analysis of data presented in this report.

12.3.1 Coverage

The report provides comprehensive coverage of key renewable energy initiatives and policies for the following countries: Australia, China, India, Japan, South Korea, Thailand, New Zealand, Vietnam and Taiwan, covering the following major topics:

- Renewable energy policy framework
- Financial incentives and policy support for wind, solar, small hydro, bioenergy and energy efficiency
- Renewable policy changes and updates by country
- Important agencies dealing in renewable energy

It also provides a country-level comparison of major policy instruments.

12.3.2 Secondary Research

The research process begins with extensive secondary research using GlobalData's proprietary databases and external sources.

Investment estimates and market growth rates are determined by taking the following into consideration:

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- Statistics and historical trends provided by government bodies, industry associations and equipment vendors
- Utility expansion plans
- Government and private sector investment
- Government regulations and policies
- GlobalData's proprietary databases, such as Capacity and Generation Database and Transmission and Distribution Database
- For different countries, these databases were analyzed to determine historical and forecast trends in renewable capacity addition and power generation
- Other insights obtained through secondary research and analysis of company websites, annual reports, investor presentations, industry and trade journals, and association data

12.4 Disclaimer

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