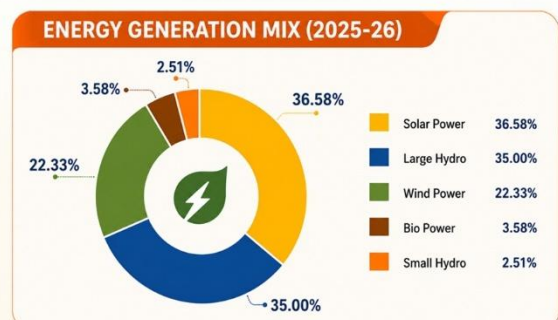
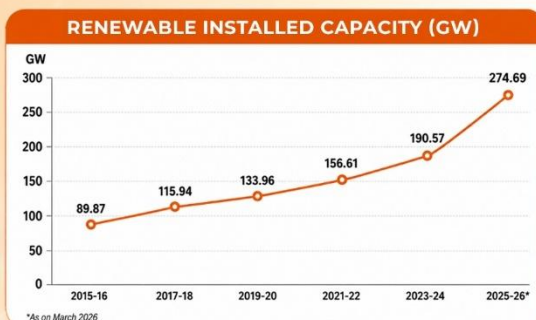
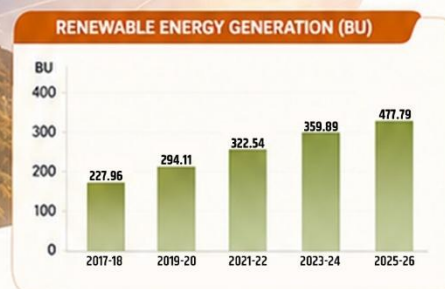
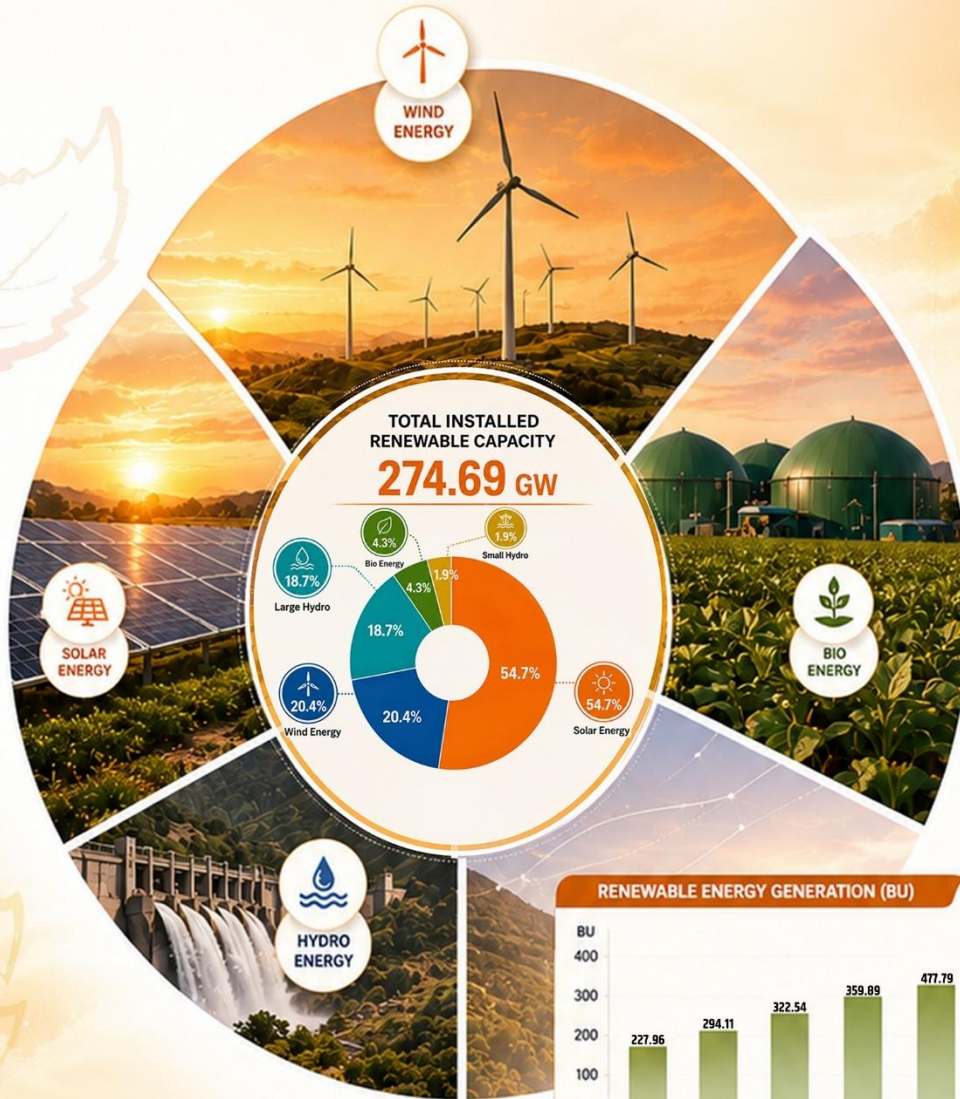




RE- STATISTICS 2025-26



प्रल्हाद जोशी
PRALHAD JOSHI
ಪ್ರಲ್ಹಾದ ಜೋಶಿ



शिक्षा, उपभोक्ता मामले,
खाद्य और सार्वजनिक वितरण तथा
नवीन और नवीकरणीय ऊर्जा मंत्री
भारत सरकार

MINISTER OF EDUCATION, CONSUMER AFFAIRS,
FOOD & PUBLIC DISTRIBUTION AND
NEW & RENEWABLE ENERGY
GOVERNMENT OF INDIA



Message

In keeping with Hon'ble Prime Minister's vision of transforming India into Viksit Bharat by 2047 and his call to all arms of the Government to realign their objectives accordingly on a war footing, the Ministry of New and Renewable Energy has also resolved to deploy all the resources at its disposal towards achieving this goal. This is being pursued through the formulation of stable and targeted policies, promotion of R&D, industry collaboration, enhanced execution capabilities, and people-focused programmes in the renewable energy sector, comprising primarily solar, wind, bio-power, small hydro power, and green hydrogen. At the same time, having already committed to becoming a Net Zero nation by 2070, India is breaking new ground every day in this vital sector.

The notification of the National Policy on Geothermal Energy in September 2025 is a strong case in point, whereby this clean and reliable energy source is proposed to be harnessed for power generation and direct-use applications. FY 2025-26 is replete with such path-breaking interventions. Another notable example is the approval of the Small Hydro Power (SHP) Development Scheme for the period from FY 2026-27 to FY 2030-31, which is expected to particularly benefit the hilly and North-Eastern States with high potential for such projects. India recorded its highest ever solar capacity addition in a financial year of 44.61 GW, against target of 34 GW. During 2025, India overtook Brazil to become the third-largest country globally in installed renewable energy capacity. It is also a matter of great pride that India continues to maintain its third position globally in the installed capacity under solar sector.

Thus, to effectively support these and future interventions and innovations, it is imperative that data relating to installed capacity and electricity generation at the national, state, and international levels in the renewable energy sector is readily available to all stakeholders. The publication "Renewable Energy Statistics 2025-26", the third in the series, presents accurate, reliable, and up-to-date statistical insights in this direction. It also provides valuable information on sector-specific performance across solar, wind, hydro, and bio-power, along with trend analysis that track the nation's progress towards achieving these goals over the years.

(Pralhad Joshi)



This is a recycled, eco-friendly, zero-chemical paper that saves 40% water, consumes less energy, involves no tree cutting, adds carbon credits thus, reducing climate change & global warming.



Office : 8th Floor, Atal Akshay Urja Bhawan, Opp. CGO Complex, Lodhi Road, New Delhi-110003

Tel. : 011-20849102, 20849103, Fax: 20849101, E-mail : ofcofmin-mnre@gov.in

Residence : 11, Akbar Road, New Delhi-110001, Tel.: 011-23014097, 23094098

Office of MP Dharwad : Chitaguppi Hospital Compound, Sir Siddappa Kambli Marg, Hubballi-580020 (Karnataka)

Tel. : 0836-2251055, 2258955, Email : pralhadvjoshi@gmail.com, officeofpralhadjoshiji@gmail.com

श्रीपाद नाईक

राज्य मंत्री

नवीन और नवीकरणीय ऊर्जा एवं विद्युत
भारत सरकार



सत्यमेव जयते

SHRIPAD NAIK

Minister of State for
New and Renewable Energy & Power
Government of India

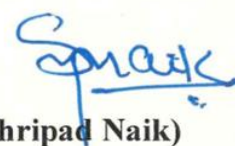


MESSAGE

To sustain progress in a rapidly industrializing world, the demand for energy is inevitable. However, in the wake of the adverse impacts of climate change, it is in the interest of the planet that energy is increasingly generated from alternative sources and that every possible effort is made to accelerate this transition. The gradual phasing out of fossil fuels and the adoption of clean and sustainable sources of energy must become the order of the day.

Recognising this imperative, the Government has adopted a two-pronged approach comprising targeted policies and strategic investments to unlock the vast potential of renewable energy and facilitate the transition to a greener energy mix. FY 2025–26 has been a year of many firsts. India recorded its highest-ever solar capacity addition in a financial year, adding 44.61 GW against the target of 34 GW. Distributed Renewable Energy (DRE) from solar contributed 16.3 GW (36%) during FY 2025–26, including 7.6 GW under PM-KUSUM and 8.7 GW from rooftop solar. This translated into another significant milestone, with India's cumulative installed solar capacity surpassing 150 GW as on 31st March 2026. The nation also recorded its highest-ever wind capacity addition of 6.05 GW in a financial year. Driven by these achievements, India now ranks third globally in overall renewable energy electricity installed capacity.

It is heartening to note that Renewable Energy Statistics 2025–26, the third in this series, presents a comprehensive and integrated database on electricity generation and installed capacity in the renewable energy sector. I am confident that this publication will serve as a valuable resource for both informed readers and those new to the subject by providing insights into sector-specific performance across solar, wind, hydro, and bio-power, along with trend analyses that present the growth of the sector in an engaging and informative manner, inspiring readers to further explore India's renewable energy journey.


(Shripad Naik)

New & Renewable Energy : 7th Floor, Atal Akshay Urja Bhawan, Lodhi Road, New Delhi-110003

Tel. : 011-20849074-75, 20849141, E-mail : mos-mnre@gov.in; shripad.naik@sansad.nic.in

Power : Room No. 200, Shram Shakti Bhawan, Rafi Marg, New Delhi-110001, Tel.: 011-23720450-51

Res. (Delhi) : 1, Lodhi Estate, New Delhi-110003, Tel.: 011-24635396, Fax : 011-24656910



संतोष सारंगी, भा.प्र.से.
सचिव

Santosh Sarangi, IAS
Secretary



PM Surya Ghar:
Muft Bijli Yojana

भारत सरकार
नवीन और नवीकरणीय ऊर्जा मंत्रालय
Government of India
Ministry of New and Renewable Energy



Foreword

Renewable energy is facilitating India's journey towards a cleaner, more sustainable, and energy-secure future. It is the need of the hour. At a time when the planet is grappling with climate change, this abundant source of energy provides a compelling reason for its greater adoption. The Ministry of New and Renewable Energy is constantly endeavouring to foster a thriving ecosystem that provides a fillip to investment, promotes the adoption of newer technologies, collaborates with industry to develop specific solutions, and boosts research, innovation, and capacity building in this sector.

These concerted efforts are reflected in several key policy initiatives undertaken during FY 2025–26. The introduction of the National Policy on Geothermal Energy and the extension of the Small Hydro Power Development Scheme are important steps towards diversifying India's renewable energy portfolio and further strengthening the country's position in the global renewable energy landscape. As a result of sustained efforts, India's installed renewable energy capacity increased from 76.38 GW as on 31st March 2014 to 274.69 GW by 31st March 2026, registering a 3.59-fold increase and accounting for 51.56% of the country's total installed electricity capacity. This remarkable growth has established renewable energy as the dominant component of India's installed power capacity and positioned the country as the third-largest globally in overall installed renewable energy capacity.

To reflect the relentless spirit of the Ministry, the need for documenting the progress through a well-compiled collection and analysis of statistics relating to the renewable energy sector was felt for quite some time. The first seeds were sown with Renewable Energy Statistics 2023–24. The publication has since gone from strength to strength, and I am confident that the latest edition, the third in the series, Renewable Energy Statistics 2025–26, will be highly useful for officials engaged in the renewable energy sector and help them gain valuable data-driven insights.

I would like to extend my heartfelt appreciation to the dedicated team of the Statistics Division, led by Shri Mayank Tewari, Additional Secretary, and Smt. Mini Prasannakumar, Deputy Director General, for their meticulous efforts in compiling this data-rich publication.

(Santosh Sarangi)

अटल अक्षय ऊर्जा भवन, गेट नं 2 के सामने, सी.जी.ओ. कॉम्प्लेक्स, लोदी रोड, नई दिल्ली-110003
Atal Akshay Urja Bhawan, Opp. Gate No. 2, CGO Complex, Lodhi Road, New Delhi-110003
Tel. : 011-20849010, 20849011 • E-mail : secy-mnre@nic.in
website : www.mnre.gov.in



सत्यमेव जयते

मयंक तिवारी

MAYANK TEWARI

अपर सचिव
भारत सरकार
नवीन और नवीकरणीय ऊर्जा मंत्रालय

ADDITIONAL SECRETARY
GOVERNMENT OF INDIA
MINISTRY OF NEW AND RENEWABLE ENERGY



PREFACE

India has made significant progress in the renewable energy sector, demonstrating an unwavering commitment to a sustainable future. Given the scale of deployment of RE in India, not only is RE environment-friendly but is now emerging as an economic imperative. Over the past financial year, all major programmes of the Ministry of New and Renewable Energy (MNRE) have shown exemplary progress. Be it Solar, Wind, the National Bioenergy Programme, Small Hydropower, or Green Hydrogen, the flags of achievement have been planted high on every pillar. The Ministry's unwavering resolve has found expression in industry-friendly interventions, the establishment of standards and regulatory frameworks, infrastructure development, and ecosystem building.

According to Renewable Energy Statistics 2026 published by International Renewable Energy Agency (IRENA), renewable energy accounted for 49.50% of global installed electricity capacity as on 31st December 2025 and 31.70% of global electricity generation in 2024, reflecting the growing adoption of renewable energy technologies across countries. India has also made significant progress, with renewable energy accounting for 51.56% of total installed electricity capacity as on 31st March 2026. During 2025–26, RE capacity grew by 24.80% over FY 2024–25, with a record addition of 54.59 GW, while renewable sources contributed 25.97% of India's total electricity generation.

It is against this backdrop that MNRE is presenting the third edition of Renewable Energy Statistics, which provides a detailed, evidence-based account of India's renewable energy progress, offering valuable insights at the national, state, and international levels.

The compilation draws from several authoritative sources, including the International Renewable Energy Agency (IRENA), whose Renewable Energy Statistics 2026 served as a key source for global comparisons, and the Central Electricity Authority (CEA), Ministry of Power, for its regular updates on installed capacity and electricity generation. This document is the result of dedicated collaboration across various divisions of the Ministry, and special recognition is due to Smt. Mini Prasannakumar, Deputy Director General, for her stewardship of the Statistics Division, whose dedication and commitment have been instrumental in its successful completion. As we continue to scale new heights in clean energy deployment, this report stands both as a testament to the sector's progress and as a valuable guide for the industry.

Feedback and suggestions are most welcome and will help enhance future editions.


(Mayank Tewari)

मिनि प्रसन्नाकुमार
Mini Prasannakumar



उप महानिदेशक
नवीन और नवीकरणीय ऊर्जा मंत्रालय
भारत सरकार

Deputy Director General
Ministry of New & Renewable Energy
Government of India



ACKNOWLEDGEMENT

As the world stands up to the challenge of climate change and grapples with the question of development versus sustainability, India has opted to harness nature's renewing and self-healing potential. During 2025–26, a number of statistically significant developments have taken place.

The future is where green energy lies. Keeping in mind the overarching objectives of building 500 GW of non-fossil fuel-based capacity by 2030 and attaining net-zero emissions by 2070, the importance of reliable, comprehensive, and authoritative data for policy formulation cannot be overstated. The present edition of Renewable Energy Statistics of the Ministry of New and Renewable Energy (MNRE) seeks to carry forward the work from where the previous edition left off, and the chapters contained therein provide an all-round account of India's renewable energy progress across various fronts.

The present compilation draws upon several authoritative sources of official statistics, including the International Renewable Energy Agency (IRENA) and the Central Electricity Authority (CEA), Ministry of Power. Much like the overall functioning of the Government of India through the breaking down of silos, this document too is the culmination of dedicated efforts and cooperation across various Programme Divisions within the Ministry.

The publication has been brought out through the dedicated efforts and cooperation of Shri Moinak Mukherjee, Director, Statistics Division. Special appreciation is placed on record for the exceptional initiative, dedication, and tireless efforts of Ms. Deepali Sharma, Stenographer (Grade D), who, while not being part of the Statistics Division and despite this publication not being part of her assigned duties, extended her wholehearted support towards its preparation and finalisation. Her personal commitment played a crucial role in bringing out this publication in its present form and, notably, much earlier than the previous editions. Her efforts are particularly appreciated and placed on record with sincere gratitude.

It is humbly hoped that this publication shall facilitate informed decision-making and inspire its readers to offer even more valuable suggestions and ideas for the next edition.

(Mini Prasannakumar)

Atal Akshay Urja Bhawan, Opp. CGO Complex, Lodhi Road, New Delhi - 110003
Tel. : 011-20849138, E-mail : miniprasanna.k@nic.in

**Officials Associated with the preparation of
Renewable Energy Statistics 2025-26**

Ms. MINI PRASANNAKUMAR

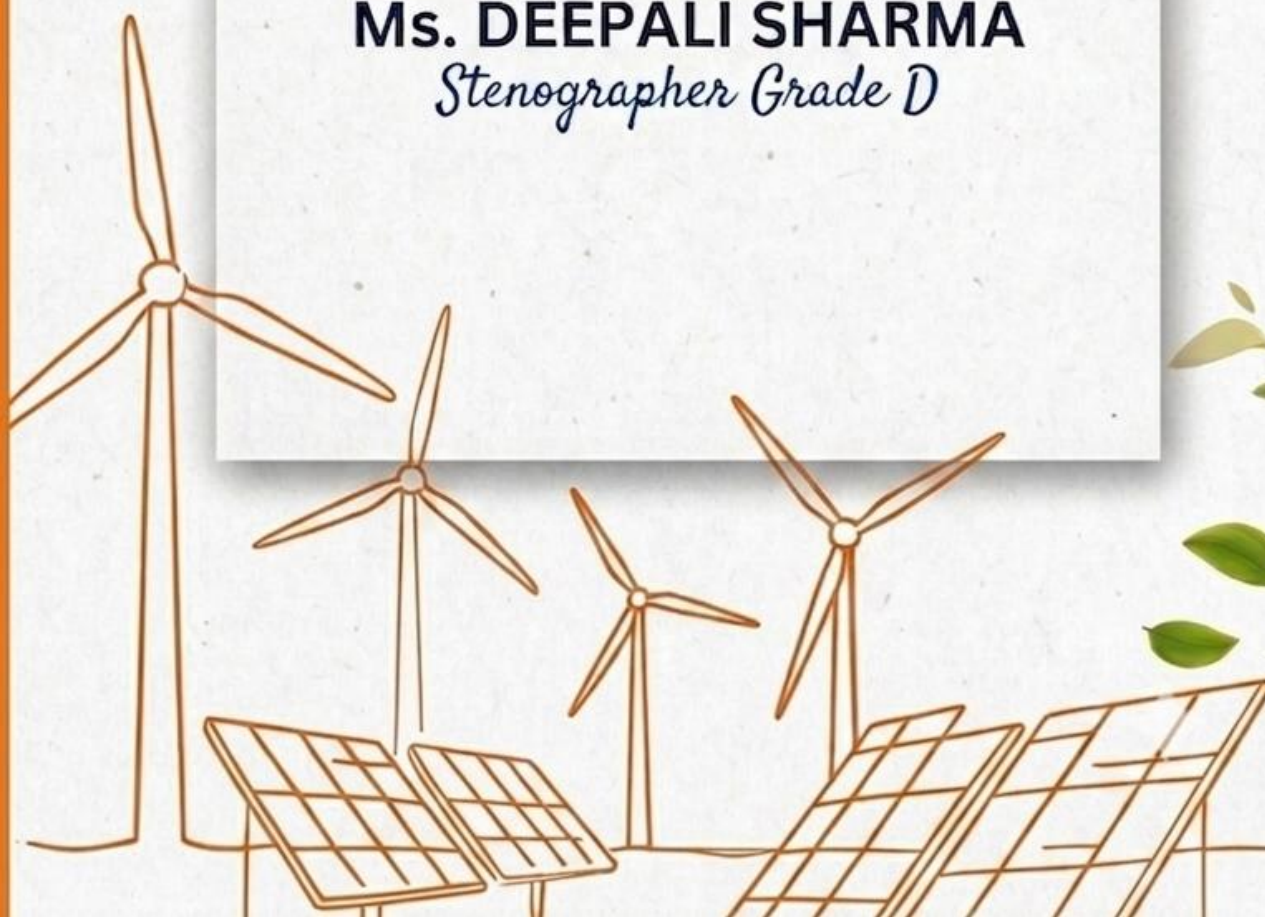
Deputy Director General

Mr. MOINAK MUKHERJEE

Director

Ms. DEEPALI SHARMA

Stenographer Grade D



Contents

Sl. No.	CONTENTS	PAGE NO.
	Scope & Coverage	1
	Introduction	2
	Highlights	3-9
ALL INDIA STATUS		
INSTALLED CAPACITY		
Chapter 1	Installed Capacity - RE and Non-RE sector	11-14
	Table 1.1 Cumulative installed capacity since 2015-16	11
Chapter 2	Installed Capacity - Wind, Solar, Small Hydro & Bioenergy (RES) sector	15-21
	Table 2.1 Cumulative installed Capacity under RES since 2015-16	15
ENERGY GENERATION		
Chapter 3	Energy Generation - RE and Non-RE sector	22-24
	Table 3.1 Year-wise All India Energy Generation since 2015-16	22
Chapter 4	Energy Generation – Wind, Solar, SHP & Bioenergy (RES) sector	25-28
	Table 4.1 Year-wise Energy Generation under RES since 2015-16	25
INSTALLED CAPACITY & ENERGY GENERATION DURING -2025-26 and SDG-NIF		
Chapter 5	Monthly Installed Capacity and Electricity Generation during 2025-26	29-31
	Table 5.1 Monthly Capacity Addition during 2025-26	30
	Table 5.2 Monthly Sector Wise RE Capacity Addition during 2025-26	30
	Table 5.3 Monthly Electricity Generation during 2025-26	31
	Table 5.4 Monthly Electricity Generation under RES during 2025-26	31
Chapter 6	Sustainable Development Goal-NIF	32-34
	Table 6.1 SDG – NIF Indicators 7.b.1/12. a.1- Installed renewable energy generating capacity in the country (in watts per capita)	32
	Table 6.2 SDG Indicator 7.2.1- RE share in the total installed electricity generation	33
STATEWISE STATUS		
POTENTIAL AND INSTALLED CAPACITY		
Chapter 7	Estimated RE Potential and Installed Capacity in RE and Non-RE sector	36-39
	Table 7.1 Estimated potential in RE sector	37
	Table 7.2 State wise Non-RE and RE Cumulative Installed Capacity as on 31.03.2018 and 31.03.2026	38-39
Chapter 8	Installed capacity in RE sector	40-47
	Table 8.1 Region wise/State wise RE Cumulative Installed Capacity from 2017-18 to 2025-26	40-41
	Table 8.2 Source-wise RE cumulative installed capacity as on 31.03.2026	44
	Table 8.3 Cumulative installed capacity of bio-power and solar power under various categories as on 31.03.2026	45

	Table 8.4 Installation of Off-grid Systems/Devices as on 31.03.2026	46
	Table 8.5 Share of RE in cumulative installed capacity as on 31.03.2026	47
ENERGY GENERATION		
Chapter 9	Energy Generation – RE and Non-RE sector	48-50
	Table 9.1 Share (%) of RE generation in total Energy Generation during 2025-26	49
	Table 9.2 State-wise and source-wise Renewable Energy Generation during 2025-26	50
Chapter 10	Top 5 States in Renewable Energy Installed Capacity	51-53
	10.1 Top 5 states in RE installed capacity and their Contribution in the Country's cumulative RE Installed Capacity	51
	10.2 Contribution of various RE sources of top 5 RE installed capacity states within the respective state's RE installed capacity	52
	10.3 Contribution of various RE sources of top 5 RE installed capacity states in RE generation within the respective states	53
Chapter 11	Gujarat	54-60
	Table 11.1.1 Installed Capacity under RE and Non-RE sector since 2017-18	55
	Table 11.2.1 Installed Capacity under Solar, wind, Biopower and Small Hydro Power (RES) since 2014-15	57
	11.3 Energy Generation during 2025-26	60
Chapter 12	Rajasthan	61-67
	Table 12.1.1 Installed Capacity in RE and Non-RE sector since 2017-18	62
	Table 12.2.1: Installed Capacity under Solar, wind, Bio Power and Small Hydro Power (RES) since 2014-15	64
	12.3 Energy Generation during 2025-26	67
Chapter 13	Maharashtra	68-74
	Table 13.1.1 Installed Capacity in RE and Non-RE sector since 2017-18	69
	Table 13.2.1: Installed Capacity under Solar, wind, Bio Power and Small Hydro Power (RES) since 2014-15	71
	13.3 Energy Generation during 2025-26	74
Chapter 14	Tamil Nadu	75-81
	Table 14.1.1 Installed Capacity in RE and Non-RE sector since 2017-18	76
	Table 14.2.1: Installed Capacity under Solar, wind, Bio Power and Small Hydro Power (RES) since 2014-15	78
	14.3 Energy Generation during 2025-26	81
Chapter 15	Karnataka	82-88
	Table 15.1.1 Installed Capacity in RE and Non-RE sector since 2017-18	83
	Table 15.2.1: Installed Capacity under Solar, wind, Bio Power and Small Hydro Power (RES) since 2014-15	85
	15.3 Energy Generation during 2025-26	88

INTERNATIONAL STATUS

WORLD WISE ANALYSIS

Chapter 16	Installed Capacity	90-96
	Table 16.1.1 Cumulative electricity installed capacity under RE & Non-RE sectors from 2015 to 2025	90
	Table 16.2.1 Installed Capacity under solar, wind, renewable hydro and bioenergy from 2015 to 2025	94
Chapter 17	Energy Generation	98-103
	Table 17.1.1 Energy generation in RE and Non-RE sector from 2015 to 2024	98
	Table 17.2.1 Energy Generation under solar, wind, renewable hydro and bioenergy from 2015 to 2024	101

REGION WISE ANALYSIS

Chapter 18	Installed Capacity and Energy Generation	104-110
	Table 18.1.1 Total RE & Non-RE Installed capacity from 2015 to 2025	104
	Table 18.3.1 Electricity generation from RE & Non-RE sources from 2015 to 2024	108

COUNTRY WISE ANALYSIS

Chapter 19	Installed Capacity and Energy Generation	111-114
	Table 19.1.1 Top 10 countries by electricity installed capacity under RE sector as on 31st December, 2025	111
	Table 19.2.1 Top 10 countries by electricity generation from RE sources during 2024	113
Metadata - Annexure		115-117

SCOPE & COVERAGE

Scope: *Renewable Energy Statistics 2025-26* The publication presents a comprehensive overview of the renewable energy sector, encompassing detailed statistics on installed capacity and electricity generation. It provides valuable insights into the current status, trends and growth of renewable energy sources in the electricity sector at the national, state and global levels.

Coverage: At the national and state levels, the analysis is limited to installed capacity and electricity generation from utility-scale sources. Pumped storage is included under large hydro power. For international statistics, the International Renewable Energy Agency (IRENA) considers installed capacity and electricity generation from both utility and non-utility power plants in its publication. Unlike the national classification, IRENA excludes pumped storage from hydropower and considers only renewable hydropower as part of renewable energy.

Data Sources:

- **Non-Renewable Energy and Large Hydro:** The installed capacity data have been sourced from the National Power Portal maintained by Central electricity Authority (CEA) and electricity generation data have been sourced from the website of CEA, Ministry of Power.
- **Renewable Energy (Solar, Wind, Bio, and Small Hydro):** Installed capacity data is from Ministry of New and Renewable Energy (MNRE).
- **International Data:** Installed capacity and electricity generation data have been sourced from IRENA's publication, Renewable Energy Statistics 2026. The share of renewable energy, rounded to two decimal places, has been used to derive the corresponding installed capacity and electricity generation from non-renewable sources for each country. All secondary data sources are cited below the respective tables.
- **Reference Period:** National data on installed capacity and electricity generation are reported on a financial year basis (April–March), whereas international data are reported on a calendar year basis (January–December).

INTRODUCTION

The rapid growth of the global population and continued advances in human development have led to a substantial increase in energy demand. Despite the well-established environmental and health impacts associated with fossil fuels, global dependence on conventional energy sources continues, underscoring the need for a faster transition towards clean and sustainable energy.

To meet the growing energy demand while addressing the risks of climate change, a transition from fossil fuels to clean and renewable energy sources is imperative. In pursuit of this objective, India's power sector is undergoing a transformative transition, with increasing emphasis on harnessing the country's diverse renewable energy resources.

In line with its mandate, the Ministry of New and Renewable Energy (MNRE) has undertaken several initiatives to promote the widespread adoption and deployment of renewable energy technologies, accelerating India's transition towards clean energy and reducing dependence on fossil fuels. The PM-Surya Ghar: Muft Bijli Yojana is the world's largest domestic rooftop solar initiative, targeting the installation of rooftop solar systems in one crore households by March 2027. Complementing this, the Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM-KUSUM) promotes solar pumps and grid-connected renewable energy plants on barren and agricultural land, supporting rural livelihoods while reducing the agricultural sector's dependence on conventional fuels. Meanwhile, the National Green Hydrogen Mission aims to position India as a global leader in the production and utilisation of green hydrogen, contributing to a cleaner and more sustainable energy future.

During 2025–26, the Ministry undertook a series of progressive initiatives to accelerate India's clean energy transition while promoting inclusive, sustainable and balanced growth. The National Policy on Geothermal Energy, introduced in September 2025, provides a comprehensive framework for the exploration, development and commercial utilisation of the country's geothermal resources. The extension of the Small Hydro Power (SHP) Development Scheme for FY 2026–27 to FY 2030–31 is expected to particularly benefit the hilly and North-Eastern States, which possess significant SHP potential. The extended Scheme will provide renewed impetus to the SHP sector and facilitate faster harnessing of the available potential. SHP projects are also environmentally sustainable, as they generally involve limited land requirements and avoid large-scale deforestation and displacement of communities. Further, based on the recommendations of MNRE, Ministry of Power (MoP) and the Central Electricity Regulatory Commission (CERC) introduced a series of amendments to their respective guidelines, which are expected to have a long-term positive impact on the development and integration of the renewable energy network in the country.

The Ministry's policy initiatives and sustained efforts have resulted in a significant expansion of renewable energy capacity and a growing contribution of green energy to electricity generation. This publication captures this remarkable evolution through a comprehensive analysis of renewable energy development at the national, state and international levels.

HIGHLIGHTS

ALL INDIA STATUS

Installed Capacity:

- As on 31st March 2026, India's total installed power generation capacity reached 532.74 GW, registering a 73.91% increase from 306.33 GW in 2015–16. The installed capacity under the renewable energy sector expanded by 205.65% during the decade. Among renewable sources, solar, wind, bio power, and small hydro together recorded a remarkable growth of over 374%, reflecting the country's sustained transition towards a cleaner and more sustainable energy mix.
- The year 2025–26 marked a historic milestone for the renewable energy sector, with a record annual capacity addition of 54.59 GW, far exceeding the 2.93 GW added under the non-renewable sector. The annual growth rate of installed capacity under the renewable energy sector surged to 24.80%, compared to just 1.15% in the non-renewable sector, highlighting the accelerating pace of India's clean energy expansion.
- By the end of 2025–26, installed capacity under the renewable energy sector constituted 51.56% of India's total installed electricity capacity, indicating that renewable sources had become the dominant component of the country's power capacity. Meanwhile, non-fossil fuel-based sources, including renewable energy and nuclear power, together accounted for 53.21% of the total installed capacity.
- According to Renewable Energy Statistics 2026 published by IRENA, India advanced from 4th to 3rd position globally in overall renewable energy installed capacity and retained its 3rd position in solar installed capacity. This achievement reflects India's growing leadership in the global clean energy transition and its continued progress towards achieving its renewable energy and climate goals.

Electricity Generation:

- During 2025–26, India generated 1,840.11 Billion Units (BU) of electricity, registering a 57.60% increase over 1,167.58 BU during 2015–16. Renewable energy played an increasingly important role in the country's power sector, generating 477.79 BU, which accounted for 25.97% of the total electricity generated during the year.
- Electricity generation from solar, wind, small hydro, and bio-energy increased significantly from 65.78 BU during 2015–16 to 310.59 BU during 2025–26, reflecting the rapid expansion of renewable energy infrastructure. Among these sources, solar power recorded the fastest growth, registering a compound annual growth rate (CAGR) of 37.10%, and emerged as the largest contributor to the increase in renewable electricity generation.

- According to Renewable Energy Statistics 2026 published by IRENA, India ranked 5th globally in total electricity generation from renewable energy sources and retained the 3rd position in electricity generation from solar power, highlighting its growing prominence in the global clean energy landscape.

STATE WISE STATUS

Installed capacity:

- As on 31st March 2026, Gujarat, Rajasthan, Maharashtra, Tamil Nadu, and Karnataka emerged as the top five states in installed renewable energy capacity, collectively accounting for 66.26% of the country's total installed capacity under the renewable energy sector, highlighting their leading role in India's clean energy transition.
- The solar power sector remained highly concentrated in Gujarat, Rajasthan, Maharashtra, Tamil Nadu, and Karnataka, which together contributed 76.28% of the country's total installed solar power capacity, reflecting the rapid deployment of solar projects in these states.
- Wind power installations were predominantly concentrated in Gujarat, Tamil Nadu, Karnataka, Maharashtra, Rajasthan, Andhra Pradesh, and Madhya Pradesh, which together accounted for 99.64% of India's total installed wind power capacity, underscoring the favourable wind resource potential in these regions.
- The bioenergy sector was led by Maharashtra, Uttar Pradesh, Karnataka, and Tamil Nadu, which together contributed 70.68% of the country's total installed bioenergy capacity, demonstrating their significant role in biomass and waste-to-energy development.
- Installed capacity under large hydro power was primarily concentrated in Himachal Pradesh, Uttarakhand, Karnataka, Jammu & Kashmir, Andhra Pradesh, Maharashtra, and Telangana, which together accounted for 62.24% of the country's total installed large hydro capacity, reflecting the geographical distribution of major hydroelectric resources.

Electricity Generation during 2025-26:

- During 2025–26, Rajasthan, Gujarat, Karnataka, Tamil Nadu, Himachal Pradesh, and Maharashtra emerged as the leading states in electricity generation from renewable energy sources, collectively contributing 67% of the country's total renewable electricity generation.
- Rajasthan, Gujarat, Tamil Nadu, Karnataka, Maharashtra, and Andhra Pradesh dominated solar power generation, together accounting for over 82% of India's total electricity generation from solar energy, reflecting the concentration of installed solar capacity in these states.

- Wind power generation remained highly concentrated in Gujarat, Tamil Nadu, Karnataka, Andhra Pradesh, Maharashtra, and Rajasthan, which together produced more than 95% of the country's total electricity generation from wind power.
- In the bioenergy sector, Maharashtra, Karnataka, Uttar Pradesh, Chhattisgarh, West Bengal, and Punjab together accounted for 77.74% of India's total electricity generation from bio-based renewable sources, underscoring their leading role in biomass-based power generation.
- Himachal Pradesh, Uttarakhand, Jammu & Kashmir, and Karnataka were the leading contributors to large hydro power generation, collectively producing more than 54% of India's total electricity generation from large hydro, reflecting the concentration of major hydroelectric resources in these states.

Top 5 states in India in electricity Installed Capacity under Renewable Energy:

I. GUJARAT

- As on 31st March 2026, Gujarat emerged as the largest contributor to India's renewable energy installed capacity, with a cumulative capacity of 47.18 GW, accounting for 17.18% of the country's total installed renewable energy capacity. Between 2017–18 and 2025–26, the state's installed renewable energy capacity expanded by 5.05 times, while non-renewable capacity recorded only a 1.04-fold increase. A major milestone was achieved in 2023–24, when renewable energy installed capacity surpassed non-renewable capacity for the first time.
- The share of renewable energy in Gujarat's total installed electricity capacity increased significantly from 28.45% of 2017–18 to 65.81% by 2025–26. Within the renewable energy electricity installed capacity as on 31st March 2026, solar power leads with a 62.11% share, followed by wind power having 33.16%.
- During 2025–26, Gujarat ranked second in the country in electricity generation from renewable energy sources, generating 67.83 Billion Units (BU) and contributing 14.20% of India's total renewable electricity generation. The state also secured the second position in electricity generation from solar, wind, bioenergy, and small hydro, producing 61.46 BU, which accounted for 19.79% of the national generation from these renewable technologies.
- Renewable energy sources contributed 46.31% of Gujarat's total electricity generation during 2025–26. Among renewable sources, wind power was the largest contributor, accounting for 49.69% of the state's renewable electricity generation, followed by solar power with a 40.36% share.

II. RAJASTHAN

- As on 31st March 2026, Rajasthan ranked as the second-largest renewable energy state after Gujarat, with an installed renewable energy capacity of 47.02 GW, accounting for 17.12% of the country's total installed renewable energy capacity. Between 2017–18 and 2025–26, the state's renewable energy capacity expanded by 6.45 times, far exceeding the 1.27-fold increase in non-renewable capacity. A major milestone was achieved in 2021–22, when renewable energy installed capacity surpassed non-renewable capacity for the first time.
- The share of renewable energy in Rajasthan's total installed electricity capacity increased markedly from 40.51% of 2017–18 to 77.53% by 2025–26. Within the renewable energy portfolio, solar power remained the dominant source, accounting for 87.22% of the state's installed renewable energy capacity, followed by wind power with a 11.38% share.
- During 2025–26, Rajasthan ranked first in the country in electricity generation from renewable energy sources, producing 69.12 Billion Units (BU) and contributing 14.47% of India's total renewable electricity generation. The state also led in electricity generation from solar, wind, bioenergy, and small hydro, with a combined generation of 68.05 BU, accounting for 21.91% of the national generation from these renewable technologies.
- Renewable energy sources contributed 50.25% of Rajasthan's total electricity generation during 2025–26. Among these, solar power was the dominant source, accounting for 86.69% of the state's renewable electricity generation, while wind power contributed 10.63%.

III. MAHARASHTRA

- As on 31st March 2026, Maharashtra ranked third in India in installed renewable energy capacity, with 31.98 GW, accounting for 11.64% of the country's total installed renewable energy capacity. Over the past eight years, the state's renewable energy capacity expanded by 2.78 times, while installed capacity under the non-renewable sector witnessed a marginal decline of 0.08 times.
- Share of renewable energy in Maharashtra's total electricity installed capacity has grown significantly from 27.86% to 53.73% over the past 8 years. Within this installed capacity, solar power leads with a share of 61.36% followed by wind power having 18.53% share.
- During 2025–26, Maharashtra ranked sixth in the country in electricity generation from renewable energy sources, producing 29.11 Billion Units (BU) and contributing 6.09% of India's total renewable electricity generation. The state secured the fifth position in electricity generation from solar, wind, bioenergy, and small hydro, generating 23.62 BU, which accounted for 7.61% of the national generation from these renewable technologies.
- Renewable energy sources contributed 16.86% of Maharashtra's total electricity generation during 2025–26. Among renewable sources, solar power was the largest contributor, accounting for 36.26% of the state's renewable electricity generation, followed by wind power with a 29.58% share

IV. TAMIL NADU

- As on 31st March 2026, Tamil Nadu ranked fourth in the country in installed renewable energy capacity, with 29.11 GW, accounting for 10.60% of India's total installed renewable energy capacity. Between 2017–18 and 2025–26, the state's renewable energy capacity expanded by 2.16 times, compared to a 1.11-fold increase in installed capacity under the non-renewable sector
- The share of renewable energy in Tamil Nadu's total installed electricity capacity increased from 44.70% of 2017–18 to 61.10% by 2025–26. During this period, solar power overtook wind power to become the largest source of installed renewable energy capacity, accounting for 46.65% of the state's renewable energy capacity, followed by wind power with a 41.73% share.
- During 2025–26, Tamil Nadu ranked fourth in the country in electricity generation from renewable energy sources, producing 49.98 Billion Units (BU) and contributing 10.46% of India's total renewable electricity generation. The state secured the third position in electricity generation from solar, wind, bioenergy, and small hydro, generating 44.39 BU, which accounted for 14.29% of the national electricity generation from these renewable technologies.
- Renewable energy sources contributed 37.81% of Tamil Nadu's total electricity generation during 2025–26. Among renewable sources, wind power remained the largest contributor, accounting for 48.42% of the state's renewable electricity generation, followed by solar power with a 39.40% share.

V. KARNATAKA

- As on 31st March 2026, Karnataka ranked fifth in the country in installed renewable energy capacity, with 26.72 GW, accounting for 9.73% of India's total installed renewable energy capacity. Between 2017–18 and 2025–26, the state's renewable energy capacity expanded by 1.65 times, compared to a 1.02-fold increase in installed capacity under the non-renewable sector.
- The share of renewable energy in Karnataka's total installed electricity capacity increased from 60.71% of 2017–18 to 71.30% by 2025–26. Within this sector, solar energy leads with a share of 41.54%, followed by wind energy having 32.67% share.
- During 2025–26, Karnataka ranked third in the country in electricity generation from renewable energy sources, producing 58.54 Billion Units (BU) and contributing 12.25% of India's total renewable electricity generation. The state secured the fourth position in electricity generation from solar, wind, bioenergy, and small hydro, generating 42.94 BU, which accounted for 13.83% of the national generation from these renewable technologies.
- During 2025–26, Renewable energy sources contributed 54.27% of Karnataka's total electricity generation during 2025–26. Among renewable sources, wind power was the largest contributor, accounting for 32.12% of the state's renewable electricity generation, followed closely by solar power with a 30.62% share.

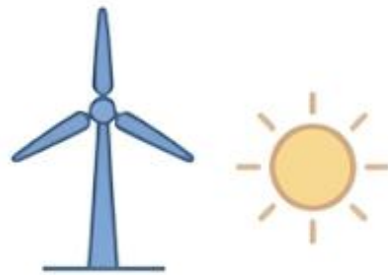
INTERNATIONAL STATUS

Installed capacity:

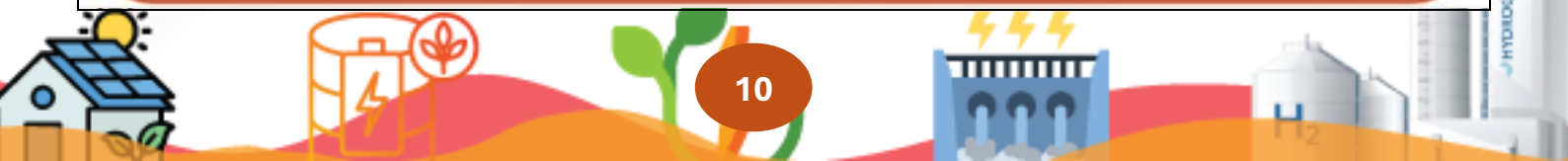
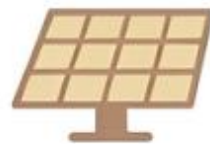
- As on 31st December 2025, global installed renewable energy capacity reached 5,155.01 GW, according to Renewable Energy Statistics 2026 published by IRENA. The share of renewable energy in the world's total installed electricity capacity increased from 29.50% of 2015 to 49.50% by 2025, reflecting the rapid global transition towards clean energy.
- During 2025, the global renewable energy sector achieved a historic milestone with a record addition of 693.38 GW of renewable energy capacity, far exceeding the 125.88 GW added under the non-renewable sector, highlighting the accelerating pace of the global energy transition.
- Among renewable energy sources, solar power recorded the fastest expansion, with installed capacity increasing from 225.72 GW of 2015 to 2,396.71 GW by 2025. Wind power also witnessed substantial growth, rising from 416.39 GW to 1,291.02 GW during the same period.
- Over the last decade, the renewable energy sector consistently recorded annual growth rates exceeding 7.78%, whereas annual growth in installed capacity under the non-renewable sector remained modest, fluctuating between 0.73% and 3.00%.
- During the last seven years, renewable energy accounted for around 75% of the annual additions to global installed power capacity, demonstrating its dominant role in the expansion of the global electricity sector.
- Asia recorded the largest increase in installed renewable energy capacity during 2016–2025, adding 2,172.71 GW, followed by Europe, which added 473.20 GW, reflecting the region's leadership in renewable energy deployment.
- China leads the global renewable energy sector with an installed capacity of 2258.02 GW followed by United States with 466.45 GW, as on 31st December, 2025. India ranked third with 250.50 GW while Brazil secured fourth position with 228.20 GW of RE installed capacity. Germany was in 5th position with an installation of 200.90 GW. Together, top 5 countries accounted for 66 % of the world's total installed capacity under Renewable energy sector.
- Among the top five countries in installed renewable energy capacity, India, China, the United States, and Germany had solar power as the largest contributor to their renewable energy portfolios as on 31st December 2025. Germany had the highest share of wind power, accounting for 38.76% of its renewable energy capacity, while Brazil's renewable energy mix was dominated by renewable hydropower, which contributed 48.32% of its installed renewable energy capacity.

Electricity Generation from Renewable Energy sources:

- During 2024, global electricity generation from renewable energy sources reached 9,836.13 TWh, registering a substantial increase from 5,516.41 TWh of 2015. Over the same period, the share of renewable energy in global electricity generation rose from 22.70% to 31.70%, reflecting the growing contribution of clean energy to the world's power supply.
- Asia recorded the largest increase in electricity generation from renewable energy sources, rising from 2,033.20 TWh of 2015 to 4,589.49 TWh during 2024. Europe ranked second, with renewable electricity generation increasing from 1,174.08 TWh to 1,758.04 TWh during the same period, underscoring the continued expansion of renewable energy across both regions.



ALL INDIA STATUS



INSTALLED CAPACITY

CHAPTER 1

Installed Capacity - RE and Non-RE sector

1.1 Installed Capacity in RE and Non-RE sector: By 31st March 2026, India's total installed power generation capacity scaled to 532.74 GW, representing a significant 73.91% expansion from the 306.33 GW recorded in 2015–16. This decade of growth has been anchored by the renewable energy sector, which achieved a remarkable 205.65% increase in capacity during this timeframe. The most dynamic progress occurred within specific Renewable Energy Sources (RES) including solar, wind, bio-power, and small hydro, which collectively surged by approximately 374.13%. A major turning point was reached in 2025–26, as annual renewable capacity additions hit a historic record of 54.59 GW, vastly overshadowing the 2.93 GW added by non-renewable sector. Since 2017–18, annual growth rate for renewables has consistently stayed above 6%, ultimately peaking at 24.80% in 2025–26. By the close of 2025–26, renewable energy emerged as the primary stakeholder in India's electricity installed capacity mix, accounting for 51.56% of total installed capacity. When combined, all non-fossil sources now contribute a substantial 53.21% to the national grid. As the data in the following chapters will demonstrate, past decade represents more than just a numerical increase in installed capacity; it signals a fundamental qualitative transformation towards a cleaner, more sustainable, and inclusive energy future.

1.2 Table 1.1 Cumulative Installed Capacity since 2015-16 (in GW)

Year*	Mode-wise Breakup (GW)						Grand Total	Growth (%)			Share (%)	
	Non-RE			Renewables (RE)				RES	RE	Total	RES	RE
	Thermal	Nuclear	Total	Large Hydro	RES*	Total						
2015-16	210.68	5.78	216.46	42.78	47.09	89.87	306.33	17.61	10.53	10.99	15.37	29.34
2016-17	218.33	6.78	225.11	44.48	58.56	103.04	328.15	24.36	14.65	7.12	17.85	31.40
2017-18	222.91	6.78	229.69	45.29	70.65	115.94	345.63	20.65	12.52	5.33	20.44	33.54
2018-19	226.28	6.78	233.06	45.40	79.41	124.81	357.87	12.40	7.65	3.54	22.19	34.88
2019-20	230.60	6.78	237.38	45.70	88.26	133.96	371.34	11.14	7.33	3.76	23.77	36.07
2020-21	234.73	6.78	241.51	46.21	95.80	142.01	383.52	8.54	6.01	3.28	24.98	37.03
2021-22	236.11	6.78	242.89	46.72	109.89	156.61	399.50	14.71	10.28	4.17	27.51	39.20
2022-23	237.27	6.78	244.05	46.85	125.16	172.01	416.06	13.90	9.83	4.15	30.08	41.34
2023-24	243.22	8.18	251.40	46.93	143.64	190.57	441.97	14.77	10.79	6.23	32.50	43.12
2024-25	246.94	8.18	255.12	47.73	172.37	220.10	475.21	20.00	15.50	7.52	36.27	46.32
2025-26	249.27	8.78	258.05	51.41	223.27	274.69	532.74	29.53	24.80	12.11	41.91	51.56
Growth(%) (2015-16 to 2025-26)	18.32 %	51.90 %	19.21 %	20.17 %	374.13 %	205.65 %	73.91 %					
CAGR (2015-16 to 2025-26)	1.70 %	4.27 %	1.77 %	1.85 %	16.84 %	11.82 %	5.69 %					

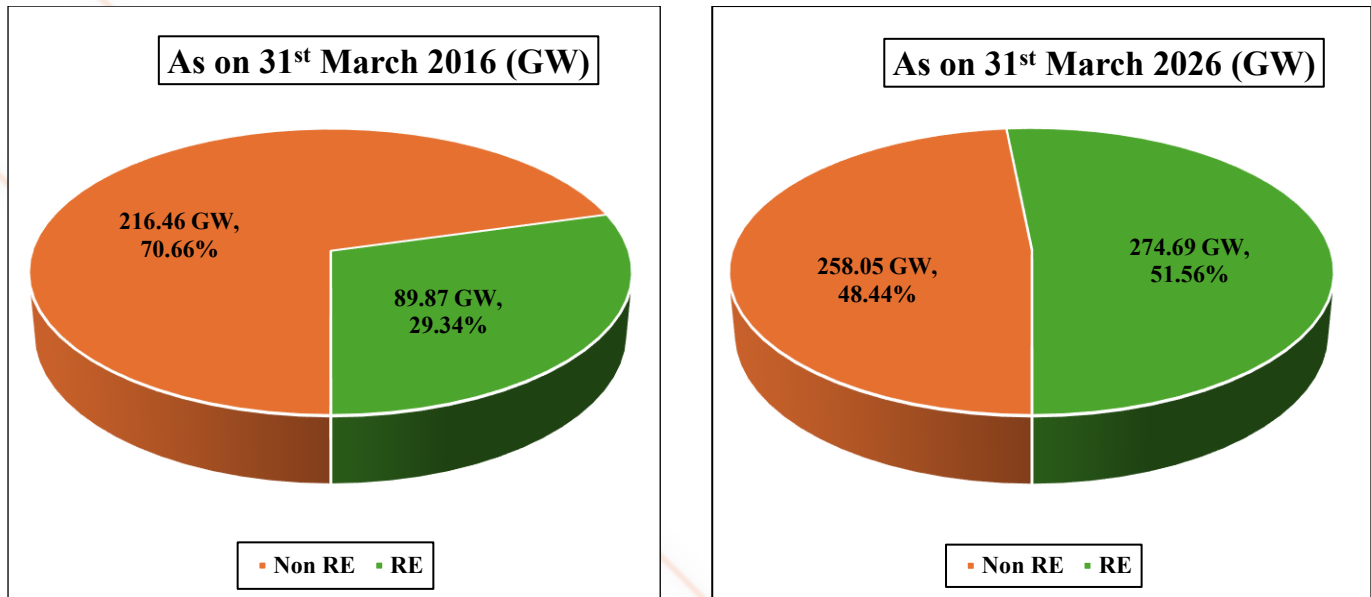
*As of the end of March of the year.

Source: Ministry of New and Renewable Energy(MNRE) and Central Electricity Authority (CEA)

RES*- Comprising of Solar, Wind, Bio-Power and Small Hydro Power

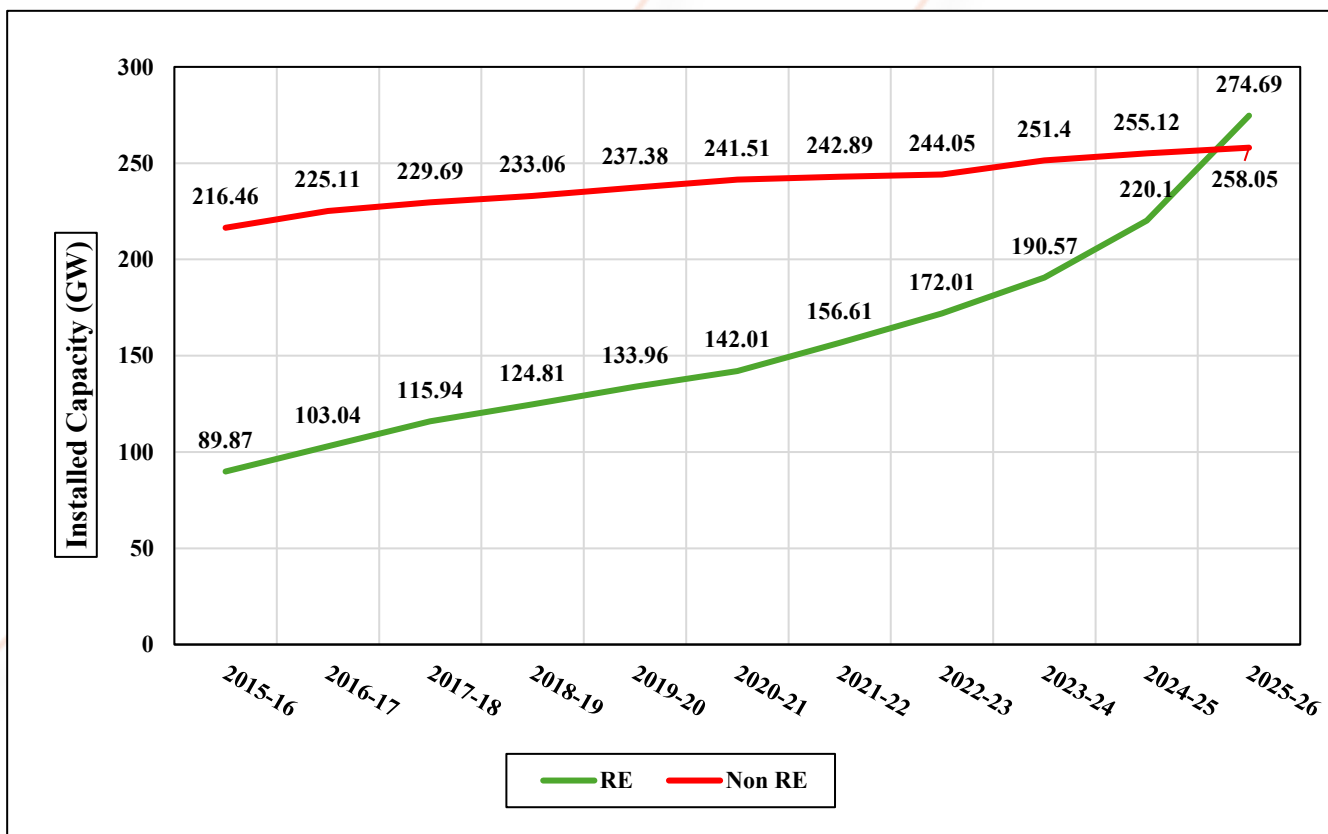
CAGR=Compound Annual Growth Rate

Fig 1.1 Share of Renewable Energy



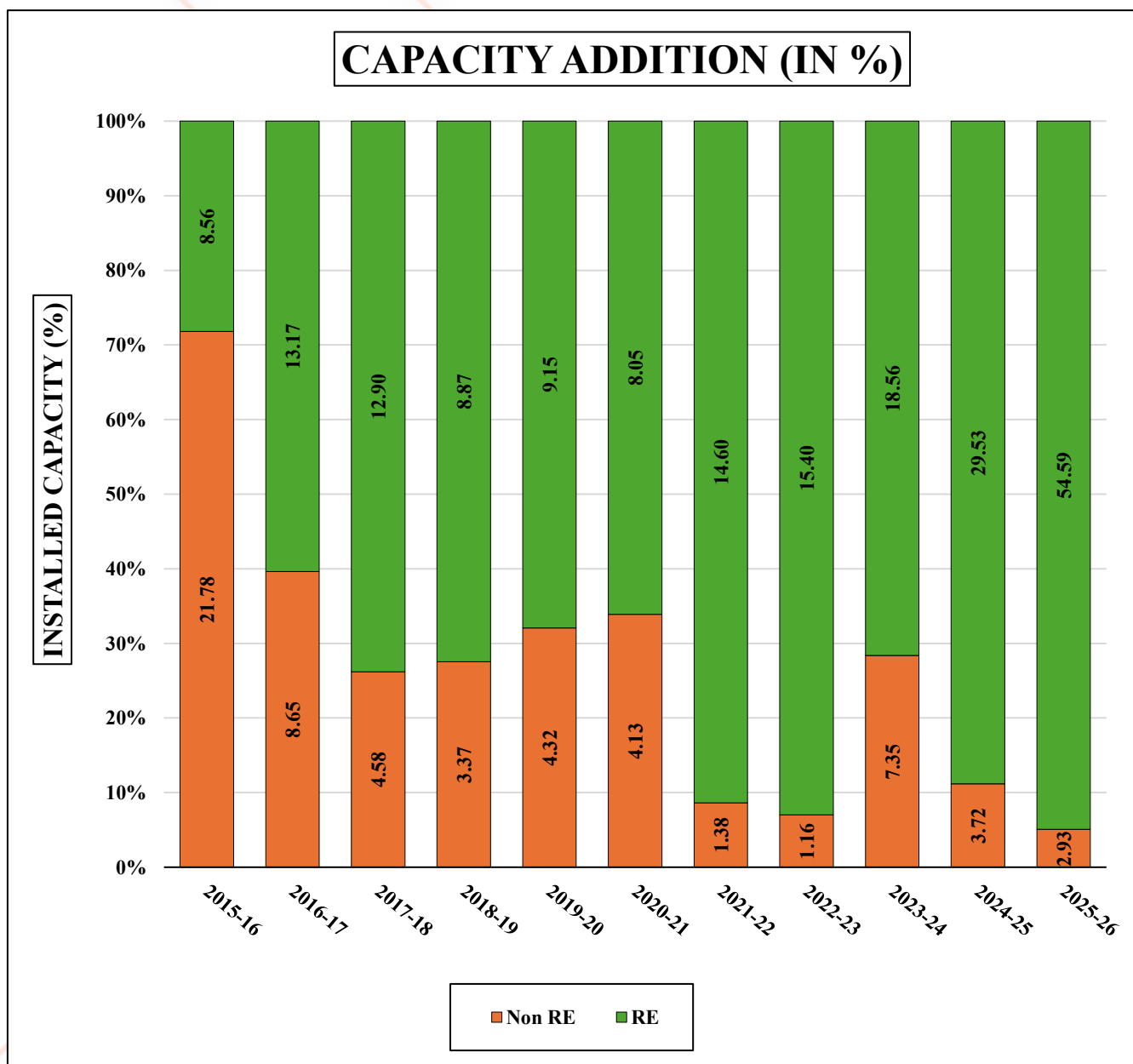
Over the past ten years, Renewable Energy (RE) sector has fundamentally reshaped India's power landscape by significantly expanding its footprint in the national grid. On 31st March 2016, renewable energy represented a modest 29.34% of the total installed capacity. However, by the conclusion of 2025–26, this figure had enhanced to a commanding 51.56%. This dramatic increase highlights the sector's pivotal role as the primary engine for India's transition towards a clean energy future.

Fig 1.2 Trend in Cumulative Installed Capacity



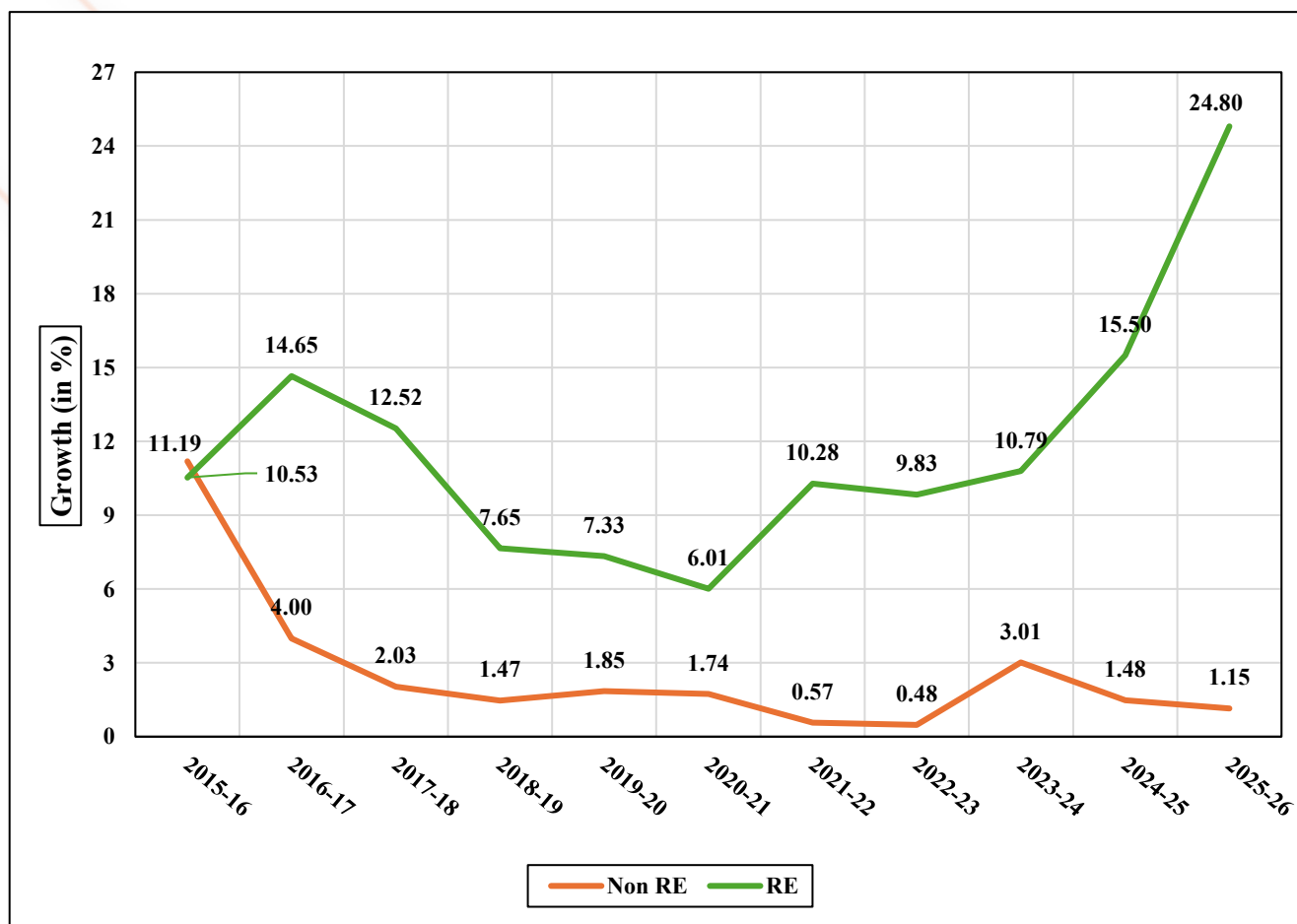
The graph depicts the trends in India's installed power generation capacity over the past decade, comparing the Non-Renewable Energy (Non-RE) and Renewable Energy (RE) sectors. While Non-RE sector experienced a measured and steady climb from 216.46 GW in 2015–16 to 258.05 GW by 2025–26, RE sector demonstrated far more aggressive and consistent growth. Starting at 89.87 GW in 2015–16, renewable capacity surged to 274.69 GW by the end of the period. This rapid expansion led to a significant narrowing of the historical gap between the two sectors. Most notably, 2025–26 period marked a historic milestone as cumulative RE installations surpassed Non-RE installed capacity for the first time.

Fig 1.3 Year wise capacity addition (in %).



Data shown inside the bar diagram represents the installed capacity in GW.

Fig 1.4 Year wise growth (%) in installed capacity



When evaluating annual capacity additions and percentage growth rates, the Renewable Energy (RE) sector has shown remarkable and consistent progress over the non-renewable sector, which encompasses traditional thermal and nuclear power. A historic milestone was reached in the 2025–26 period, as actual renewable capacity additions surged to a record 54.59 GW, vastly exceeding the 2.93 GW added by non-renewable sources. Year-wise growth graph illustrates a clear separation in the trajectories of the two sectors. Growth rate for the non-renewable sector has steadily diminished, falling from 11.19% to a mere 1.15%, signalling a significant slowdown in fossil-fuel-based expansion. Conversely, growth rate of the RE sector scaled from 10.53% to a peak of 24.80%. After overtaking the non-renewable sector in 2016–17, RE sector has maintained its lead in growth rates every year since. Following a temporary dip around 2020–21, RE growth has rebounded with renewed strength, demonstrating robust momentum in India's clean energy deployment.

CHAPTER 2

Installed capacity - Wind, Solar, Small Hydro and Bio Energy (RES) Sector

2.1 Installed Capacity under RES: The Ministry of New and Renewable Energy (MNRE) has been the central catalyst in India's transition towards a sustainable future. By championing a diverse portfolio including Solar, Wind, Bio-Power, and Small Hydro Power, Ministry has driven a decade of transformative growth in the nation's green energy landscape. Most profound impact has been witnessed in the Solar Power sector, which evolved from a modest 7.12 GW of 2015–16 to an extraordinary 150.26 GW by 2025–26 and achieving historic record by adding 44.61 GW of installed capacity in a single year during 2025-26, registering a record annual growth of 42.22% compared to 2024-25. A staggering growth rate of more than 2,010% during last decade is a testament to effective policy frameworks and the rapid nationwide adoption of solar technology.

Parallel to this, Wind Power sector has demonstrated steady progress, achieving a 109.45% increase in installed capacity over the same decade. Notably, 2025–26 period marked a peak performance for the sector with a record annual addition of 6.05 GW. While more moderate than solar, this growth underscores a sustained commitment to diversifying India's electricity mix. Together with contributions from Bio-Power and Small Hydro, these sectors strengthen the resilience of the renewable energy grid. This chapter provides a comprehensive analysis of installed capacity across these key sectors, examining the trends, and growth trajectories that define India's renewable energy journey.

Table 2.1: Cumulative Installed Capacity under RES since 2015-16 (in GW)

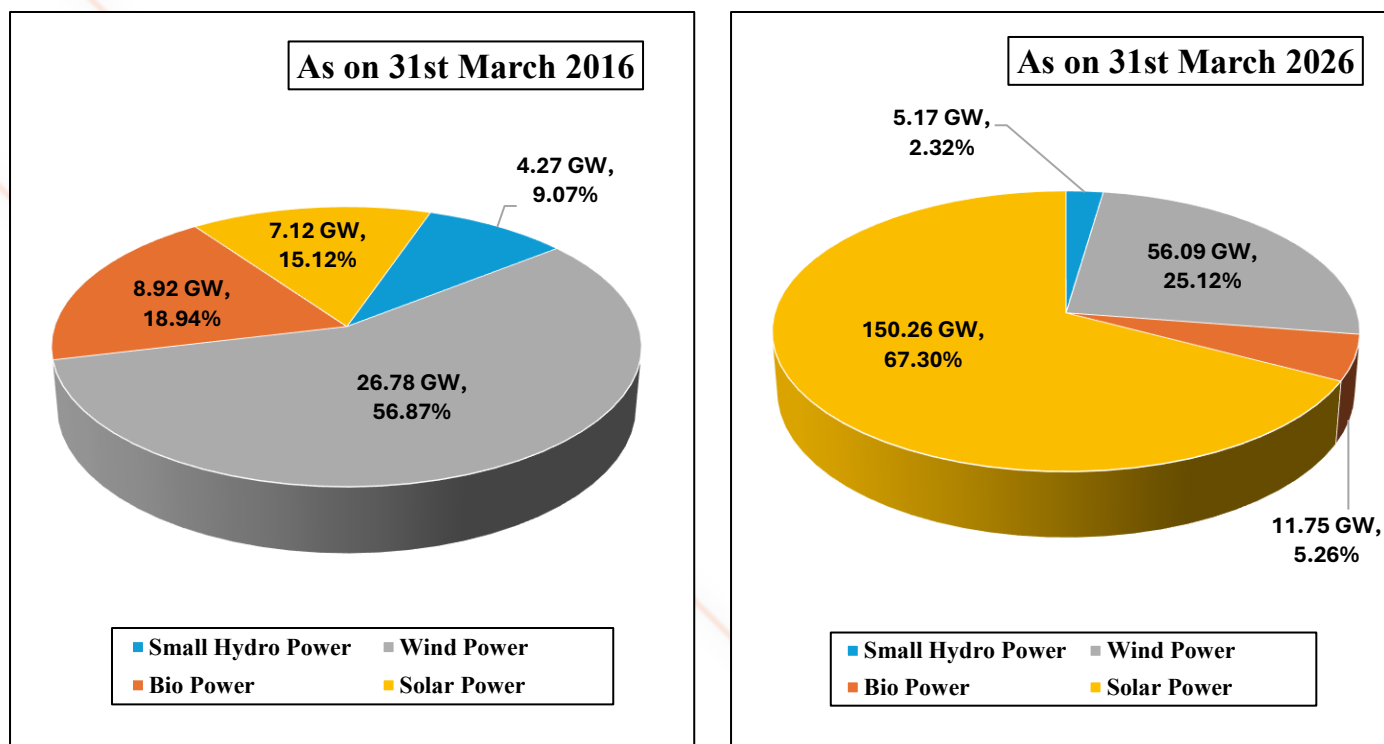
Year (as on 31 st March of the year)	Small Hydro Power	Wind Power	Bio-Power		Solar Power	Total RES* Capacity	Growth (%)
			BM Power/ Cogen.	Waste to Energy			
2015-16	4.27	26.78	8.67	0.25	7.12	47.09	...
2016-17	4.38	32.28	8.84	0.28	12.78	58.56	24.36
2017-18	4.49	34.15	9.36	0.31	22.35	70.65	20.65
2018-19	4.59	35.63	9.78	0.32	29.10	79.41	12.40
2019-20	4.68	37.74	9.88	0.35	35.60	88.26	11.14
2020-21	4.79	39.25	10.15	0.39	41.24	95.80	8.54
2021-22	4.85	40.36	10.21	0.48	54.00	109.89	14.71
2022-23	4.94	42.63	10.25	0.55	66.78	125.16	13.90
2023-24	5.00	45.89	10.36	0.59	81.81	143.64	14.77
2024-25	5.10	50.04	10.74	0.84	105.65	172.37	20.00
2025-26	5.17	56.09	10.87	0.88	150.26	223.27	29.53
Gr (2015-16 to 2025-26)	21.08 %	109.45 %	25.37 %	252.00 %	2010.39 %	374.13 %	
CAGR (2015-16 to 2025-26)	1.93 %	7.67 %	2.29 %	13.41 %	35.66 %	16.84 %	

RES comprises of Solar, Wind, Small Hydro Power & Bio Power

Gr=Growth (%)

CAGR=Compound Annual Growth Rate

Fig 2.1 Share of various sources in RES Cumulative Installed capacity



Pie charts illustrate a profound transformation in India's renewable energy landscape between 2015–16 and 2025–26. At the start of this decade, the electricity installed capacity mix under RES sector was dominated by Wind Power, which held a majority share of 56.87%, while Solar Power accounted for only 15.12%. During this period, Bio-Power (18.94%) and Small Hydro Power (9.07%) also maintained notable positions in the sectoral composition.

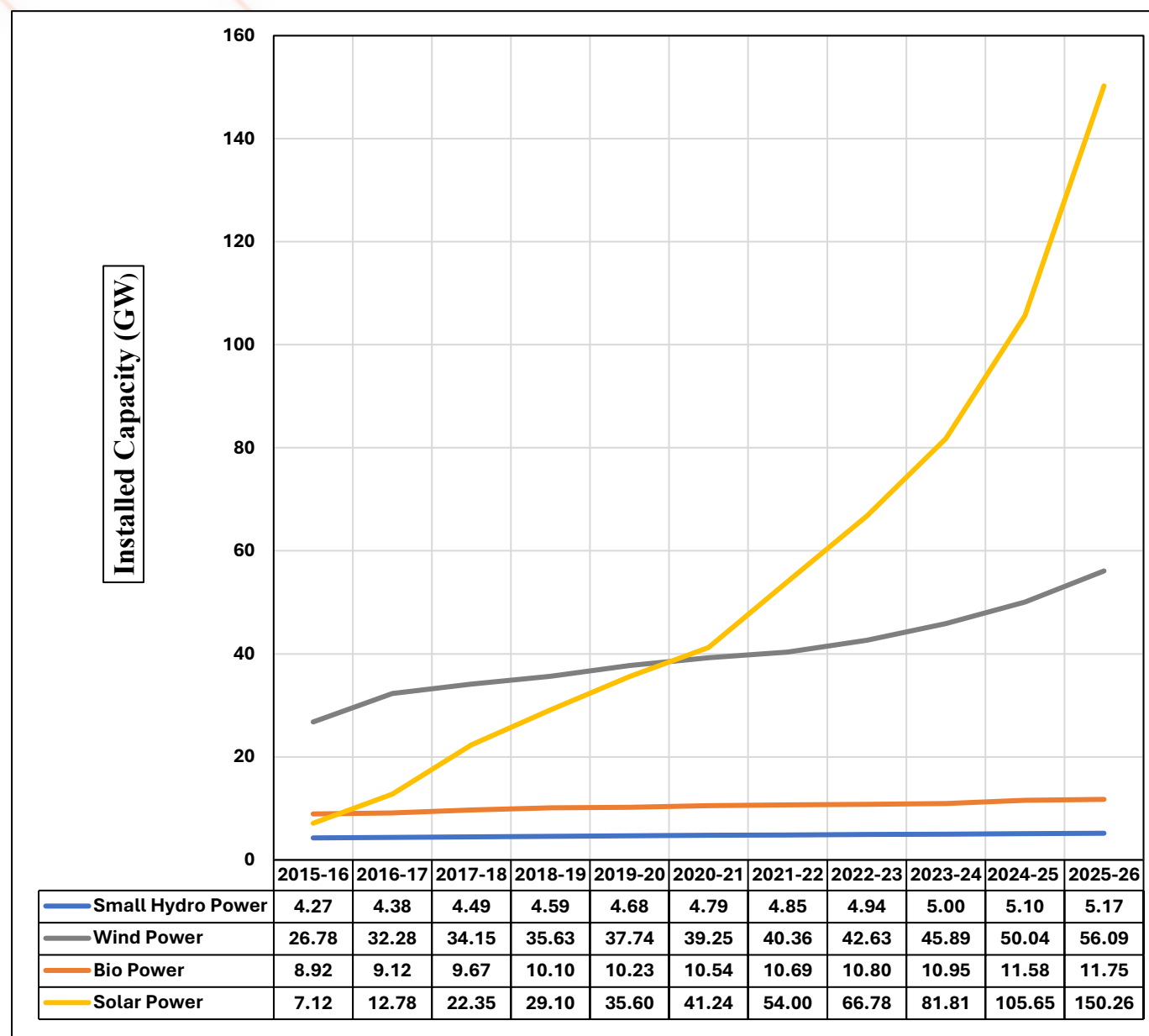
By the end of 2025–26, the hierarchy has shifted dramatically. Solar Power has emerged as the dominant force, now representing 67.30% of the total capacity, cementing its role as the backbone of the renewable sector. Wind Power's share has contracted to 25.12%, even though its absolute capacity more than doubled during this timeframe. Bio-Power (5.26%) and Small Hydro Power (2.32%) have seen their relative contributions decline significantly, reflecting much slower growth trajectories compared to the rapid expansion of solar and wind. Ultimately, while the entire renewable sector has expanded, the data highlights a clear pivot towards a solar-centric energy profile, with wind remaining a secondary but vital contributor.

2.2 Trend in cumulative installed capacity under RES

The cumulative installed capacity of Renewable Energy Sources (RES) from 2015–16 to 2025–26 illustrates a dynamic and transformative growth trajectory. Solar power stands out with the most extraordinary surge, skyrocketing from 7.12 GW to 150.26 GW, a leap driven by rapid technological evolution and aggressive adoption. While solar led the charge, other sectors showed varying degrees of expansion. Wind Power Maintained steady progress, more than doubling its capacity from 26.78 GW to 56.09 GW, ensuring its status as a cornerstone of the installed electricity capacity mix under renewable energy source. Bio-Power, experienced gradual but consistent growth, rising from 8.92 GW to 11.75 GW. Small Hydro Power, recorded the most conservative gains, increasing slightly from 4.27 GW to 5.17 GW, reflecting a period of limited new

infrastructure. Data underscores a decade defined by the "solar boom," which has fundamentally reshaped India's energy landscape. While wind remains a vital and stable contributor, solar power has emerged as the primary engine of growth, with bio-power and small hydro power providing smaller, reliable shares to the total installed capacity. (Ref Fig 2.2)

Fig 2.2 Trend in RES cumulative Installed Capacity



2.3 Year wise growth in installed capacity under RES

During last decade ending 2025-26, annual growth rates for renewable energy (RE) capacity reveal distinct trajectories for each technology. Solar power consistently led the momentum; after an initial explosive phase with growth near 80% between 2015-16 and 2017-18, it stabilized into a healthy 15% to 30% range, before surging again to over 42% in 2025–26. Wind sector experienced significant fluctuations, peaking early at 20.54% in 2016–17 before dipping into single digits. However, it saw a recent resurgence, climbing to 9% in 2024–25 and exceeding 12% by 2025–26. Growth in respect of Bio Power sector remained modest but reliable, generally oscillating between 1% and 6%, reflecting a gradual and consistent expansion. Small Hydro

Power technology recorded the most conservative growth, holding steady between 1% and 7%, which indicates a mature sector with limited new capacity additions. Overall, while solar power remains the primary engine of India's renewable expansion, wind power shows resilient and recovering progress, while bio-power and small hydro provide a slow but stable secondary layer of growth.

Fig 2.3 Year wise growth (%) in installed capacity

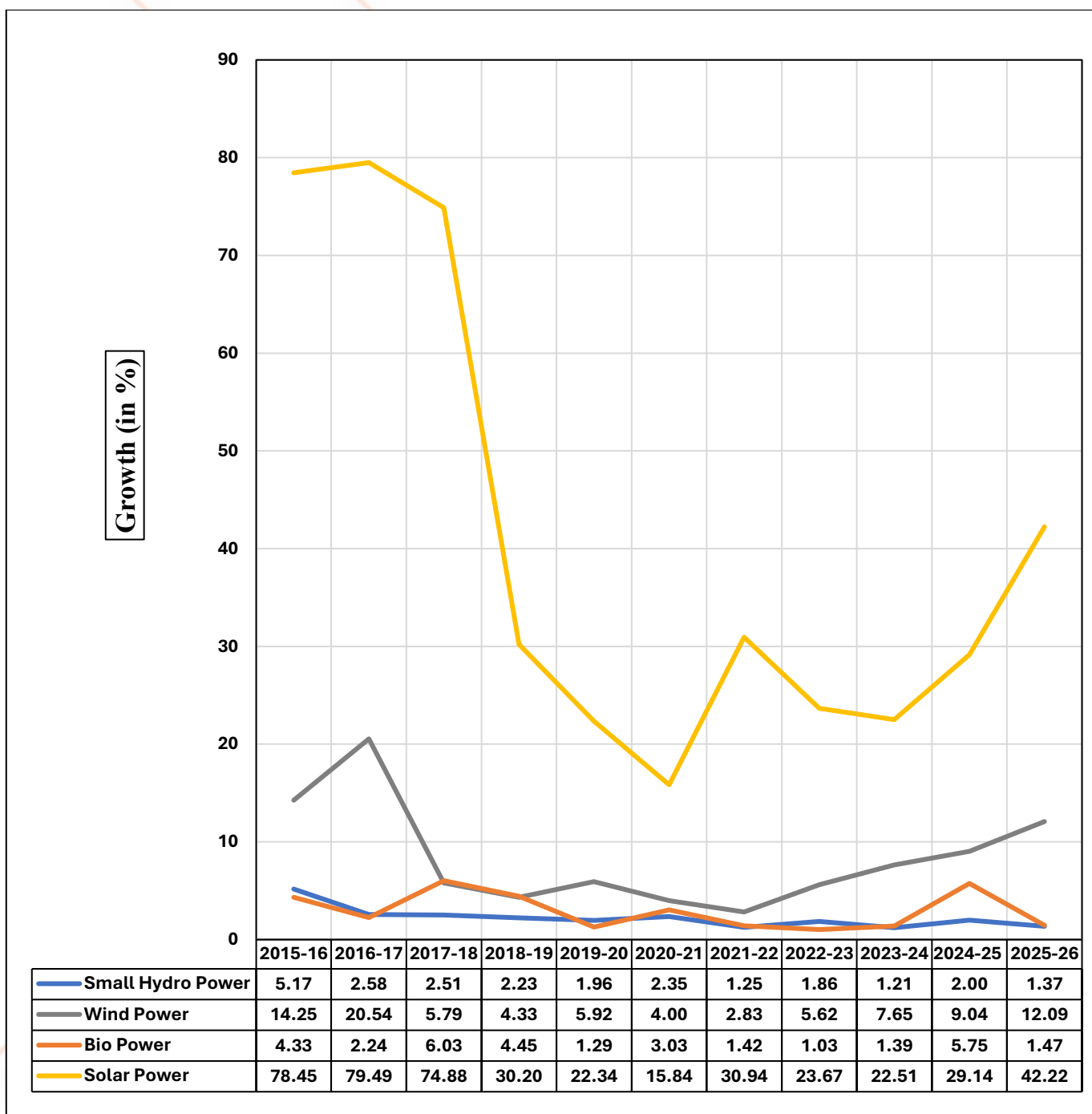
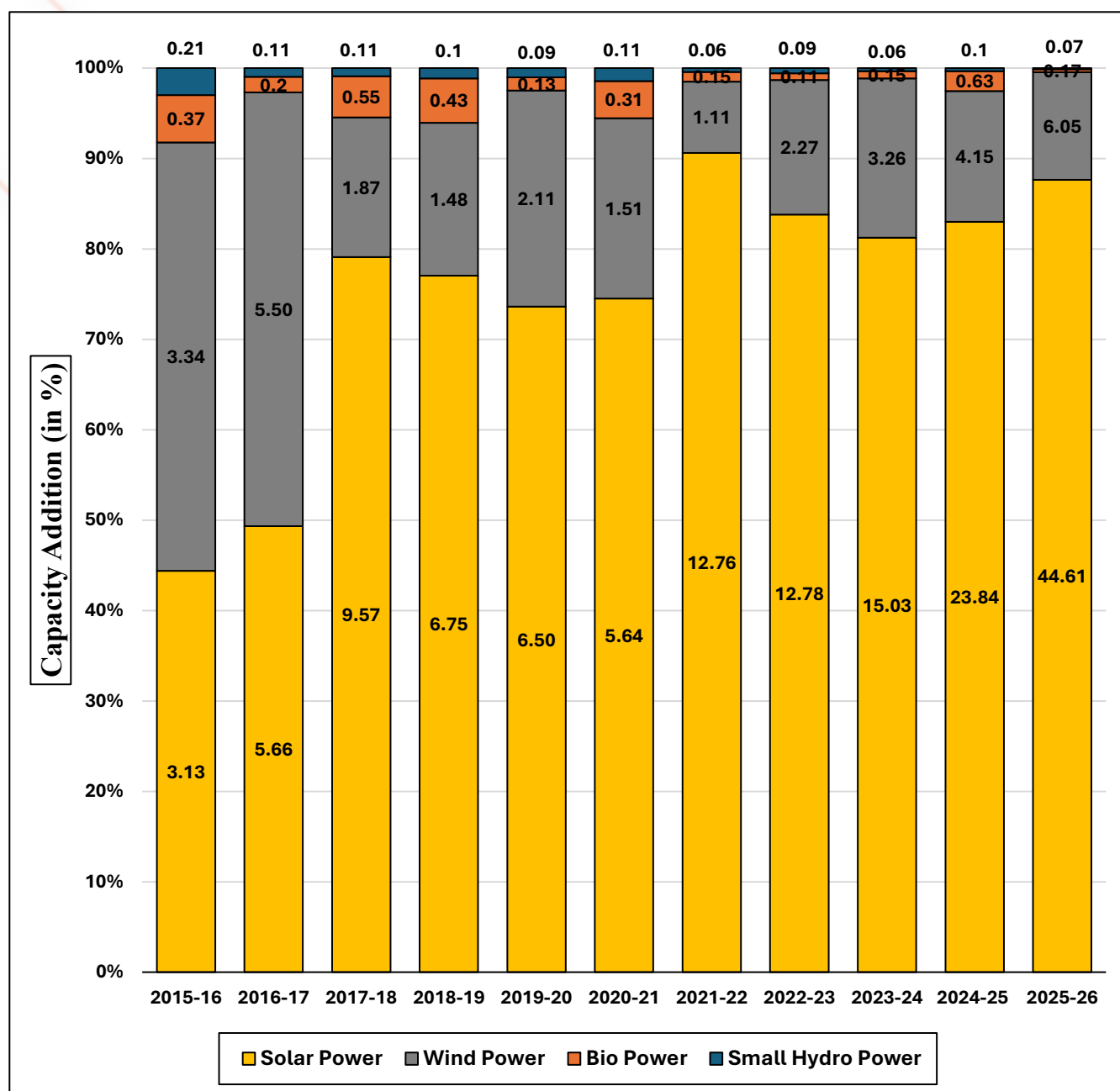


Fig 2.4 Year wise installed capacity addition (in%)

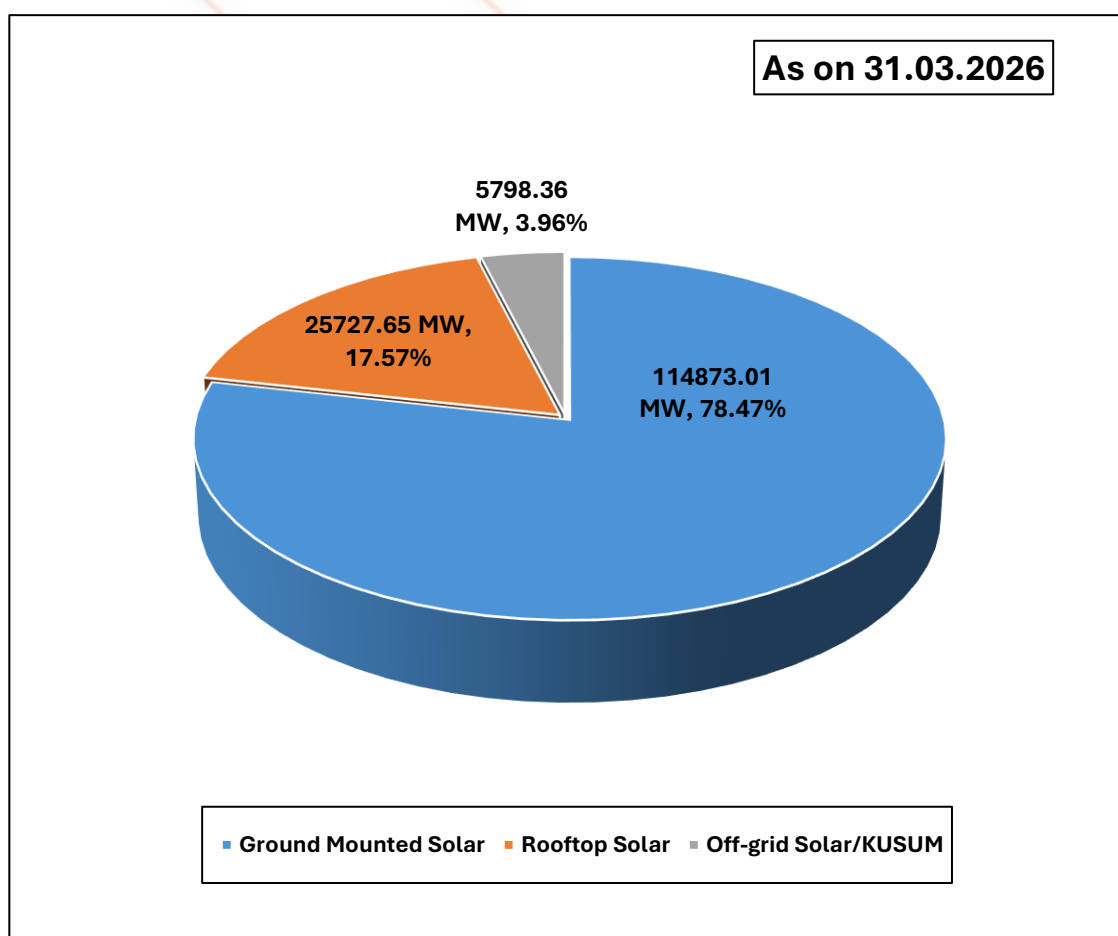


Data shown inside the bar diagram represents the installed capacity in GW.

Fiscal year 2025–26 proved to be a landmark period for the Solar sector, which achieved a historic record by adding 44.61 GW of capacity in a single year. This surge pushed the total solar installed capacity from 105.65 GW of 2024–25 to 150.26 GW by the close of 2025–26. The dramatic escalation in annual additions, rising from just 3.13 GW of 2015–16 to the current record high, underscores solar energy's pivotal role in India's transition towards a greener power grid. Despite experiencing notable fluctuations in wind power installation rates over the decade, the sector remains a vital contributor, recording a significant annual addition of 6.05 GW in 2025–26. While Bio-Power & Small Hydro Power (SHP) sectors represent a smaller portion of the overall electricity installed capacity mix and have faced inconsistent year-on-year growth, their importance remains clear. Though they do not match the massive scale of solar or wind, they are essential for diversifying the energy portfolio, improving energy access, and meeting the specific power needs of remote and rural regions.

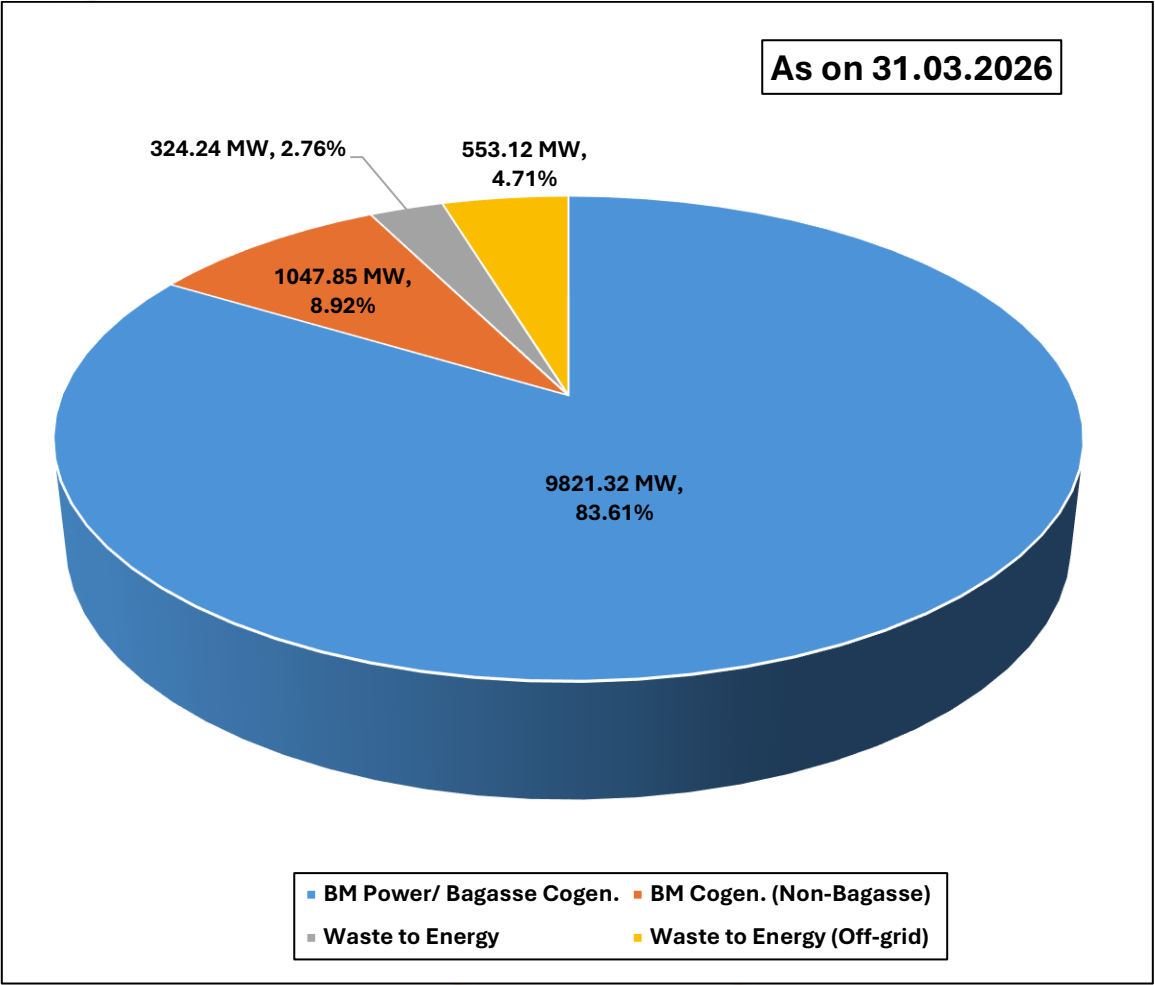
Various categories of Solar Power installations: Ground-mounted solar installations continue to lead the country's solar power landscape, representing 78.47% of the total installed capacity. With 114.87 GW deployed, this segment has grown by roughly 37% compared to 2024–25. It also encompasses hybrid systems that integrate solar with wind energy or storage solutions. Typically built at a utility scale within solar parks and designated zones, these projects have been central to rapid solar expansion, benefiting from large capacities, efficient grid integration, and strong policy support. Rooftop solar systems make up the second-largest share, accounting for 17.57% of total capacity, or 25.73 GW, and have experienced a growth rate of 51.18% over 2024–25. Off-grid installations, including those under the KUSUM (Kisan Urja Suraksha evam Utthaan Mahabhiyan) scheme which encourages the use of solar-powered pumps for farmers, constitute the remaining 3.96%. This segment has reached an installed capacity of 5.80 GW, with a growth rate of 22.25% compared to 2024–25.

Fig. 2.5 Various categories of Solar Power installations



Various categories of Bio Power installations: As of 31st March 2026, bio-power sector is largely driven by Biomass Power and Bagasse Cogeneration, which together make up 83.61% of the total installed capacity. Non-bagasse biomass cogeneration accounts for 8.92%, while off-grid waste-to-energy projects contribute 4.71%, and grid-connected waste-to-energy plants represent 2.76%. These technologies utilize agricultural residues, sugarcane by-products, and other organic waste to produce electricity and heat, these technologies offer a sustainable, circular energy solution that is especially vital to India's agrarian and industrial regions.

Fig 2.6 Various categories of Bio Power installations



ENERGY GENERATION

CHAPTER 3

Energy Generation - RE and Non-RE sector

3.1 Energy generation from RE and Non-RE sector:

India's total electricity generation reached 1840.11 Billion Units (BU) during 2025–26, reflecting a substantial increase of 57.60% from 1167.58 BU in 2015–16. A key milestone in this growth has been the expanding share of renewable energy sources, which contributed 477.79 BU during 2025–26, accounting for 25.97% of the country's total electricity generation. Compared to 2015–16, renewable energy generation recorded an impressive growth of 155.28%, highlighting India's strong commitment to advancing a cleaner and more sustainable energy future.

This chapter provides a comprehensive year-wise analysis of India's electricity generation from both renewable and non-renewable sources during the period 2015–16 to 2025–26. The observed trends indicate a steady transition towards renewable energy, underscoring India's strategic shift from conventional fossil-fuel-based generation to a more diversified and environmentally sustainable power sector.

Table 3.1 Year-wise All India Energy Generation since 2015-16

(in BU)

Year	Non-RE			RE			Grand Total	Share (%)		Growth	
	Thermal	Nuclear	Total	Large Hydro	RES*	Total		RE	RES*	RE	RES*
2015-16	943.01	37.41	980.42	121.38	65.78	187.16	1167.58	16.03	5.63	-1.99	6.58
2016-17	993.52	37.92	1031.44	122.38	81.55	203.93	1235.37	16.51	6.60	8.96	23.97
2017-18	1037.15	38.35	1075.50	126.12	101.84	227.96	1303.46	17.49	7.81	11.78	24.88
2018-19	1072.31	37.81	1110.12	134.89	126.76	261.65	1371.77	19.07	9.24	14.78	24.47
2019-20	1042.84	46.47	1089.31	155.77	138.34	294.11	1383.42	21.26	10.00	12.41	9.14
2020-21	1032.61	43.03	1075.64	150.30	147.25	297.55	1373.19	21.67	10.72	1.17	6.44
2021-22	1114.81	47.11	1161.92	151.63	170.91	322.54	1484.46	21.73	11.51	8.40	16.07
2022-23	1206.39	45.86	1252.25	162.10	203.55	365.65	1617.90	22.60	12.58	13.37	19.10
2023-24	1326.55	47.94	1374.49	134.05	225.84	359.89	1734.38	20.75	13.02	-1.58	10.95
2024-25	1363.89	56.68	1420.57	148.63	255.01	403.64	1824.21	22.13	13.98	12.16	12.92
2025-26	1307.13	55.19	1362.32	167.20	310.59	477.79	1840.11	25.97	16.88	18.37	21.80
Gr (2015-16 to 2025-26)	38.61%	47.53%	38.95%	37.75%	372.16%	155.28%	57.60%				
CAGR (2015-16 to 2025-26)	3.32%	3.97%	3.34%	3.25%	16.79%	9.83%	4.65%				

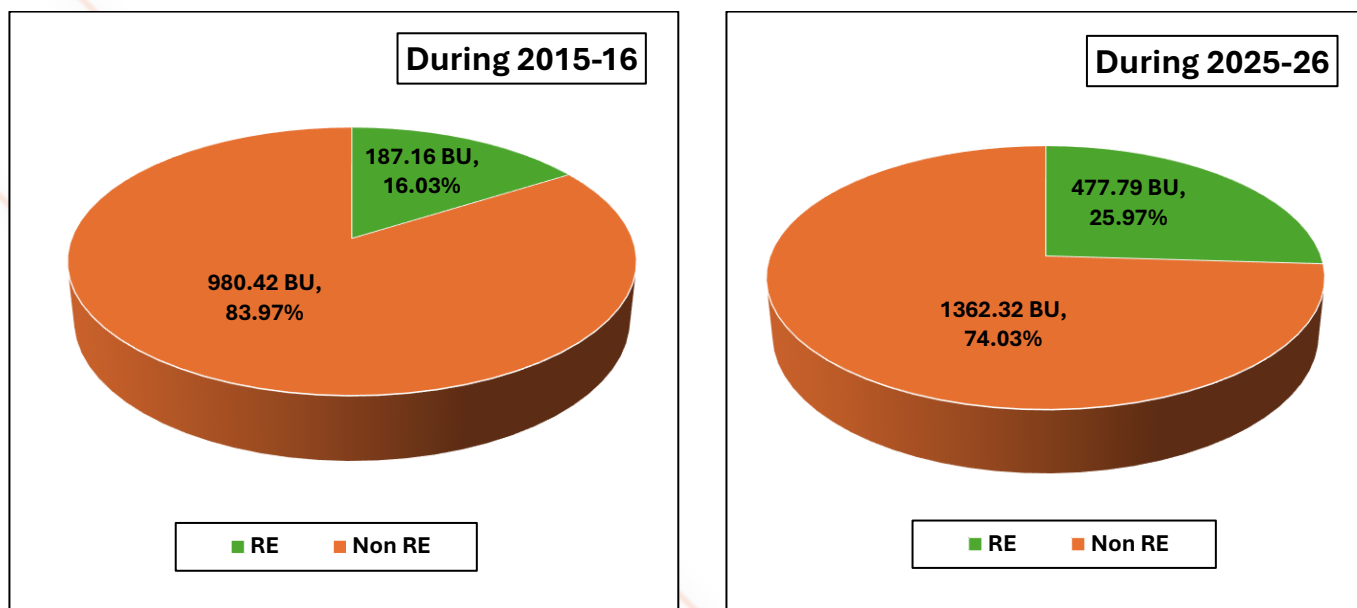
Source: CEA, Ministry of Power (MoP)

*RES constitutes Solar, Wind, Bio-Power & Small Hydro Power

Gr=Growth (%)

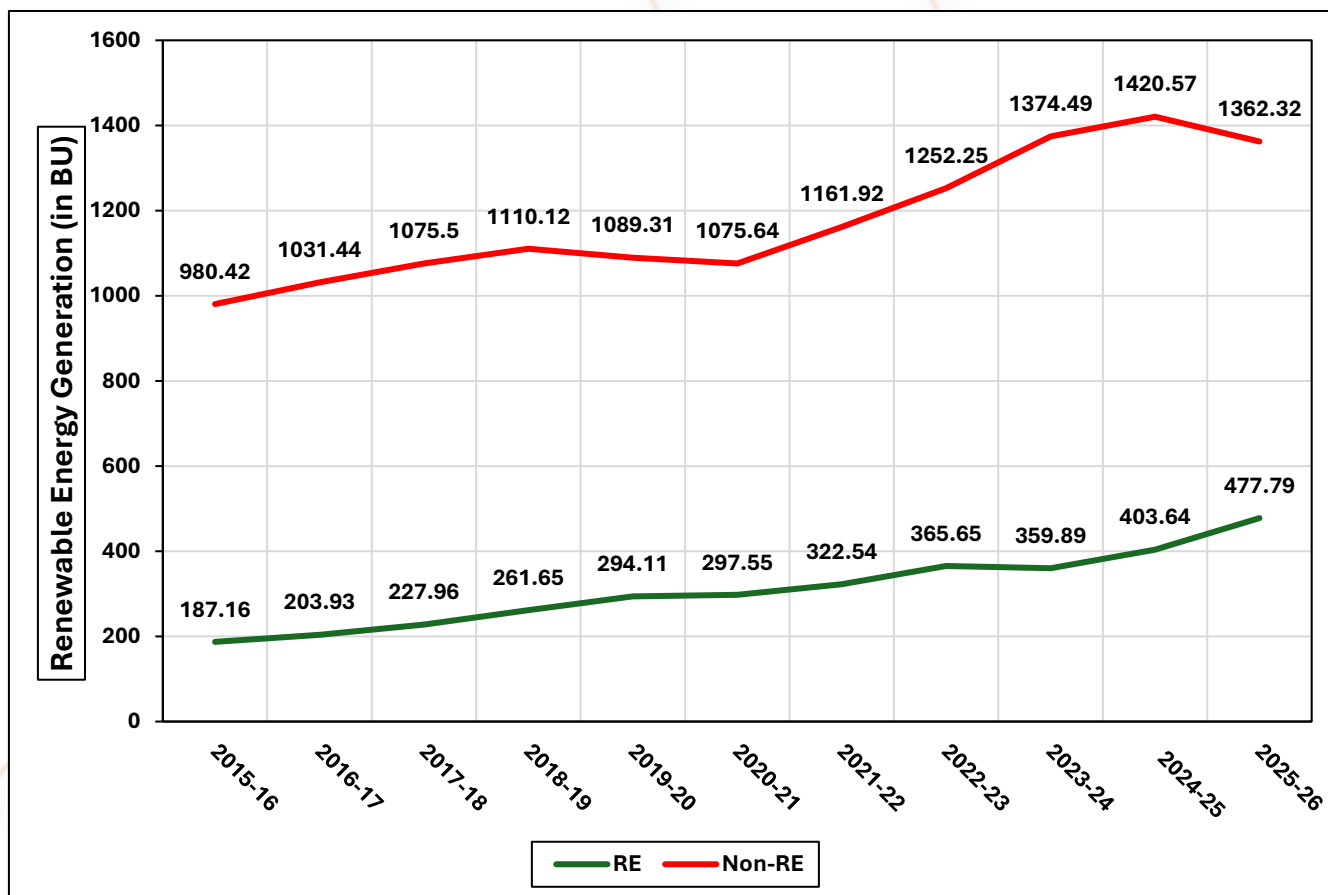
CAGR=Compound Annual Growth Rate

Fig 3.1 Share of Renewable Energy



India's share of renewable energy in total electricity generation increased from 16.03% of 2015-16 to 25.97% in 2025-26, while renewable energy generation in absolute terms grew significantly from 187.16 BU to 477.79 BU. The share of non-renewable energy declined from 83.97% to 74.03% during the same period.

Fig 3.2 Trend in Energy Generation

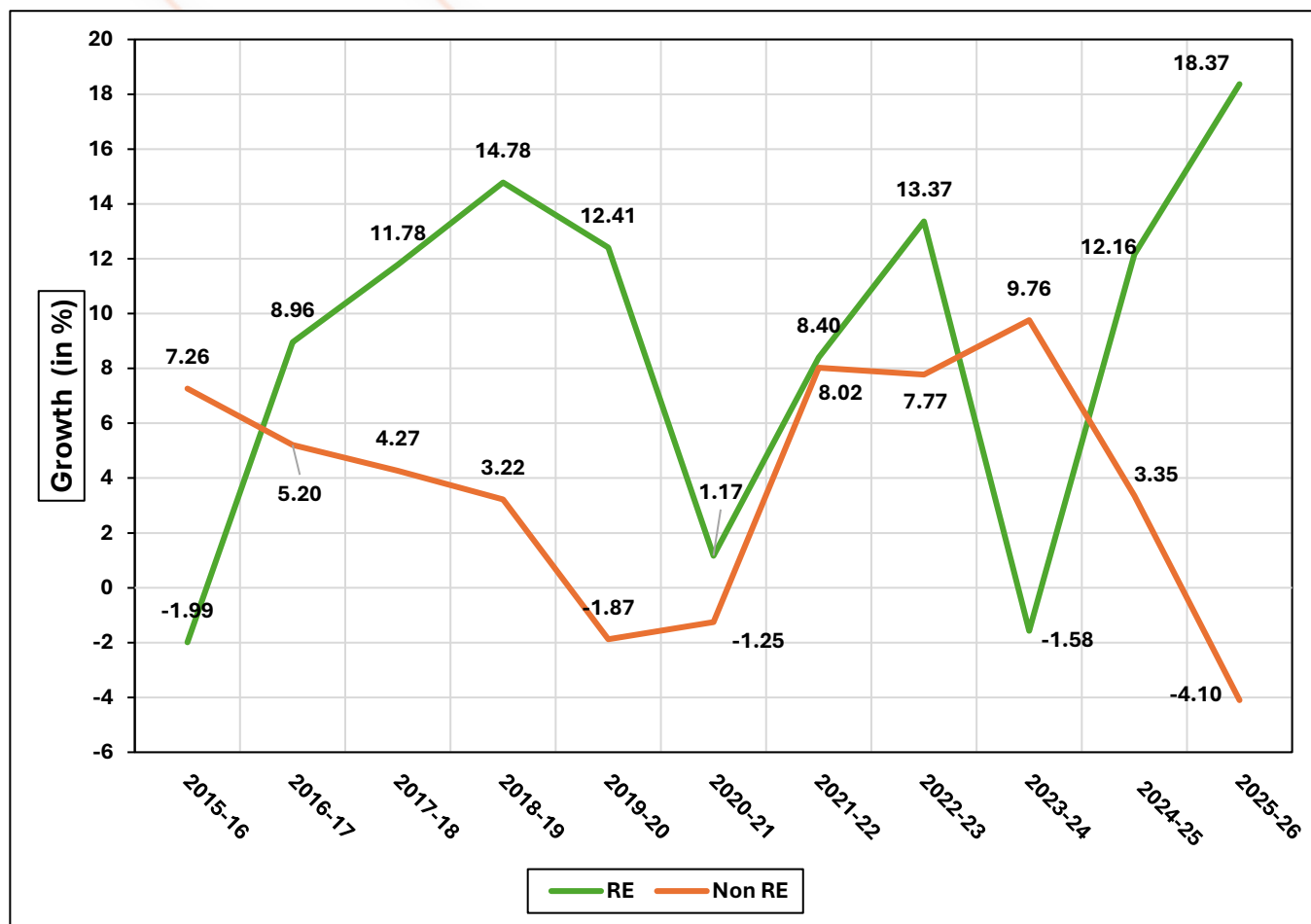


The graph illustrates the trend in electricity generation from renewable energy (RE) and non-renewable energy (Non-RE) sources in India from 2015-16 to 2025-26. Electricity generation from Non-RE sources

remained consistently higher throughout the period, increasing from 980.42 BU in 2015–16 to 1362.32 BU in 2025–26. However, some fluctuations were observed between 2019–20 and 2020–21, along with a decline of 4.1% during 2025–26.

Electricity generation from RE sources exhibited steady growth, rising from 187.16 BU to 477.79 BU during the same period. Despite occasional minor fluctuations, renewable energy continued to expand its contribution, reflecting India's gradual transition towards cleaner and more sustainable energy sources, although non-renewable sources still account for the larger share of electricity generation.

Fig 3.3 Year wise growth in Energy Generation (%)



The graph illustrates the annual growth rates of electricity generation from renewable energy (RE) and non-renewable energy (Non-RE) sources in India during the period 2015–16 to 2025–26. Electricity generation from renewable energy sources exhibited significant fluctuations, with notable growth peaking at 14.78% in 2018–19 and 18.37% in 2025–26, alongside occasional declines, including a contraction of 1.58% in 2023–24. Overall, the growth trend for renewable energy generation remained largely positive. In contrast, the growth rate of electricity generation from non-renewable sources was relatively more stable but showed a gradual downward trend over the years. It declined from 7.26% in 2015–16 to a negative growth rate of 4.10% by 2025–26.

CHAPTER 4

Energy Generation - Wind, Solar, Small Hydro & Bio Energy (RES) Sector

4.1 Energy generation from RES sector during 2025–26: Electricity generation from wind, solar, small hydro power, and bio-energy reached 310.59 Billion Units (BU), a substantial rise from 65.78 BU during 2015–16. Renewable Energy Sources (RES) constituting wind, solar, bioenergy and small Hydro sector recorded a growth of 21.79% in 2025–26 compared to 2024–25, highlighting India's significant progress in expanding renewable energy capacity over the last decade. The data shows a strong and consistent upward trend in electricity generation from renewable energy sources, with solar power emerging as the leading contributor in recent years. Since 2015–16, solar power generation has grown at a compound annual growth rate (CAGR) of 37.10%, reflecting its rapid expansion and increasing importance in India's energy mix. Overall, RES generation has registered a robust CAGR of 16.79% over the past ten years. A detailed analysis of generation trends across different renewable energy sources is provided in this chapter.

Table 4.1 Year-wise Energy Generation under RES since 2015-16

Year	Wind	Solar	Bio-Power				Small Hydro	Grand Total	Growth (%)
			Biomass	Bagasse	Waste to Energy	Total			
2015-16	33.03	7.45	3.73	12.95	0.27	16.95	8.35	65.78	6.58
2016-17	46.00	13.50	4.20	9.96	0.21	14.37	7.67	81.55	23.97
2017-18	52.70	25.80	3.41	11.87	0.36	15.64	7.70	101.84	24.88
2018-19	62.04	39.27	2.76	13.56	0.43	16.75	8.70	126.76	24.47
2019-20	64.65	50.13	2.94	10.80	0.37	14.11	9.45	138.34	9.14
2020-21	60.15	60.40	3.51	11.30	1.62	16.43	10.26	147.25	6.44
2021-22	68.64	73.48	3.48	12.57	2.27	18.32	10.46	170.91	16.07
2022-23	71.81	102.01	3.16	12.86	2.53	18.55	11.17	203.55	19.10
2023-24	83.39	115.98	3.42	10.83	2.75	17.00	9.49	225.86	10.96
2024-25	83.35	144.15	3.74	9.34	2.87	15.94	11.57	255.01	12.92
2025-26	106.70	174.76	4.14	9.94	3.03	17.11	12.01	310.59	21.79
Gr (2015-16 to 2025-26)	223.04%	2245.77%	10.99%	-23.24%	1022.22%	0.94%	43.83%	372.16%	
CAGR (2015-16 to 2025-26)	12.44%	37.10%	1.05%	-2.61%	27.35%	0.09%	3.70%	16.79%	

Source: CEA, MoP

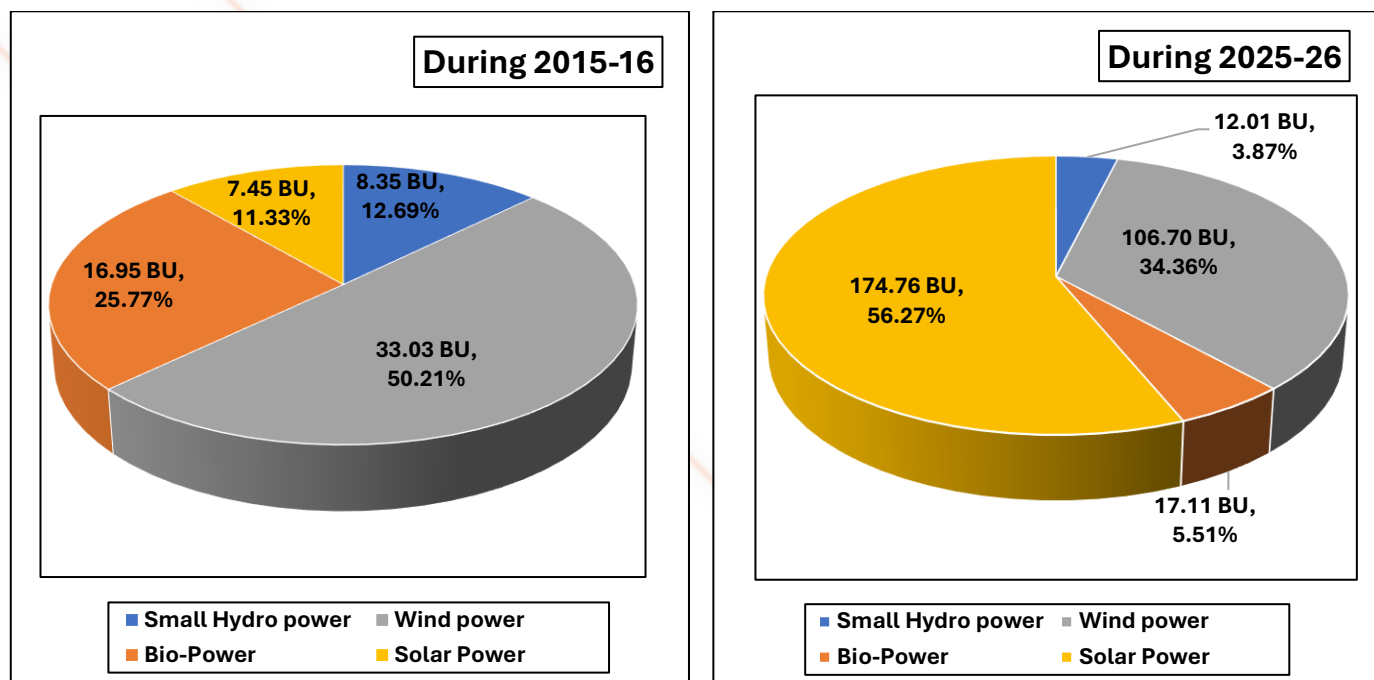
Gr=Growth (%)

CAGR=Compound Annual Growth Rate

Between 2015–16 and 2025–26, electricity generation from solar, wind, biopower, and small hydro sources expanded significantly, with solar power driving the growth. Solar energy generation increased exponentially from 7.45 BU to 174.76 BU, registering a remarkable growth of 2245.77% and an impressive CAGR of 37.10% over the decade. Wind energy also recorded substantial growth, increasing by 223.04% with a CAGR of 12.44% during the same period. However, biopower generation remained relatively stagnant, as limited growth in biomass and waste-to-energy generation was offset by a decline in bagasse-based electricity production. Despite its small overall contribution, waste-to-energy generation grew by an impressive 1022.22%, indicating its emerging importance in the energy mix. Small hydro power generation witnessed moderate growth of 43.83%, continuing to serve as a stable but comparatively smaller contributor to renewable

energy generation. Overall, electricity generation from these renewable sources increased more than fourfold, rising from 65.78 BU in 2015–16 to 310.59 BU in 2025–26, reflecting a robust CAGR of 16.79% over the past decade.

Fig 4.1 Share of various RE sources of RES in Energy Generation

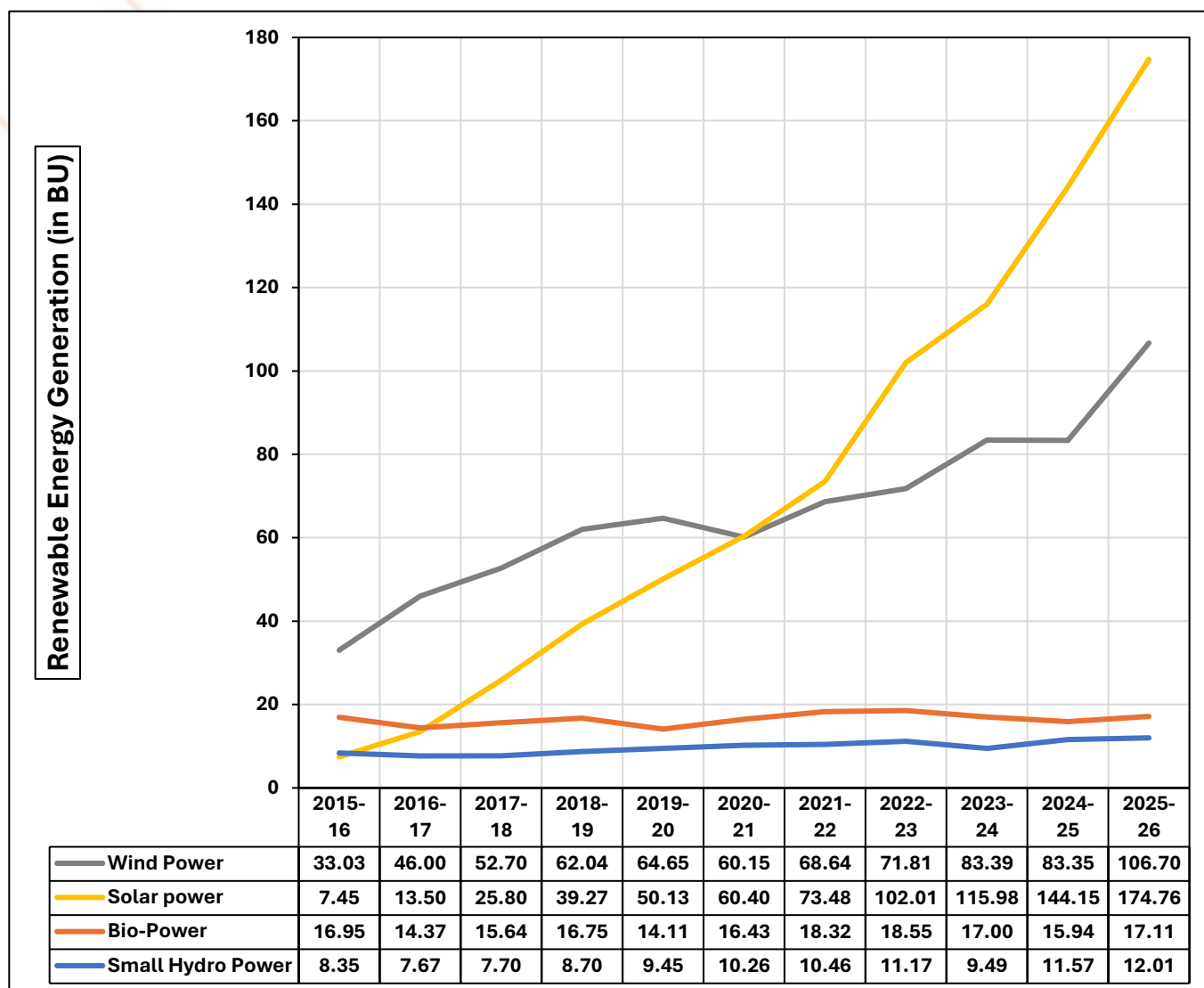


Above charts illustrate a significant transformation in India's electricity generation from solar, wind, biopower, and small hydro sources between 2015–16 and 2025–26. During 2015–16, wind power was the leading contributor, accounting for 50.21% of total generation from these renewable sources, followed by biopower at 25.77%. Small hydro and solar power contributed 12.69% and 11.33%, respectively. By 2025–26, solar power had emerged as the dominant renewable energy source, generating 174.76 BU and accounting for 56.27% of total electricity generation from these sources, compared to just 7.45 BU and an 11.33% share in 2015–16. Although wind power generation increased in absolute terms, its share declined to 34.36%. Similarly, biopower generation recorded only marginal growth, resulting in its share falling to 5.51%, while small hydro power, despite moderate growth in generation, saw its share decline further to 3.87%. This comparison highlights a major shift in India's renewable energy landscape, with solar power overtaking wind power as the primary source of renewable electricity generation, underscoring the country's transition toward solar-led growth.

4.2 Trend in year wise electricity Generation under RES:

Between 2015-16 and 2025-26, electricity generation from solar, wind, biopower, and small hydro sources underwent a significant transformation, led by the rapid expansion of solar power. Solar power generation increased dramatically from just 7.45 BU in 2015-16 to 174.76 BU in 2025-26, reflecting exponential growth over the decade. Wind power, which was the largest renewable energy source in 2015-16 with generation of 33.03 BU, also recorded steady growth, reaching approximately 106.70 BU by 2025-26. In contrast, biopower generation, including biomass, bagasse, and waste-to-energy, remained relatively stable, fluctuating between 14 BU and 19 BU during the period. Small hydro power continued to make a modest but consistent contribution, with generation increasing slightly from 8.35 BU in 2015-16 to 12.01 BU in 2025-26. Overall, the trend highlights the growing dominance of solar power in India's renewable energy generation mix.

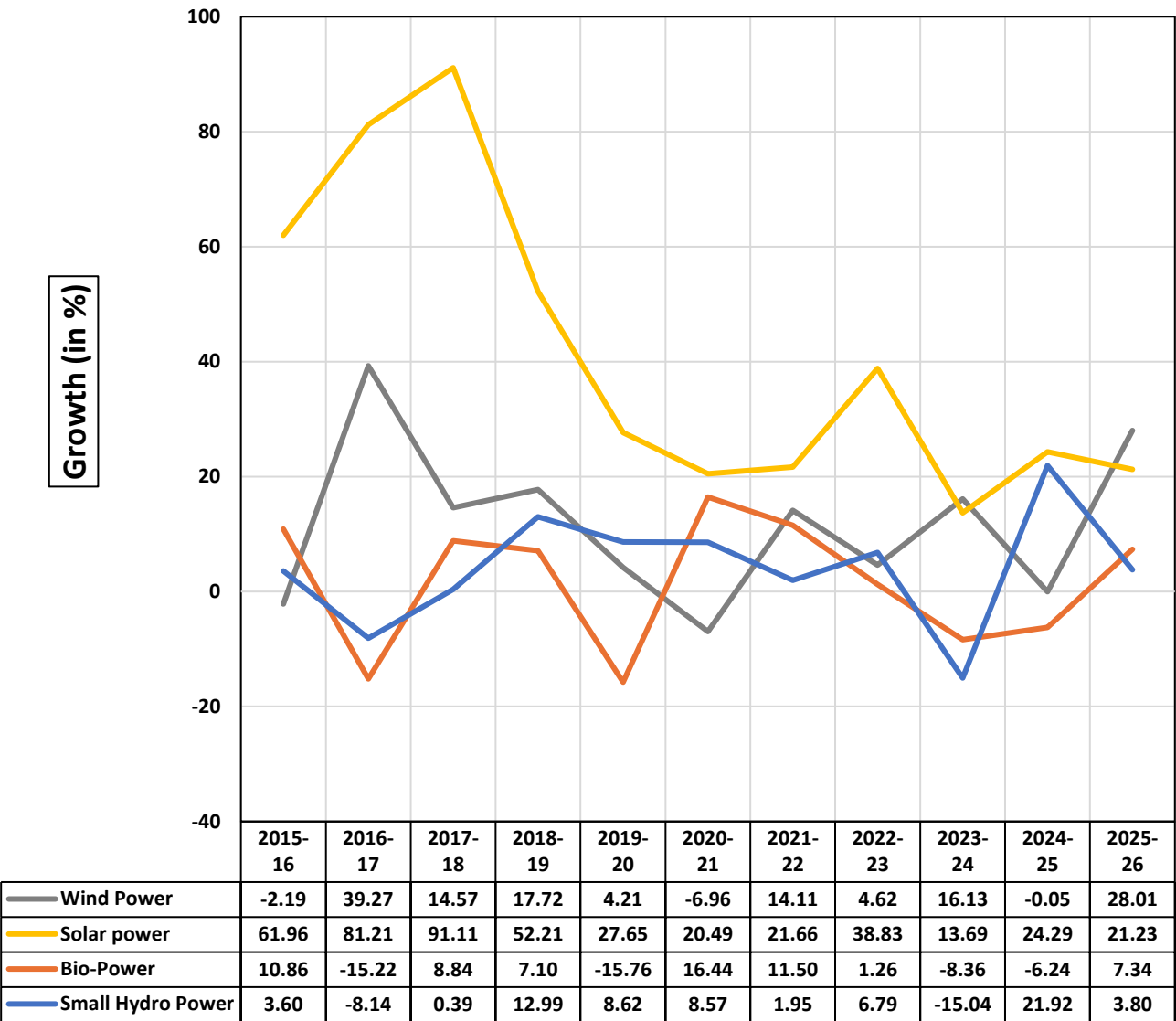
Fig 4.2 Trend in year wise energy Generation



4.3 Yearwise growth(%) in Energy Generation :

Year-wise growth trends in electricity generation from solar, wind, biopower, and small hydro sources during 2015–16 to 2025–26 highlight a highly dynamic renewable energy landscape, particularly for solar power. Solar energy consistently recorded the highest growth rates, peaking at 91.11% in 2017–18, followed by strong double-digit growth in most subsequent years. Wind power exhibited moderate but fluctuating growth, reaching a high of 39.27% in 2016–17 before slowing in later years and even registering marginal declines in 2020–21 and 2024–25. However, in 2025–26, electricity generation from wind power rebounded strongly, recording growth of more than 28%. Biopower generation showed an irregular pattern, with alternating phases of growth and decline over the years. Similarly, electricity generation from small hydro power experienced modest and volatile growth, frequently slipping into negative territory, including a decline of 15.04% in 2023–24, before recovering with a growth rate of 21.92% in 2024–25. Overall, the data underscores the dominant role of solar power as the key driver of renewable electricity generation growth in India, while other renewable sources displayed comparatively higher variability (Fig. 4.3).

Fig 4.3 Yearwise growth(%) in Energy Generation



INSTALLED CAPACITY AND ELECTRICITY GENERATION DURING -2025-26 & SDG-NIF

Chapter 5

Monthly Installed Capacity and Electricity Generation during 2025-26

5.1 Monthly Installed Capacity and Electricity Generation during 2025-26 :

Installed capacity additions during 2025–26 were predominantly driven by renewable energy, with monthly additions ranging from 3.12 GW to 8 GW, while additions under non-renewable energy sources remained minimal. Thermal power capacity recorded a decline of 6.88 GW in April 2025 due to the retirement of power generation units. In the remaining months, thermal capacity additions varied between 0.35 GW and 1.98 GW, except in May 2025, December 2025, and February 2026, when no additions were recorded. Nuclear capacity remained unchanged throughout the year, apart from an increase of 0.6 GW in April 2025. Additions in the large hydro sector were also limited, with no new capacity added in May, September, and February. Renewable energy additions reached their highest level in March 2026 at 8.00 GW. Remarkable year-on-year growth rates were observed, exceeding 405% in June and 219% in April 2025. Solar energy emerged as the primary contributor, with monthly additions peaking at 6.66 GW in March 2026. The highest growth in solar installed capacity was recorded in September 2025, registering a year-on-year increase of 215.92%. Wind power capacity additions showed fluctuations, including an addition of 1.02 GW in April with a year-on-year growth surge of 270.80%. In comparison, small hydro and bio-power contributed only marginally. Overall, the expansion of installed capacity during 2025–26 was driven largely by solar energy, with wind energy serving as an important secondary contributor.

During 2025–26, total monthly electricity generation ranged from 132 BU to 165.43 BU. Non-renewable sources continued to dominate electricity generation, contributing between 101.72 BU and 125.18 BU each month. However, their performance remained subdued, recording year-on-year declines in most months except December 2025 and January 2026. The electricity generation from renewable energy (RE) sources ranged from 30.42 BU to 54.50 BU and emerged as the key driver of growth in overall electricity generation. Significant year-on-year increases in renewable generation were observed in April 2025 (25.13%), June 2025 (24.74%), and July 2025 (25.20%). Solar power generation demonstrated steady growth throughout the year, increasing from 12.10 BU in July 2025 to 19.39 BU in March 2026. Strong year-on-year growth exceeding 30% was recorded in April, December, and February. Electricity generation from wind energy peaked at 17.57 BU in July 2025 and registered an exceptional year-on-year increase of 97.84% in October. Large hydro generation reached a high of 23.52 BU in August, contributing to year-on-year growth of more than 23% in July 2025. Overall, renewable energy sources, particularly solar power played a central role in driving electricity generation growth during 2025–26, while generation from non-renewable sources remained largely stagnant or declined across several months.

Details of Monthly installed capacity addition as well as electricity generation from various sources during 2025-26 are stipulated in this chapter.

Table 5.1 Monthly Capacity Addition during 2025-26

(in MW)

Month	Non-RE			RE			Grand Total	Year on Year Growth (in %)	
	Thermal	Nuclear	Total	Large Hydro	RES	Total		RES	RE
Apr-25	-6875.84	600.00*	-6275.84	200.00	3332.05	3532.05	-2743.79	200.99	219.05
May-25	0.00	0.00	0.00	0.00	3122.37	3122.37	3122.37	64.31	64.31
Jun-25	1980.00	0.00	1980.00	1450.00	5798.41	7248.41	9228.44	304.68	405.87
Jul-25	1750.00	0.00	1750.00	250.00	3241.90	3491.90	5241.87	47.92	59.32
Aug-25	350.00	0.00	350.00	480.00	4654.69	5134.69	5484.69	95.73	115.91
Sep-25	660.00	0.00	660.00	0.00	4683.84	4683.84	5343.84	149.77	149.77
Oct-25	800.00	0.00	800.00	240.00	3093.84	3333.84	4133.84	80.15	89.71
Nov-25	1342.00	0.00	1342.00	66.50	3311.53	3378.03	4720.03	43.65	46.53
Dec-25	0.00	0.00	0.00	500.00	3486.60	3986.60	3986.60	-11.15	1.59
Jan-26	1600.00	0.00	1600.00	250.00	4931.26	5181.26	6781.26	80.92	90.09
Feb-26	0.00	0.00	0.00	0.00	3498.51	3498.51	3498.51	39.53	39.53
Mar-26	730.00	0.00	730.00	250.00	7750.25	8000.25	8730.25	66.36	47.64
2025-26	2336.16	600.00	2936.16	3686.50	50905.25	54591.75	57527.91	77.22	84.91

Note: Growth '-100.00' reflects the absence of additions in 2025-26, in contrast to additions recorded in 2024-25 and '...' represents no capacity addition during 2024-25

**700 MW has been added and 100 MW has been temporarily removed on account of outage for a long-time during April 2025.*

Source: MNRE and CEA

Table 5.2 Monthly Sector Wise RE Capacity Addition during 2025-26

(in MW)

Month	RE					Year on Year Growth (in %)				
	Solar	Wind	SHP	Bio Power	Large Hydro	Solar	Wind	SHP	Bio Power	Large Hydro
Apr-25	2299.12	1020.73	1.50	10.70	200.00	178.93	270.80	-25.00	94.55	...
May-25	2888.67	233.70	0.00	0.00	0.00	76.19	-10.35	...	...	...
Jun-25	5413.52	382.60	0.00	2.29	1450.00	352.30	63.57	...	11.17	...
Jul-25	2768.74	465.25	6.66	1.25	250.00	59.70	11.02	-78.86	-83.33	...
Aug-25	4113.59	541.10	0.00	0.00	480.00	84.96	362.87	-100	-100	...
Sep-25	4202.14	442.60	24.90	14.20	0.00	215.92	159.45	398	-96.16	...
Oct-25	2591.55	476.12	25.00	1.17	240.00	90.97	34.57	1566.67	-76.60	500
Nov-25	2924.43	386.10	0.00	1.00	66.50	42.75	59.28	-100	-86.21	...
Dec-25	2961.69	524.91	0.00	0.00	500.00	-19.89	157.27	-100	-100	...
Jan-26	4791.79	139.47	0.00	0.00	250.00	94.38	-30.99	...	-100	...
Feb-26	3002.62	482.10	12.75	1.04	0.00	34.27	115.90	...	-97.83	...
Mar-26	6656.35	962.34	0.00	131.56	250.00	116.08	-33.60	...	2.05	-67.10
2025-26	44614.21	6057.02	70.81	163.21	3686.50	87.20	45.91	-27.23	-74.58	360.82

Note: Growth '-100.00' reflects the absence of additions in 2025-26, in contrast to additions recorded in 2024-25 and '...' represents no capacity addition during 2024-25

Source: MNRE and CEA

Table 5.3 Monthly Electricity Generation during 2025-26

(in MU)

Month	Non-RE			RE			Grand Total	Year on Year Growth (in %)		
	Thermal	Nuclear	Total	Large Hydro	RES	Total		Non-RE	RES	RE
Apr-25	119070.49	4951.45	124021.94	9618.15	23846.08	33464.23	157486.17	-3.20	27.96	25.13
May-25	114095.95	5137.08	119233.03	13264.6	26604.70	39869.30	159102.33	-9.89	18.23	13.60
Jun-25	108811.65	4498.01	113309.66	16775.5	29660.94	46436.44	159746.10	-9.41	28.67	24.74
Jul-25	106393.46	4536.36	110929.82	21673.90	32827.76	54501.66	165431.48	-4.54	26.42	25.20
Aug-25	104541.85	4105.67	108647.52	23515.94	27859.13	51375.07	160022.59	-0.95	22.70	16.05
Sep-25	102013.32	4045.28	106058.60	22317.41	26064.43	48381.84	154440.44	-0.95	16.38	12.59
Oct-25	97656.54	4808.57	102465.11	16437.39	21488.49	37925.88	140390.99	-13.80	21.39	17.94
Nov-25	97855.25	3860.28	101715.53	9816.95	20600.00	30416.95	132132.48	-6.72	22.95	19.82
Dec-25	113387.32	4221.94	117609.26	8767.19	23331.39	32098.58	149707.84	3.74	17.99	16.61
Jan-26	116085.67	5029.03	121114.70	7852.09	26043.13	33895.22	155009.92	1.87	22.93	18.63
Feb-26	107142.88	4888.71	112031.59	7663.40	25295.17	32958.57	144990.16	-2.20	25.26	21.33
Mar-26	120076.12	5108.14	125184.26	9501.26	26964.06	36465.32	161649.58	-1.72	11.69	10.82
2025-26	307130.50	55190.52	1362321.02	167203.78	310585.28	477789.06	1840110.08	-4.10	21.79	18.40

Source: Central Electricity Authority (CEA)

RES*- Comprising of Solar, Wind, Bio-Power and Small Hydro Power

Table 5.4 Monthly Electricity Generation under RES during 2025-26

(in MU)

Month	RE					Year on Year Growth (in %)				
	Solar	Wind	Small Hydro	Bio Power	Large Hydro	Solar	Wind	Small Hydro	Bio Power	Large Hydro
Apr-25	15811.82	6330.71	687.48	1016.07	9618.15	31.53	33.86	15.77	-21.31	18.61
May-25	14305.32	10667.42	780.91	851.05	13264.6	13.12	29.18	6.37	-1.47	5.31
Jun-25	12927.48	14879.54	1170.79	683.13	16775.5	12.95	46.81	50.80	-1.75	18.36
Jul-25	12100.61	17572.87	1584.52	1569.76	21673.90	16.84	28.96	19.77	137.27	23.41
Aug-25	12634.94	12893.73	1659.90	670.56	23515.94	24.39	25.56	3.72	-1.16	9.04
Sep-25	13556.16	10399.59	1494.29	614.39	22317.41	19.94	17.24	-7.35	0.72	8.47
Oct-25	13063.14	6406.49	1251.09	767.77	16437.39	6.58	97.84	-14.17	2.39	13.71
Nov-25	13185.97	4483.33	920.60	2010.10	9816.95	17.24	44.19	6.93	30.65	13.74
Dec-25	14946.83	5009.06	727.82	2647.68	8767.19	39.60	-12.85	-9.85	5.43	13.07
Jan-26	15854.67	6944.20	607.69	2636.57	7852.09	29.05	23.17	-2.70	-0.01	6.28
Feb-26	16983.54	5661.07	538.70	2111.86	7663.40	31.52	23.27	-4.12	-0.65	9.93
Mar-26	19386.04	5451.78	590.35	1535.89	9501.26	15.31	6.20	-4.03	-2.86	8.42
2025-26	174756.52	106699.79	12014.14	17114.83	167203.78	21.23	28.02	3.86	7.35	12.56

Source: Central Electricity Authority (CEA)

CHAPTER 6

Sustainable Development Goal -National Indicator Framework (SDG-NIF)

6.1 SDG-NIF: India has made significant strides in achieving Sustainable Development Goal 7 (SDG 7), which focuses on ensuring access to affordable, reliable, sustainable, and modern energy for all. A key indicator used to monitor this progress is indicator 7.b.1/12.a.1, which tracks installed renewable energy generation capacity per capita (in watts). Over the last decade, India's per capita renewable energy capacity has more than tripled, rising from 64.04 watts in 2014–15 to 193.36 watts in 2025–26. This growth corresponds with the expansion of the country's total installed renewable energy capacity from approximately 81.22 GW to 274.69 GW during the same period. The sharpest annual rise was recorded in 2025–26, when per capita renewable installed capacity increased by 23.7%, rising from 156.31 watts to 193.36 watts.

Another important national indicator for assessing progress under SDG 7 is indicator 7.2.1, which measures the share of renewable energy (RE) in India's total electricity generation. This indicator has shown steady improvement over the years. The contribution of renewable energy to overall electricity generation increased from 16.03% in 2015–16 to 25.97% in 2025–26. During this period, renewable electricity generation reached 477.79 billion units (BU) out of a total generation of 1840.11 BU. These achievements underline India's strong commitment to advancing a sustainable energy transition while meeting the energy needs of its expanding population. Further details regarding these indicators are presented in this chapter.

Table 6.1 SDG – NIF Indicators 7.b.1/12. a.1- Installed renewable energy generating capacity in the country (in watts per capita)

Year	Installed electricity generation capacity in renewable energy (in Watt)	Watts per capita
2014-15	81217520000	64.04
2015-16	89874800000	69.98
2016-17	103036610000	79.29
2017-18	115944860000	88.25
2018-19	124811220000	93.97
2019-20	133954520000	99.77
2020-21	142012610000	104.65
2021-22	156607900000	114.29
2022-23	172009980000	124.38
2023-24	190572680000	136.56
2024-25	220096350000	156.31
2025-26	274688100000	193.36

Fig 6.1 Installed renewable energy generating capacity in the country (in watts per capita)

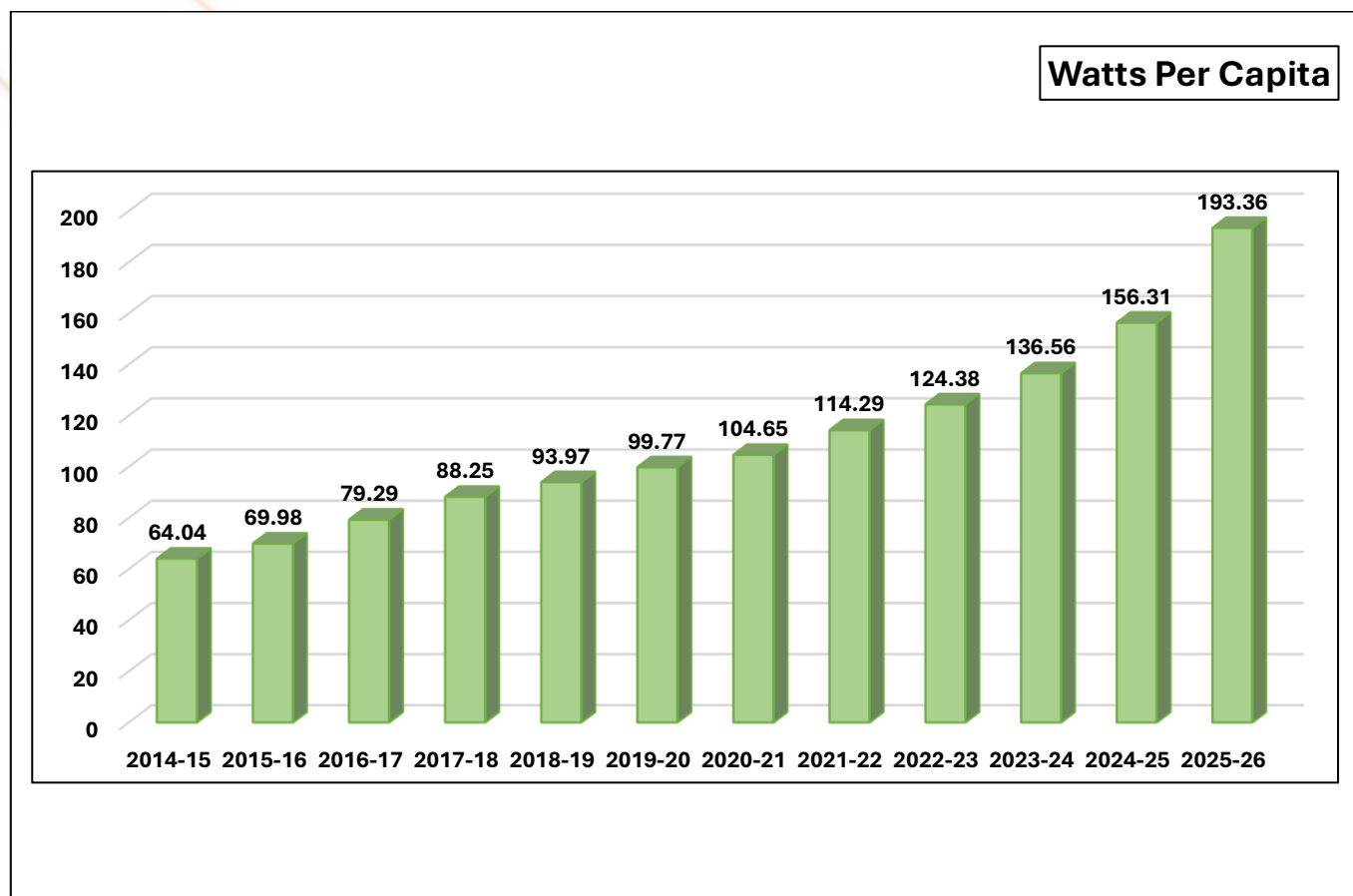
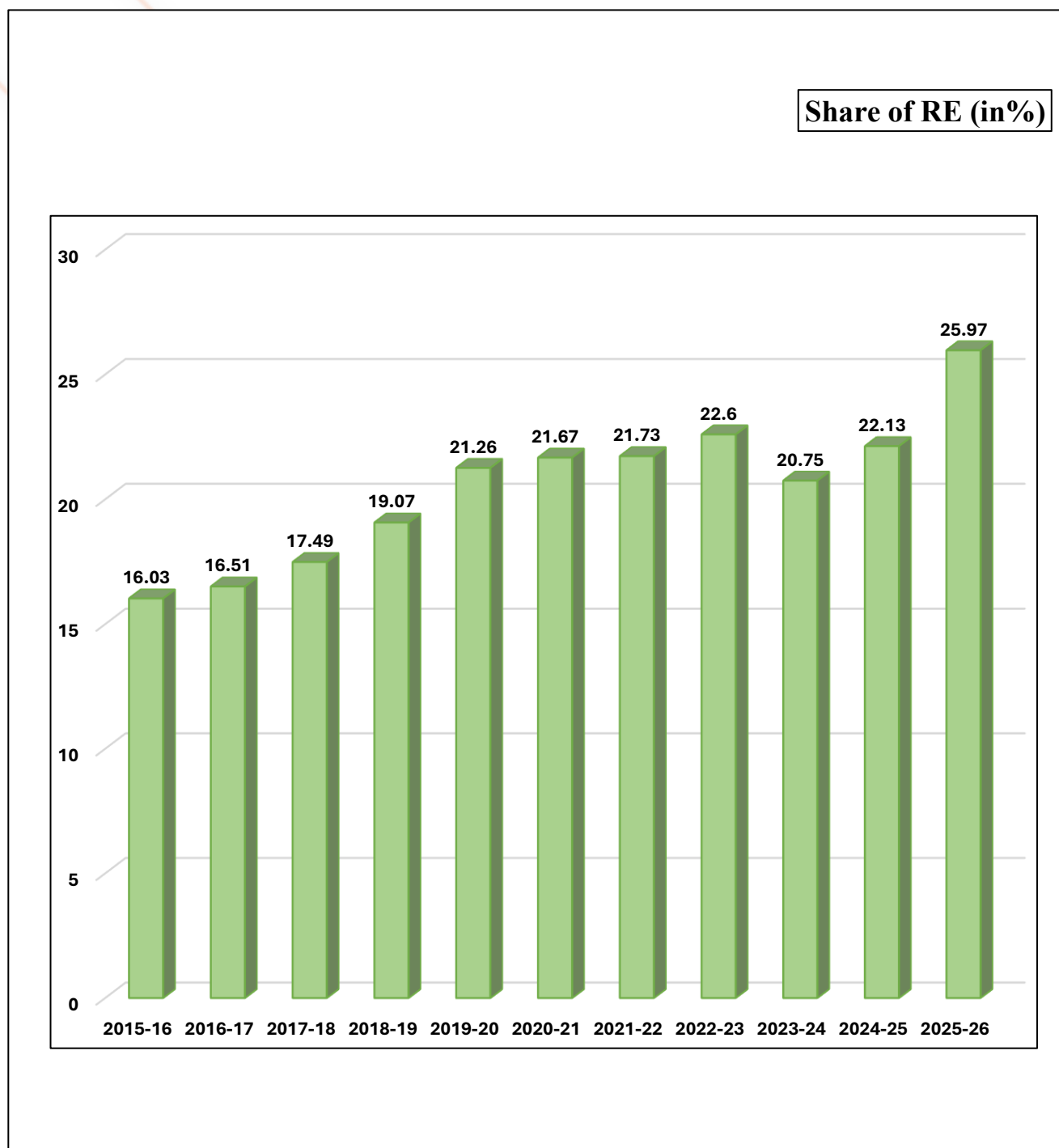
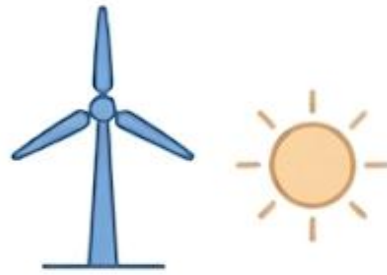


Table 6.2 SDG Indicators 7.2.1 RE share in the total installed electricity generation

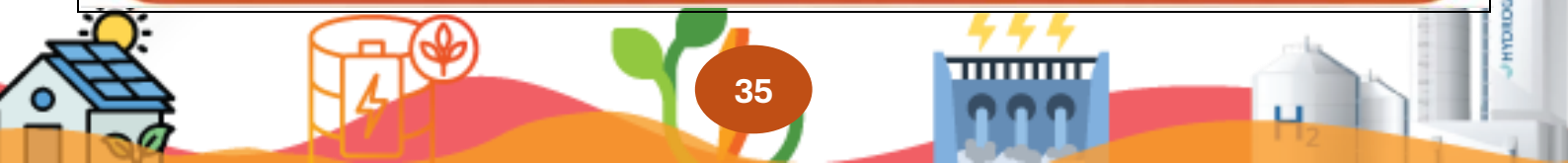
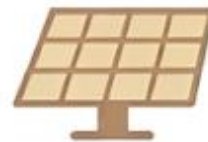
Year	Overall generation (in BU)	Generation through RE (in BU)	Share of RE (in %)
2015-16	1167.58	187.16	16.03
2016-17	1235.36	203.93	16.51
2017-18	1303.46	227.96	17.49
2018-19	1371.78	261.65	19.07
2019-20	1383.42	294.11	21.26
2020-21	1373.19	297.55	21.67
2021-22	1484.46	322.54	21.73
2022-23	1617.90	365.65	22.60
2023-24	1734.38	359.89	20.75
2024-25	1824.22	403.64	22.13
2025-26	1840.11	477.79	25.97

Fig 6.2 RE share in the total installed electricity generation





STATE WISE STATUS



CHAPTER 7

Estimated RE potential and Installed Capacity in RE and Non-RE sector

7.1 Estimated Renewable Energy Potential: India has significant renewable energy potential across a range of sources, including solar, wind, hydro, and bioenergy. The Government of India regularly undertakes initiatives to assess and update the estimated capacities of these resources. According to the most recent evaluations, the country's potential for solar, wind, hydro, and bioenergy is outlined as follows:

Solar Power: According to the report “Solar PV Potential of India (Ground Mounted)” published by National Institute of Solar Energy (NISE) in September 2025, the country's estimated ground mounted solar power potential stands at 3343.37 GW. The potential assessment report of “Solar PV Potential of India (Floating Solar)” published by NISE in June 2026, the country's estimated floating solar power potential stands at 102.18 GW across reservoirs, irrigation tanks, hydropower lakes and other water bodies. Therefore, total estimated “Solar PV Potential of India” stands at 3445.55 GW. Now, India ranks third globally in respect of installed capacity as well as electricity generation from solar power.

Wind Power: According to the National Institute of Wind Energy (NIWE), India's wind power potential was estimated at 1163.86 GW in 2023 at 150 meters above ground level. The country ranks 4th globally in installed wind capacity, highlighting substantial progress in harnessing its wind energy resources.

Hydro Power:

- **Large Hydro Power:** India holds considerable hydropower potential due to its vast network of rivers and dams. According to the Central Electricity Authority under the Ministry of Power, the country's estimated exploitable capacity for large hydropower stands at 133.41 GW.
- **Small Hydro Power:** According to a 2016 assessment by Indian Institute of Technology Roorkee, India's estimated potential for small hydropower projects (up to 25 MW) is 21.13 GW.

Biomass Power: A 2021 assessment by Administrative Staff College of India, estimated the country's bioenergy power potential at 42.27 GW. India ranks third globally in installed bioenergy capacity.

State-wise renewable energy potential is presented in **Table 7.1**.

Table 7.1 Estimated potential in RE Sector
(in MW)

States / UTs	Wind Power	Small Hydro Power	Bio-energy			Solar Power			Large Hydro
			Biomass Power	Bagasse Cogeneration	Bio Energy Total	Floating Solar	Ground mounted solar	Solar Potential Total	
Andhra Pradesh	123336	409.32	1999.49	279.6	2279.09	1455.01	299312.12	300767.13	2596
Arunachal Pradesh	246	2064.92	18.46		18.46		467.52	467.52	50394
Assam	459	201.99	321.89		321.89	6.35	19173.13	19179.48	643
Bihar	4023	526.98	964.37	346.6	1310.97	234.48	32991.49	33225.97	130.1
Chhattisgarh	2749	1098.2	353.68		353.68	2730.6	126484.29	129214.89	1311
Goa	14	4.7	32.97		32.97	168.36	6752.35	6920.71	
Gujarat	180790	201.97	2637.84	554.7	3192.54	6317.88	243219.9	249537.78	550
Haryana	593	107.4	1353.35	362.1	1715.45		6468.1	6468.1	
Himachal Pradesh	239	3460.34	69.71		69.71	1993.21	21501.61	23494.82	18305
Jammu & Kashmir		1707.45	82.82		82.82	879.62	8588.94	9468.56	12971.5
Ladakh	1					392.23	8556.64	8948.87	
Jharkhand	16	227.96	146.31		146.31	2808.86	51831.29	54640.15	300
Karnataka	169251	3726.49	1793.88	1762.1	3555.98	13687.67	223278.99	236966.66	4414.4
Kerala	2621	647.15	778.41		778.41	2220.41	12404.71	14625.12	2472.75
Madhya Pradesh	55423	820.44	2516.42		2516.42	14892.96	318972.16	333865.12	2819
Maharashtra	173868	786.46	2629.55	3917	6546.55	16279.05	486678.68	502957.73	3144
Manipur		99.95	62.31		62.31	610.8	2293.92	2904.72	615
Meghalaya	55	230.05	68.54		68.54		14674.1	14674.1	2026
Mizoram		168.9	2.90		2.9		612.21	612.21	1926.7
Nagaland		182.18	53.90		53.9		190.96	190.96	325
Orissa	12129	286.22	298.72		298.72	12812.62	139474.33	152286.95	2824.5
Punjab	428	578.28	3022.11	414.4	3436.51	32.21	9210.19	9242.4	1300.73
Rajasthan	284250	51.67	1299.55		1299.55	3356.53	828781.44	832137.97	411
Sikkim		266.64	4.73		4.73		254.46	254.46	6051
Tamil Nadu	95107	604.46	1560.08	639.3	2199.38	3343.09	204765.06	208108.15	1785.2
Telangana	54717	102.25	1678.36	117.4	1795.76	10717.43	140451.26	151168.69	1302
Tripura		46.86	34.35		34.35		9105.85	9105.85	
Uttar Pradesh	510	460.75	2800.31	4925.7	7726.01	5638.17	97842.99	103481.16	501.6
Uttarakhand	49	1664.31	93.34	215.1	308.44	769.94	4436.24	5206.18	13481.35
West Bengal	1281	392.06	1741.74		1741.74	771.39	22742.39	23513.78	809.2
Andaman & Nicobar	1245	7.27	18.13		18.13		594.22	594.22	
Chandigarh			0.15		0.15	11.61	22.42	34.03	
Dadar & Nagar Haveli & Daman and Diu	17		2.16		2.16		498.31	498.31	
Delhi					0		550.22	550.22	
Lakshadweep	31		1.39		1.39			0	
Pondicherry	408		5.00		5	44.83	195.9	240.73	
Others				284.4	284.4			0	
Total	1163856	21133.62	28446.91	13818.4	42265.31	102175.31	3343378.39	3445553.7	133410.03

Source: MNRE & CEA

7.2 State wise Installed Capacity under RE and Non -RE sector:

During 2018–19 to 2025–26, India's renewable energy (RE) installed capacity rose sharply from 116 GW to 274.69 GW, marking a growth of over 136.92%. However, non-renewable energy capacity increased more modestly by about 12.35%, from around 230 GW to 258 GW, highlighting a clear policy and investment shift towards clean energy.

At the state level, Gujarat emerged as the leading state in RE installed capacity as of 31 March 2026, reaching a cumulative 47.17 GW after adding 37.84GW over the past eight years. Rajasthan followed closely in second place, adding 39.73GW to reach 47.02 GW, just marginally behind the top state. Maharashtra ranked third with a cumulative installed capacity of 31.98 GW.

Other major contributors to RE growth include Tamil Nadu, Karnataka, Andhra Pradesh, Himachal Pradesh, and Madhya Pradesh, all of which recorded significant capacity additions during this period. Meanwhile, smaller states and Union Territories such as Puducherry, Goa, Dadra and Nagar Haveli and Daman and Diu, Delhi, Andaman and Nicobar Islands, and Chandigarh posted notable percentage increases, albeit from a lower base.

Detailed state- and UT-wise installed capacity data for 31 March 2018 and 31 March 2026 are presented in Table 7.2.

Table 7.2 State wise Non-RE and RE Cumulative Installed Capacity as on 31.03.2018 and 31.03.2026 (in MW)

Sr. No.	Year	Up to 31 st March,2018		Up to 31 st March,2026	
	States/UTs	Non-RE	RE	Non-RE	RE
1	Andhra Pradesh	16507.20	8060.58	15666.20	15980.11
2	Arunachal Pradesh	0.00	517.00	0.00	2021.05
3	Assam	1103.95	378.39	1347.36	958.28
4	Bihar	5480.00	346.18	10170.00	651.26
5	Chhattisgarh	22968.00	785.42	24093.00	2323.56
6	Goa	48.00	1.08	0.00	83.49
7	Gujarat	23483.41	9339.45	24512.31	47178.33
8	Haryana	5971.59	510.49	5761.59	3011.72
9	Himachal Pradesh	0.00	10514.30	0.00	12802.96
10	Jammu & Kashmir	175.00	3650.22	0.00	3634.41
11	Jharkhand	4590.00	320.14	7030.00	489.59
12	Karnataka	10513.12	16241.59	10755.25	26722.76
13	Kerala	693.54	2282.06	519.54	4574.28
14	Ladakh	0.00	0	0.00	146.81
15	Madhya Pradesh	17065.00	6445.13	21170.00	12182.64
16	Maharashtra	29833.08	11519.21	27535.09	31980.63
17	Manipur	36.00	115.28	36.00	127.97
18	Meghalaya	0.00	418.85	0.00	395.11
19	Mizoram	0.00	100.16	0.00	139.16
20	Nagaland	0.00	108.51	0.00	111.01

Table 7.2 contd.

Sr. No.	Year	Up to March,2018		Up to March,2026	
	States/UTs	Non-RE	RE	Non-RE	RE
21	Odisha	7680.00	2364.94	9950.00	3242.84
22	Punjab	6540.00	2626.98	5680.00	3439.93
23	Rajasthan	10703.10	7289.36	13626.83	47020.54
24	Sikkim	0.00	2222.98	0.00	2344.67
25	Tamil Nadu	16638.90	13451.7	18528.78	29108.27
26	Telangana	6682.50	6507.48	11842.50	7930.58
27	Tripura	1132.10	24.53	1067.60	51.55
28	Uttar Pradesh	23776.10	3447.25	31948.14	7005.23
29	Uttarakhand	450.00	4379.83	664.00	6018.55
30	West Bengal	14495.00	1747.46	13895.00	2112.18
31	Andaman & Nicobar	40.05	12.05	92.71	37.37
32	Chandigarh	0.00	26.01	0.00	78.85
33	Dadar & Nagar Haveli/Daman & Diu	0.00	16.07	0.00	138.65
34	Delhi	3048.40	123.03	2100.40	506.37
35	Lakshadweep	0.00	3.14	26.83	6.57
36	Pondicherry	32.50	0.34	32.50	81.51
	Others		47.66	0.00	49.31
	Total	229687.00	115945.00	258051.63	274688.10

Source: National Power Portal (NPP), MoP & MNRE

CHAPTER 8

Installed capacity in RE sector

8.1 Region wise /state wise installed capacity in RE sector

From 2017–18 to 2025–26, India experienced a striking expansion in electricity installed capacity, nearly doubling from 116 GW to more than 274.69 GW. This surge was largely concentrated in the Western, Southern, and Northern regions, fuelled by significant contributions from states such as Gujarat, Maharashtra, Karnataka, Tamil Nadu, Andhra Pradesh and Rajasthan.

The Western Region accounts for the largest share of the country's renewable energy capacity at over 34%, followed by the Southern and Northern regions, while the Eastern and North-Eastern regions trail behind. Solar power forms the backbone of India's renewable energy mix, supported by wind, large hydro, bio-power, and small hydro sources.

Several states, including Rajasthan, Gujarat, and Karnataka, have achieved renewable energy shares exceeding 60% (including large hydro and other renewable sources), while some northeastern states have reached 100% renewable capacity, primarily driven by hydro power. For detailed state-wise and region-wise data on RE installed capacity from 2017–18 to 2025–26, please refer to **Table 8.1**.

Table 8.1 Region wise / State wise RE Cumulative Installed Capacity from 2017-18 to 2025-26

(in MW)

States / UTs	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26
NORTHERN REGION									
Haryana	510.49	519.11	547.19	762.51	1242.13	1362.09	1832.92	2449.94	3011.72
Himachal Pradesh	10514.30	10707.75	10768.91	10916.61	11303.49	11330.42	11356.16	12196.18	12802.95
Jammu & Kashmir	3650.22	3664.10	3581.11	3588.11	3551.61	3556.12	3595.37	3624.42	3634.41
Ladakh	0.00	0.00	89.00	89.00	136.44	137.79	139.79	142.59	146.81
Punjab	2626.98	2522.38	2566.86	2743.80	2864.12	2961.93	3163.92	3270.42	3439.93
Rajasthan	7289.36	8223.73	10134.97	10812.35	17451.62	22809.05	27103.89	34136.34	47020.54
Uttar Pradesh	3447.25	3739.46	3900.97	4563.07	4985.12	5282.65	5697.17	6223.91	7005.23
Uttarakhand	4379.83	4426.88	4437.96	4589.24	4787.15	4909.14	4971.94	5010.77	6018.55
Chandigarh	26.01	35.52	41.36	45.97	55.17	58.69	65.52	78.85	78.85
Delhi	123.03	180.35	218.62	246.43	270.12	302.26	340.51	397.4	506.37
Total	32567.47	34019.28	36286.95	38357.09	46646.97	52710.14	58267.19	67530.82	83665.36
NORTH-EASTERN REGION									
Arunachal Pradesh	517.00	655.69	955.98	1256.27	1257.34	1259.75	1259.90	1270.46	2021.05
Assam	378.39	414.58	433.86	437.67	504.05	534.04	542.29	582.65	958.28
Manipur	115.28	118.66	120.43	121.84	122.70	122.73	123.49	124.24	127.97
Meghalaya	418.85	372.18	372.18	372.18	372.48	372.48	395.07	395.11	395.11
Mizoram	100.16	101.20	102.52	103.45	104.37	133.49	135.78	135.86	139.16
Nagaland	108.51	108.51	108.51	108.58	108.71	110.71	110.84	110.84	111.01
Tripura	24.53	24.53	28.91	29.57	30.9	33.61	34.47	37.25	51.55
Total	1662.72	1795.35	2122.39	2429.56	2500.55	2566.81	2601.84	2656.41	3804.13

Table 8.1 Contd.

STATES / UT's	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26
WESTERN REGION									
Chhattisgarh	785.42	850.77	864.89	886.52	989.08	1419.82	1683.39	1828.46	2323.56
Goa	1.08	4.09	5.29	7.95	20.34	26.88	45.47	58.43	83.49
Gujarat	9339.45	10697.72	12683.77	15204.25	18577.90	21425.85	27461.72	33393.03	47178.33
Madhya Pradesh	6445.13	6864.87	7285.75	7526.97	7703.88	8140.08	9333.37	10827.7	12182.64
Maharashtra	11519.21	12421.69	12822.27	13382.85	13704.08	15804.50	17530.12	22401.46	31980.63
Dadar & Nagar Haveli/ Daman & Diu	16.07	19.93	25.32	46.01	46.18	46.47	46.47	51.87	138.65
Total	28106.36	30859.07	33687.29	37054.55	41041.46	46863.6	56100.54	68560.95	93887.3
EASTERN REGION									
Bihar	346.18	352.23	365.09	376.63	387.35	389.60	450.15	539.26	651.26
Jharkhand	320.14	267.87	273.80	288.21	307.14	324.19	395.55	434.06	489.59
Odisha	2364.94	2681.68	2686.38	2715.63	2771.64	2782.57	2825.03	2958.84	3242.84
Sikkim	2222.98	2222.99	2223.05	2223.05	2338.79	2341.80	2344.15	2344.67	2344.67
West Bengal	1747.46	1849.29	1888.03	1923.44	1928.15	1962.77	1982.13	2112.18	2112.18
Andaman & Nicobar	12.05	17.22	17.68	34.71	34.74	35.16	35.16	35.16	37.37
Total	7013.75	7391.28	7454.03	7561.67	7767.81	7836.09	8032.17	8424.17	8877.91
SOUTHERN REGION									
Andhra Pradesh	8060.58	9560.02	10091.40	10696.10	10821.6	10970.20	11029.30	12114.48	15980.11
Karnataka	16241.60	17524.40	18918.10	19149.30	19593.8	20408.40	21441.90	23917.64	26722.76
Kerala	2282.06	2290.71	2304.35	2428.92	2527.2	2957.10	3229.46	3853.38	4574.28
Tamil Nadu	13451.7	14909.40	16588.8	17476.70	18277.5	20098.60	22161.60	25241.36	29108.27
Telangana	6507.48	6405.96	6442.85	6796.59	7364.79	7510.97	7604.40	7688.34	7930.58
Lakshadweep	3.14	3.14	3.27	3.27	3.27	3.27	4.97	4.97	6.57
Pondicherry	0.34	3.32	5.69	9.51	13.69	35.53	49.91	54.51	81.51
Total	46546.9	50696.95	54354.46	56560.39	58601.85	61984.07	65521.54	72874.68	84404.08
Others	47.66	49.31	49.31	49.31	49.31	49.31	49.31	49.31	49.31
Total	115944.90	124811.20	133954.50	142012.60	156607.90	172010.00	190572.70	220096.35	274688.10

Source: MNRE & NPP, MoP

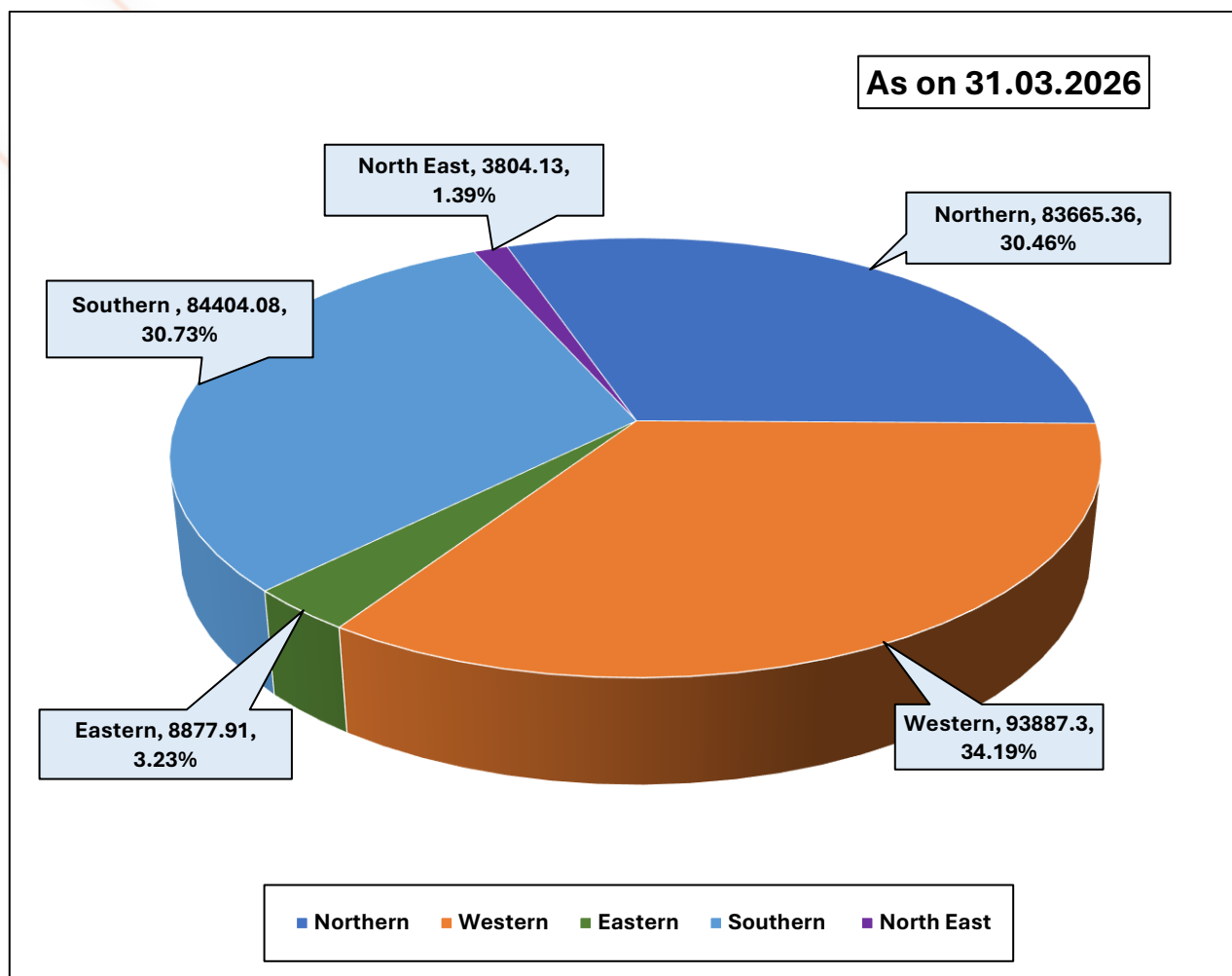
8.2 Share of various regions in the installed capacity as on 31.03.2026:

As on 31st March 2026, the Western Region leads India's renewable energy installed capacity with the highest share of 34.19%, reflecting robust growth in states such as Gujarat, Maharashtra, and Madhya Pradesh, and overtaking the Southern Region compared to 31st March 2025. The Southern Region follows with a 30.73% share, supported by significant contributions from Tamil Nadu, Karnataka, and Andhra Pradesh. The Northern Region accounts for 30.46%, with Rajasthan playing a key role in driving growth. The Eastern Region holds a modest 3.23% share, while the North-Eastern Region contributes the least at just 1.39%, indicating limited capacity expansion and underdeveloped renewable infrastructure.

Overall, the data underscores a clear regional imbalance in renewable energy development, led by Western, Southern and Northern regions leading the transition. (Ref Fig 8.1).

Fig 8.1 Region wise RE Installed Capacity

(in MW)



8.3 Source-wise cumulative Installed Capacity under RE as on 31.03.2026:

As on 31st March 2026, Gujarat, Rajasthan, Maharashtra, Tamil Nadu, and Karnataka emerged as the leading contributors to India's renewable energy (RE) installed capacity. Together, these states accounted for a significant 66.26% share of the country's total RE capacity. In the solar energy segment, the top five states; Rajasthan, Gujarat, Maharashtra, Tamil Nadu, and Karnataka dominated the landscape, collectively contributing 76.28% of India's installed solar power capacity. Wind energy remained highly concentrated in a limited number of states. Gujarat, Tamil Nadu, Karnataka, Maharashtra, Rajasthan, Andhra Pradesh, and Madhya Pradesh together accounted for about 99.63% of total installed wind power capacity, underscoring the strong dependence on coastal and high-wind corridor regions. Bioenergy sector witnessed steady growth, led by Maharashtra, Uttar Pradesh, Karnataka, and Tamil Nadu, which together contributed around 70.68% of the country's total installed bioenergy capacity, supported by the availability of agricultural and industrial biomass.

For large hydro power, the leading contributors were Himachal Pradesh, Uttarakhand, Karnataka, Jammu & Kashmir, Andhra Pradesh, and Maharashtra, collectively accounting for 57.56% of India's installed large hydro capacity. This reflects the advantage of regions such as the Himalayas and the Western Ghats, which offer strong hydro power potential. Overall, the distribution of renewable energy capacity highlights

clear geographical clustering across different segments, with state-specific natural resources and policy support shaping India's renewable energy development trajectory. (Refer table 8.2)

8.4 State wise installed capacity of Various categories of Solar and Bio Power as on 31.03.2026:

India's renewable energy capacity in the bio-power and solar segments reflects a diverse state-wise contribution. In bio-power, bagasse-based cogeneration is the dominant source, with Maharashtra, Uttar Pradesh, and Karnataka emerging as the key contributors. In the solar sector, capacity is largely driven by ground-mounted installations, with Rajasthan, Gujarat, Maharashtra, and Tamil Nadu leading the expansion. Rooftop solar also plays an important role, particularly in Gujarat, Maharashtra, Rajasthan, Kerala, and Tamil Nadu. At the same time, smaller states and Union Territories such as Delhi, Dadra & Nagar Haveli and Daman & Diu, Puducherry, and Chandigarh have shown a stronger emphasis on rooftop and off-grid solar systems. Overall, this pattern highlights India's strong bio-energy foundation alongside rapid growth in solar power, reflecting a balanced shift towards both centralized and decentralized clean energy systems (Refer Table 8.3).

8.5 Installation of Off-grid Energy Systems / Devices as on 31.03.2026:

The data highlights the widespread adoption of off-grid renewable energy systems across Indian states and Union Territories, particularly in the form of small biogas plants, waste to energy plants (large biogas plants, large biogas-based power generation plants and biomass gasifier), solar photovoltaic (SPV) pumps, and other SPV-based applications. Biogas plants are extensively deployed, with Maharashtra, Karnataka, and Uttar Pradesh emerging as the leading states, playing an important role in meeting rural energy requirements. Waste to energy off grid plants are majorly deployed in states like Uttar Pradesh, Maharashtra, Andhra Pradesh, Gujarat and Haryana. Similarly, SPV pumps, which are vital for promoting sustainable agriculture, have seen strong uptake in states such as Maharashtra, Haryana, Rajasthan, Chhattisgarh and Uttar Pradesh. Details of Off-Grid Renewable Energy Systems / Devices installed under schemes of MNRE are stipulated in table 8.4

8.6 Renewable energy share in the total installed capacity within the state:

The penetration of renewable energy (RE) in total installed power capacity shows wide variation across Indian states and Union Territories. As on 31st March 2026, several States/UTs—namely Arunachal Pradesh, Himachal Pradesh, Meghalaya, Mizoram, Nagaland, Sikkim, Ladakh, Chandigarh, Dadra & Nagar Haveli and Daman & Diu, Goa, and Jammu & Kashmir—have achieved 100% of their installed power capacity from renewable energy sources. In addition, states such as Uttarakhand, Kerala, Manipur, Rajasthan, Union Territory of Puducherry, Karnataka, Gujarat, and Tamil Nadu report a high renewable energy share ranging between 60% and 100% of their total installed capacity (Refer table 8.5).

Table 8.2 Source-wise RE cumulative installed capacity as on 31.03.2026

(in MW)

States /UTs	Small Hydro Power	Wind Power	Bio Power	Solar Power	Large Hydro	Total Capacity
Andhra Pradesh	164.51	4415.78	615.02	7494.80	3290.00	15980.11
Arunachal Pradesh	140.61		0.00	15.44	1865.00	2021.05
Assam	34.11		8.00	570.17	346.00	958.28
Bihar	70.70		145.22	435.34		651.26
Chhattisgarh	100.90		289.92	1812.74	120.00	2323.56
Goa	0.05		1.94	81.50		83.49
Gujarat	113.30	15642.26	129.85	29302.92	1990.00	47178.33
Haryana	73.50		329.84	2608.38		3011.72
Himachal Pradesh	1013.46		10.20	358.28	11421.02	12802.96
Jammu & Kashmir	189.93		5.00	79.48	3360.00	3634.41
Jharkhand	4.05		20.14	255.40	210.00	489.59
Karnataka	1284.73	8730.14	1917.05	11101.64	3689.20	26722.76
Kerala	276.52	71.52	2.50	2215.59	2008.15	4574.28
Ladakh	45.79		0.00	12.02	89.00	146.81
Madhya Pradesh	123.71	3679.15	159.46	5985.32	2235.00	12182.64
Maharashtra	384.28	5927.21	2999.97	19622.17	3047.00	31980.63
Manipur	5.45		0.00	17.52	105.00	127.97
Meghalaya	55.03		13.80	4.28	322.00	395.11
Mizoram	45.47		0.00	33.69	60.00	139.16
Nagaland	32.67		0.00	3.34	75.00	111.01
Odisha	140.63		64.22	883.44	2154.55	3242.84
Punjab	176.10		582.59	1584.94	1096.30	3439.93
Rajasthan	23.85	5349.15	222.42	41012.62	412.50	47020.54
Sikkim	55.11		0.00	7.56	2282.00	2344.67
Tamil Nadu	123.05	12147.23	1055.12	13579.67	2203.20	29108.27
Telangana	89.67	128.10	242.11	5065.10	2405.60	7930.58
Tripura	16.01		0.00	35.54		51.55
Uttar Pradesh	50.60		2329.89	4123.14	501.60	7005.23
Uttarakhand	233.82		161.49	837.89	4785.35	6018.55
West Bengal	98.50		351.86	320.62	1341.20	2112.18
Andaman & Nicobar Islands	5.25		0.00	32.12		37.37
Chandigarh			0.00	78.85		78.85
"Dadar & Nagar Haveli/ Daman & Diu"			3.75	134.90		138.65
Delhi			85.17	421.20		506.37
Lakshadweep			0.00	6.57		6.57
Pondicherry			0.00	81.51		81.51
Others		4.30	0.00	45.01		49.31
Total	5171.36	56094.84	11746.53	150260.70	51414.67	274688.10

Table 8.3 Cumulative installed capacity of bio-power and solar power under various categories as on 31.03.2026.

(in MW)

States/Uts	Bio-Power				Solar Power			
	BM Power/ Bagasse Cogen.	BM Cogen. (Non Bagasse)	Waste to Energy	Waste to Energy (Off-grid)	Ground Mounte d Solar	Rooftop Solar	Hybrid Solar Comp.	Off-grid Solar/ KUSUM
Andhra Pradesh	378.1	134.57	53.16	49.19	6382.54	774.5	249.42	88.34
Arunachal Pradesh					1.27	6.68		7.49
Assam		8			216.26	344.2		9.71
Bihar	112.5	31.4		1.32	196.06	218		21.28
Chhattisgarh	272.09	7		10.83	1254.41	167.6		390.73
Goa			1.94		8.51	71.5		1.49
Gujarat	65.3	12	7.5	45.05	20974.68	6881.8	1273.43	173.01
Haryana	151.4	125.46	11.2	41.78	267.76	1188.3		1152.32
Himachal Pradesh		9.2		1	257	66.7		34.58
Jammu & Kashmir		5			2.49	42.2		34.79
Jharkhand		19.1		1.04	21	94.9		139.5
Karnataka	1868.91	20.2	1	26.94	9855.78	842.9	358.85	44.11
Kerala		2.27		0.23	340.26	1850.4		24.93
Ladakh					6	5		1.02
Madhya Pradesh	92.5	18.85	15.4	32.71	4990.18	893.1		102.04
Maharashtra	2907.3	16.4	12.59	63.68	12171.3	5442.3		2008.57
Manipur					0.6	10.6		6.32
Meghalaya		13.8				0.21		4.07
Mizoram					22	5.3		6.39
Nagaland						1		2.34
Odisha	50.4	8.82		5	662.52	156.3		64.62
Punjab	299.5	237.79	10.75	34.55	886.77	581.2		116.97
Rajasthan	134.15	2	74.5	11.77	36125.95	2090.4	1980	816.27
Sikkim					0.52	5.12		1.92
Tamil Nadu	969.1	52.05	6.4	27.57	11972.82	1532.3		74.55
Telangana	158.1	23.74	45.8	14.47	4360.49	695.9		8.71
Tripura					7.09	12.2		16.25
Uttar Pradesh	1985.5	184.76		159.63	3048.33	715.3		359.51
Uttarakhand	72.72	71.92		16.85	541.05	273.71		23.13
West Bengal	300	43.52		8.34	240.35	67.13		13.14
Andaman & Nicobar Islands					25.05	6.8		0.27
Chandigarh					6.34	71.7		0.81
Dadra & Nagar Haveli / Daman & Diu	3.75				14.3	120.6		
Delhi			84	1.17	9.84	409.9		1.46
Lakshadweep					2.45	1.6		2.52
Pondicherry					1.03	80.3		0.18
Others								45.01
Total (MW)	9821.32	1047.85	324.24	553.12	114873	25727.65	3861.7	5798.35

Table 8.4 Installation of Off-grid Energy Systems as on 31.03.2026*

State/UT	Small Biogas Plants	SPV Pumps	Solar Photovoltaic (SPV) Systems				Waste to Energy (Off-grid)
			SLS	HLS	SL	PP	
	(Nos)	(Nos.)	(Nos.)	(Nos.)	(Nos.)	(KWP)	(MW)
Andhra Pradesh	268652	34045	16,460	24,011	77,803	3,816	49.19
Arunachal Pradesh	3621	721	25,008	39,064	2,18,551	963	-
Assam	139485	1283	29,538	46,879	6,47,761	1,605	-
Bihar	130440	2813	54,147	12,303	17,35,227	6,905	1.32
Chhattisgarh	60738	119282	4,538	42,969	3,311	31,373	10.83
Goa	4245	245	707	393	1,093	33	-
Gujarat	439402	32114	5,004	9,253	31,603	13,577	45.05
Haryana	64366	187519	34,625	56,727	93,853	4,571	41.78
Himachal Pradesh	47718	1109	98,800	22,592	33,909	21,606	1.00
Jammu & Kashmir	3201	4569	39,076	1,44,316	51,224	8,130	-
Jharkhand	7890	62331	14,344	11,632	7,90,515	3,770	1.04
Karnataka	515386	19896	5,694	52,817	7,781	7,854	26.94
Kerala	154462	826	1,735	41,986	54,367	16,268	0.23
Ladakh	0	265	-	-	-	-	-
Madhya Pradesh	388333	27573	16,808	9,041	5,29,101	7,654	32.71
Maharashtra	945345	483913	10,420	3,497	2,39,297	3,858	63.68
Manipur	2178	190	32,767	24,683	69,722	1,581	-
Meghalaya	11156	117	5,800	14,874	97,360	2,004	-
Mizoram	5857	589	20,325	12,060	1,55,217	3,895	-
Nagaland	7953	268	16,045	1,045	30,766	1,506	-
Odisha	271980	24078	19,109	5,274	99,843	2,321.50	5.00
Punjab	191157	22535	43,758	8,626	17,495	2,066	34.55
Rajasthan	73597	180198	8,934	1,87,968	2,25,851	1,04,449	11.77
Sikkim	9044	0	504	15,059	45,200	850	-
Tamil Nadu	224129	56490	41,419	2,98,641	16,818	13,053	27.57
Telangana	316749	424	2,458	126	1,42,000	7,450	14.47
Tripura	4052	8515	15,517	34,426	3,64,012	867	-
Uttar Pradesh	441845	100188	3,02,532	2,35,909	23,51,205	10,638	159.63
Uttarakhand	367169	2533	43,803	91,595	1,65,071	4,060	16.85
West Bengal	1293	653	18,203	1,45,332	17,662	1,730	8.34
Andaman & Nicobar	97	5	1,490	468	6,296	167	-
Chandigarh	169	12	901	275	1,675	730	-
Dadar & Nagar Haveli	699	0	-	-	-	-	-
Daman & Diu	0	0	-	-	-	-	-
Delhi	578	90	301	-	4,807	1,269	1.17
Lakshadweep	0	0	4,465	600	5,289	2,190	-
Puducherry	17541	21	417	25	1,637	121	-
Others*		4621	9,150	1,40,273	1,25,797	23,885	-
Total	51,20,527	13,80,031	9,44,802	17,34,739	84,59,119	3,16,815.50	553.12

SLS =Street Lightening System, HLS=Home Lightening System, SL=Solar Lantern, PP= Power Plants, SPV=Solar Photo Voltaic

*Installed under schemes of MNRE.

Table 8.5 Share of RE in Cumulative Installed Capacity as on 31.03.2026

(in MW)

STATES / UTs	Non RE	RE			Grand Total	Share (%)	
		RES	Hydro	Total		RES	RE
Andhra Pradesh	15666.20	12690.11	3290.00	15980.11	31646.31	40.10	50.50
Arunachal Pradesh	0.00	156.05	1865.00	2021.05	2021.05	7.72	100.00
Assam	1347.36	612.28	346.00	958.28	2305.64	26.56	41.56
Bihar	10170.00	651.26		651.26	10821.26	6.02	6.02
Chhattisgarh	24093.00	2203.56	120.00	2323.56	26416.56	8.34	8.80
Goa	0.00	83.49		83.49	83.49	100.00	100.00
Gujarat	24512.31	45188.33	1990.00	47178.33	71690.64	63.03	65.81
Haryana	5761.59	3011.72		3011.72	8773.31	34.33	34.33
Himachal Pradesh	0.00	1381.94	11421.02	12802.96	12802.96	10.79	100.00
Jammu & Kashmir	0.00	274.41	3360.00	3634.41	3634.41	7.55	100.00
Jharkhand	7030.00	279.59	210.00	489.59	7519.59	3.72	6.51
Karnataka	10755.25	23033.56	3689.20	26722.76	37478.01	61.46	71.30
Kerala	519.54	2566.13	2008.15	4574.28	5093.82	50.38	89.80
Ladakh	0.00	57.81	89.00	146.81	146.81	39.38	100.00
Madhya Pradesh	21170.00	9947.64	2235.00	12182.64	33352.64	29.83	36.53
Maharashtra	27535.09	28933.63	3047.00	31980.63	59515.72	48.62	53.73
Manipur	36.00	22.97	105.00	127.97	163.97	14.01	78.04
Meghalaya	0.00	73.11	322.00	395.11	395.11	18.50	100.00
Mizoram	0.00	79.16	60.00	139.16	139.16	56.88	100.00
Nagaland	0.00	36.01	75.00	111.01	111.01	32.44	100.00
Odisha	9950.00	1088.29	2154.55	3242.84	13192.84	8.25	24.58
Punjab	5680.00	2343.63	1096.30	3439.93	9119.93	25.70	37.72
Rajasthan	13626.83	46608.04	412.50	47020.54	60647.37	76.85	77.53
Sikkim	0.00	62.67	2282.00	2344.67	2344.67	2.67	100.00
Tamil Nadu	18528.78	26905.07	2203.20	29108.27	47637.05	56.48	61.10
Telangana	11842.50	5524.98	2405.60	7930.58	19773.08	27.94	40.11
Tripura	1067.60	51.55		51.55	1119.15	4.61	4.61
Uttar Pradesh	31948.14	6503.63	501.60	7005.23	38953.37	16.70	17.98
Uttarakhand	664.00	1233.20	4785.35	6018.55	6682.55	18.45	90.06
West Bengal	13895.00	770.98	1341.20	2112.18	16007.18	4.82	13.20
Andaman & Nicobar	92.71	37.37		37.37	130.08	28.73	28.73
Chandigarh	0.00	78.85		78.85	78.85	100.00	100.00
Dadar & Nagar Haveli/Daman & Diu	0.00	138.65		138.65	138.65	100.00	100.00
Delhi	2100.40	506.37		506.37	2606.77	19.43	19.43
Lakshadweep	26.83	6.57		6.57	33.40	19.67	19.67
Pondicherry	32.50	81.51		81.51	114.01	71.49	71.49
Others	0.00	49.31		49.31	49.31	100.00	100.00
Total	258051.63	223273.43	51414.67	274688.10	532739.73	41.91	51.56

Energy generation - RE and Non-RE Sector

9.1 Share of Renewable Energy in total electricity generation during 2025-26:

India's renewable energy landscape in 2025–26 reflects strong regional leadership across different renewable energy sectors. States such as Rajasthan, Gujarat, and Karnataka have emerged as leaders across multiple renewable energy segments, while other states have established significant positions in specialized areas such as large hydro power and bio-energy. This geographical diversification of renewable energy resources not only strengthens the country's energy security but also supports balanced and sustainable progress towards national clean energy and climate goals.

During 2025–26, Rajasthan, Gujarat, Karnataka, Tamil Nadu, and Himachal Pradesh emerged as the top five states in terms of renewable electricity generation. Collectively, these states accounted for around 61% of the country's total renewable energy generation, underscoring their pivotal role in India's renewable energy transition. Their dominance reflects a combination of abundant natural resources, supportive policy frameworks, and sustained investments in renewable energy infrastructure. State-wise electricity generation from RE and Non RE sources are stipulated in **table 9.1**.

9.2 Generation of electricity from various Renewable Energy Sources:

Electricity generation from renewable energy (RE) sources during 2025–26 reflects a well-diversified energy mix, with total generation reaching 477.79 billion units (BU). Solar power emerged as the largest contributor, generating 174.76 BU, with major contributions from states such as Rajasthan, Gujarat, Tamil Nadu, and Karnataka. Rajasthan led the country in solar power generation, producing around 60 BU, thereby reinforcing its position as India's leading solar energy state. Large hydro power contributed 167.20 BU, with generation concentrated primarily in hilly states such as Himachal Pradesh, Uttarakhand, Jammu & Kashmir, and Karnataka, where favourable geographical conditions support hydroelectric development. Wind power generation stood at 106.70 BU and was largely concentrated in high-wind and coastal regions, particularly Gujarat, Tamil Nadu, and Karnataka. Bio-power also made a significant contribution, with notable generation recorded in Maharashtra, Karnataka, and Uttar Pradesh, supporting both renewable energy generation and effective utilization of biomass resources.

Overall, the renewable energy generation profile of 2025–26 demonstrates a balanced mix of solar, hydro, wind, and bio-energy resources. This diversification enhances the resilience of the power sector, reduces dependence on fossil fuels, and supports India's long-term objectives of achieving energy security, environmental sustainability, and a low-carbon economy. (For state wise renewable energy generation please Refer **Table 9.2**)

State wise electricity generation during 2025-26 from RE and Non RE sector, Solar Power, Wind power, Large Hydro Power, Small Hydro Power, Bio Power is described in this chapter.

Table 9.1 Share (%) of RE generation in Total Energy Generation during 2025-26

(in MU)

STATES / UTs	Non-RE	RE			Grand Total	Share (%)	
		RES	Hydro	Total		RES	RE
Andhra Pradesh	73830.22	18600.58	6190.06	24790.64	98620.86	18.86	25.14
Arunachal Pradesh	0.00	2.70	4854.46	4857.16	4857.16	0.06	100.00
Assam	7155.26	470.09	1424.54	1894.63	9049.89	5.19	20.94
Bihar	59345.84	432.65	0.00	432.65	59778.49	0.72	0.72
Chhattisgarh	168087.54	3628.05	351.61	3979.66	172067.20	2.11	2.31
Goa	0.00	65.24	0.00	65.24	65.24	100.00	100.00
Gujarat	78635.61	61458.00	6372.91	67830.91	146466.52	41.96	46.31
Haryana	25652.46	2380.45	0.00	2380.45	28032.91	8.49	8.49
Himachal Pradesh	0.00	2895.28	42827.62	45722.90	45722.90	6.33	100.00
Jammu & Kashmir	0.00	413.60	15663.32	16076.92	16076.92	2.57	100.00
Jharkhand	40599.65	36.93	145.61	182.54	40782.19	0.09	0.45
Karnataka	49339.83	42943.01	15601.21	58544.22	107884.05	39.80	54.27
Kerala	0.00	3601.16	9187.59	12788.75	12788.75	28.16	100.00
Ladakh	0.00	0.00	465.24	465.24	465.24	0.00	100.00
Madhya Pradesh	140609.40	13494.08	8088.74	21582.82	162192.22	8.32	13.31
Maharashtra	143511.65	23622.06	5483.02	29105.08	172616.73	13.68	16.86
Manipur	0.00	8.60	576.01	584.61	584.61	1.47	100.00
Meghalaya	0.00	159.90	879.22	1039.12	1039.12	15.39	100.00
Mizoram	0.00	54.82	263.98	318.80	318.80	17.20	100.00
Nagaland	0.00	97.90	228.33	326.23	326.23	30.01	100.00
Odisha	69371.55	1615.90	7253.62	8869.52	78241.07	2.07	11.34
Punjab	32527.13	2738.82	4291.63	7030.45	39557.58	6.92	17.77
Rajasthan	68420.09	68049.96	1070.61	69120.57	137540.66	49.48	50.25
Sikkim	0.00	12.35	2602.18	2614.53	2614.53	0.47	100.00
Tamil Nadu	82227.70	44393.37	5589.67	49983.04	132210.74	33.58	37.81
Telangana	58723.07	7722.37	6874.54	14596.91	73319.98	10.53	19.91
Tripura	5040.27	8.97	0.00	8.97	5049.24	0.18	0.18
Uttar Pradesh	167553.37	7896.05	1775.64	9671.69	177225.06	4.46	5.46
Uttarakhand	477.12	933.72	16533.16	17466.88	17944.00	5.20	97.34
West Bengal	87707.96	2064.82	2609.26	4674.08	92382.04	2.24	5.06
Andaman & Nicobar	369.03	30.65	0.00	30.65	399.68	7.67	7.67
Chandigarh	0.00	7.94	0.00	7.94	7.94	100.00	100.00
Dadar & Nagar Haveli/Daman & Diu	0.00	32.82	0.00	32.82	32.82	100.00	100.00
Delhi	2885.34	700.11	0.00	700.11	3585.45	19.53	19.53
Lakshadweep	66.38	0.09	0.00	0.09	66.47	0.14	0.14
Pondicherry	184.66	12.24	0.00	12.24	196.90	6.22	6.22
Total	1362321.13	310585.29	167203.78	477789.07	1840110.20	16.88	25.97

Source: CEA, MoP

Table 9.2 State-wise and source-wise Renewable Energy generation during 2025-26.

(in MU)

States /UTs	Small Hydro Power	Wind Power	Bio Power	Solar Power	Large Hydro	Total
Andhra Pradesh	438.46	8902.94	486.13	8773.06	6190.06	24790.65
Arunachal Pradesh	0.34	0.00	0.00	2.37	4854.46	4857.17
Assam	139.39	0.00	0.59	330.12	1424.54	1894.64
Bihar	23.44	0.00	81.50	327.71	0.00	432.65
Chhattisgarh	244.97	0.00	1469.91	1913.17	351.61	3979.66
Goa	0.00	0.00	8.14	57.11	0.00	65.25
Gujarat	196.59	33706.20	175.56	27379.65	6372.91	67830.91
Haryana	239.74	0.00	528.39	1612.32	0.00	2380.45
Himachal Pradesh	2693.75	0.00	0.00	201.53	42827.62	45722.90
Jammu & Kashmir	413.60	0.00	0.00	0.00	15663.32	16076.92
Jharkhand	19.29	0.00	0.00	17.64	145.61	182.54
Karnataka	2800.48	18804.62	3414.10	17923.81	15601.21	58544.22
Kerala	952.97	130.33	97.37	2420.50	9187.59	12788.76
Ladakh	0.00	0.00	0.00	0.00	465.24	465.24
Madhya Pradesh	514.87	4706.66	195.57	8076.98	8088.74	21582.82
Maharashtra	934.52	8610.62	3524.08	10552.84	5483.02	29105.08
Manipur	0.00	0.00	0.00	8.60	576.01	584.61
Meghalaya	159.90	0.00	0.00	0.00	879.22	1039.12
Mizoram	25.51	0.00	0.00	29.31	263.98	318.80
Nagaland	97.90	0.00	0.00	0.00	228.33	326.23
Odisha	620.05	0.00	86.53	909.33	7253.62	8869.53
Punjab	447.23	0.00	929.69	1361.90	4291.63	7030.45
Rajasthan	6.52	7345.17	777.10	59921.18	1070.61	69120.58
Sikkim	12.35	0.00	0.00	0.00	2602.18	2614.53
Tamil Nadu	307.56	24200.81	194.01	19690.99	5589.67	49983.04
Telangana	85.62	292.46	423.76	6920.53	6874.54	14596.91
Tripura	0.00	0.00	0.00	8.97	0.00	8.97
Uttar Pradesh	87.55	0.00	2505.77	5302.73	1775.64	9671.69
Uttarakhand	353.40	0.00	248.52	331.80	16533.16	17466.88
West Bengal	184.40	0.00	1461.93	418.49	2609.26	4674.08
Andaman & Nicobar	13.72	0.00	0.00	16.92	0.00	30.64
Chandigarh	0.00	0.00	0.00	7.94	0.00	7.94
Dadar & Nagar Haveli/Daman & Diu	0.00	0.00	12.64	20.18	0.00	32.82
Delhi	0.00	0.00	493.58	206.53	0.00	700.11
Lakshadweep	0.00	0.00	0.00	0.09	0.00	0.09
Pondicherry	0.00	0.00	0.00	12.24	0.00	12.24
Total	12014.12	106699.80	17114.85	174756.51	167203.78	477789.07

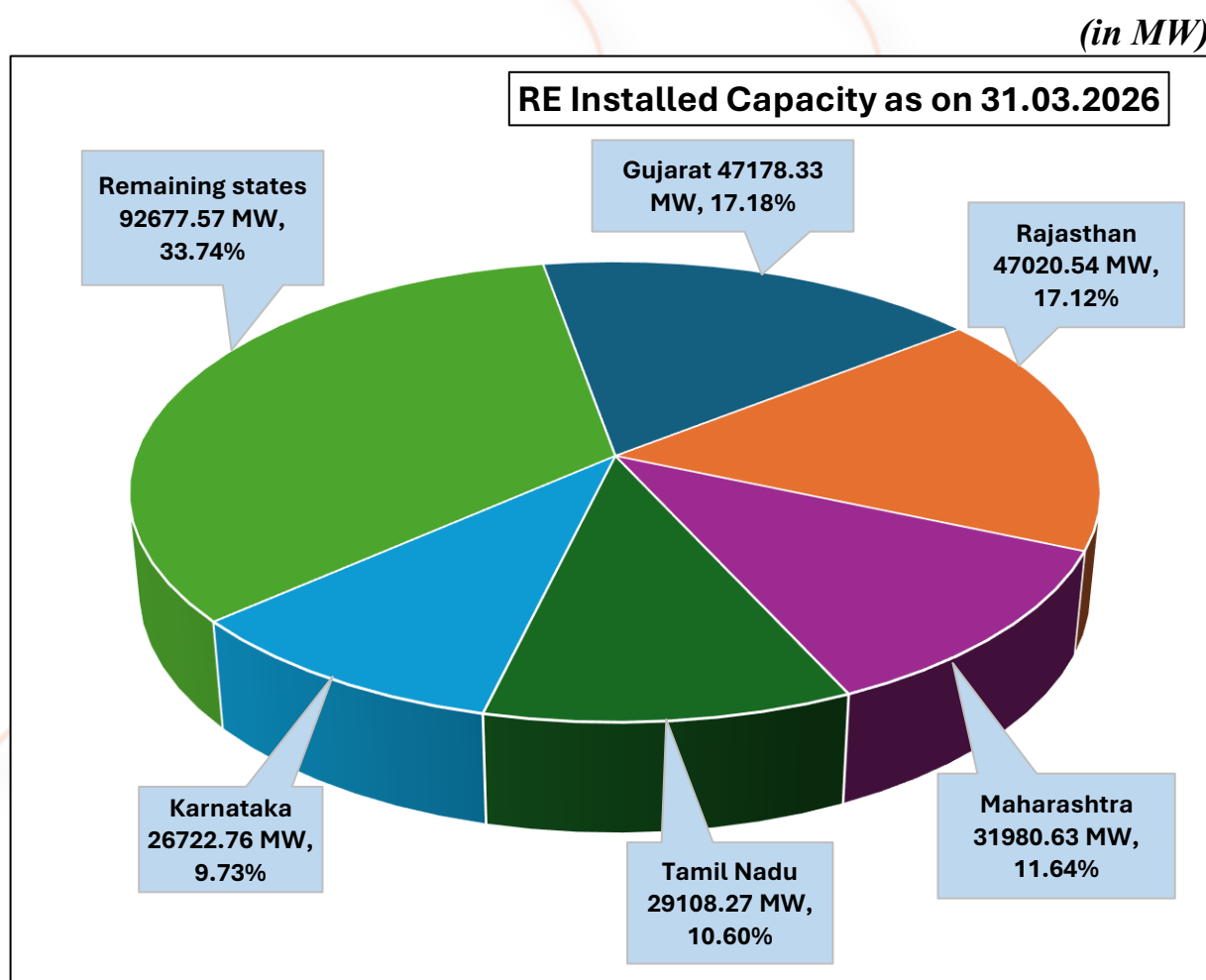
Source: CEA, MoP

CHAPTER 10

Top 5 states in Renewable Energy Installed Capacity

10.1 Top 5 states in RE installed capacity and their contribution in the country's cumulative RE Installed Capacity: As on 31st March 2026, Gujarat, Rajasthan, Maharashtra, Tamil Nadu, and Karnataka were the top five states in terms of installed renewable energy capacity in India. Gujarat emerged as the leading state, accounting for 17.18% of the country's total renewable energy installed capacity, closely followed by Rajasthan with a share of 17.12%. In comparison, during 2024–25, Rajasthan held the top position with a 15.51% share, while Gujarat contributed 15.17%. During 2025–26, Maharashtra, Tamil Nadu, and Karnataka accounted for 11.64%, 10.60%, and 9.73% of the national renewable energy installed capacity, respectively. In 2024–25, the corresponding shares were 10.18% for Maharashtra, 11.47% for Tamil Nadu, and 10.87% for Karnataka. Collectively, these five states accounted for 66.26% of India's total renewable energy installed capacity in 2025–26, highlighting their dominant role in the country's renewable energy sector. Their strong performance has been driven primarily by large-scale investments and capacity additions in solar and wind energy. (Refer Fig 10.1)

Fig 10.1 Top 5 states in RE installed capacity and its share (%)

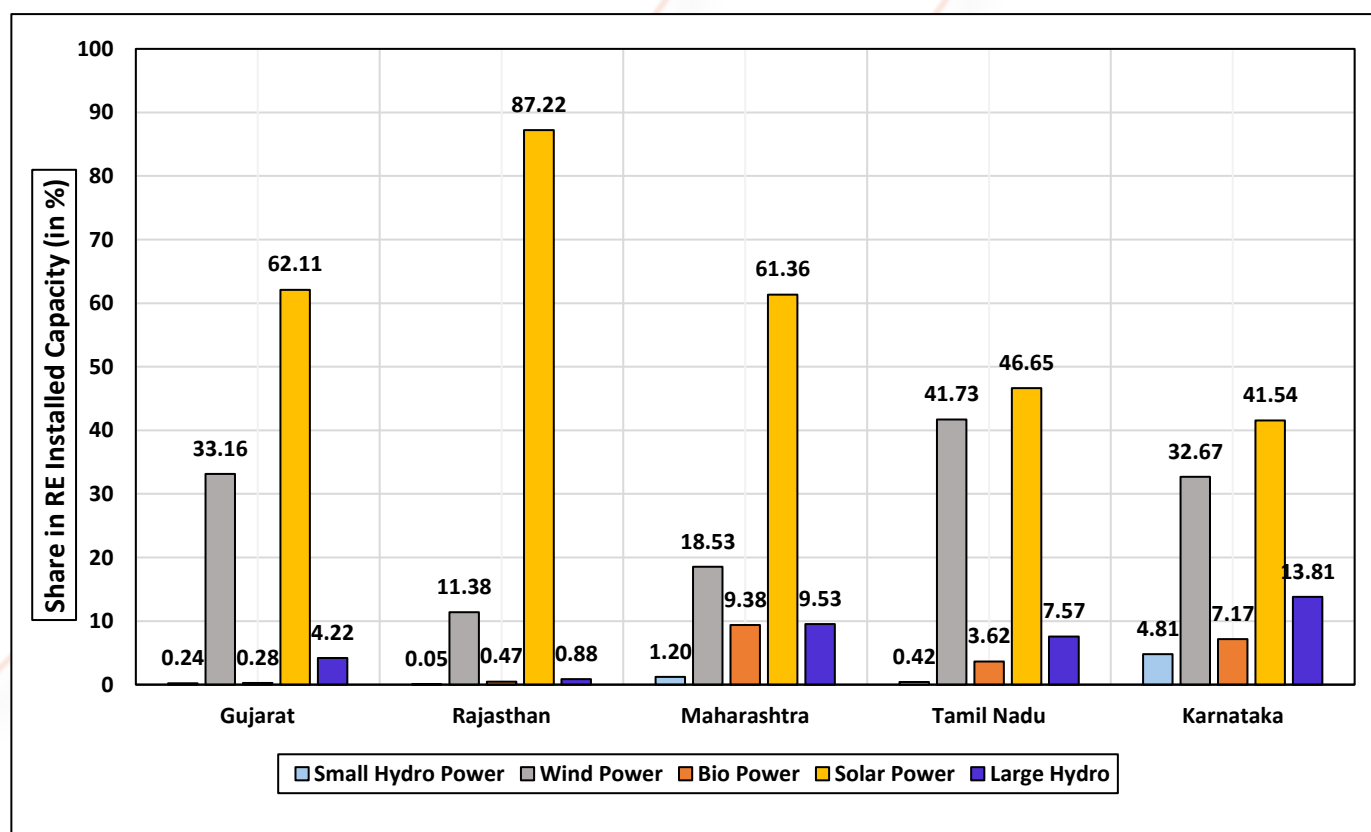


10.2 Contribution of various RE sources of top 5 RE installed capacity states within the respective state's RE installed Capacity:

An analysis of the composition of renewable energy installed capacity in the top five states as on 31st March 2026 indicates that solar power constituted the largest share in each state's renewable energy portfolio. Gujarat demonstrated a strong focus on solar energy, which accounted for 62.11% of its renewable energy installed capacity. Wind power contributed a significant 33.16%, while bio-power and hydro-power sources made relatively small contributions. Rajasthan also exhibited the highest dependence on solar energy, with 87.22% of its renewable energy installed capacity coming from solar power, followed by 11.38% from wind energy, while contributions from other renewable sources remained negligible. Maharashtra maintained a predominantly solar-based renewable energy portfolio, with solar accounting for 61.36% of its installed renewable capacity. This was followed by 18.53% from wind energy, while large hydro power and bio-energy contributed 9.53% and 9.38%, respectively. Tamil Nadu continued to exhibit a diversified renewable energy mix. Solar power accounted for 46.65% of its installed renewable capacity, closely followed by wind energy at 41.73%. Large hydro power and bio-power also made meaningful contributions, accounting for 7.57% and 3.62%, respectively. Karnataka likewise maintained a balanced renewable energy portfolio, with solar power (41.54%) and wind power (32.67%) forming the major components. The state also derived substantial capacity from large hydro power (13.81%), bio-power (7.17%), and small hydro power (4.81%). Overall, while solar power remained the dominant renewable energy source across all five leading states, the degree of diversification varied considerably. Rajasthan, Gujarat and Maharashtra were heavily solar-oriented, whereas in Tamil Nadu and Karnataka, no wide difference is shown in Solar and Wind installed capacity. (Refer Fig 10.2).

Fig 10.2 Share of various RE sources of top 5 RE installed capacity states within the state's RE installed capacity

(As on 31.03.2026)

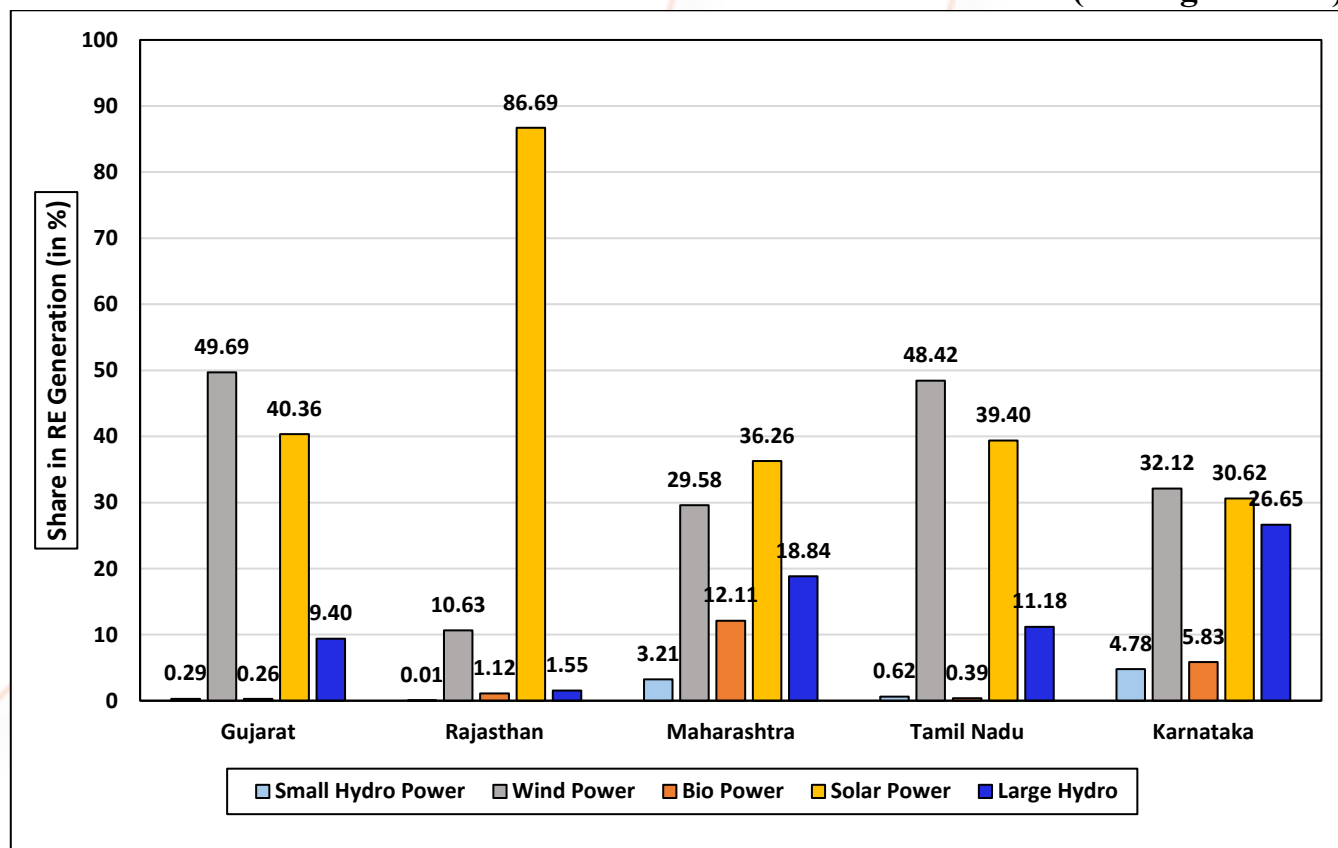


10.3 Contribution of various RE sources of top 5 RE installed capacity states in RE generation within the respective states:

The share of various renewable energy (RE) sources in the total electricity generation from renewable sources across the top five states highlights distinct generation patterns shaped by their resource endowments and energy infrastructure. Although Gujarat had the highest renewable energy installed capacity in the country, it ranked second in renewable electricity generation. The state's RE generation was led by wind power, which accounted for 49.69% of total renewable generation, followed by solar power with a share of 40.36%. Rajasthan, the second-largest state in terms of renewable energy installed capacity, emerged as the leading state in renewable electricity generation. Its renewable generation profile was overwhelmingly dominated by solar power, which contributed 86.69% of total RE generation. Wind power accounted for 10.63%. Maharashtra exhibited a relatively diversified renewable generation mix. Solar power contributed the largest share at 36.26%, followed by wind power (29.58%) and large hydro power (18.84%). Tamil Nadu relied predominantly on wind power, which accounted for 48.42% of its renewable electricity generation, followed by solar power at 39.40%. Karnataka maintained one of the most balanced renewable generation portfolios among the top five states. Wind power contributed 32.12%, closely followed by solar power (30.62%) and large hydro power (26.65%). Overall, the analysis reveals significant variation in renewable electricity generation patterns across the leading states. While Rajasthan's generation is overwhelmingly solar-driven, Gujarat and Tamil Nadu derive a substantial share from wind power, and Karnataka and Maharashtra benefit from a more diversified mix that includes significant hydro and bio-energy contributions, enhancing the resilience and stability of their renewable energy portfolios. (Refer Fig. 10.3)

Fig 10.3 Share of the various RE sources of top 5 RE installed capacity states within their respective total RE generation

(During 2025-26)



CHAPTER 11

GUJARAT

11.1 Status of RE and Non-RE sector in Gujarat:

As on 31st March 2026, Gujarat emerged as the largest contributor to India's electricity installed capacity following Rajasthan, with a total RE installed capacity of 47.18 GW, accounting for 17.18% of the country's total installed capacity under the RE sector. Over the eight-year period from 2018–19 to 2025–26, Gujarat witnessed substantial growth in RE installed capacity, increasing from 9.34 GW to 47.18 GW, representing a growth of 405.15% with a CAGR of approximately 22.44%. In comparison, the installed capacity under the Non-RE sector increased marginally from 23.48 GW to 24.51 GW, reflecting a growth of 4.38% and a CAGR of 0.54% during the period.

The share of RE in Gujarat's total installed capacity increased significantly from 28.45% in 2017–18 to 65.81% by 2025–26, indicating a major shift towards renewable energy in the state's power capacity mix. The year 2025–26 marked a significant milestone, with an annual RE capacity addition of 13,785.30 MW, driven primarily by solar energy capacity additions. Solar energy remained the dominant component of Gujarat's RE portfolio, with an installed capacity of 29.30 GW, contributing 62.11% of the state's total RE installed capacity, followed by wind energy with an installed capacity of 15.64 GW, accounting for 33.16%.

During 2025–26, Gujarat generated 67.83 BU of electricity from renewable sources, constituting 46.31% of the state's total electricity generation. In terms of electricity generation from renewable energy sources, wind energy contributed the highest share, accounting for 49.69% of Gujarat's total RE generation, while solar energy contributed 40.36%. This performance placed Gujarat as the second-highest state in the country in terms of renewable energy generation, contributing 14.20% to India's total RE generation.

Further, Gujarat ranked second in combined electricity generation from solar, wind, bio-power, and small hydro power sources, generating 61.46 BU of electricity, which accounted for 19.79% of the national generation from these technologies.

This chapter provides detailed analysis of the installed capacity under the RE and Non-RE sectors since 2017–18, installed capacity trends of solar power, wind power, and small hydro power since 2014–15, electricity generation from various renewable energy sources, and an assessment of the overall renewable energy sector performance in the state of Gujarat.

INSTALLED CAPACITY

Table 11.1.1 Cumulative Installed Capacity under RE and Non-RE sector since 2017-18
(in MW)

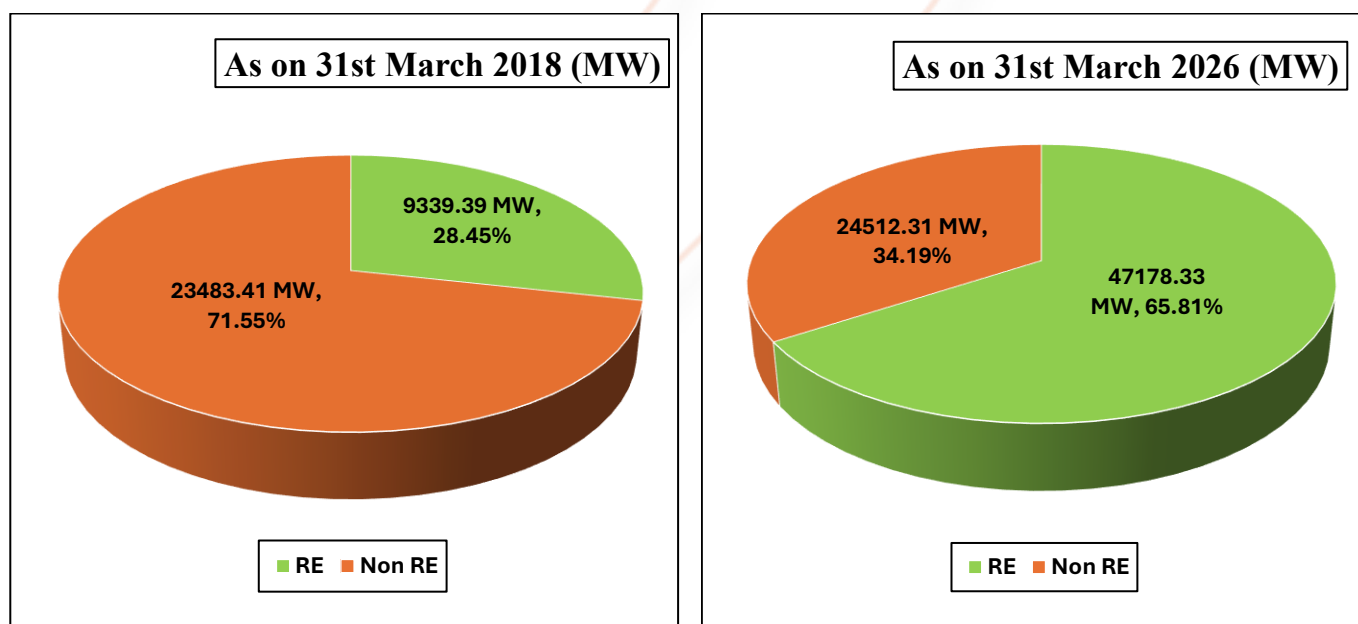
Year	RE	Non-RE	Total	Share (%)		Growth (%)	
				RE	Non-RE	RE	Non-RE
2017-18	9339.39	23483.41	32822.00	28.45	71.55		
2018-19	10697.72	23483.41	34181.13	31.30	68.70	14.54	0.00
2019-20	12683.77	24223.41	36907.18	34.37	65.63	18.57	3.15
2020-21	15204.25	24083.41	39287.66	38.70	61.30	19.87	-0.58
2021-22	18577.90	24083.41	42661.31	43.55	56.45	22.19	0.00
2022-23	21425.85	24083.41	45509.26	47.08	52.92	15.33	0.00
2023-24	27461.72	25483.41	52945.13	51.87	48.13	28.17	5.81
2024-25	33393.03	24828.41	58221.44	57.36	42.37	21.60	-2.57
2025-26	47178.33	24512.31	71690.64	65.81	34.19	41.28	-1.27
Gr (2017-18 to 2025-26)	405.15%	4.38%	118.42%				
CAGR (2017-18 to 2025-26)	22.44%	0.54%	10.26%				

Source: NPP, MoP & MNRE

Gr=Growth (%)

CAGR=Compound Annual Growth Rate

Fig. 11.1.1 Share of RE Installed Capacity

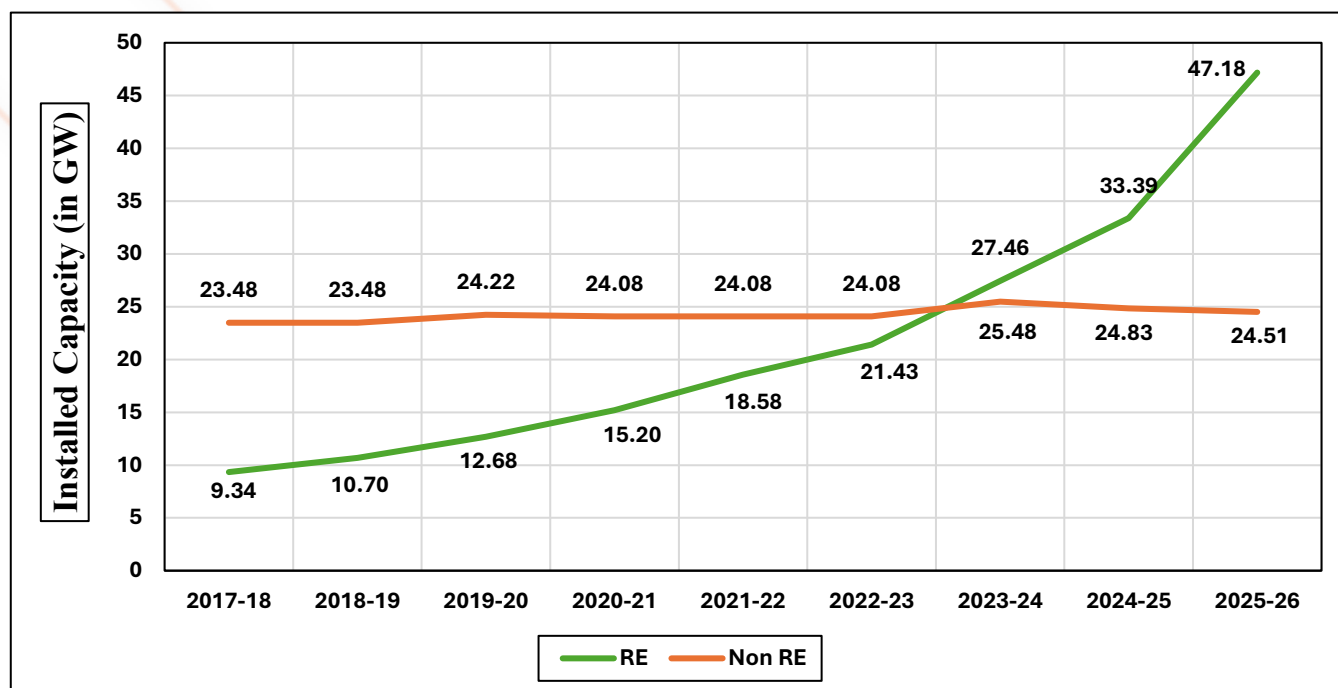


The pie charts illustrate the shift in the installed capacity mix between the Renewable Energy (RE) and Non-Renewable Energy (Non-RE) sectors in Gujarat as on 31st March 2018 and 31st March 2026.

As on 31st March 2018, the installed capacity was predominantly contributed by the Non-RE sector, accounting for 71.55% of the total installed capacity, while the RE sector contributed 28.45%. However, by 31st March 2026, a significant transformation was observed, with the share of RE installed capacity increasing

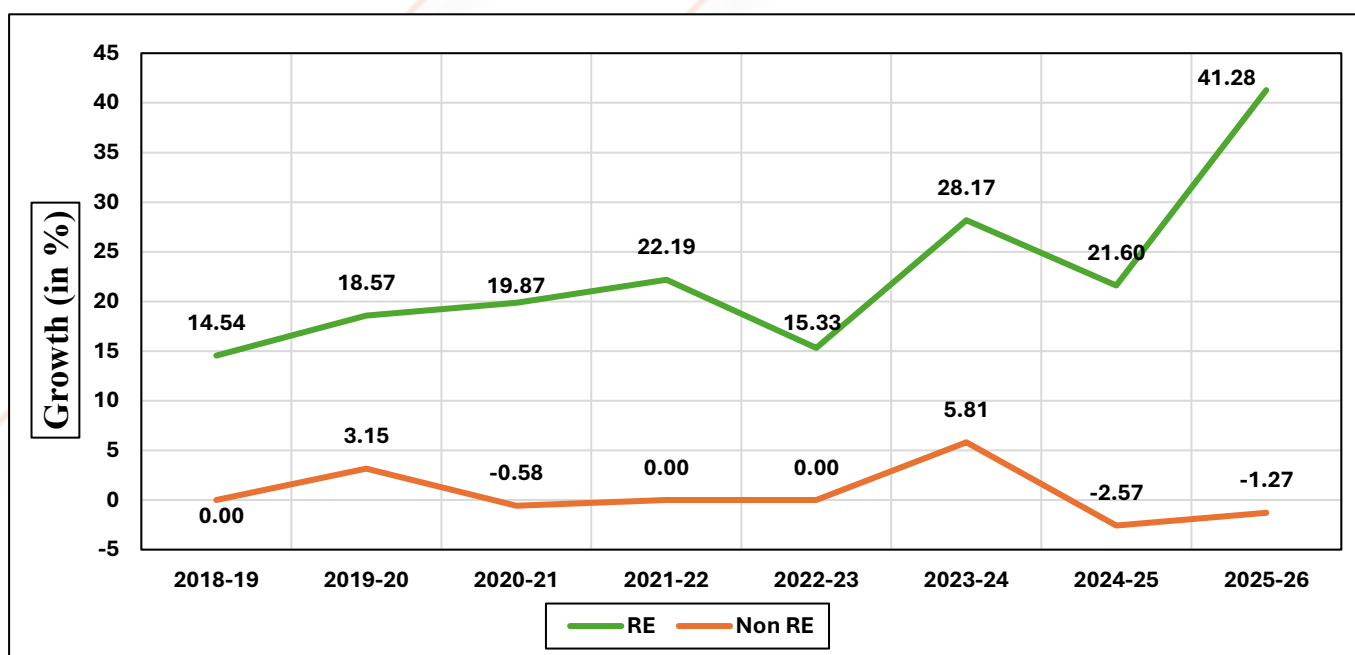
substantially to 65.81%, while the share of Non-RE installed capacity declined to 34.19%. This shift highlights Gujarat's rapid transition towards a renewable energy-based power capacity mix over the period.

Fig11.1.2 Trend in installed Capacity



The graph illustrates the trend of installed capacity under Renewable Energy (RE) and Non-Renewable Energy (Non-RE) sources from 2017–18 to 2025–26. The RE installed capacity shows a consistent and substantial increase, rising from 9.34 GW in 2017–18 to 47.18 GW in 2025–26, reflecting the rapid expansion of renewable energy infrastructure in the state. However, the installed capacity under the non-RE sector remained largely stable during the period, fluctuating marginally around 24 GW. A significant milestone was achieved around 2023–24, when RE installed capacity surpassed non-RE installed capacity, indicating a major transition in Gujarat's power capacity landscape towards renewable energy sources.

Fig 11.1.3 Year wise Growth (%) in installed Capacity



The year-wise growth in installed capacity highlights a clear divergence between the Renewable Energy (RE) and Non-Renewable Energy (Non-RE) sectors during the period from 2018–19 to 2025–26. The RE sector witnessed consistent and robust growth throughout the period, increasing from 14.54% in 2018–19 to a peak growth rate of 41.28% in 2025–26. This reflects the sustained expansion of renewable energy capacity and the growing emphasis on clean energy sources, whereas, the non-RE sector exhibited largely stagnant growth, with capacity additions remaining marginal and fluctuating around zero. While certain years recorded moderate growth, such as 3.15% in 2019–20 and 5.81% in 2023–24, the sector also experienced a decline in installed capacity, registering a decrease of 1.27% during 2025–26. The contrasting trends indicate a significant shift in the state’s power capacity development towards renewable energy sources.

11.2 Installed capacity under Solar, Wind, Bio Power and Small Hydro Power (RES):

Gujarat’s renewable energy landscape has undergone a significant transformation over the past decade, driven by strong growth across major clean energy technologies. Solar power has emerged as the key contributor to this transition, witnessing a remarkable increase of 2796.43% in installed capacity from 2014–15 to 2025–26, with a CAGR of 35.80%. Wind power, which has traditionally been a major strength of Gujarat’s renewable energy sector, also recorded steady growth of 339.86% during the same period, with a CAGR of 14.41%. A significant milestone was achieved in 2023–24, when installed capacity from solar power surpassed wind power capacity for the first time, and this trend continued during 2025–26. Meanwhile, bio-power and small hydro power also registered consistent growth, increasing by 64.62% and 585.01%, respectively, during the period through continuous capacity additions.

The details of installed capacity under Solar Power, Wind Power, Bio-Power, and Small Hydro Power are provided in Table 11.2.1.

Table 11.2.1: Cumulative Installed Capacity under solar, wind, bio power and small hydro power (RES) since 2014-15

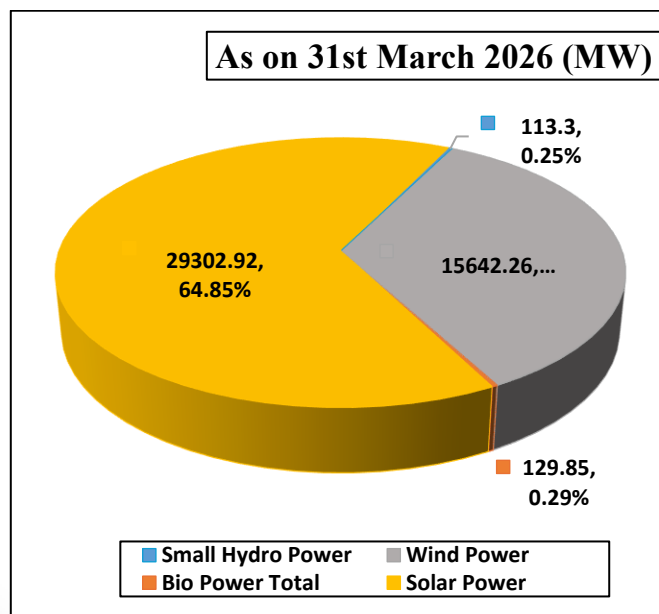
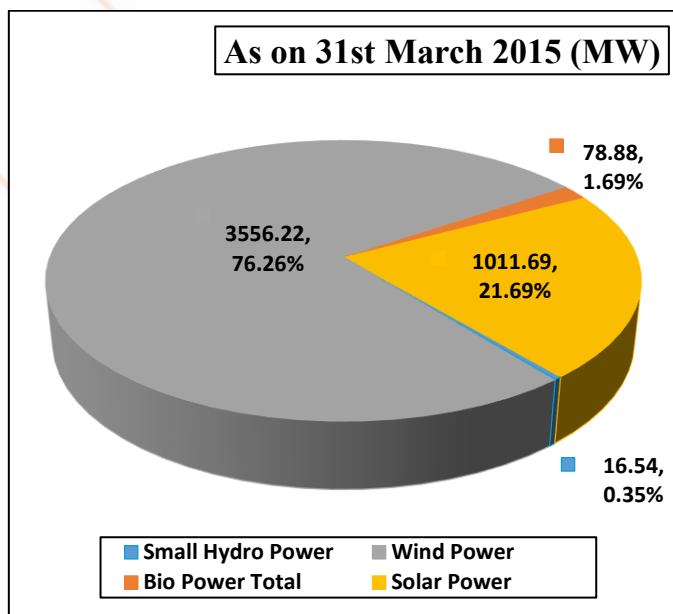
(in MW)

Year	Small Hydro Power	Wind Power	Bio-Power	Solar Power	Total	Growth (%)
2014-15	16.54	3556.22	78.88	1011.69	4663.33	6.55
2015-16	16.54	3948.62	78.92	1137.82	5181.90	11.12
2016-17	16.54	5340.62	79.99	1278.19	6715.34	29.59
2017-18	28.54	5613.42	81.24	1626.19	7349.39	9.44
2018-19	61.24	6073.07	95.03	2478.32	8707.66	18.48
2019-20	68.95	7541.52	96.53	2986.77	10693.77	22.81
2020-21	82.69	8561.82	99.87	4469.87	13214.25	23.57
2021-22	89.39	9209.22	109.26	7180.03	16587.90	25.53
2022-23	91.64	9978.92	110.73	9254.56	19435.85	17.17
2023-24	91.64	11722.72	112.48	13544.88	25471.72	31.06
2024-25	106.64	12677.48	122.25	18496.66	31403.03	23.29
2025-26	113.30	15642.26	129.85	29302.92	45188.33	43.90
Gr (2014-15 to 2025-26)	585.01%	339.86%	64.62%	2796.43%	869.01%	
CAGR (2014-15 to 2025-26)	19.12%	14.41%	4.64%	35.80%	22.93%	

Gr=Growth (%)

CAGR=Compound Annual Growth Rate(%)

Fig 11.2.1 Share of various sources in RES Cumulative Installed capacity

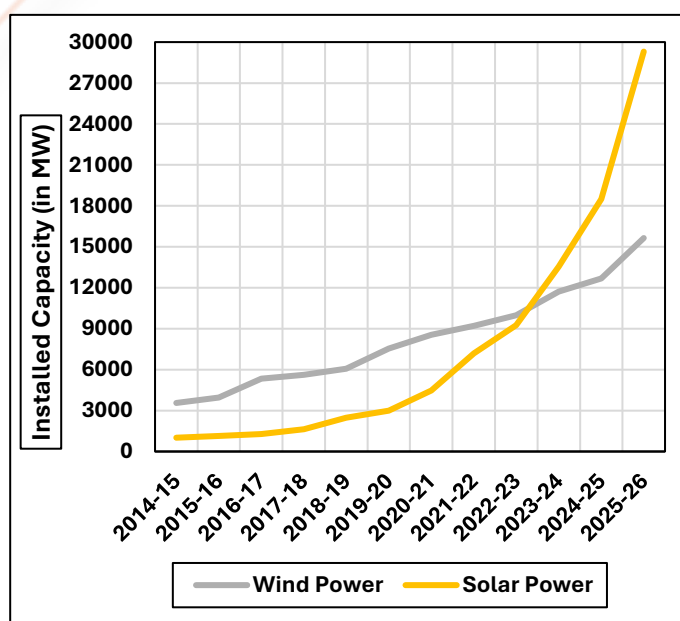
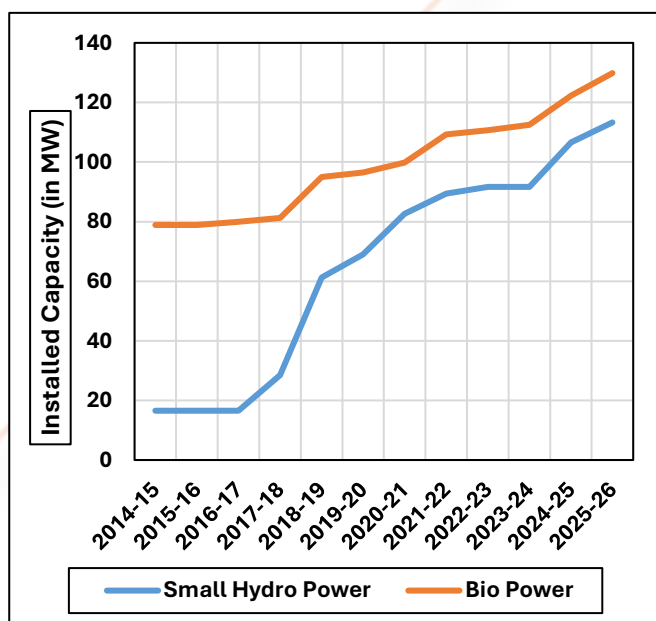


As on 31st March 2015, Gujarat's renewable energy landscape was predominantly driven by wind power, which accounted for 76.26% of the total renewable energy installed capacity. Solar power contributed 21.69%, while bio-power and small hydro power had relatively limited shares of 1.69% and 0.35%, respectively.

A decade later, as on 31st March 2026, Gujarat's renewable energy profile witnessed a significant transformation. Solar power emerged as the dominant source of renewable energy, accounting for 64.85% of the total RE installed capacity. Although wind power continued to remain a major contributor, its share declined to 34.62%. Bio-power and small hydro power continued to maintain marginal contributions, with shares of 0.29% and 0.25%, respectively.

The shift in the renewable energy mix highlights Gujarat's transition from a wind-dominated renewable energy portfolio to a solar-led clean energy capacity landscape.

Fig 11.2.2 Trend in cumulative Installed Capacity

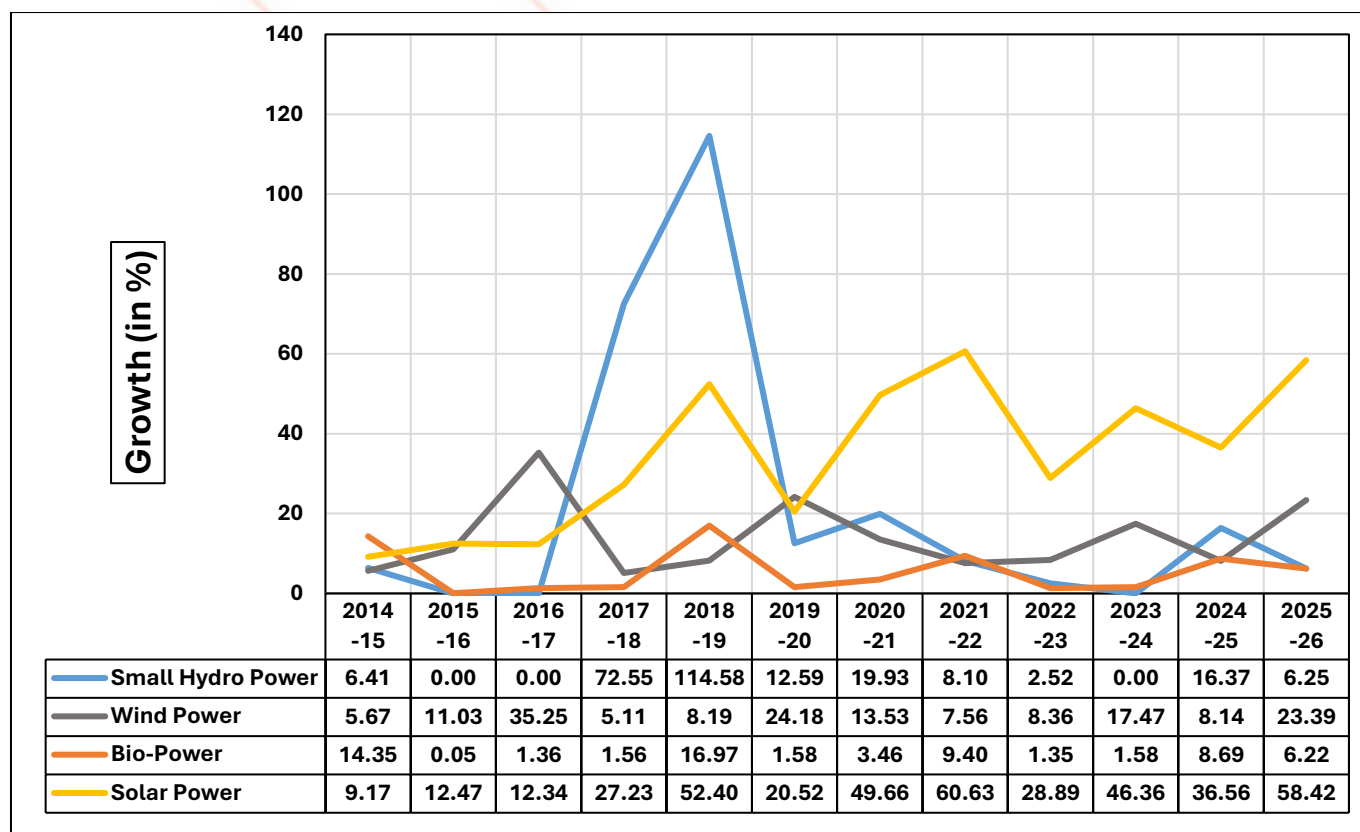


The cumulative installed capacity trends from 2014–15 to 2025–26 indicate varied growth patterns across different renewable energy sources. Small Hydro Power witnessed steady growth, particularly after 2017–18, reaching an installed capacity of 113.30 MW by 2025–26. Bio-Power capacity remained relatively stable throughout the period, with only marginal growth observed over the years.

Wind Power demonstrated consistent growth, increasing from 3556.22 MW in 2014–15 to 15,642.26 MW by 2025–26, although the pace of capacity addition moderated after 2022–23. Solar Power recorded the most significant growth trajectory, increasing from 1,011.69 MW in 2014–15 and accelerating rapidly after 2018–19 to reach over 29,300 MW by 2025–26, surpassing wind power capacity.

The trend highlights solar energy as the fastest-growing renewable energy source and the key driver behind the overall expansion of Gujarat's renewable energy installed capacity.

Fig 11.2.3 Year wise growth (%) in installed capacity



The year-wise growth in installed capacity across renewable energy sources from 2014–15 to 2025–26 highlights distinct growth patterns among different technologies. Small Hydro Power recorded its highest growth between 2017–18 and 2018–19, reaching a peak of 114.58%, followed by a decline and relatively moderate growth in subsequent years.

Wind Power witnessed fluctuating growth during the period, with the highest growth of 35.25% recorded in 2016–17. However, capacity addition slowed significantly in the following years, with intermittent growth trends observed thereafter. Bio-Power capacity remained largely stagnant, showing only marginal increases with limited growth spikes during 2014–15 and 2018–19, indicating minimal expansion over the period.

Solar Power demonstrated consistent and robust growth, particularly during 2015–16 to 2021–22, reaching a peak growth rate of 60.63% in 2021–22. The sector again recorded strong growth of 58.42% in 2025–26. Despite minor fluctuations, solar power continued to be the primary contributor to renewable energy capacity expansion.

ENERGY GENERATION

11.3 Energy Generation during 2025-26:

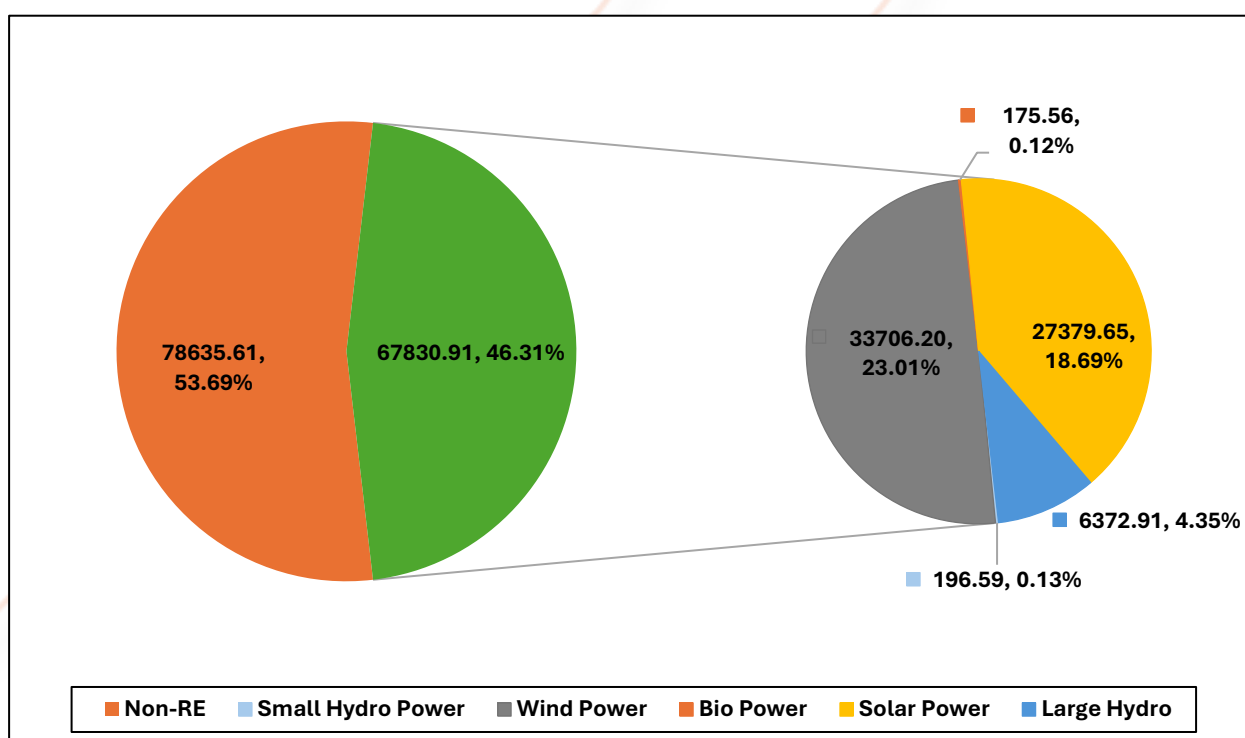
During 2025–26, Gujarat recorded a total electricity generation of 146.47 BU, of which 67.83 BU, equivalent to 46.31% of the total generation, was contributed by Renewable Energy (RE) sources. Among the renewable energy sources, wind power emerged as the largest contributor, generating 33.71 BU, followed by solar power with a generation of 27.38 BU. Together, wind and solar power accounted for 90.06% of the total electricity generation from RE sources in the state. Large hydro power contributed 6.37 BU, while small hydro power and bio-power contributed 0.20 BU and 0.18 BU, respectively.

Gujarat achieved a significant milestone by securing the second position in the country in terms of electricity generation from renewable energy sources during 2025–26. The state's renewable energy generation of 67.83 BU accounted for 14.20% of India's total electricity generation from RE sources. Further, Gujarat ranked second in combined electricity generation from solar, wind, bio-power, and small hydro power, with a total generation of 61.46 BU, contributing 19.79% to the national generation from these technologies.

Figure 11.3.1 presents the detailed share of electricity generation from RE and Non-RE sources in the total electricity generation mix of Gujarat.

Fig 11.3.1 RE share in total electricity generation during 2025-26

(in MU)



CHAPTER 12

RAJASTHAN

12.1 Status of RE and Non-RE Sector in Rajasthan:

Rajasthan has emerged as India's second-largest state having installed capacity under renewable energy sector after Gujarat, driven by a substantial expansion of its renewable energy capacity over recent years. As on 31st March 2026, the state's total installed power capacity was at 60.65 GW, of which renewable energy constituted 77.53%, a significant increase from 40.51% of 2017–18. Over this eight-year period, renewable energy capacity increased from 7.29 GW to 47.02 GW, recording an impressive growth of 545.06%. This growth far outpaced the overall increase in installed capacity of 237.07% and the relatively modest 27.32% growth in non-renewable capacity. Rajasthan accounted for 17.12% of the country's total installed renewable energy capacity.

Annual growth rate of cumulative renewable energy capacity remained consistently above 12.82%, except during 2020–21, whereas non-renewable capacity either stagnated or grew at rates below 6.17% annually. A major milestone was achieved in 2021–22 when renewable energy capacity surpassed non-renewable capacity for the first time, supported by a record annual growth rate of 61.40%.

The state's renewable energy portfolio is overwhelmingly dominated by solar power. Solar installed capacity expanded from 1,000.23 MW of 2014–15 to 41,012.62 MW by 2025–26, representing an extraordinary growth of 4,000.32% and a CAGR of 40.16%. During the same period, wind power capacity increased from 3,308.52 MW to 5,349.15 MW, registering growth of 61.68% and a CAGR of 4.46%, while bio-power capacity enhanced from 119.97 MW to 222.42 MW. Consequently, the technology mix within the renewable energy sector underwent a dramatic transformation, with wind power's share declining from 74.31% of total renewable capacity in 2014–15 to 11.48% by 2025–26, whereas the share of solar power increased from 24.46% to 87.99% during the same period.

This transformation in installed capacity has been reflected in electricity generation as well. During 2025–26, Rajasthan generated a total of 137.54 billion units (BU) of electricity, of which 69.12 BU, accounting for 50.25%, originated from renewable energy sources. The state ranked first in the country in renewable energy generation during the year, contributing 14.47% of India's electricity generation from renewable sources. Rajasthan also retained its leading position in overall electricity generation from solar, wind, bio-power, and small hydro sources, producing 68.05 BU, which constituted 21.91% of the nation's total electricity generation from these renewable energy sources. Renewable energy generation in the state increased by 20.52% compared to 2024–25.

This chapter presents a detailed analysis of Rajasthan's renewable and non-renewable installed capacity since 2017–18, the growth of solar, wind, and small hydro power capacity since 2014–15, and electricity generation from various renewable energy sources during 2025–26. It highlights the key trends, achievements, and structural changes that have shaped the state's renewable energy sector over the years.

INSTALLED CAPACITY

Table 12.1.1 Cumulative Installed Capacity in RE and Non-RE sector since 2017-18
(in MW)

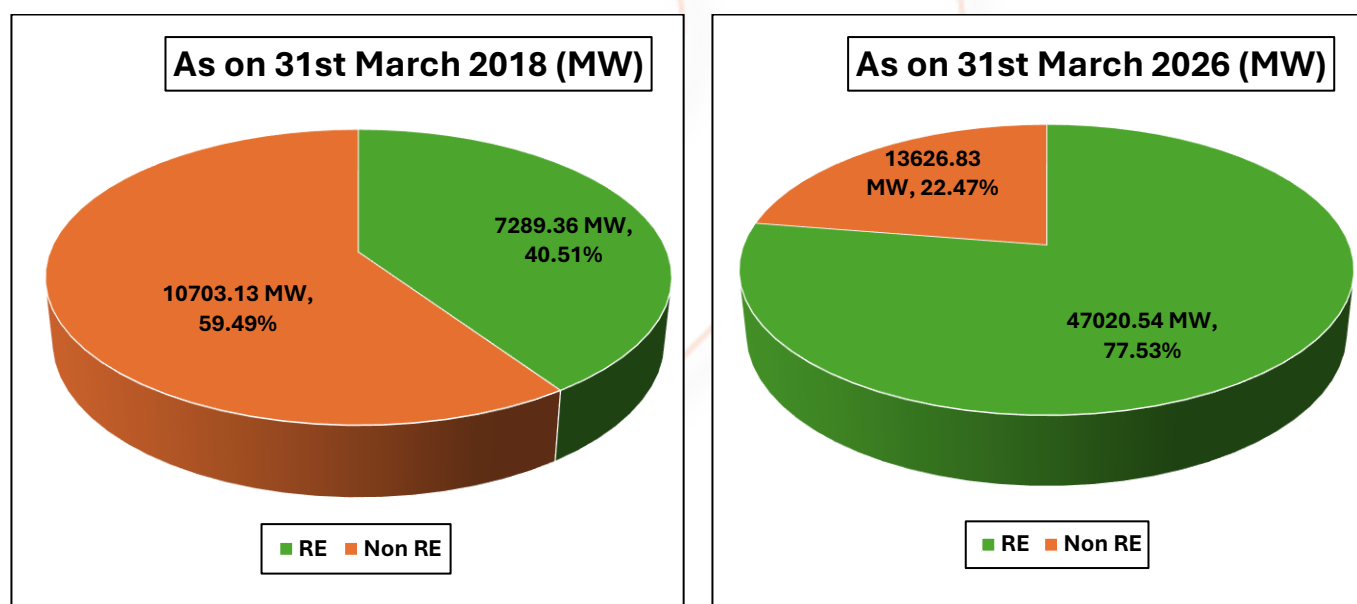
Year	RE	Non-RE	Total	Share (%)		Growth (%)	
				RE	Non-RE	RE	Non-RE
2017-18	7289.36	10703.13	17992.49	40.51	59.49		
2018-19	8223.73	11363.13	19586.86	41.99	58.01	12.82	6.17
2019-20	10134.97	12023.13	22158.10	45.74	54.26	23.24	5.81
2020-21	10812.35	12023.13	22835.48	47.35	52.65	6.68	0.00
2021-22	17451.62	12683.13	30134.75	57.91	42.09	61.40	5.49
2022-23	22809.05	12682.83	35491.88	64.27	35.73	30.70	0.00
2023-24	27103.89	12982.83	40086.72	67.61	32.39	18.83	2.37
2024-25	34136.34	12982.83	47119.17	72.45	27.55	25.95	0.00
2025-26	47020.54	13626.83	60647.37	77.53	22.47	37.74	4.96
Gr (2017-18 to 2025-26)	545.06%	27.32%	237.07%				
CAGR (2017-18 to 2025-26)	26.24%	3.06%	16.40%				

Source: NPP, MoP & MNRE

Gr=Growth (%) ,

CAGR=Compound Annual Growth Rate

Fig. 12.1.1 Share of RE in Installed Capacity (in MW)



Over the past eight years, Rajasthan's power sector has witnessed a significant transformation, marked by a decisive shift from conventional non-renewable sources to renewable energy, particularly solar and wind power. As on 31st March 2018, renewable energy accounted for 40.51% of the state's total installed power capacity, while non-renewable sources held the dominant share of 59.49%. By 31st March 2026, this position had reversed substantially, with renewable energy emerging as the predominant source, contributing 77.53% of the total installed capacity, while the share of non-renewable sources declined to 22.47%. This remarkable transition underscores Rajasthan's growing leadership in the adoption and expansion of clean energy infrastructure.

Fig 12.1.2 Trend in installed Capacity

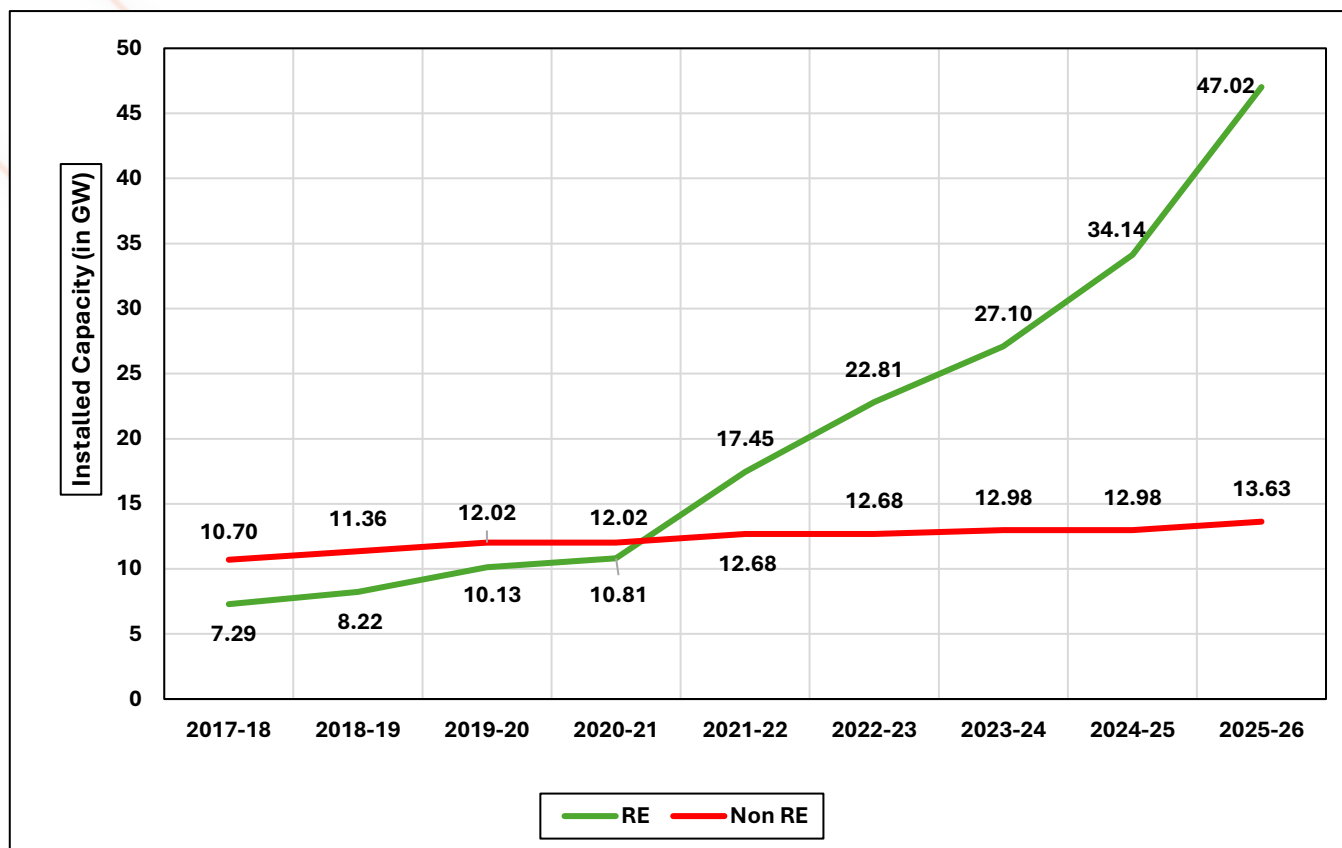
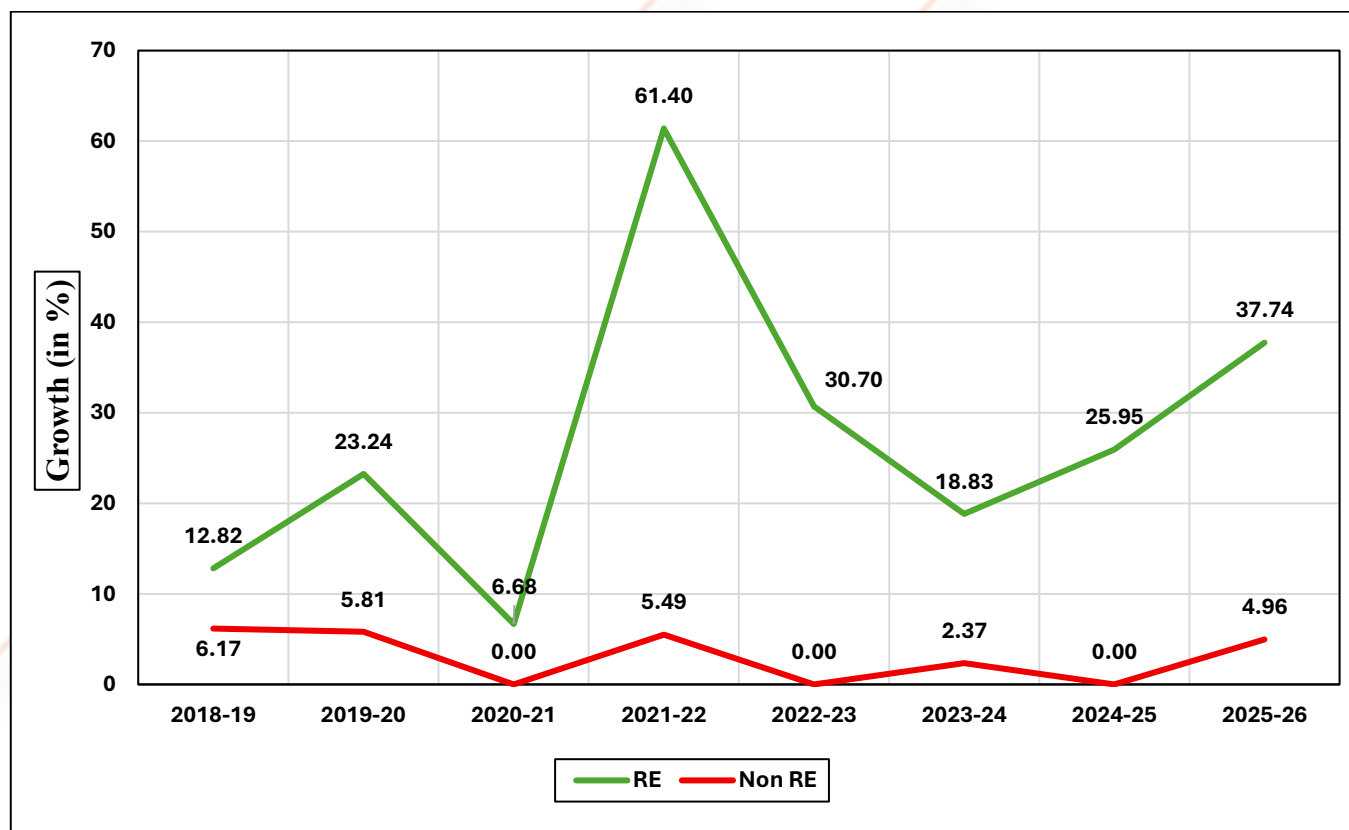


Fig 12.1.3 Growth (%) in installed Capacity



Rajasthan has recorded exceptional growth in renewable energy (RE) installed capacity during the period from 2017–18 to 2025–26. The state's RE capacity increased from 7,289.36 MW in 2017–18 to 47,020.54 MW in 2025–26, reflecting an impressive overall growth of 545.06% and a Compound Annual Growth Rate (CAGR) of 26.24%. The highest year-on-year expansion was achieved in 2021–22, when cumulative installed renewable capacity grew by more than 61% over the previous year.

However, growth of non-renewable (Non-RE) installed capacity remained relatively subdued during the same period. Non-RE capacity rose marginally from 10,703.13 MW of 2017–18 to 13,626.83 MW in 2025–26, registering an overall growth of 27.32% and a CAGR of only 3.06%.

The stark contrast between the growth trajectories of renewable and non-renewable capacity highlights Rajasthan's sustained commitment to clean energy development. It also underscores the state's increasingly important contribution towards advancing India's renewable energy ambitions and facilitating the transition to a low-carbon power sector.

12.2 Installed Capacity under Wind, Solar, Small Hydro & Bio Energy (RES):

Rajasthan's renewable energy sector has undergone a significant transformation over the past decade, led by the rapid growth of solar power. Solar installed capacity recorded a CAGR of 40.16%, while wind power grew at a CAGR of 4.46%, resulting in solar energy becoming the dominant component of the state's renewable energy capacity mix. Details of installed capacity under RES is given in the **Table 12.2.1**.

Table 12.2.1: Cumulative Installed Capacity under Solar, wind, Bio Power and Small Hydro Power (RES) since 2014-15

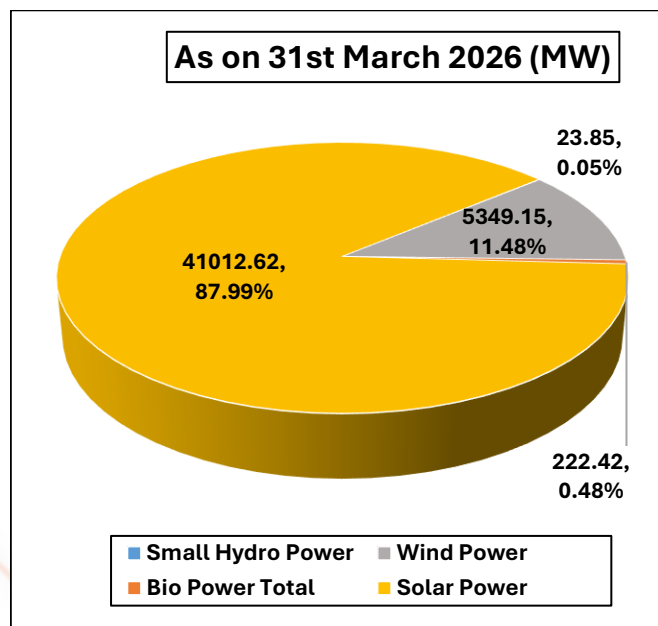
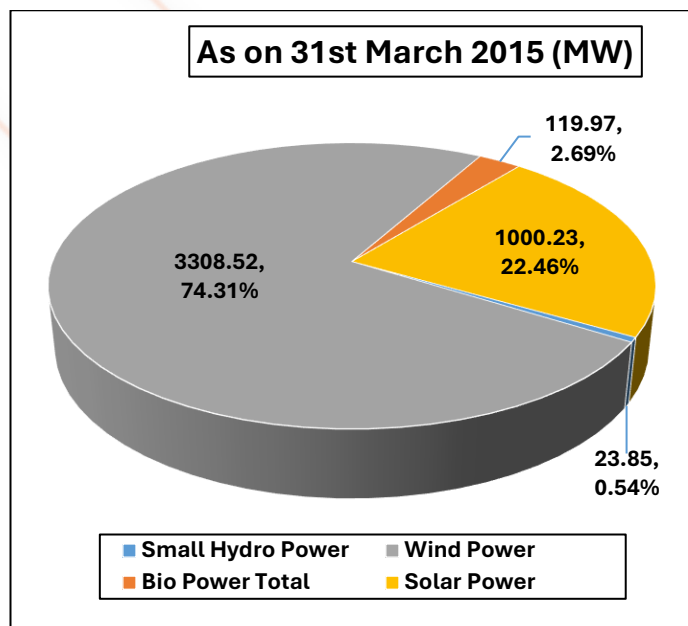
(in MW)

Year	Small Hydro Power	Wind Power	Bio-Power	Solar Power	Total	Growth (%)
2014-15	23.85	3308.52	119.97	1000.23	4452.57	20.83
2015-16	23.85	3994.02	119.97	1346.09	5483.93	23.16
2016-17	23.85	4281.72	125.13	1907.99	6338.69	15.59
2017-18	23.85	4297.72	125.13	2431.66	6878.36	8.51
2018-19	23.85	4299.72	125.13	3364.03	7812.73	13.58
2019-20	23.85	4299.72	125.13	5275.27	9723.97	24.46
2020-21	23.85	4326.82	125.08	5925.6	10401.35	6.97
2021-22	23.85	4326.82	125.08	12564.87	17040.62	63.83
2022-23	23.85	5193.42	125.08	17055.7	22398.05	31.44
2023-24	23.85	5195.82	125.64	21347.58	26692.89	19.18
2024-25	23.85	5208.75	206.27	28286.47	33725.34	26.35
2025-26	23.85	5349.15	222.42	41012.62	46608.04	38.20
Gr (2014-15 to 2025-26)	0.00%	61.68%	85.40%	4000.32%	946.77%	
CAGR (2014-15 to 2025-26)	0.00%	4.46%	5.77%	40.16%	23.80%	

Gr=Growth (%)

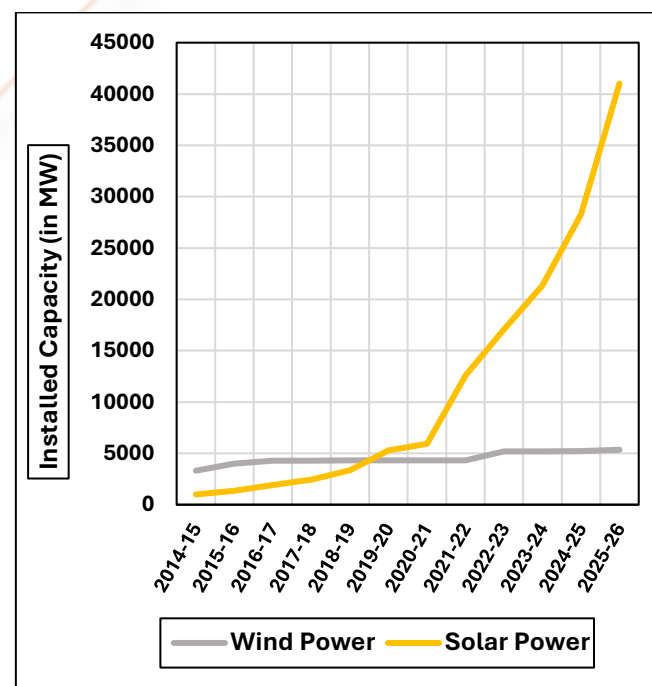
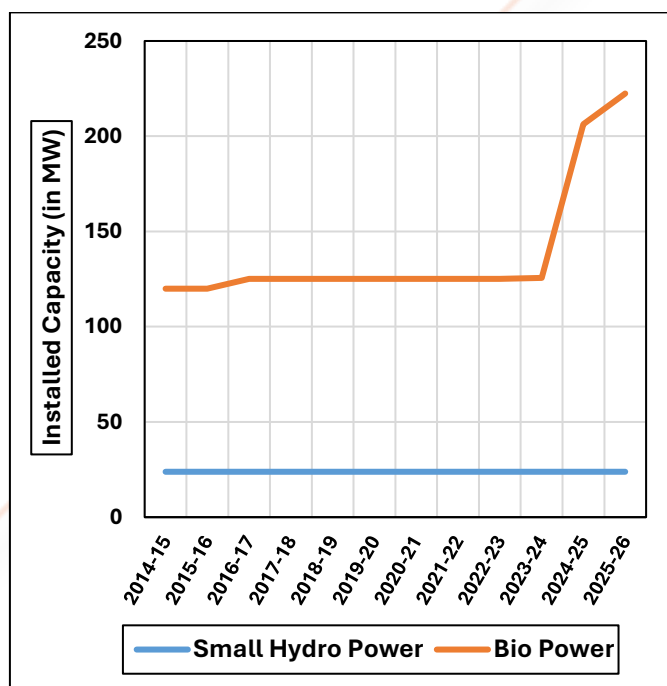
CAGR=Compound Annual Growth Rate

Fig 12.2.1 Share (%) in Cumulative Installed capacity



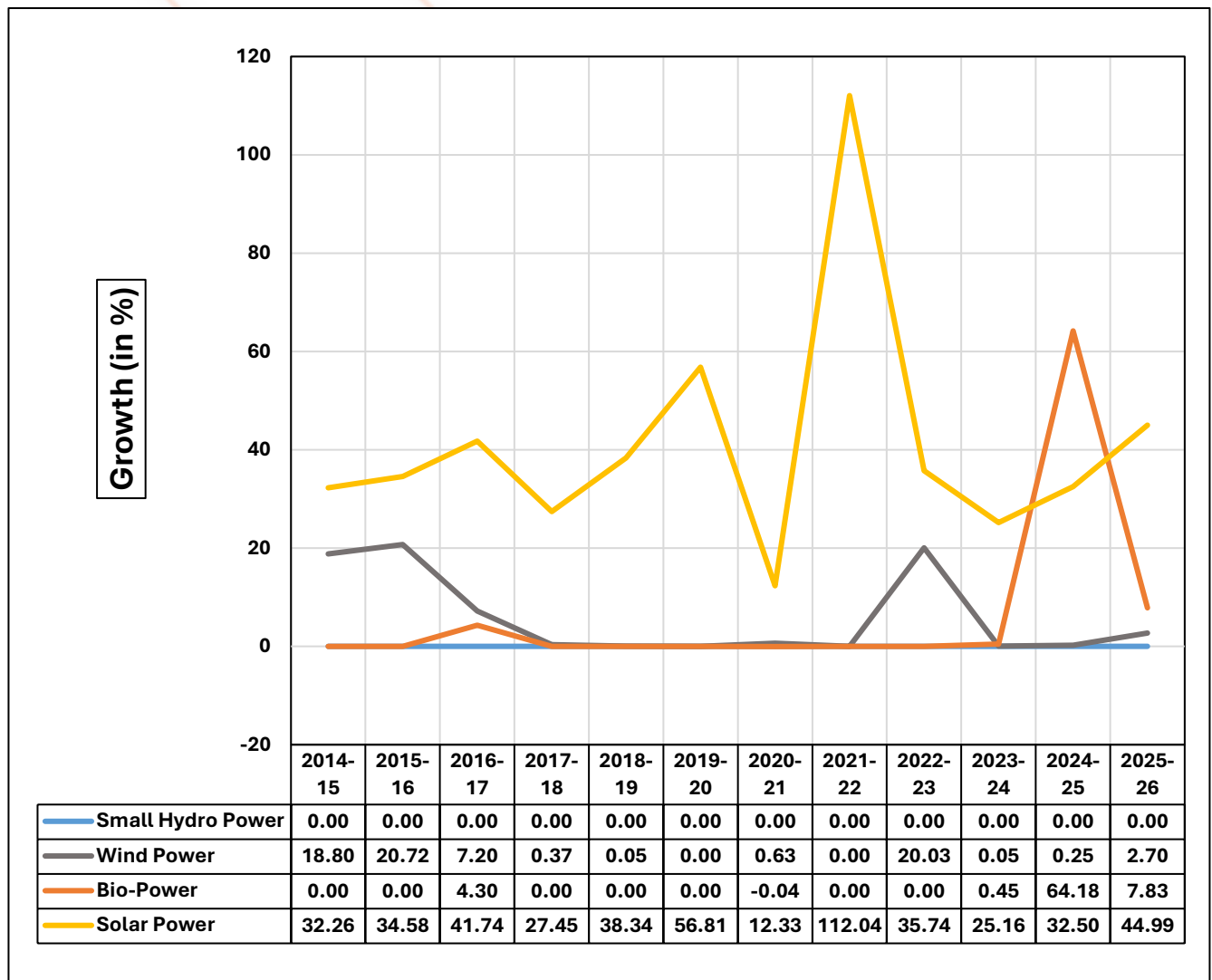
A comparison of renewable energy installed capacity as on 31st March 2015 and 31st March 2026 reveals pronounced shift in Rajasthan's renewable energy mix towards solar power. In 2014–15, wind power was the dominant source, accounting for 74.31% of the state's renewable energy capacity, while solar power contributed 22.46%. By 2025–26, the situation had changed dramatically, with solar power emerging as the dominant source, accounting for 87.99% of total renewable energy capacity, whereas the share of wind power declined to 11.48%. This transition highlights the rapid expansion of solar energy and its pivotal role in shaping Rajasthan's renewable energy landscape.

Fig 12.2.2 Trend in cumulative Installed Capacity



Graphs show that the installed capacity of small hydro power remained nearly constant at around 23.85 MW from 2014-15 to 2025-26, indicating negligible growth. Bio-power installed capacity remained stable at approximately 125 MW until 2023-24, after which it increased sharply to 206.27 MW in 2024-25 and further to 222.42 MW in 2025-26. Wind power capacity witnessed moderate growth from 3308.52 MW in 2014-15 to 5349.15 MW by 2025-26. The most significant change was observed in solar power installed capacity, which increased exponentially from 1000.23 MW in 2014-15 to 41012.62 MW by 2025-26, highlighting the rapid expansion and growing dominance of solar energy in Rajasthan's renewable energy sector.

Fig 12.2.3 Year wise growth (%) in installed capacity



The growth rates highlight significant variation among renewable energy sources between 2014-15 and 2025-26. Small Hydro Power remained stagnant, recording zero growth throughout the period. Wind Power experienced fluctuating growth, with peaks of 20.72% in 2015-16 and 20.03% in 2022-23, while remaining mostly below 10% in other years. Solar Power demonstrated the most dynamic growth, recording consistently high growth rates and peaking at 112.04% in 2021-22. Although growth moderated in some years, solar energy continued to expand strongly, underscoring its growing dominance in renewable installed capacity growth.

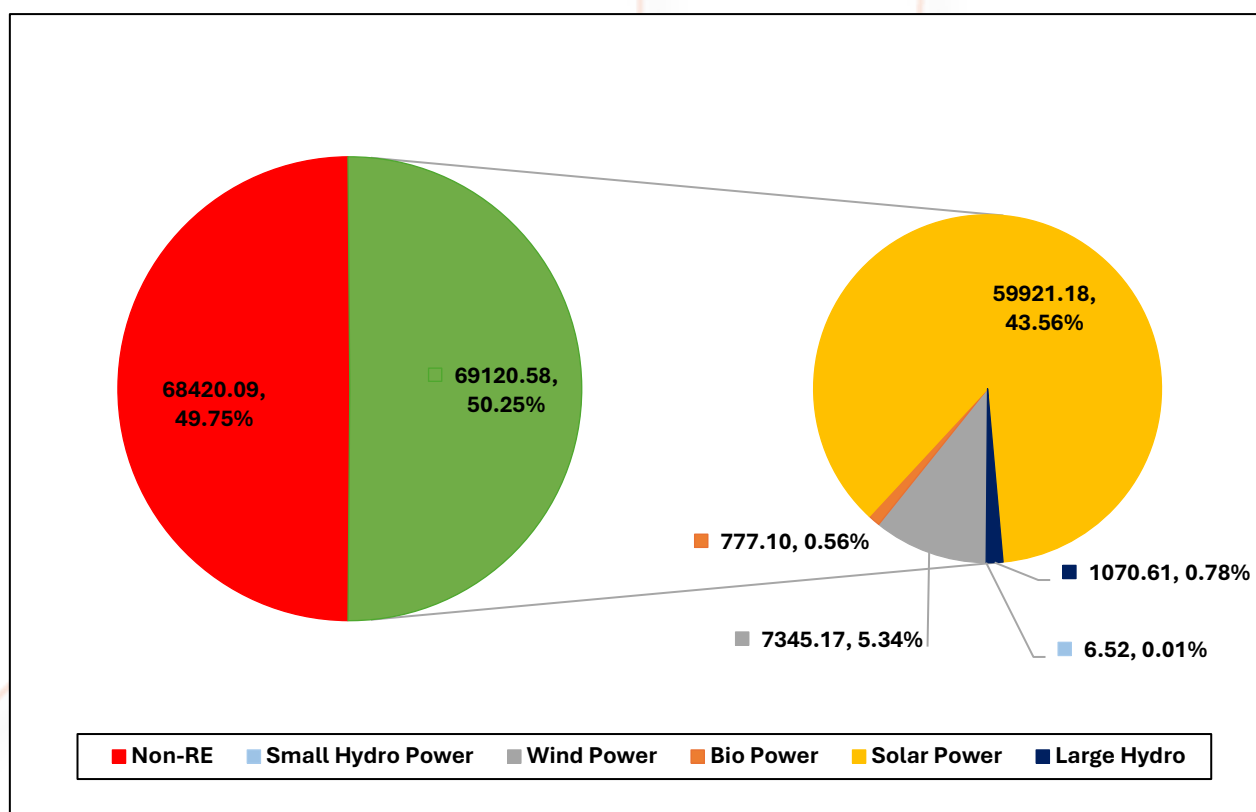
ENERGY GENERATION

12.3 Energy generation during 2025-26:

During 2025–26, Rajasthan generated a total of 137.54 Billion Units (BU) of electricity, of which 69.12 BU, accounting for 50.25%, was produced from renewable energy (RE) sources. The state ranked first in the country in renewable electricity generation, contributing 14.47% of India's total electricity generation from renewable sources. Rajasthan also retained its leading position in electricity generation from solar, wind, bio-power, and small hydro power, producing 68.05 BU, which accounted for 21.91% of the country's total generation from these renewable energy sources. Among the renewable sources, solar power was the dominant contributor, generating 59.92 BU and accounting for 43.57% of the state's total electricity generation. Wind power contributed 7.35 BU (5.34%), while bio-power and small hydro power generated 0.78 BU (0.56%) and 0.01 BU (0.005%), respectively. Large hydro power added a further 1.07 BU, representing 0.78% of the state's total electricity generation. These figures underscore the pivotal role of solar power in Rajasthan's energy mix and highlight the state's leadership in renewable energy generation at the national level.

Fig 12.3.1 RE share in total energy generation during 2025-26

(in MU)



CHAPTER 13

MAHARASHTRA

13.1 Status of RE and Non-RE sector:

As on 31st March 2026, Maharashtra ranked third in India in terms of installed renewable energy (RE) capacity, with a total capacity of 31.98 GW, accounting for 11.64% of the country's total installed RE capacity. The share of renewable energy in Maharashtra's overall installed power capacity increased substantially from 27.86% in 2017–18 to 53.73% by 2025–26, reflecting a significant transition towards cleaner and sustainable energy sources. Within Maharashtra's renewable energy portfolio, solar power emerged as the dominant source, contributing 61.36% of the total RE installed capacity, followed by wind power with a share of 18.53%. Notably, during 2025–26, Maharashtra achieved a significant milestone as the installed capacity from the renewable energy sector surpassed that of the non-renewable energy sector for the first time.

In terms of electricity generation, Maharashtra generated a total of 172.62 Billion Units (BU) during 2025–26, of which 29.11 BU, representing 16.86%, was contributed by renewable energy sources. The state ranked sixth in India in total electricity generation from renewable energy sources, accounting for 6.09% of the country's renewable electricity generation. Considering the combined generation from solar, wind, bioenergy, and small hydro power sources, Maharashtra secured the fifth position nationally, generating 23.62 BU, equivalent to 7.61% of India's total electricity generation from these renewable segments. Among the renewable energy sources within the state, solar power emerged as the largest contributor, accounting for 36.26% of Maharashtra's renewable electricity generation, followed by wind power with a share of 29.58%. These trends highlight the growing significance of solar energy in shaping the state's evolving energy mix.

The following sections provide a detailed assessment of Maharashtra's renewable energy landscape, covering the growth of installed capacity under renewable and non-renewable sectors since 2017–18, trends in solar, wind, and small hydro power capacity development since 2014–15, electricity generation from various renewable energy sources, and an in-depth analysis of the state's renewable energy sector performance.

INSTALLED CAPACITY

Table 13.1.1 cumulative Installed Capacity in RE and Non-RE sector since 2017-18
(in MW)

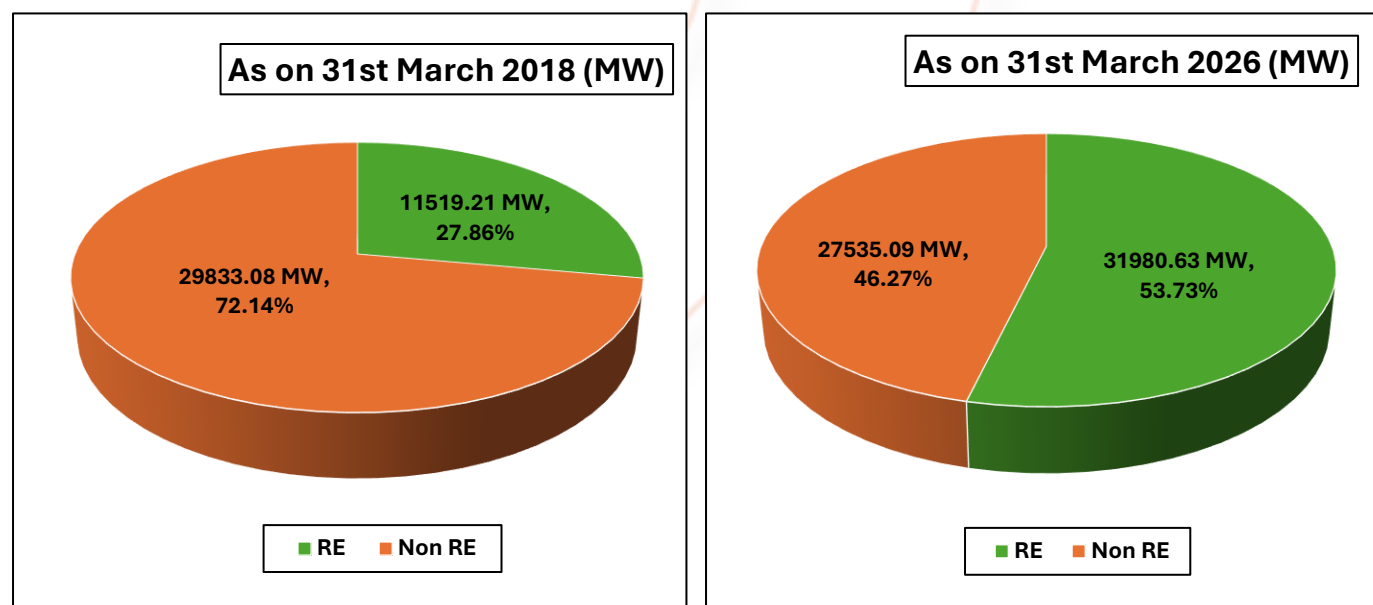
Year	RE	Non-RE	Total	Share (%)		Growth (%)	
				RE	Non-RE	RE	Non-RE
2017-18	11519.21	29833.08	41352.29	27.86	72.14		
2018-19	12421.69	30493.08	42914.77	28.95	71.05	7.83	2.21
2019-20	12822.27	29573.08	42395.35	30.24	69.76	3.22	-3.02
2020-21	13382.85	29573.08	42955.93	31.15	68.85	4.37	0.00
2021-22	13704.08	28463.08	42167.16	32.50	67.50	2.40	-3.75
2022-23	15804.50	28463.08	44267.58	35.70	64.30	15.33	0.00
2023-24	17530.12	28613.09	46143.21	37.99	62.01	10.92	0.53
2024-25	22401.46	29273.09	51674.55	43.35	56.65	27.79	2.31
2025-26	31980.63	27535.09	59515.72	53.73	46.27	42.76	-5.94
Gr (2017-18 to 2025-26)	177.63%	-7.70%	43.92%				
CAGR (2017-18 to 2025-26)	13.61%	-1.00%	4.66%				

Source: NPP, MoP and MNRE

Gr=Growth (%)

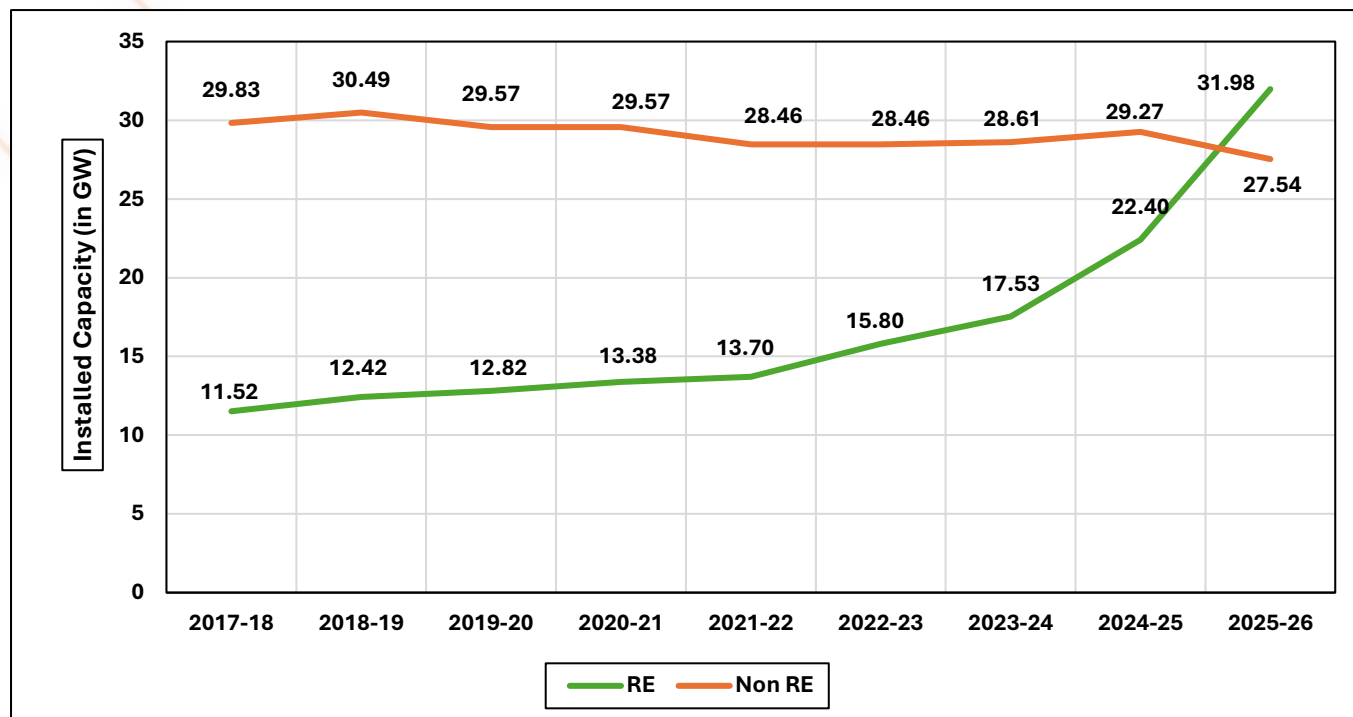
CAGR=Compound Annual Growth Rate

Fig. 13.1.1 RE Installed Capacity (in MW) and its share (%)



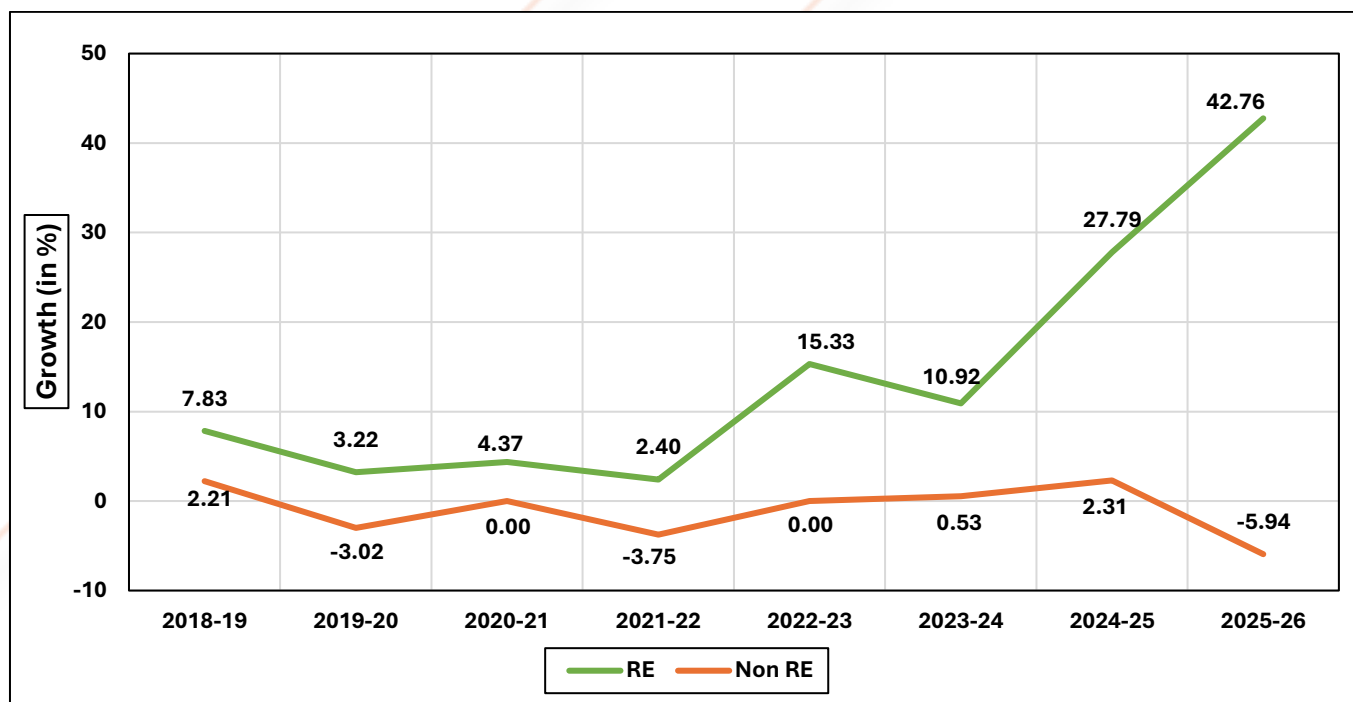
The two pie charts illustrate the shift in installed capacity between Renewable Energy (RE) and Non-Renewable Energy (Non-RE) sources from 31st March 2018 to 31st March 2026. As on 31st March 2018, RE installed capacity accounted for 27.86% of the total installed electricity capacity, while the Non-RE segment dominated with a share of 72.14%. However, by 31st March 2026, the share of RE installed capacity increased to 53.73%, while Non-RE witnessed a decline in both installed capacity and share. This comparison highlights a clear shift towards renewable energy sources, reflecting the growing focus on sustainable and clean energy.

Fig 13.1.2 Trend in Capacity installation



Installed capacity under Renewable Energy (RE) has shown a strong and consistent upward trend, increasing from 11.52 GW in 2017–18 to 31.98 GW in 2025–26. This sharp growth, particularly after 2021–22, reflects the increased focus on clean energy initiatives, whereas Non-RE capacity remained relatively stagnant, fluctuating slightly around 27–31 GW and ending at 27.54 GW in 2025–26. For the first time, installed capacity under the RE sector surpassed the Non-RE installed capacity in the state.

Fig 13.1.3 Year wise growth (%) in installed Capacity



RE sector demonstrates a consistently positive growth trend, though with varying intensity. After moderate growth in the initial years, a major surge occurred from 2022–23 onwards, with growth increasing to 15.33% in 2022–23, 10.92% in 2023–24, 27.79% in 2024–25, and peaking at 42.76% in 2025–26, indicating a sharp acceleration in renewable capacity additions.

The Non-RE sector exhibited low and fluctuating growth in the cumulative installed capacity, including negative growth in 2019–20, 2021–22, and 2025–26 due to retirement of the power generating units. The highest decline during the last eight years was recorded in 2025–26. This analysis clearly highlights the dynamic expansion of the RE sector, while Non-RE growth remained subdued, signalling a paradigm shift towards clean energy in the overall installed capacity.

13.2 Installed Capacity under Wind, Solar, Small Hydro & Bio Energy (RES) :

Installed capacity of Renewable Energy Sources (RES), including Solar Power, Wind Power, Bio-Power, and Small Hydro Power, has shown remarkable growth from 2014–15 to 2025–26, with the most significant expansion observed in solar energy. Solar power installed capacity increased exponentially from 363.77 MW in 2014–15 to 19,622.17 MW by 2025–26, registering a substantial growth of 5294.11% with a CAGR of 43.70%, making it the key driver of growth in RES. Wind power, an established segment with an installed capacity of 4,445.93 MW in 2014–15, grew steadily to 5,927.21 MW by 2025–26, achieving a growth of 33.32% over the last 11 years. Bio-power capacity increased from 1,883.25 MW to 2,999.97 MW, recording a growth of 59.30% with a CAGR of 4.32%. Small hydro power showed gradual and consistent growth, increasing from 336.93 MW to 384.28 MW, reflecting a growth of 14.05% with a CAGR of 1.20%.

Overall, total RES installed capacity increased from 7,029.88 MW in 2014–15 to 28,933.63 MW by 2025–26, representing an impressive growth of 311.58% with a CAGR of 13.73%. Details of installed capacity under RES are provided in **Table 13.2.1**.

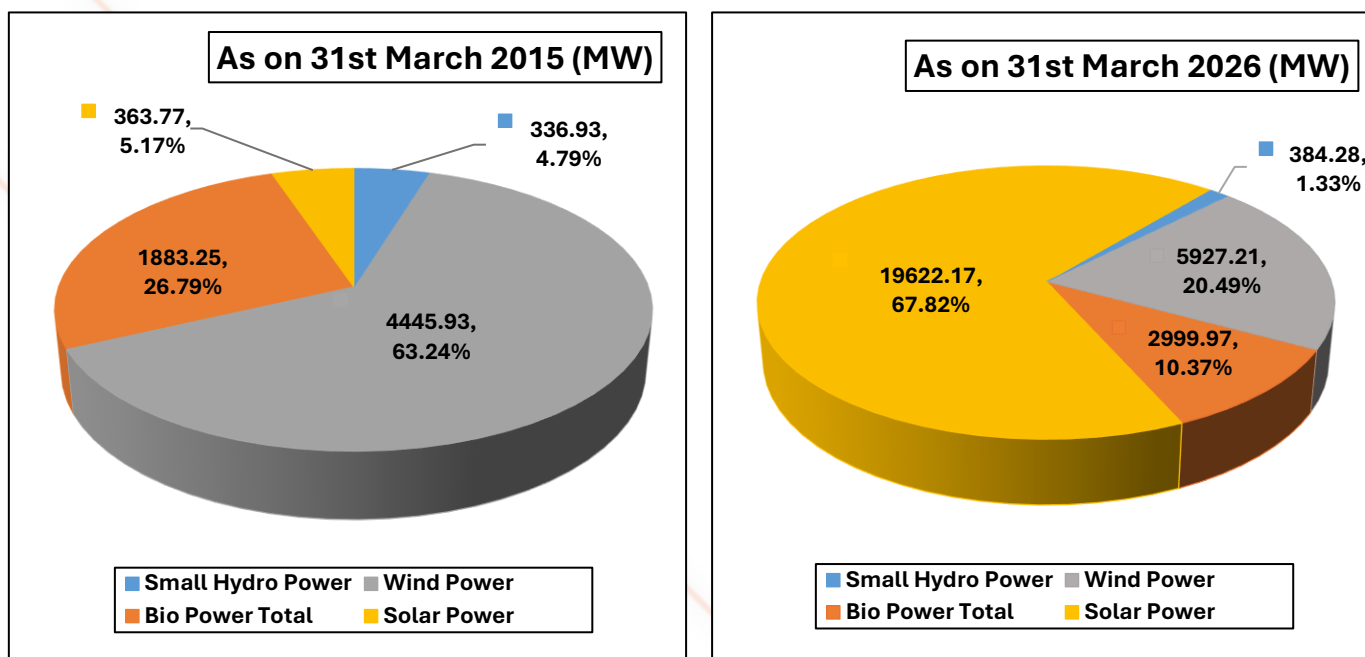
Table 13.2.1: Cumulative Installed Capacity under Solar, wind, Bio Power and Small Hydro Power (RES) since 2014-15 (in MW)

Year	Small Hydro Power	Wind Power	Bio-Power	Solar Power	Total	Growth (%)
2014-15	336.93	4445.93	1883.25	363.77	7029.88	10.83
2015-16	339.88	4653.78	2020.08	390.88	7404.62	5.33
2016-17	346.18	4771.33	2118.83	460.69	7697.03	3.95
2017-18	373.18	4783.93	2223.70	1251.40	8632.21	12.15
2018-19	375.57	4794.13	2556.53	1648.46	9374.69	8.60
2019-20	379.58	5000.33	2559.74	1835.62	9775.27	4.27
2020-21	379.58	5000.33	2632.15	2323.79	10335.85	5.73
2021-22	381.08	5012.83	2632.15	2631.02	10657.08	3.11
2022-23	381.08	5012.83	2640.69	4722.90	12757.50	19.71
2023-24	382.28	5207.98	2643.19	6249.67	14483.12	13.53
2024-25	384.28	5284.61	2998.30	10687.27	19354.46	33.63
2025-26	384.28	5927.21	2999.97	19622.17	28933.63	49.49
Gr (2014-15 to 2025-26)	14.05%	33.32%	59.30%	5294.11%	311.58%	
CAGR (2014-15 to 2025-26)	1.20%	2.65%	4.32%	43.70%	13.73%	

Gr=Growth (%)

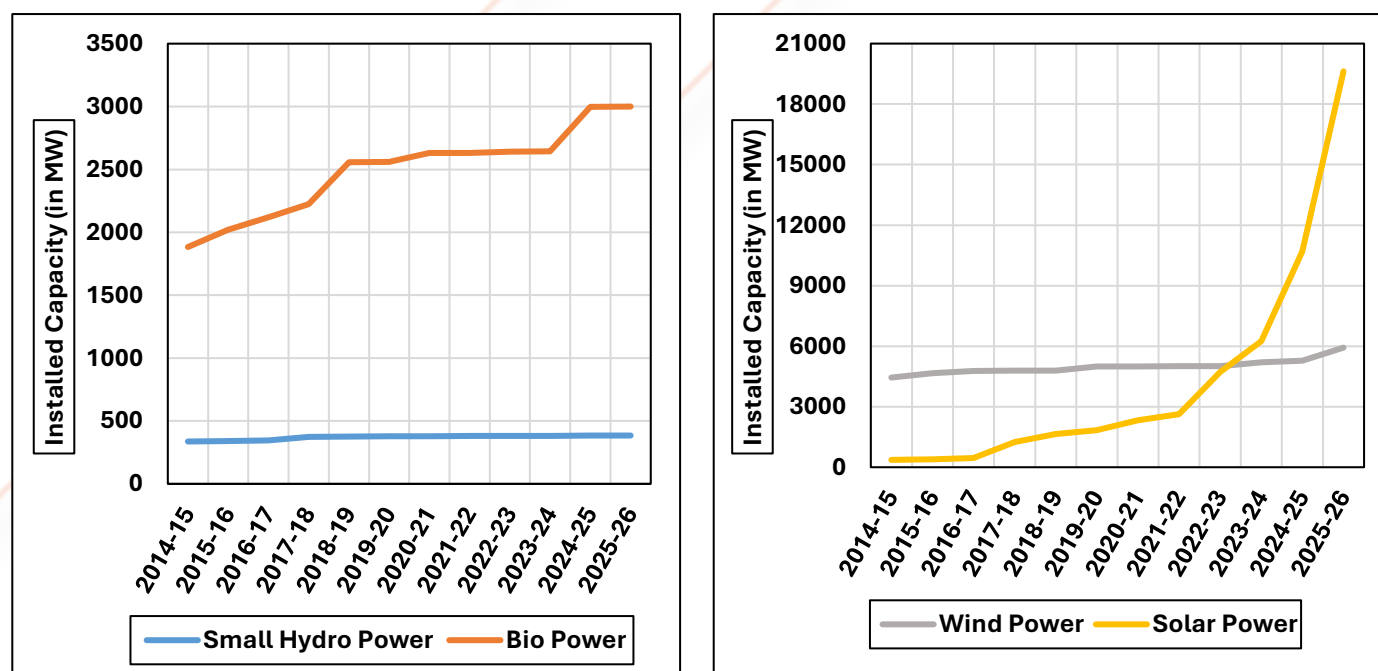
CAGR=Compound Annual Growth Rate

Fig 13.2.1 Share (%) in Cumulative Installed capacity



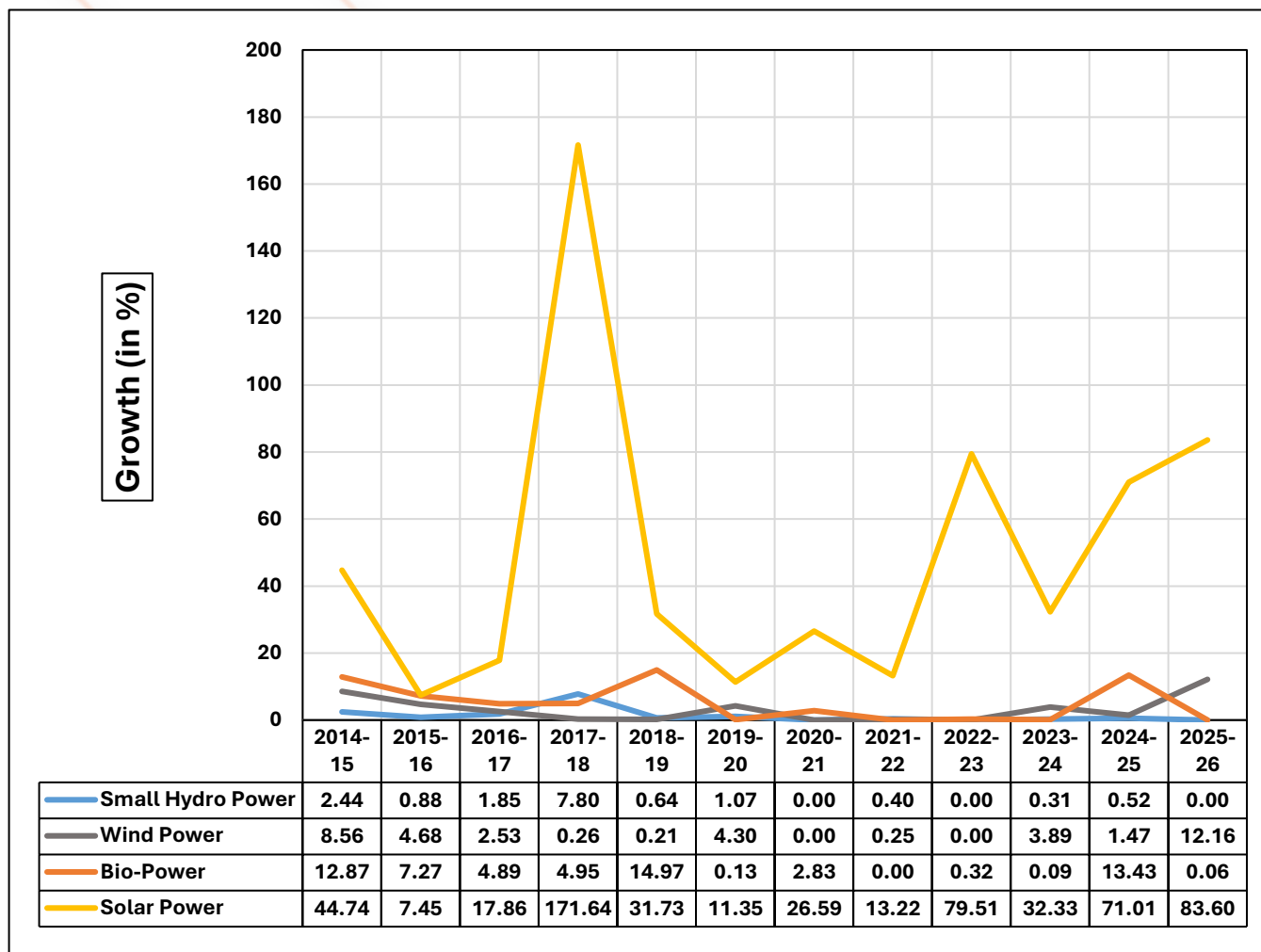
The pie charts compare the share (%) of cumulative installed capacity from various Renewable Energy Sources (RES) as of 31st March 2015 and 31st March 2026. As on 31st March 2015, Wind Power dominated the RES portfolio with a share of 63.24%, followed by Bio-Power at 26.79%, while Solar Power and Small Hydro Power contributed only 5.17% and 4.79%, respectively. By 31st March 2026, the RES landscape had changed significantly, with Solar Power emerging as the largest contributor, accounting for 67.82% of the total installed capacity due to its rapid expansion. The share of Wind Power declined to 20.49% despite modest capacity additions, while Bio-Power and Small Hydro Power shares reduced to 10.37% and 1.33%, respectively.

Fig 13.2.2 Trend in cumulative Installed Capacity



Trend in cumulative installed capacity shows that Bio-Power has exhibited steady growth, increasing from around 1,883 MW in 2014–15 to nearly 3,000 MW by 2025–26, with a notable increase after 2018–19. Small Hydro Power, on the other hand, recorded marginal growth, rising only slightly from 337 MW to 384 MW, indicating limited expansion in this segment. Wind Power witnessed moderate growth, increasing from 4,446 MW to 5,927 MW, whereas Solar Power experienced a remarkable surge from just 364 MW in 2014–15 to 19,622 MW by 2025–26. This exponential growth, particularly after 2016-17, has positioned solar energy as the fastest-growing and leading contributor among RES sources.

Fig 13.2.3 Year wise growth (%) in installed capacity



Year-wise growth in installed capacity of renewable energy sources from 2014–15 to 2025–26 reveals varying trends across different technologies. Small Hydro Power shows relatively steady but modest growth rates, mostly below 8%, with a peak growth of 7.8% in 2017–18 and limited increases in other years. Wind Power exhibits fluctuating growth, generally remaining below 9%, except for a surge of 12.16% in 2025–26. Bio-Power demonstrates moderate growth, with annual growth rates ranging from near zero to nearly 15%, reaching its peak in 2018–19 and recording a notable increase of 13.43% in 2024–25. The most significant variations are observed in Solar Power, which recorded exceptional growth, including a sharp increase of 171.64% in 2017–18 and a substantial growth of over 83% in 2025–26, along with several other years of double-digit expansion. Overall, solar power has emerged as the fastest-growing renewable energy source, while other sources have shown steady but comparatively slower growth.

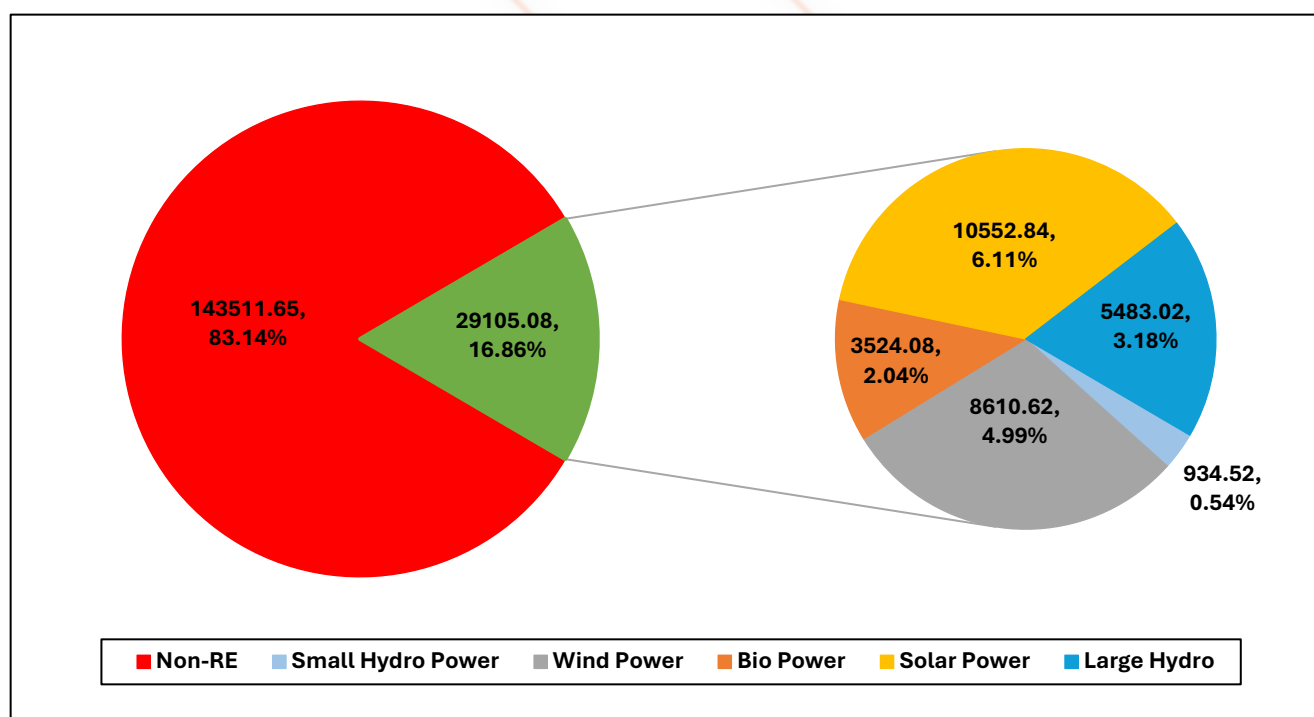
ENERGY GENERATION

13.3 Energy Generation during 2025-26 :

During 2025–26, renewable energy (RE) accounted for 16.86% of the total electricity generation, contributing 29.11 BU, while the Non-RE sector dominated with a share of 83.14%, generating 143.51 BU. Among the renewable energy sources, solar power recorded the highest contribution, generating 10.55 BU and accounting for 6.11% of the total energy mix. Wind power followed with 8.61 BU, representing around 5.00% of total generation. Large hydro contributed 3.18%, while bio-power and small hydro power accounted for smaller shares of 2.04% and 0.54%, respectively. Although renewable energy continues to represent a smaller share of total electricity generation, solar and wind power have emerged as the leading contributors within the RE sector, reflecting the growing shift towards cleaner energy sources in the 2025–26 energy mix.

Fig 13.3.1 RE share in total energy generation during 2025-26

(in MU)



CHAPTER 14

TAMIL NADU

14.1 Status of RE and Non-RE sector in Tamil Nadu

Tamil Nadu continues to play a leading role in India's renewable energy landscape, demonstrating consistent growth in both electricity installed capacity and electricity generation. As on 31st March 2026, the state's total installed electricity capacity was 47.64 GW, of which 29.11 GW was from renewable energy (RE) sources. This represents a renewable energy share of 61.10% in the total installed capacity, up from 44.70% in 2017–18. During this period, RE installed capacity grew by 116.39%, registering a CAGR of 10.13%, significantly outpacing the growth in Non-RE installed capacity. With this achievement, Tamil Nadu ranked fourth in the country in terms of installed RE capacity, contributing 10.60% to India's total installed RE capacity as on 31st March 2026. A significant milestone was achieved during 2025–26, when installed capacity under solar power surpassed that of wind power for the first time in the state. Solar power capacity reached 13.58 GW, while wind power capacity stood at 12.15 GW. Over the last eleven years, installed capacity under solar power recorded an exceptional growth of 8558.85%, while wind power registered a growth of 62.94%.

In terms of electricity generation, Tamil Nadu generated a total of 132.21 Billion Units (BU) during 2025–26, of which 49.98 BU, accounting for 37.81%, was generated from renewable energy sources. Wind power was the largest contributor within the renewable energy segment, followed by solar power. At the national level, Tamil Nadu ranked fourth in electricity generation from renewable energy sources, contributing 10.46% to the country's total renewable electricity generation. The state also secured the third position in electricity generation from solar, wind, bio-power, and small hydro power combined, generating 44.39 BU, which accounted for 14.29% of the national total from these renewable energy technologies.

The following sections present a detailed analysis of Tamil Nadu's electricity profile, with particular emphasis on the growth of the renewable energy sector. Details of installed capacity under the RE and Non-RE sectors since 2017–18, installed capacity under solar power, wind power, and small hydro power since 2014–15, and electricity generation from various renewable energy sources, along with their analysis in respect of the state of Tamil Nadu, are presented in this chapter.

INSTALLED CAPACITY

Table 14.1.1 Cumulative Installed Capacity in RE and Non-RE sector since 2017-18 (in MW)

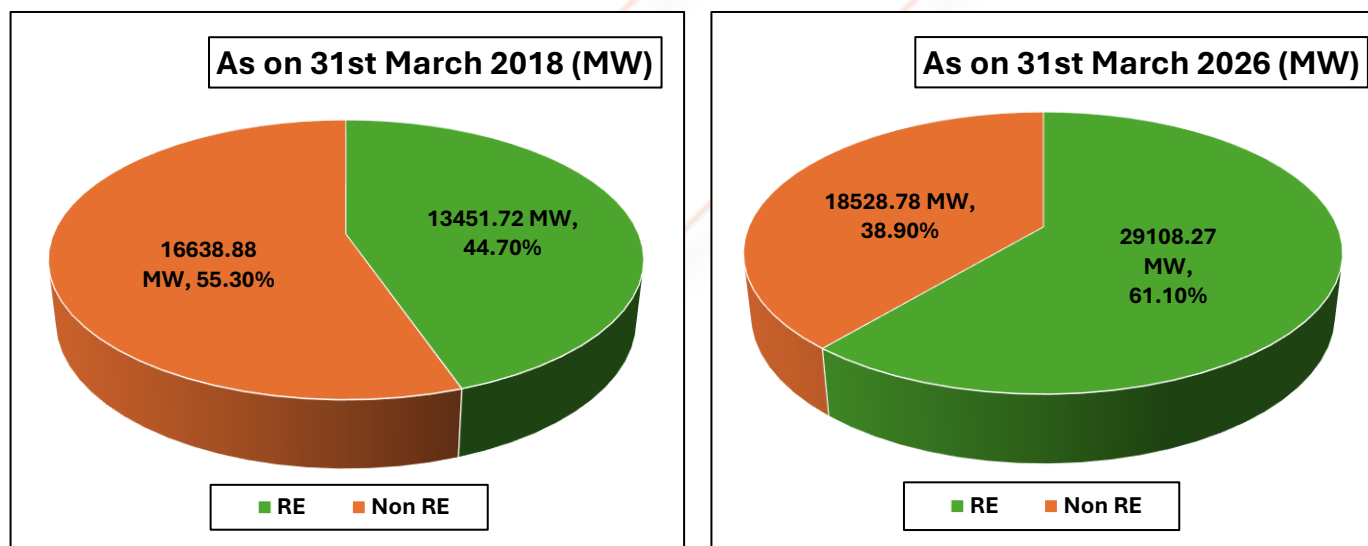
Year	RE	Non-RE	Total	Share (%)		Growth (%)	
				RE	Non-RE	RE	Non-RE
2017-18	13451.72	16638.88	30090.60	44.70	55.30		
2018-19	14909.39	16338.88	31248.27	47.71	52.29	10.84	-1.80
2019-20	16588.84	16688.88	33277.72	49.85	50.15	11.26	2.14
2020-21	17476.67	16838.88	34315.55	50.93	49.07	5.35	0.90
2021-22	18277.50	17363.88	35641.38	51.28	48.72	4.58	3.12
2022-23	20098.55	17363.88	37462.43	53.65	46.35	9.96	0.00
2023-24	22161.62	17778.00	39939.62	55.49	44.51	10.26	2.38
2024-25	25241.36	17841.38	43082.74	58.59	41.41	13.90	0.36
2025-26	29108.27	18528.78	47637.05	61.10	38.90	15.32	3.85
Gr (2017-18 to 2025-26)	116.39%	11.36%	58.31%				
CAGR (2017-18 to 2025-26)	10.13%	1.35%	5.91%				

Source : NPP, MoP and MNRE

Gr=Growth (%)

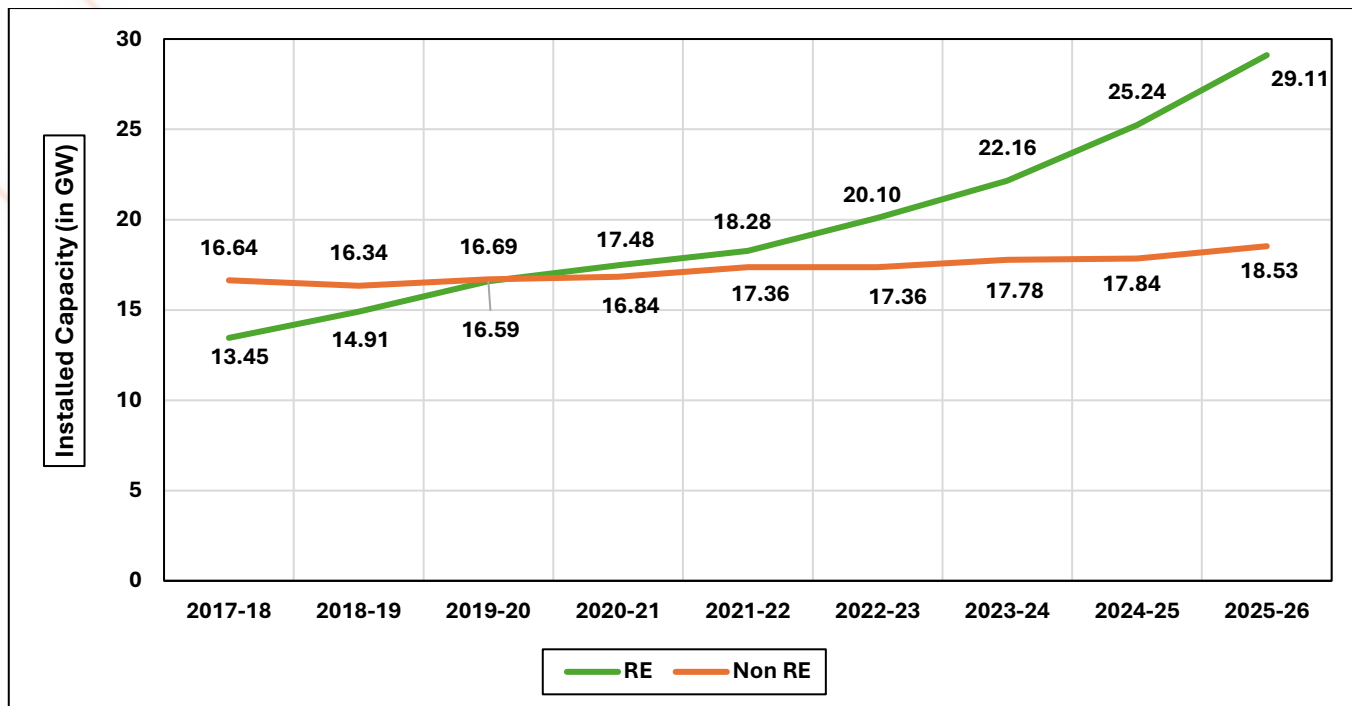
CAGR=Compound Annual Growth Rate

Fig. 14.1.1 Share in RE Installed Capacity (in MW)



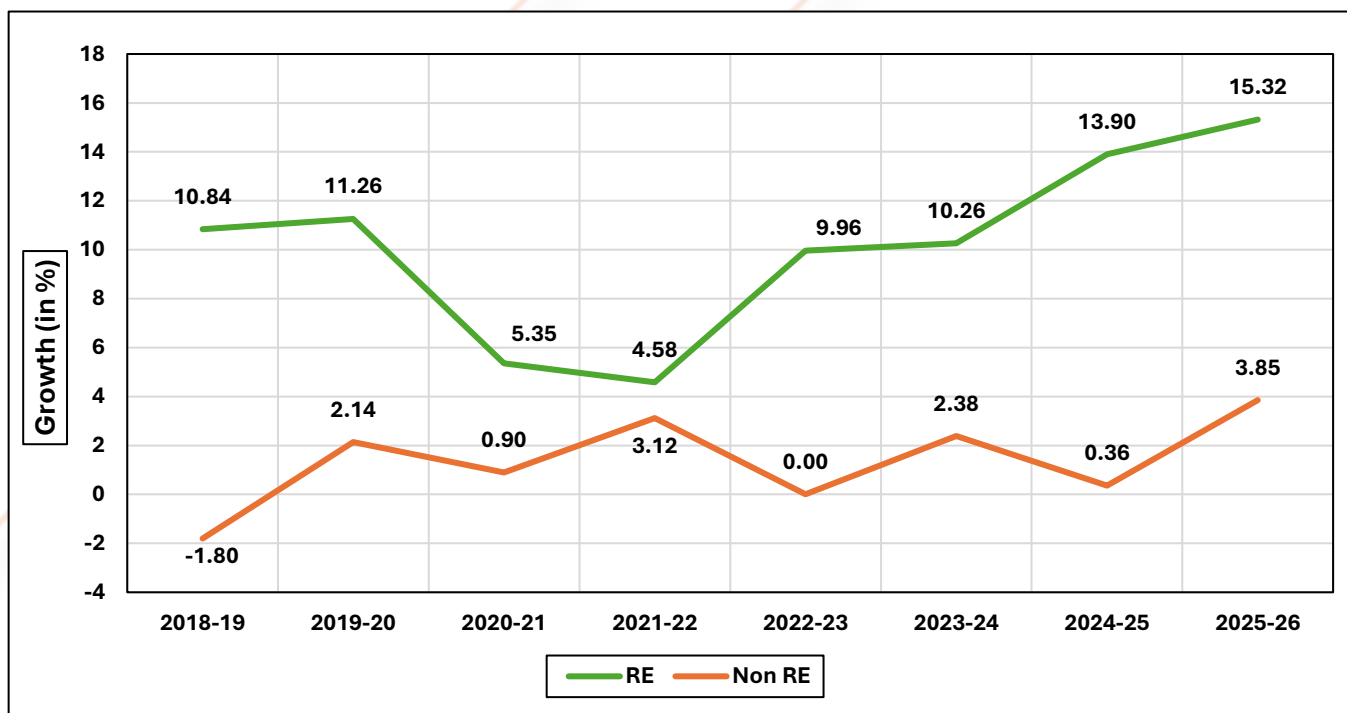
The pie charts clearly depict the shift in installed capacity between Renewable Energy (RE) and Non-Renewable Energy (Non-RE) sources as on 31st March 2018 and 31st March 2026, highlighting the growing dominance of renewable energy in the state's total installed capacity. As on 31st March 2018, RE accounted for 44.70% of the total installed capacity, while the Non-RE sector held the majority share of 55.30%. However, by 31st March 2026, the scenario had reversed, with the share of RE increasing to 61.10%, while the share of Non-RE declined to 38.90%.

Fig 14.1.2 Trend in installed Capacity



The graph illustrates the installed capacity under Renewable Energy (RE) and Non-Renewable Energy (Non-RE) sources from 2017–18 to 2025–26. As on 31st March 2018, RE installed capacity stood at 13.45 GW, significantly lower than the Non-RE installed capacity of 16.64 GW. Over the years, RE installed capacity recorded consistent and accelerated growth, surpassing Non-RE in 2020–21, when RE capacity reached 17.48 GW compared to 16.84 GW under the Non-RE sector. Thereafter, the gap between the two continued to widen. By 2025–26, RE installed capacity had increased to 29.11 GW, while Non-RE capacity grew modestly to 18.53 GW, widening the gap to 10.58 GW in favour of the RE sector.

Fig 14.1.3 Year wise growth (%) in installed capacity



The graph shows the year-wise growth (%) in installed capacity under Renewable Energy (RE) and Non-Renewable Energy (Non-RE) sources from 2018–19 to 2025–26. Installed capacity under the RE sector recorded consistently higher growth than the Non-RE sector throughout the period, reflecting the strong momentum in renewable energy expansion. RE growth peaked at 15.32% in 2025–26, following a gradual recovery from a low of 4.58% in 2021–22. Growth in the Non-RE sector remained subdued throughout the period. The fluctuating but largely stagnant trend in Non-RE stands in sharp contrast to the accelerating growth of the RE sector.

14.2 Installed Capacity under Wind, Solar, Small Hydro & Bio Energy (RES):

Installed capacity under Renewable Energy Sources (RES) in Tamil Nadu has witnessed significant growth from 2014–15 to 2025–26, primarily driven by solar power. Installed capacity under solar power increased exponentially from 156.83 MW in 2014–15 to 13,579.67 MW by 2025–26, registering an exceptional growth of 8558.85% with a CAGR of 50.01%. Wind power, though already well established, grew steadily from 7,455.09 MW to 12,147.23 MW, recording a growth of 62.94% with a CAGR of 4.54%. Bio-power registered marginal growth of 13.94% during the period, increasing from 926.06 MW to 1,055.12 MW, with a CAGR of 1.19%, indicating limited capacity addition. In contrast, installed capacity under small hydro power remained unchanged at 123.05 MW throughout the period. Overall, total installed capacity under the RES sector increased from 8,661.03 MW in 2014–15 to 26,905.07 MW by 2025–26, registering a growth of 210.65% with a CAGR of 10.85%. This growth underscores the state's transition towards renewable energy, led predominantly by the rapid expansion of solar power. Details of cumulative installed capacity under the RES sector from 2014–15 are presented in **Table 14.2.1**.

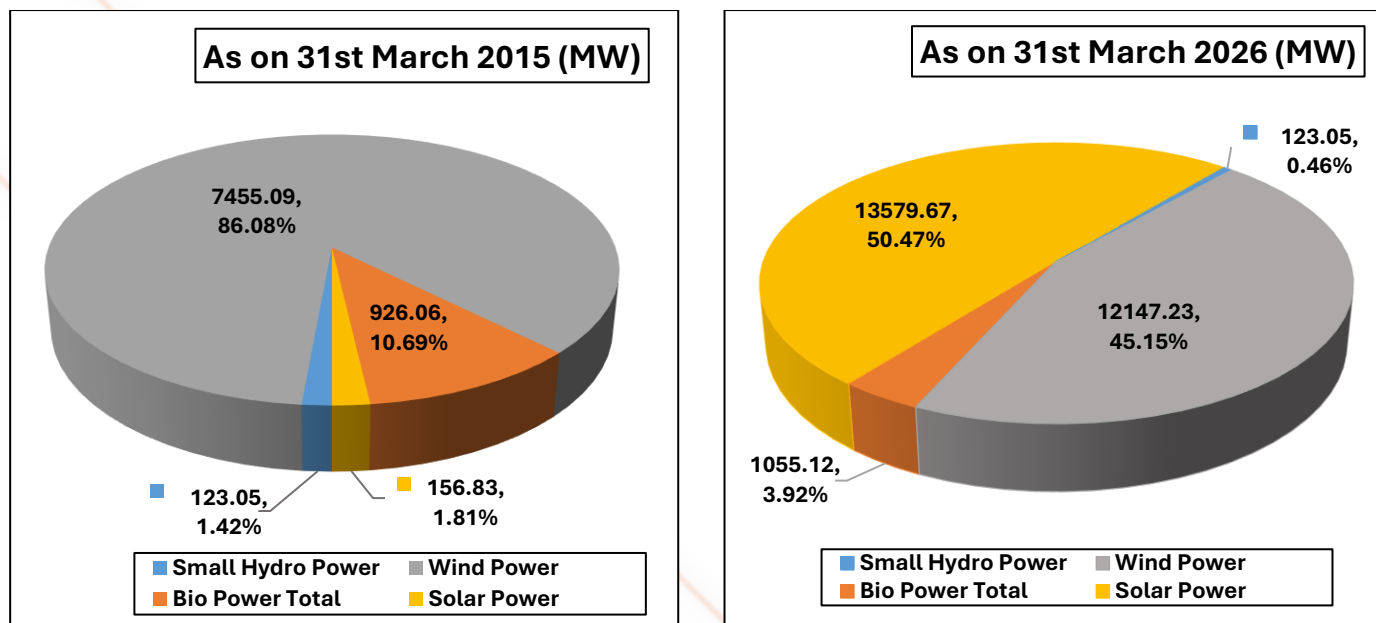
Table 14.2.1: Cumulative Installed Capacity under Solar, wind, Bio Power and Small Hydro Power (RES) since 2014-15

(in MW)						
Year	Small Hydro Power	Wind Power	Bio-Power	Solar Power	Total	Growth (%)
2014-15	123.05	7455.09	926.06	156.83	8661.03	3.10
2015-16	123.05	7613.89	926.06	1090.57	9753.57	12.61
2016-17	123.05	7861.46	926.67	1728.52	10639.70	9.09
2017-18	123.05	8197.09	977.52	1950.86	11248.52	5.72
2018-19	123.05	8968.91	1020.52	2618.71	12731.19	13.18
2019-20	123.05	9304.34	1021.69	3961.56	14410.64	13.19
2020-21	123.05	9608.04	1039.91	4527.47	15298.47	6.16
2021-22	123.05	9866.37	1042.70	5067.18	16099.30	5.23
2022-23	123.05	10017.17	1043.70	6736.43	17920.35	11.31
2023-24	123.05	10603.54	1045.45	8211.38	19983.42	11.51
2024-25	123.05	11739.91	1046.62	10153.58	23063.16	15.41
2025-26	123.05	12147.23	1055.12	13579.67	26905.07	16.66
Gr (2014-15 to 2025-26)	0.00%	62.94%	13.94%	8558.85%	210.65%	
CAGR (2014-15 to 2025-26)	0.00%	4.54%	1.19%	50.01%	10.85%	

Gr=Growth (%)

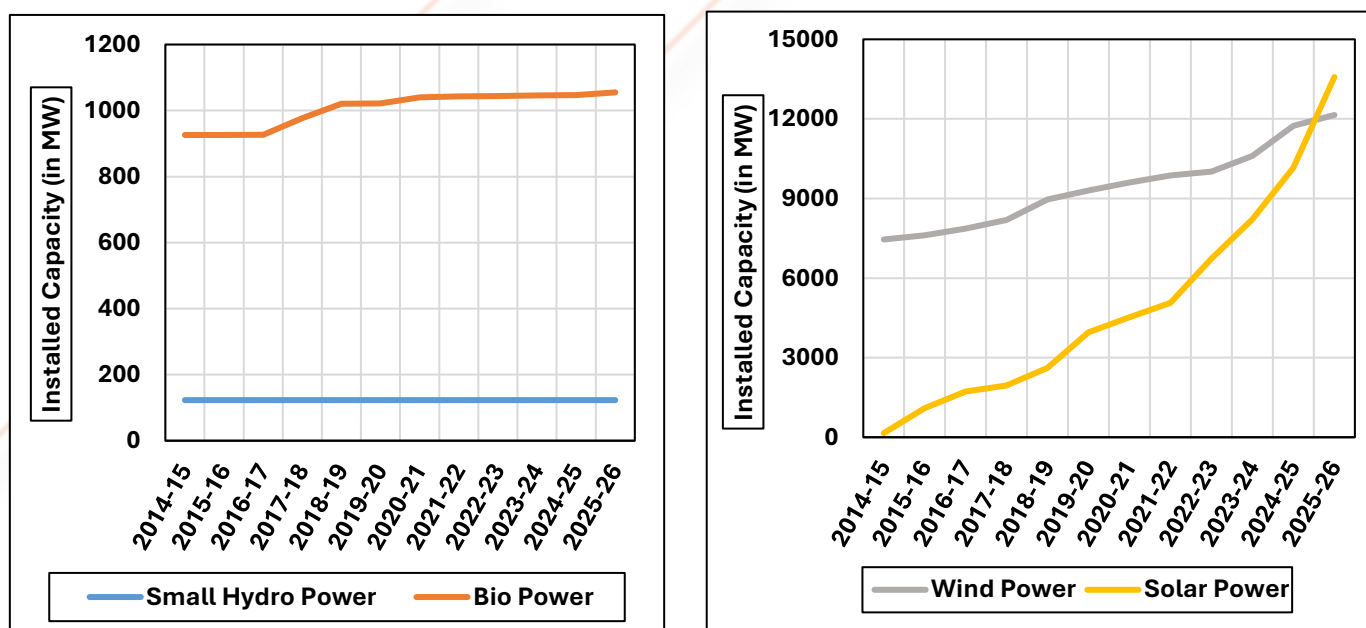
CAGR=Compound Annual Growth Rate

Fig 14.2.1 Share (%) in Cumulative Installed capacity



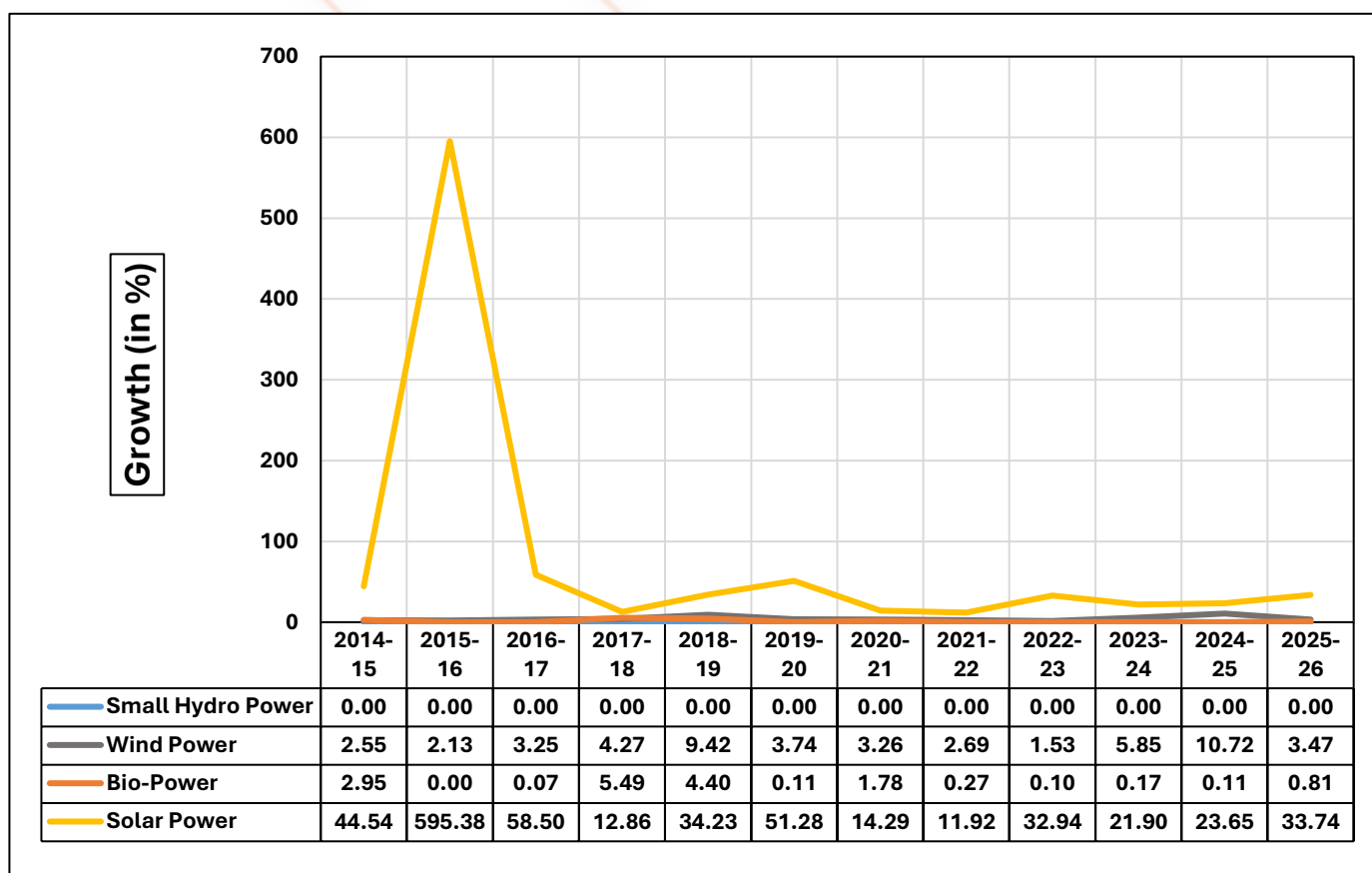
The composition of Tamil Nadu's renewable energy installed capacity has undergone a major transformation over the past decade. As on 31st March 2015, Wind Power dominated the renewable energy portfolio with an installed capacity of 7,455.09 MW, accounting for 86.08% of the total RES capacity, followed by Bio-Power with 926.06 MW and a share of 10.69%. Solar Power had an installed capacity of 156.83 MW, contributing 1.81%, while Small Hydro Power had the lowest share of 1.42%, with an installed capacity of 123.05 MW. However, by 31st March 2026, Tamil Nadu's renewable energy mix had become more diversified. Solar Power emerged as the largest contributor, accounting for 50.47% of the total RES installed capacity with 13.58 GW. Wind Power, with an installed capacity of 12.15 GW, contributed 45.15%, making it the second-largest source. Bio-Power accounted for 3.92% with 1.06 GW, while Small Hydro Power constituted 0.46% of the total renewable capacity, with its installed capacity remaining unchanged.

Fig 14.2.2 Trend in cumulative Installed Capacity



The trend in cumulative installed capacity of renewable energy sources from 2014–15 to 2025–26 reveals significant variation across different technologies. Small Hydro Power remained unchanged at 123.05 MW throughout the period, indicating no new capacity additions in this segment. Bio-Power recorded gradual growth, increasing from 926.06 MW in 2014–15 to 1,055.12 MW by 2025–26, with most of the additions taking place between 2017–18 and 2020–21, after which the installed capacity remained almost unchanged. Wind Power exhibited steady growth, increasing from 7,455.09 MW in 2014–15 to 12,147.23 MW by 2025–26, reflecting consistent capacity additions over the years. However, the most remarkable growth was observed in Solar Power, whose installed capacity surged from 156.83 MW in 2014–15 to 13,579.67 MW by 2025–26. This rapid expansion, particularly after 2018–19, highlights the state's increasing focus and investment in solar energy. Overall, while Small Hydro Power and Bio-Power showed limited growth, Wind Power expanded steadily, and Solar Power recorded exponential growth, surpassing Wind Power in 2025–26 and transforming the state's renewable energy landscape.

Fig 14.2.3 Year wise growth (%) in installed capacity



The year-wise growth in installed capacity reveals distinct trends across renewable energy sources from 2014–15 to 2025–26. Small Hydro Power remained stagnant, recording zero growth throughout the period. Wind Power registered steady and moderate growth, generally ranging between 1.5% and 10.7%, reflecting consistent capacity additions. Bio-Power exhibited minimal and irregular growth, mostly below 3%, indicating limited expansion in installed capacity. Solar Power recorded exceptional growth, with a remarkable increase of 595% in 2015–16, followed by strong but fluctuating growth rates, mostly ranging between 12% and 51%, reflecting the rapid expansion of solar capacity over the years. Overall, Solar Power emerged as the fastest-growing renewable energy source, while Wind Power expanded steadily, Bio-Power recorded slow growth, and Small Hydro Power remained unchanged.

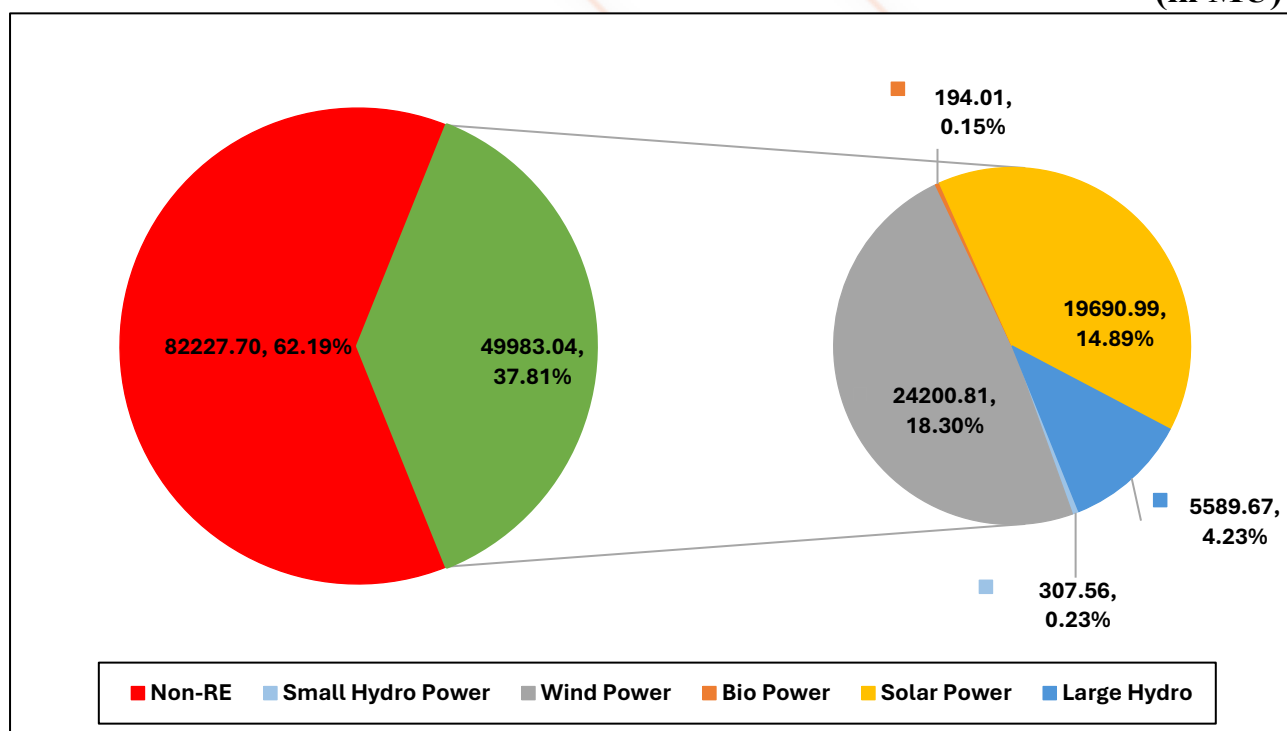
ENERGY GENERATION

14.3 Energy Generation during 2025-26:

During 2025–26, Tamil Nadu ranked fourth in the country in electricity generation from renewable energy sources, generating 49.98 BU, which accounted for 10.46% of India's total electricity generation from renewable energy sources. In terms of electricity generation from solar, wind, bio-power, and small hydro power combined, the state secured the third position by generating 44.39 BU, contributing 14.29% to the national total. Out of Tamil Nadu's total electricity generation, renewable energy sources contributed 49.98 BU, accounting for 37.81%, while non-renewable sources generated 82.23 BU, representing 62.19% of the total. Among the renewable energy sources, wind power was the largest contributor, generating 24.20 BU and accounting for 18.30% of the state's total electricity generation, followed by solar power with 19.69 BU, contributing 14.89%. Small hydro power generated 0.31 BU, accounting for 0.23%, while bio-power contributed 0.19 BU, representing 0.15%. Large hydro power generated 5.59 BU, contributing 4.23% of the state's total electricity generation.

Fig 14.3.1 RE share in total energy generation during 2025-26

(in MU)



CHAPTER 15

KARNATAKA

15.1 Status of RE and Non-RE sector in Karnataka:

As on 31st March 2026, Karnataka ranked fifth in the country in terms of installed renewable energy (RE) capacity, with a cumulative installed capacity of 26.72 GW, accounting for 9.73% of India's total installed RE capacity. The state has witnessed a significant transition towards clean energy, with its RE installed capacity increasing by 1.65 times between 2017–18 and 2025–26, compared to a marginal 1.02 times increase in Non-RE installed capacity. Consequently, the share of RE in the state's total installed capacity increased from 60.71% in 2017–18 to 71.30% by 2025–26. Solar power emerged as the dominant contributor to Karnataka's RE portfolio, accounting for 41.54% of the total RE installed capacity, followed by wind power with a share of 32.67%.

During 2025–26, Karnataka generated a total of 107.88 Billion Units (BU) of electricity, of which renewable energy sources contributed 58.54 BU, accounting for 54.27% of the total generation. Within the RE sector, wind power was the largest contributor, accounting for 32.12% of the state's renewable electricity generation, followed by solar power with a share of 30.62%, while large hydro was the next major contributor. At the national level, Karnataka ranked third in electricity generation from renewable energy sources, contributing 58.54 BU, which accounted for 12.25% of India's total renewable electricity generation. The state also secured the fourth position in electricity generation from solar, wind, bio-power, and small hydro power combined, generating 42.94 BU and contributing 13.83% to the national total under these renewable energy technologies.

The following sections provide a detailed analysis of Karnataka's energy profile, with particular emphasis on the progress of the renewable energy sector. Details of installed capacity under the RE and Non-RE sectors since 2017–18, installed capacity under solar power, wind power, and small hydro power since 2014–15, and electricity generation from various renewable energy sources, along with their analysis in respect of the state of Karnataka, are presented in this chapter.

INSTALLED CAPACITY

Table 15.1.1 Cumulative Installed Capacity in RE and Non-RE sector since 2017-18
(in MW)

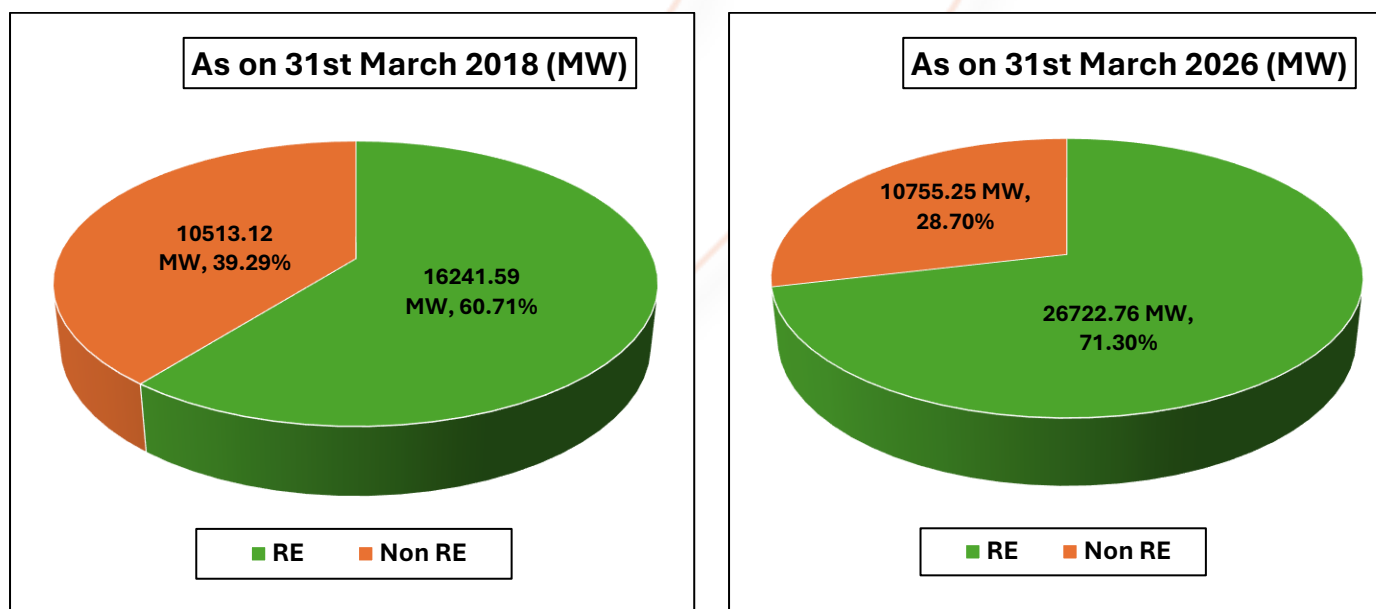
Year	RE	Non-RE	Total	Share (%)		Growth (%)	
				RE	Non-RE	RE	Non-RE
2017-18	16241.59	10513.12	26754.71	60.71	39.29		
2018-19	17524.40	10513.12	28037.52	62.50	37.50	7.90	0.00
2019-20	18918.13	10385.20	29303.33	64.56	35.44	7.95	-1.22
2020-21	19149.33	10385.20	29534.53	64.84	35.16	1.22	0.00
2021-22	19593.79	10385.20	29978.99	65.36	34.64	2.32	0.00
2022-23	20408.43	10385.20	30793.63	66.27	33.73	4.16	0.00
2023-24	21441.94	10385.20	31827.14	67.37	32.63	5.06	0.00
2024-25	23917.64	10755.25	34672.89	68.98	31.02	11.55	3.56
2025-26	26722.76	10755.25	37478.01	71.30	28.70	11.73	0.00
Gr (2017-18 to 2025-26)	64.53%	2.30%	40.08%				
CAGR (2017-18 to 2025-26)	6.42%	0.29%	4.30%				

Source: NPP, MoP and MNRE

Gr=Growth (%)

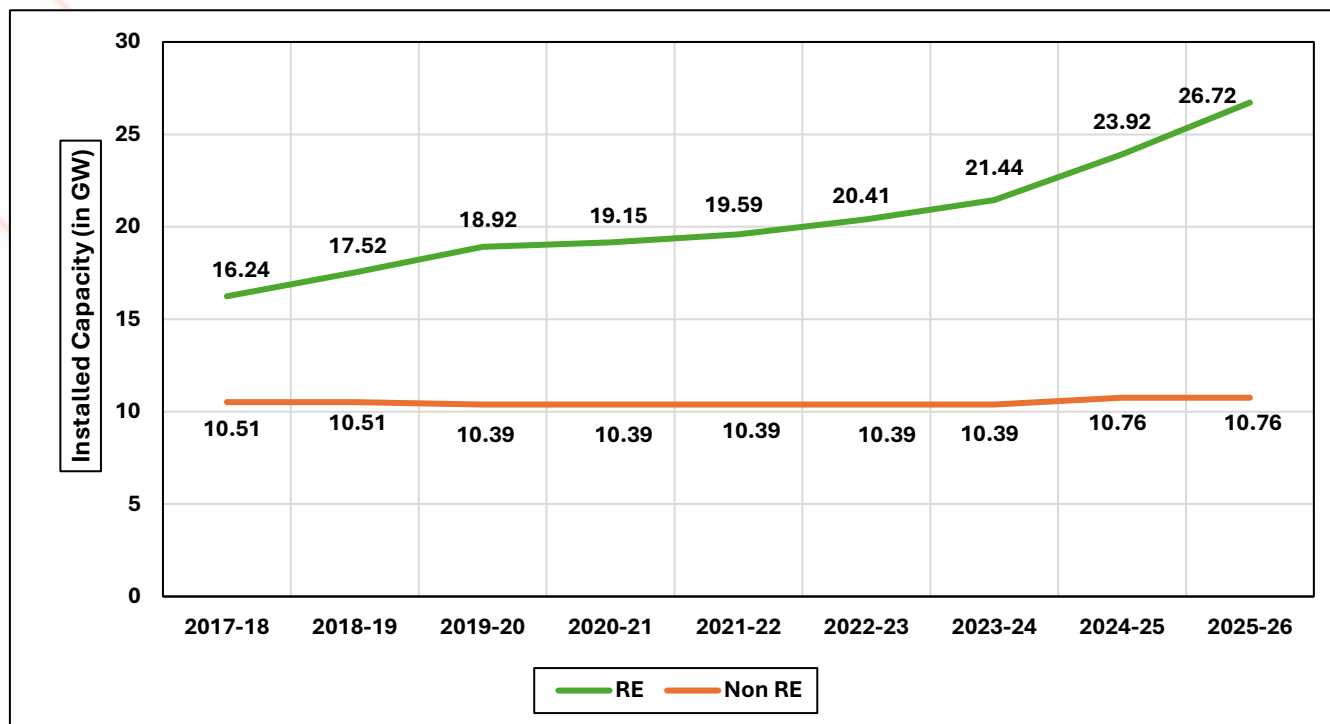
CAGR=Compound Annual Growth Rate

Fig. 15.1.1 Share of RE in Installed Capacity



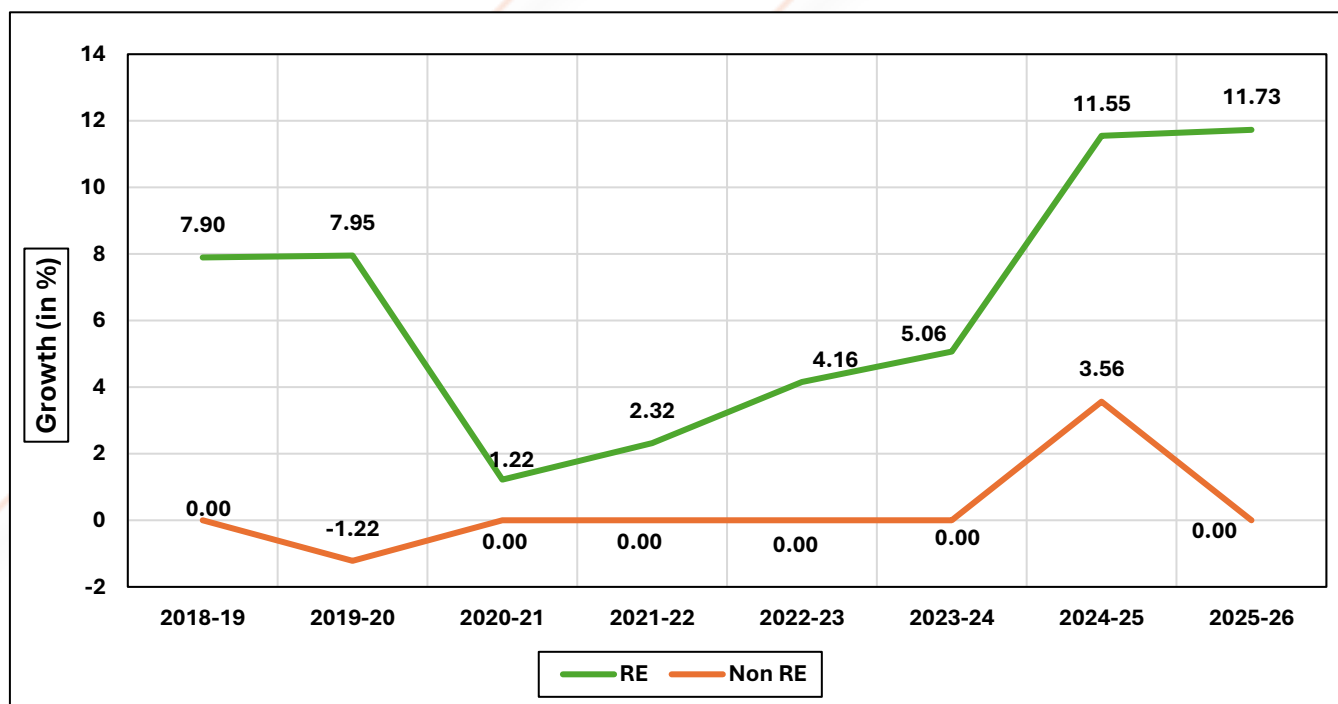
As on 31st March 2018, Renewable Energy (RE) sources accounted for 60.71% of the total installed capacity, while Non-Renewable Energy (Non-RE) sources constituted 39.29%. By 31st March 2026, the share of RE increased to 71.30%, whereas the share of Non-RE declined to 28.70%. This reflects a clear shift towards renewable energy, driven by substantial growth in RE installed capacity, while expansion in the Non-RE sector remained largely stagnant.

Fig15.1.2 Trend in installed capacity



The trend in installed capacity from 2017–18 to 2025–26 shows a steady increase in Renewable Energy (RE), rising from 16.24 GW to 26.72 GW. This reflects the state's consistent focus on expanding renewable energy sources. Non-Renewable Energy (Non-RE) installed capacity remained almost stagnant, fluctuating around 10.4 GW and increasing only marginally to 10.76 GW by 2025–26. The trend indicates that the growth in installed capacity has been driven primarily by renewable energy, while expansion in the Non-RE sector has remained minimal.

Fig 15.1.3 Growth (%) in installed capacity



Annual growth in installed capacity shows a clear contrast between the Renewable Energy (RE) and Non-Renewable Energy (Non-RE) sectors from 2018–19 to 2025–26. Installed capacity under RE sources recorded steady growth throughout the period, with annual growth rates ranging from 1.22% to 7.95%, followed by a significant increase to 11.55% in 2024–25 and 11.73% in 2025–26, indicating accelerated investment and expansion in the renewable energy sector. Installed capacity under Non-RE sources remained largely stagnant, recording zero growth in several years and a slight decline of 1.22% in 2019–20. A modest growth of 3.56% was observed only in 2024–25. Overall, the trend highlights sustained and accelerating growth in renewable installed capacity, while growth in the Non-RE sector remained minimal.

15.2 Installed Capacity under Wind, Solar, Small Hydro & Bio Energy (RES) :

The installed capacity under Solar Power, Wind Power, Bio-Power, and Small Hydro Power has shown significant variation in growth trends from 2014–15 to 2025–26. Solar power recorded the most remarkable growth, increasing from just 83.95 MW in 2014–15 to 11,101.64 MW by 2025–26, registering an extraordinary growth of 13,124.11% with a CAGR of 55.90%. Wind power also witnessed substantial expansion, with installed capacity increasing from 2,638.20 MW to 8,730.14 MW, recording a growth of 230.91% and a CAGR of 11.49%. Bio-power and Small Hydro Power experienced comparatively moderate growth. Bio-power capacity increased by 39.74%, from 1,371.83 MW to 1,917.05 MW, with a CAGR of 3.09%, while Small Hydro Power grew by 16.19%, from 1,105.73 MW to 1,284.73 MW, registering a CAGR of 1.37%. Overall, total installed capacity under Renewable Energy Sources (RES) increased from 5,199.71 MW in 2014–15 to 23,033.56 MW in 2025–26, registering a growth of nearly 343% with a CAGR of 14.49%. This reflects the state's strong transition towards renewable energy, driven primarily by the rapid expansion of solar power. Details of cumulative installed capacity under RES are given in **Table 15.2.1**.

Table 15.2.1: Cumulative Installed Capacity under Solar, wind, Bio Power and Small Hydro Power (RES) since 2014-15:

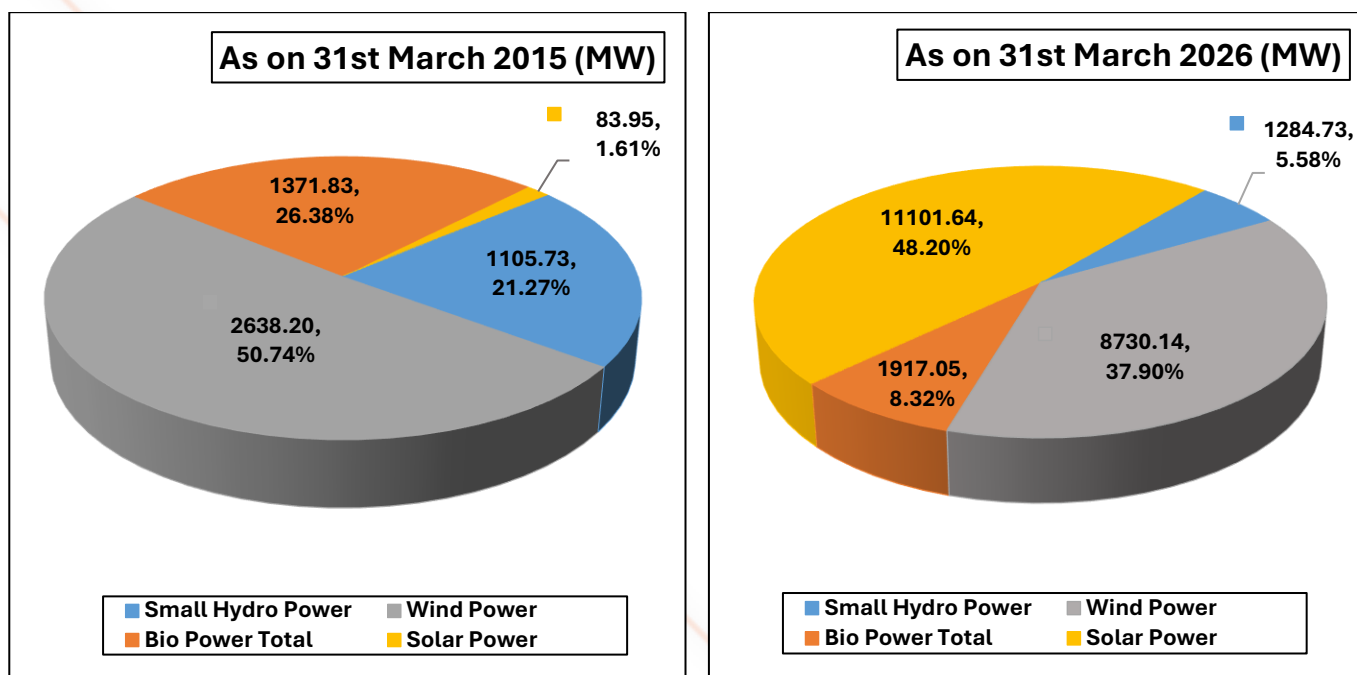
(in MW)

Year	Small Hydro Power	Wind Power	Bio-Power	Solar Power	Total	Growth (%)
2014-15	1105.73	2638.20	1371.83	83.95	5199.71	10.10
2015-16	1217.73	2869.10	1427.83	158.41	5673.07	9.10
2016-17	1225.73	3751.40	1477.83	1045.30	7500.26	32.21
2017-18	1230.73	4608.40	1779.81	4965.25	12584.19	67.78
2018-19	1254.73	4694.90	1809.81	6120.76	13880.20	10.30
2019-20	1280.73	4790.60	1896.42	7306.18	15273.93	10.04
2020-21	1280.73	4938.60	1901.92	7383.88	15505.13	1.51
2021-22	1280.73	5130.90	1902.15	7590.81	15904.59	2.58
2022-23	1280.73	5294.95	1902.15	8241.40	16719.23	5.12
2023-24	1280.73	6019.61	1907.72	8544.68	17752.74	6.18
2024-25	1284.73	7351.10	1912.95	9679.66	20228.44	13.95
2025-26	1284.73	8730.14	1917.05	11101.64	23033.56	13.87
Gr (2014-15 to 2025-26)	16.19%	230.91%	39.74%	13124.11%	342.98%	
CAGR (2014-15 to 2025-26)	1.37%	11.49%	3.09%	55.90%	14.49%	

Gr=Growth (%)

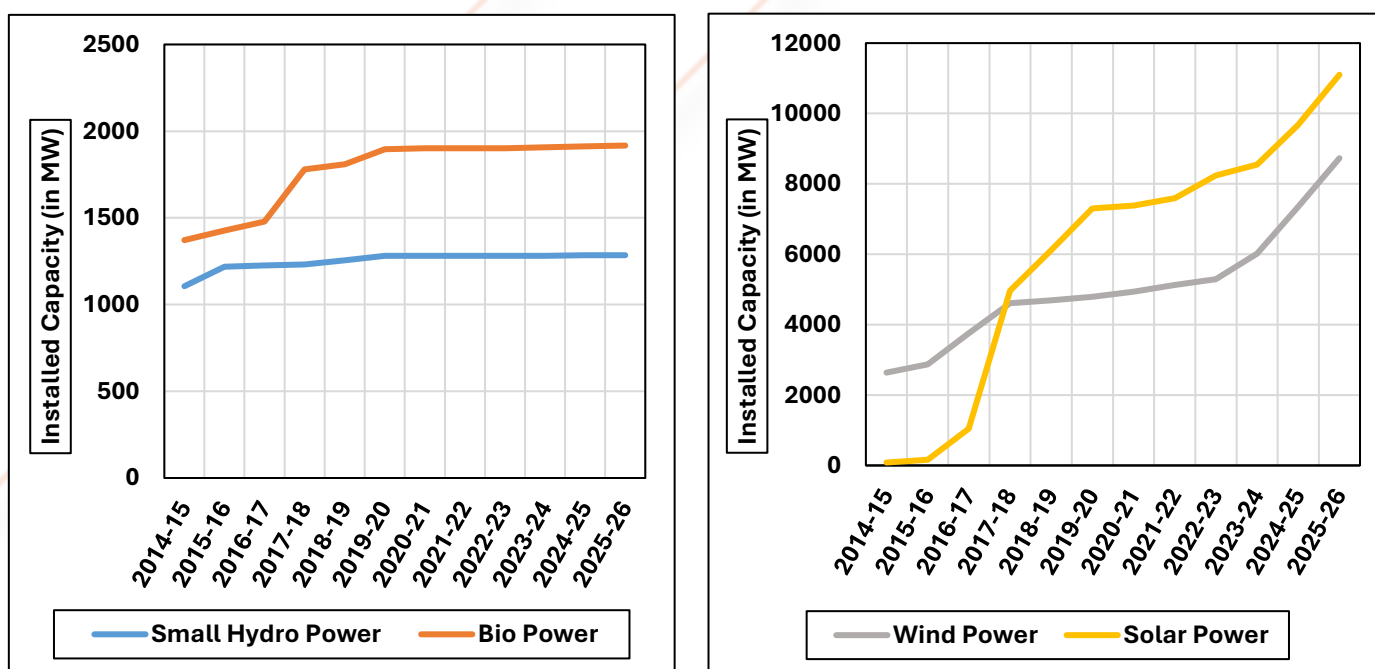
CAGR=Compound Annual Growth Rate

Fig 15.2.1 Share in Cumulative Installed capacity



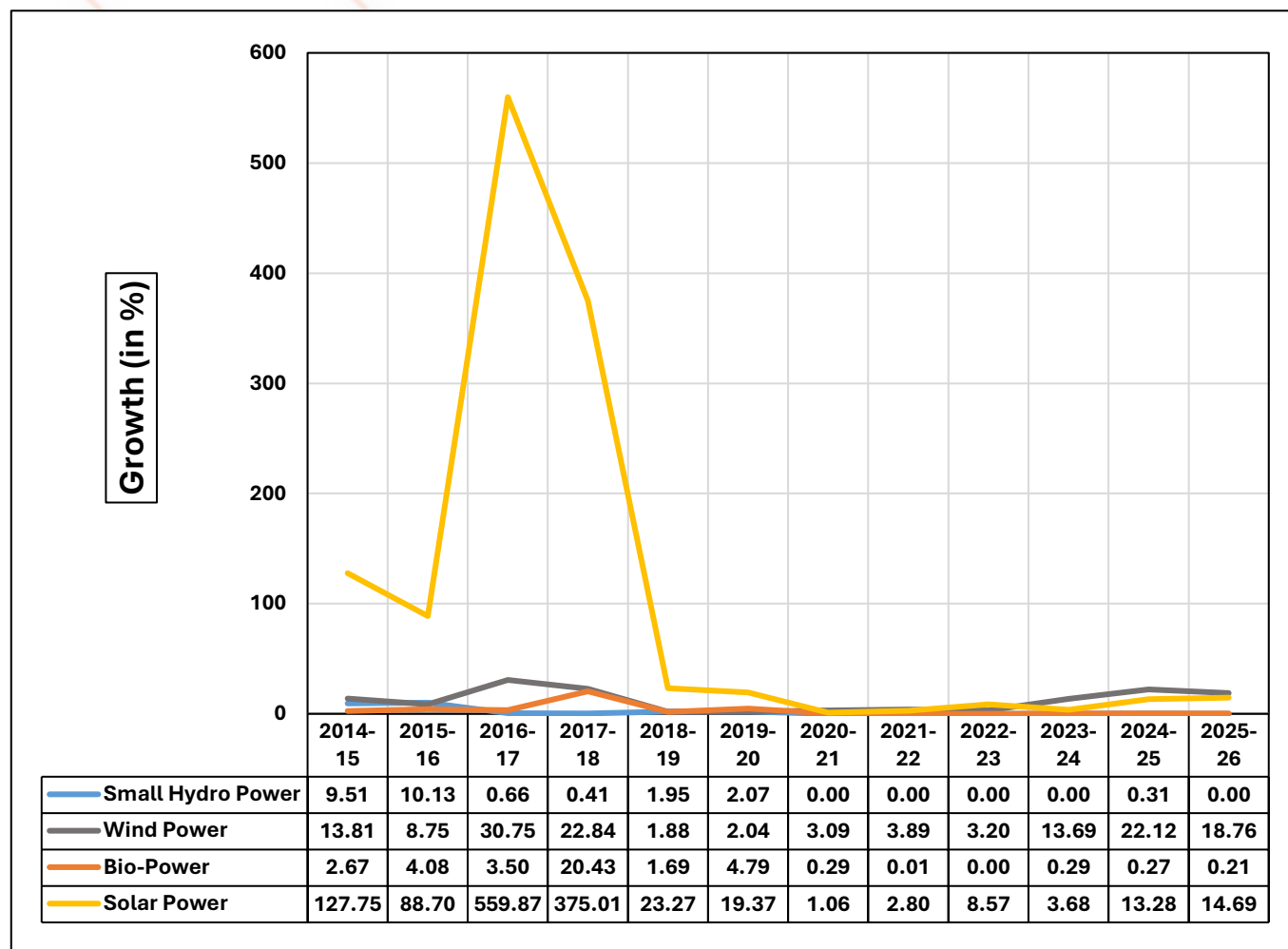
A comparison of the installed capacity of renewable energy sources as on 31st March 2015 and 31st March 2026 reveals significant changes in their composition. As on 31st March 2015, Wind Power dominated the renewable energy portfolio with a share of 50.74%, followed by Bio-Power at 26.38%. Small Hydro Power accounted for 21.27%, while Solar Power contributed the smallest share of 1.61%. By 31st March 2026, the renewable energy landscape had changed considerably. Solar Power emerged as the largest contributor, accounting for 48.20% of the total installed capacity, while the share of Wind Power declined to 37.90%. The share of Bio-Power decreased to 8.32%, and Small Hydro Power declined to 5.58%. This comparison highlights the remarkable expansion of solar power, which transformed the state's renewable energy mix and reduced the relative shares of other renewable energy sources despite their increase in installed capacity.

Fig 15.2.2 Trend in cumulative Installed Capacity



During the last decade, installed capacity under Small Hydro Power and Bio-Power grew slowly, with Bio-Power remaining almost unchanged after 2019–20. Wind Power recorded steady growth, increased to 8,730 MW by 2025–26. Solar Power witnessed remarkable growth, rising from less than 100 MW in 2014–15 to nearly 11,102 MW by 2025–26, surpassing Wind Power around 2024–25. Overall, Solar Power emerged as the fastest-growing renewable energy source in Karnataka during the period.

Fig 15.2. 3 Year wise growth (%) in installed capacity



Year-wise growth in installed capacity across different renewable energy sources reveals distinct trends. Small Hydro Power has recorded steady but modest growth, mostly remaining below 10%, with several years showing little or no increase. Wind Power exhibited greater variation in growth, peaking at 30.75% in 2016–17 and maintaining moderate growth rates between 2% and 22% in the subsequent years, reflecting consistent capacity additions. Bio-Power registered moderate growth with occasional spikes, such as 20.43% in 2017–18, but generally remained below 5%, indicating relatively slow expansion. Solar Power recorded exceptional growth, particularly in the initial years, with an extraordinary increase of 559.87% in 2016–17, followed by high, though gradually moderating, growth rates. Despite this moderation, solar power continued to register strong double-digit growth in recent years, highlighting its rapid expansion and increasing share in the state's installed renewable energy capacity. Overall, Solar Power emerged as the fastest-growing renewable energy source, Wind Power recorded steady growth, while Bio-Power and Small Hydro Power exhibited comparatively slower and more stable growth trends.

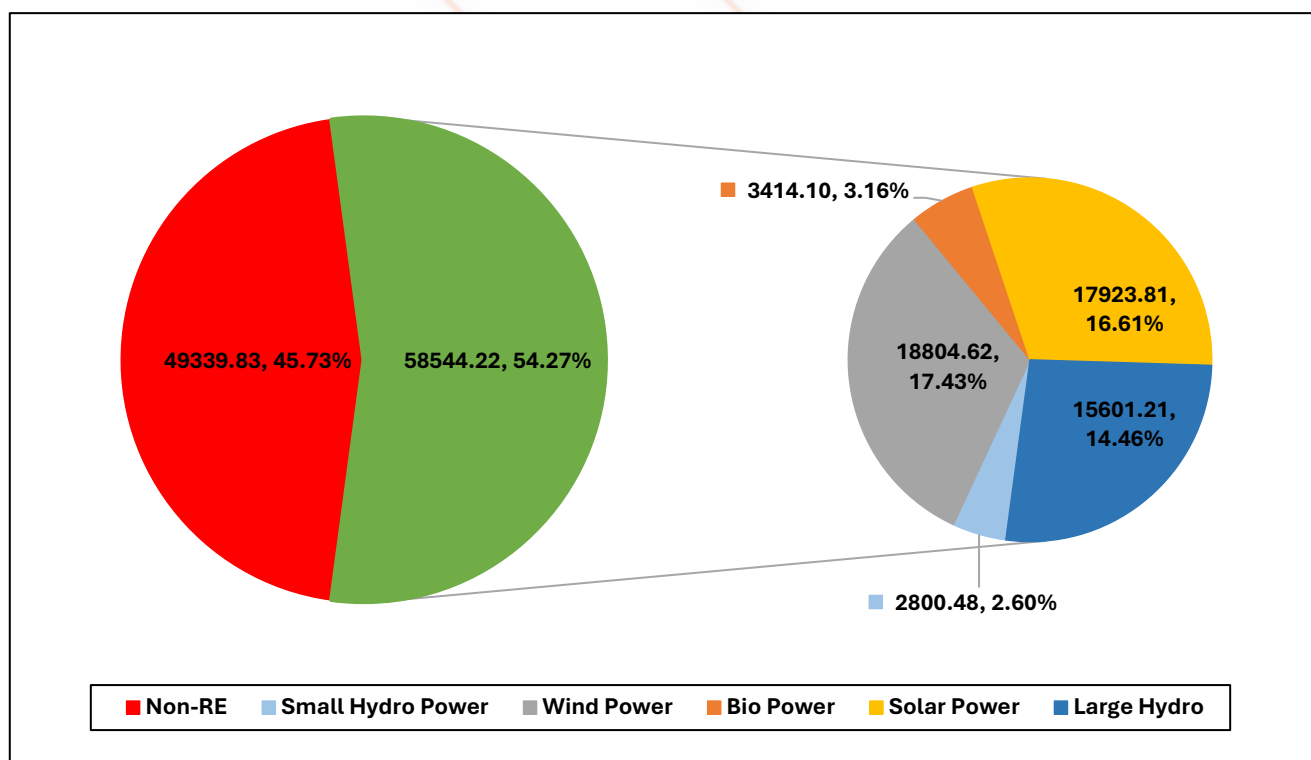
ENERGY GENERATION

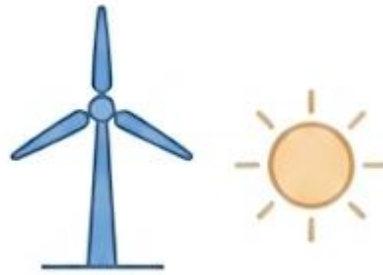
15.3 Energy generation during 2025-26:

During 2025–26, renewable energy (RE) accounted for 54.27% of the total electricity generation, while non-renewable energy (Non-RE) contributed the remaining 45.73%. Among the renewable energy sources, wind power contributed the largest share of the state's total electricity generation at 17.43%, followed by solar power at 16.61% and large hydro at 14.46%. Bio-power and small hydro power contributed smaller shares of 3.16% and 2.60%, respectively. This distribution highlights the significant contribution of wind, solar, and large hydro power to the state's renewable energy mix, with these three sources collectively accounting for the major share of electricity generation from renewable energy.

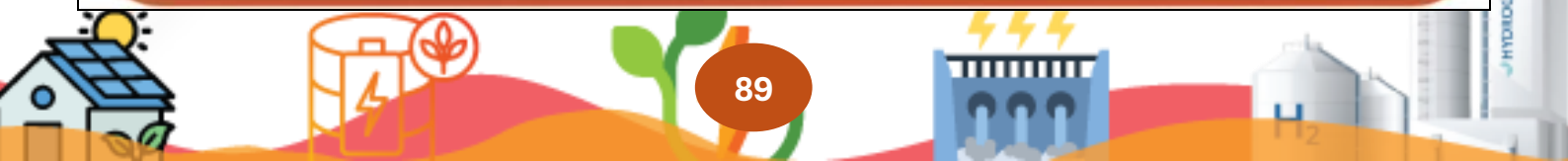
Fig 15.3.1 RE share in total energy generation during 2025-26

(in MU)





INTERNATIONAL STATUS



Installed Capacity

16.1 Installed Capacity- in RE & Non-RE sector

As on 31st December 2025, the total global installed electricity generation capacity from Renewable Energy (RE) and Non-Renewable Energy (Non-RE) sources stood at 10,414.16 GW. Of this, 5,155.01 GW was contributed by the RE sector, accounting for 49.50% of the total installed capacity, a significant increase from 29.50% in 2015. During the period from 2015 to 2025, global RE installed capacity expanded from 1,849.07 GW to 5,155.01 GW, registering a growth of 178.79% with a Compound Annual Growth Rate (CAGR) of 10.80%. However, the Non-RE sector grew from 4,418.96 GW to 5,259.15 GW, recording a modest growth of 19.01% with a CAGR of 1.76%.

Throughout the decade, the expansion of the RE sector consistently outpaced that of the Non-RE sector. Annual growth rates of RE installed capacity remained above 7.79%, reaching a peak of 15.54% in 2025. In comparison, the annual growth rate of the Non-RE sector remained below 3.00% throughout the period, with its highest growth of 3.00% recorded in 2018. The year 2025 marked a significant milestone, witnessing unprecedented additions of 693.38 GW in RE installed capacity compared with only 125.88 GW added under the Non-RE sector. This remarkable disparity reflects the accelerating global transition towards cleaner energy systems. Overall, the trends indicate a decisive structural transformation in the global electricity sector, with renewable energy emerging as the dominant driver of new capacity additions. Supported by technological advancements, favourable policy interventions, and improving cost competitiveness, renewable energy has steadily strengthened its share in the global power mix. A detailed year-wise analysis of installed capacity under the RE and Non-RE sectors is presented in this chapter.

Table 16.1.1 Cumulative electricity installed capacity under RE & Non-RE sectors since 2015 (in GW)

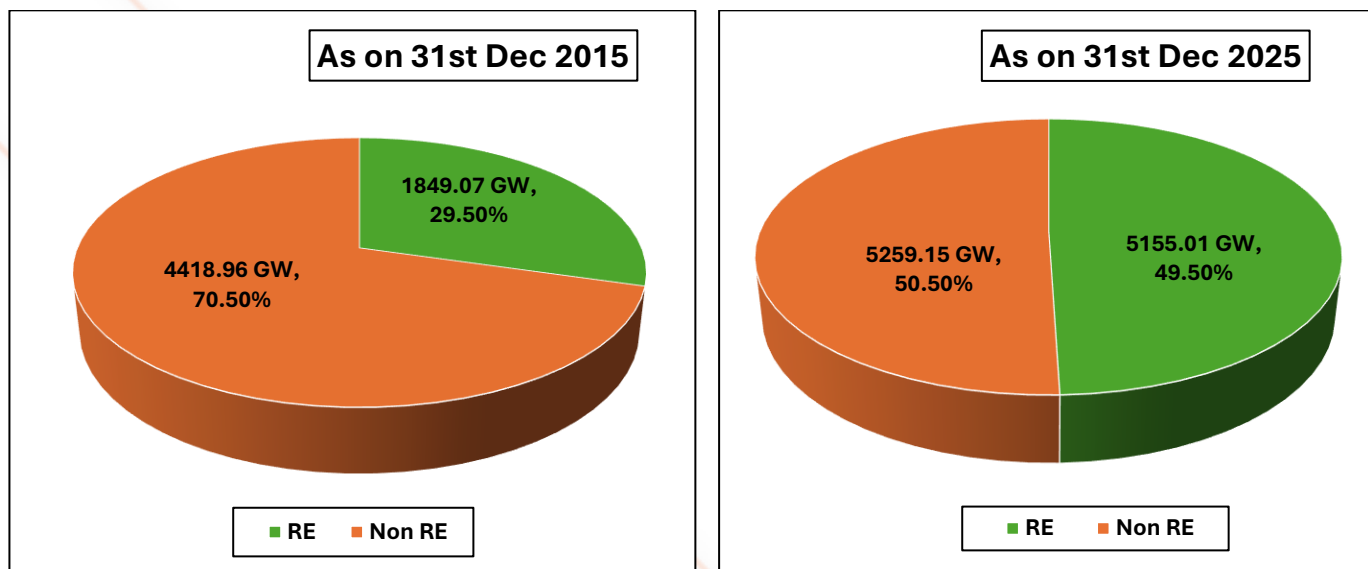
Year	RE	Non-RE	Total	Share (%)		Growth (%)	
				RE	Non-RE	RE	Non-RE
2015	1849.07	4418.96	6268.03	29.50	70.50		
2016	2021.30	4541.36	6562.66	30.80	69.20	9.31	2.77
2017	2187.57	4627.29	6814.86	32.10	67.90	8.23	1.89
2018	2358.15	4766.17	7124.32	33.10	66.90	7.80	3.00
2019	2541.90	4825.93	7367.83	34.50	65.50	7.79	1.25
2020	2811.11	4869.52	7680.63	36.60	63.40	10.59	0.90
2021	3077.12	4936.21	8013.33	38.40	61.60	9.46	1.37
2022	3379.24	5026.83	8406.07	40.20	59.80	9.82	1.84
2023	3875.76	5095.91	8971.67	43.20	56.80	14.69	1.37
2024	4461.63	5133.27	9594.90	46.50	53.50	15.12	0.73
2025	5155.01	5259.15	10414.16	49.50	50.50	15.54	2.45
Gr (2015 to 2025)	178.79%	19.01%	66.15%				
CAGR (2015 to 2025)	10.80%	1.76%	5.21%				

Gr=Growth Rate

CAGR=Compound Annual Growth Rate

Source: IRENA –Renewable Energy Statistics 2026

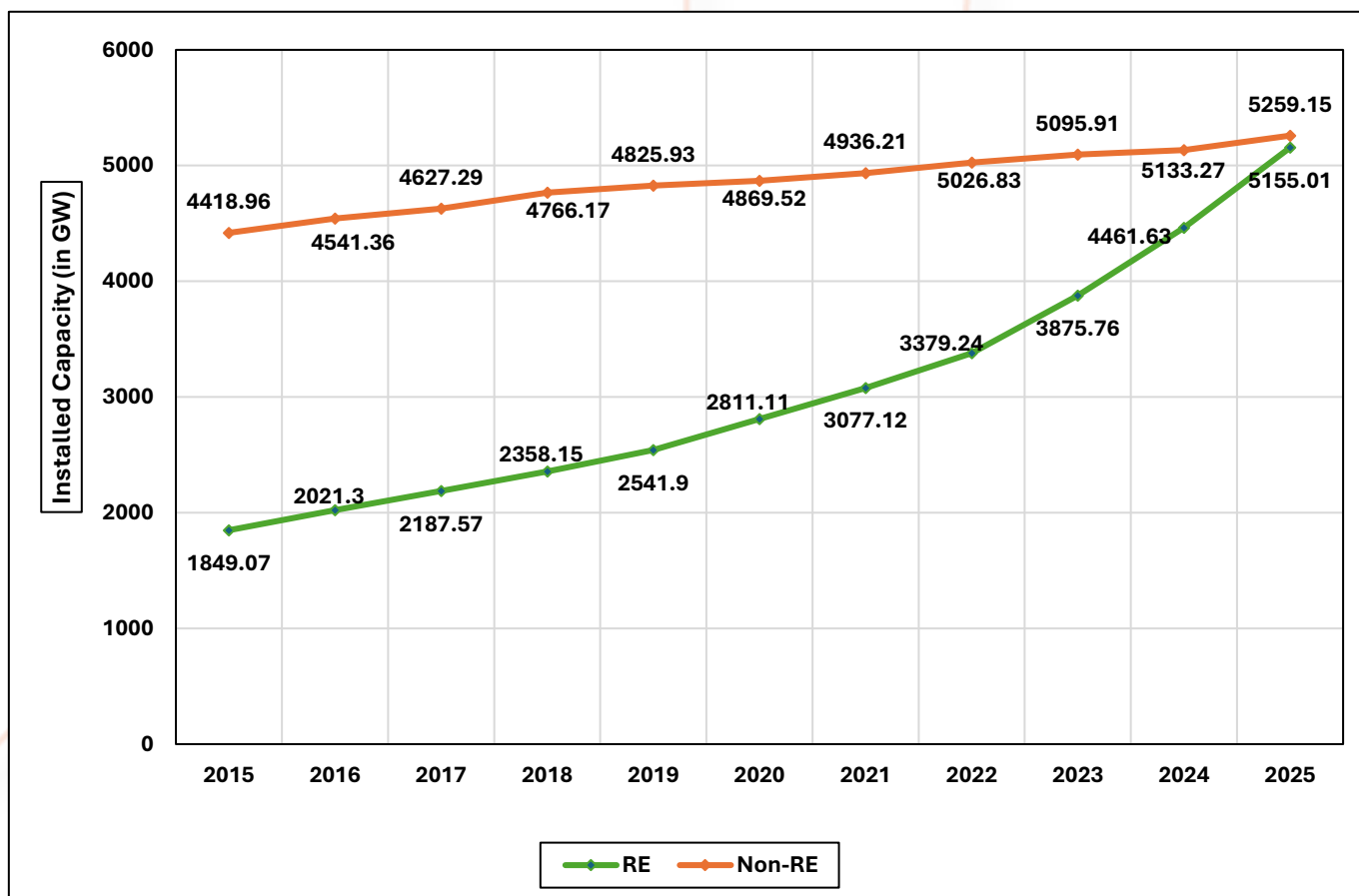
Fig 16.1.1 RE share(%) in Cumulative electricity installed capacity



The global renewable energy sector has recorded remarkable growth, with its share in total installed electricity capacity increasing from 29.50% in 2015 to 49.50% by 2025. During this period, renewable energy installed capacity expanded by 178.79%, reflecting its rapidly growing role in the global power sector.

Fig 16.1.2 Trend in Capacity installation

(in GW)



Global installed electricity capacity under renewable energy (RE) sources has witnessed remarkable growth over the past decade, increasing from 1,849.07 GW in 2015 to 5,155.01 GW in 2025. This represents an impressive growth of 178.79%, with a Compound Annual Growth Rate (CAGR) of 10.80%. In comparison, installed capacity under non-renewable energy (Non-RE) sources increased from 4,418.96 GW to 5,259.15 GW during the same period, registering a modest growth of 19.01% with a CAGR of only 1.76%.

The data highlights a clear structural transformation in the global power sector, with the gap between renewable and non-renewable installed capacity narrowing steadily over the years. This trend reflects the rapid adoption of clean energy technologies worldwide and the gradual transition from conventional fossil fuel-based power generation towards renewable energy.

Fig 16.1.3 Annual installed Capacity addition (in %)

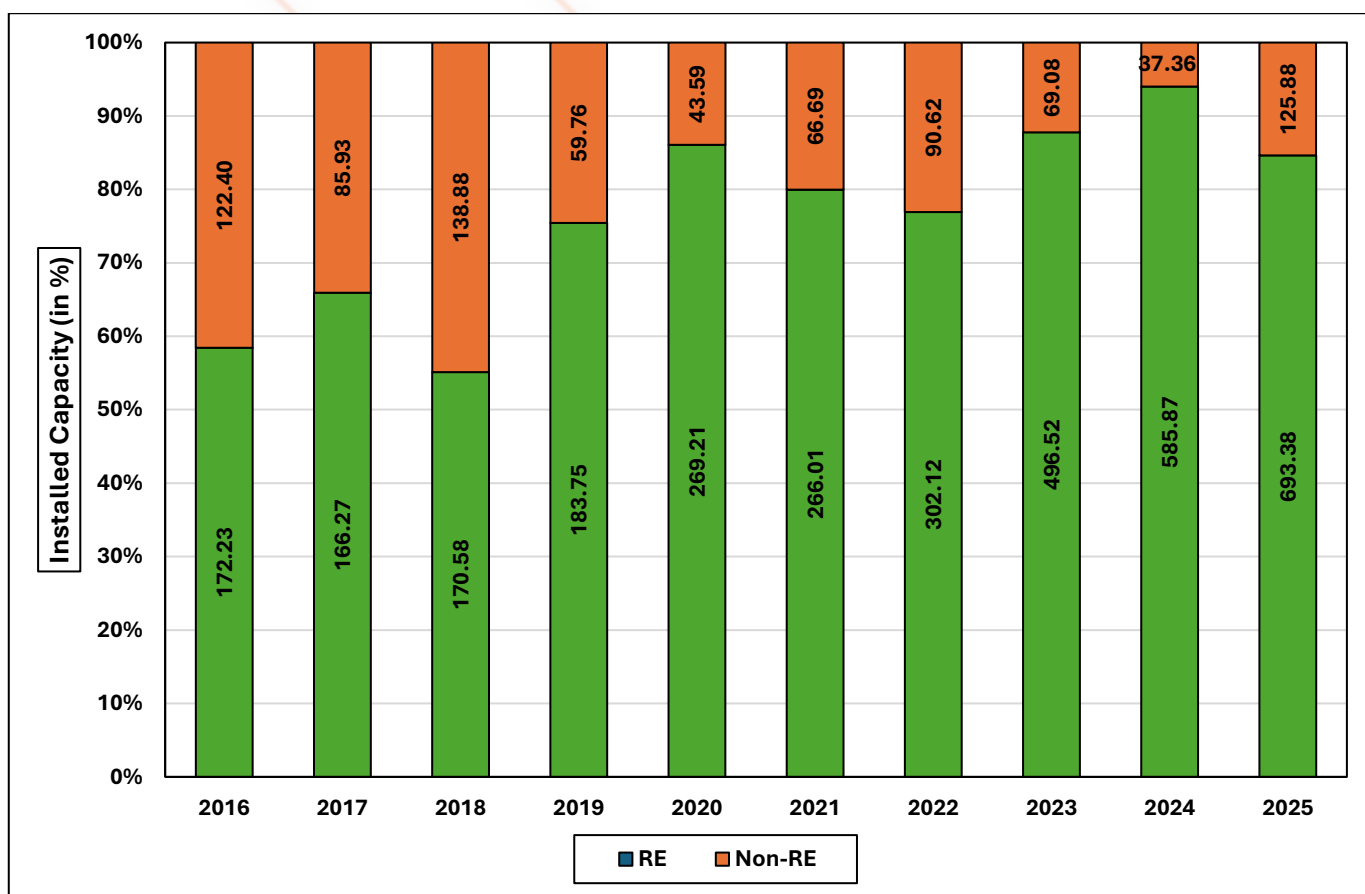
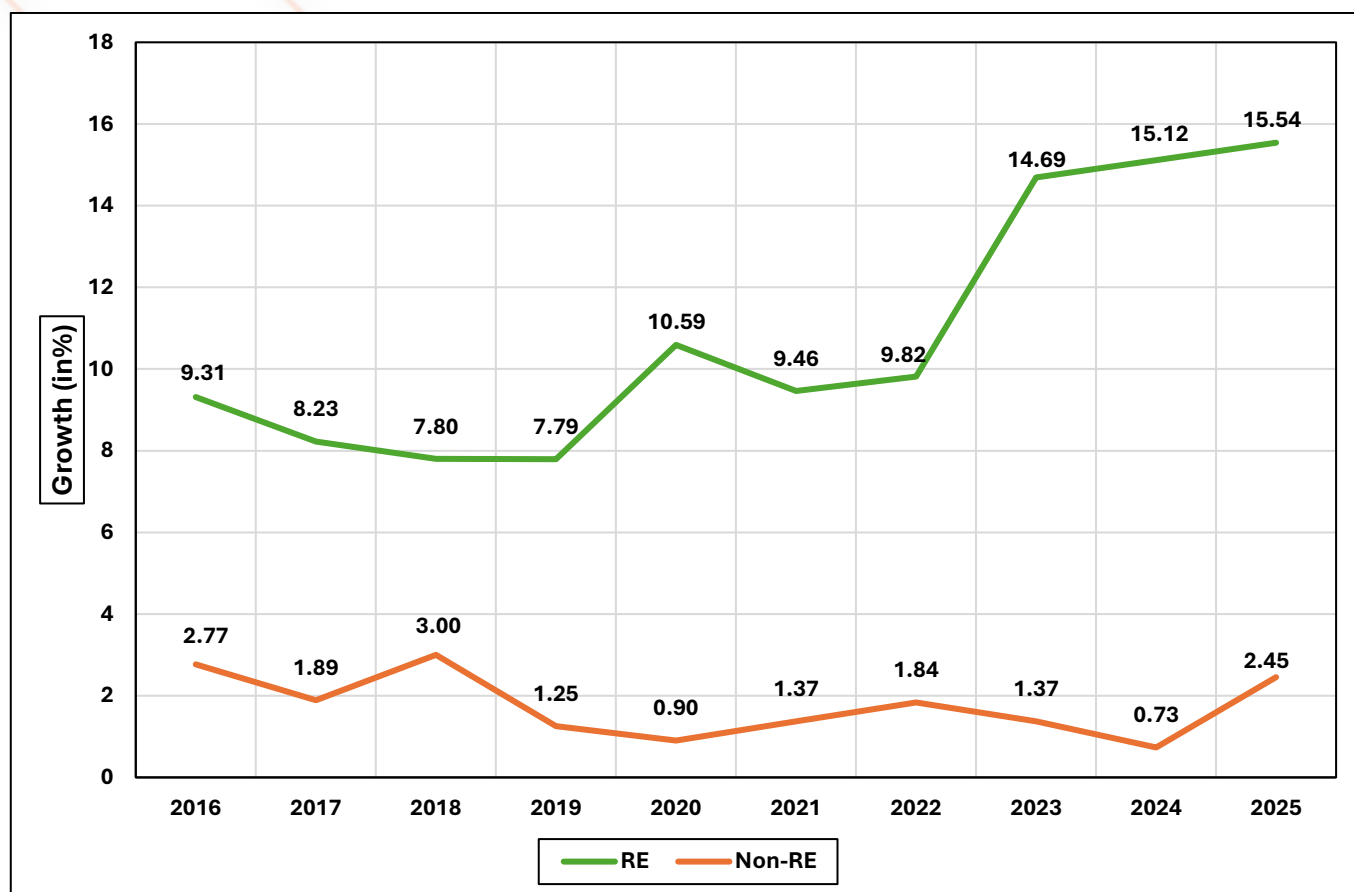


Figure inside the bar shows the installed capacity in GW

Annual installed capacity additions under renewable energy (RE) have maintained strong momentum globally, consistently exceeding annual capacity additions in the non-renewable energy (Non-RE) sector. Between 2016 and 2025, annual RE capacity additions increased from 172.23 GW in 2016 to a record 693.38 GW in 2025. Annual additions under the Non-RE sector remained significantly lower and more volatile, peaking at 138.88 GW in 2018, declining to 37.36 GW in 2024, and rising again to 125.88 GW in 2025. During the last seven years, renewable energy has accounted for more than 75% of the annual installed capacity additions worldwide, underscoring its dominant role in driving the expansion of global electricity generation capacity.

The gap between annual installed capacity additions under renewable energy (RE) and non-renewable energy (Non-RE) widened significantly over the years. Annual RE capacity additions crossed the 300 GW milestone in 2022 and accelerated sharply thereafter, reaching 496.52 GW in 2023, 585.87 GW in 2024, and a record high of 693.38 GW in 2025.

Fig 16.1.4 Growth (%) in Capacity Installation



From 2016 to 2025, installed capacity under the renewable energy (RE) sector consistently recorded substantially higher annual growth rates than the non-renewable energy (Non-RE) sector. In 2016, RE installed capacity grew by 9.31%, compared to only 2.77% for Non-RE, indicating the early onset of a faster growth trajectory for renewable energy. The most significant surge occurred during the last three years of the period. RE installed capacity grew by 14.69% in 2023, increased to 15.12% in 2024, and reached a peak of 15.54% in 2025, marking the highest annual growth during the ten-year period. However, growth in Non-RE installed capacity remained modest throughout, fluctuating between 0.73% and 3.00%. After peaking in 2018, the growth rate of Non-RE installed capacity steadily declined, highlighting the slowdown in the expansion of conventional power generation capacity. Overall, the period from 2016 to 2025 reflects a decisive structural shift in the global power sector, with renewable energy consistently expanding at a much faster pace than non-renewable energy and widening the growth gap year after year.

16.2 Capacity installation under various RE Sector:

Global installed capacity under the renewable energy sector underwent a major transformation between 2015 and 2025, with solar and wind power driving most of the growth. Total renewable energy (RE) installed capacity increased from 1,849.07 GW of 2015 to 5,155.01 GW by 2025, registering an overall growth of 178.79% with a Compound Annual Growth Rate (CAGR) of 10.80%. In 2015, the total RE capacity comprised 225.72 GW of solar, 416.39 GW of wind, 1,099.06 GW of renewable hydro (excluding pumped storage), 95.55 GW of bioenergy, 11.84 GW of geothermal energy, and 0.51 GW of marine energy.

Solar power recorded the fastest growth among all renewable energy sources. Its installed capacity expanded from 225.72 GW in 2015 to 2,396.71 GW in 2025, registering an exceptional growth of 961.81% with a CAGR of 26.65%. Wind power also recorded substantial growth, with installed capacity increasing from 416.39 GW to 1,291.02 GW, reflecting a growth of 210.05% with a CAGR of 11.98%.

Installed capacity under renewable hydro (excluding pumped storage) increased from 1,099.06 GW in 2015 to 1,295.81 GW in 2025, registering a modest growth of 17.90% with a CAGR of 1.66%. Bioenergy capacity grew steadily from 95.55 GW to 155.36 GW during the same period, recording a growth of 62.60% with a CAGR of 4.98%.

Geothermal energy installed capacity increased from 11.84 GW in 2015 to 15.62 GW in 2025, registering a growth of 31.93% with a CAGR of 2.81%. However, installed capacity under marine energy declined marginally from 0.51 GW to 0.49 GW, reflecting a growth of -4.48% with a CAGR of -0.46%.

Annual growth in total installed capacity under the RE sector ranged from 7.79% in 2019 to 15.54% in 2025, with a sharp acceleration during the last three years. This surge was largely driven by record additions in solar and wind power, reinforcing their position as the principal drivers of the global clean energy transition.

Details of cumulative installed capacity under important Renewable Energy sources are described below:

Table 16.2.1 Cumulative Installed Capacity under solar, wind, renewable hydro, bioenergy, geothermal and marine energy from 2015 to 2025

(in GW)

Year	Solar	Wind	Renewable Hydro	Bioenergy	Geothermal	Marine	Total RE
2015	225.72	416.39	1099.06	95.55	11.84	0.513	1849.07
2016	298.51	467.32	1138.92	103.87	12.17	0.524	2021.30
2017	392.34	514.97	1157.31	109.66	12.75	0.527	2187.57
2018	487.85	563.52	1176.31	116.75	13.20	0.527	2358.15
2019	590.12	623.08	1191.83	122.53	13.82	0.525	2541.90
2020	721.22	733.27	1212.17	129.77	14.18	0.491	2811.11
2021	865.92	824.19	1235.63	136.41	14.47	0.491	3077.12
2022	1057.87	903.01	1260.09	143.07	14.71	0.492	3379.24
2023	1423.99	1018.32	1270.06	147.79	15.10	0.494	3875.76
2024	1883.18	1132.59	1277.51	152.50	15.37	0.490	4461.63
2025	2396.71	1291.02	1295.81	155.36	15.62	0.490	5155.01
Gr (2015-2025)	961.81%	210.05%	17.90%	62.60%	31.93%	-4.48%	178.79%
CAGR (2015-2025)	26.65%	11.98%	1.66%	4.98%	2.81%	-0.46%	10.80%

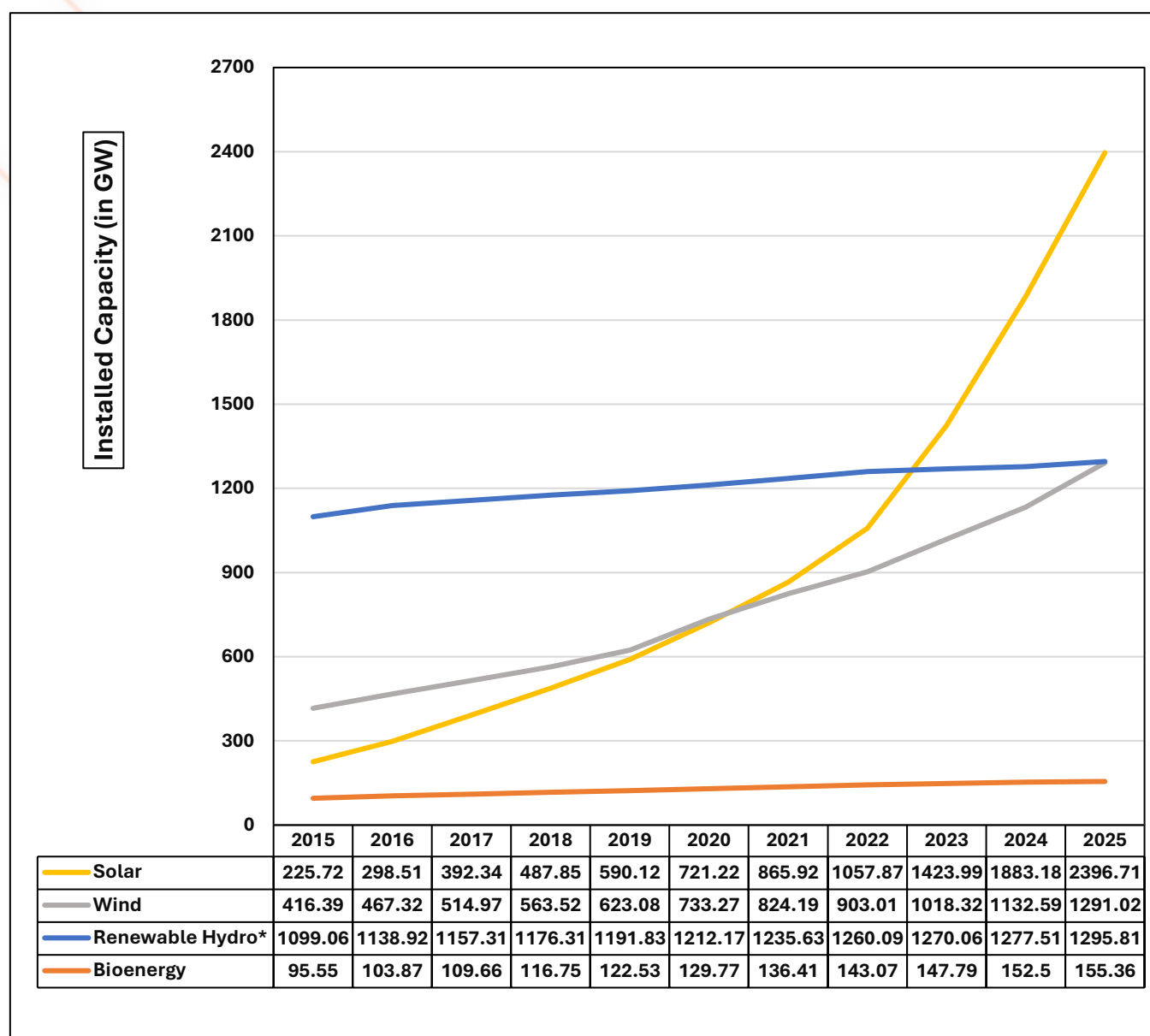
Source: IRENA – Renewable Energy Statistics 2026

Gr=Growth (%)

CAGR=Compound Annual Growth Rate

Fig 16.2.1 (1) Trend in Capacity installation

(in GW)



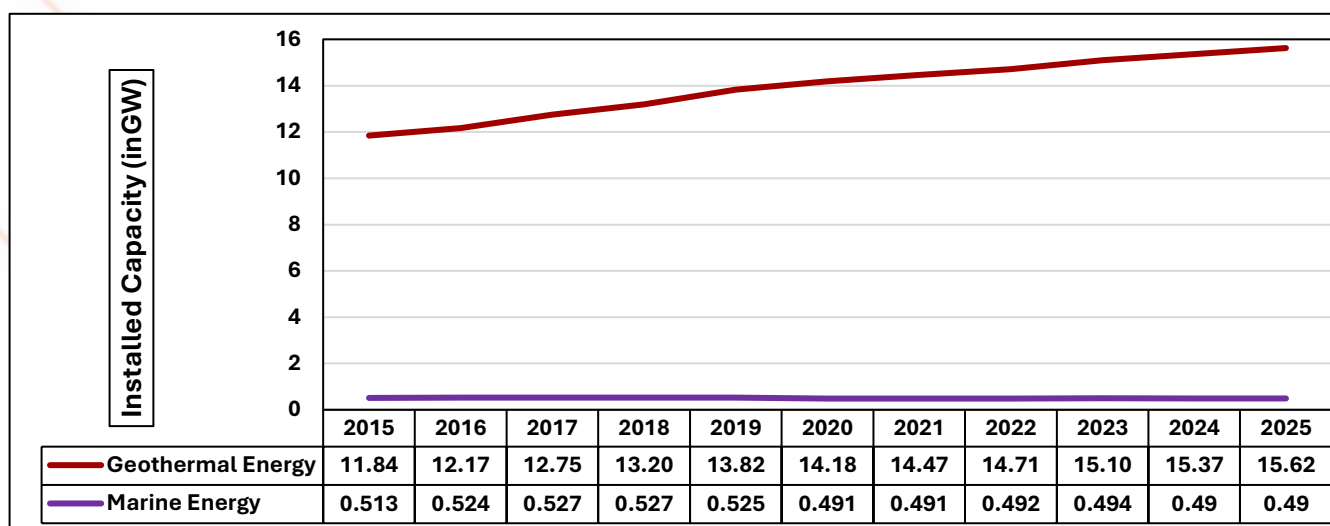
From 2015 to 2025, all major renewable energy sources, namely solar, wind, renewable hydro, bioenergy, geothermal, and marine energy, recorded growth in installed capacity, though at significantly different rates. Solar energy registered the most remarkable expansion, with installed capacity increasing more than tenfold from 225.72 GW in 2015 to 2,396.71 GW by 2025.

Installed capacity under the wind energy sector also witnessed substantial growth, rising from 416.39 GW in 2015 to 1,291.02 GW by 2025. The consistent year-on-year increase in wind installations highlights its growing contribution to global renewable energy capacity. Renewable hydro (excluding pumped storage) remained the largest contributor during the initial years, increasing modestly from 1,099.06 GW in 2015 to 1,295.81 GW by 2025.

Installed capacity under Bioenergy sector grew steadily from 95.55 GW in 2015 to 155.36 GW by 2025. Although its share in the total renewable energy installed capacity remained relatively small, it recorded consistent incremental growth throughout the period.

Fig 16.2.1 (2) Trend in Capacity installation

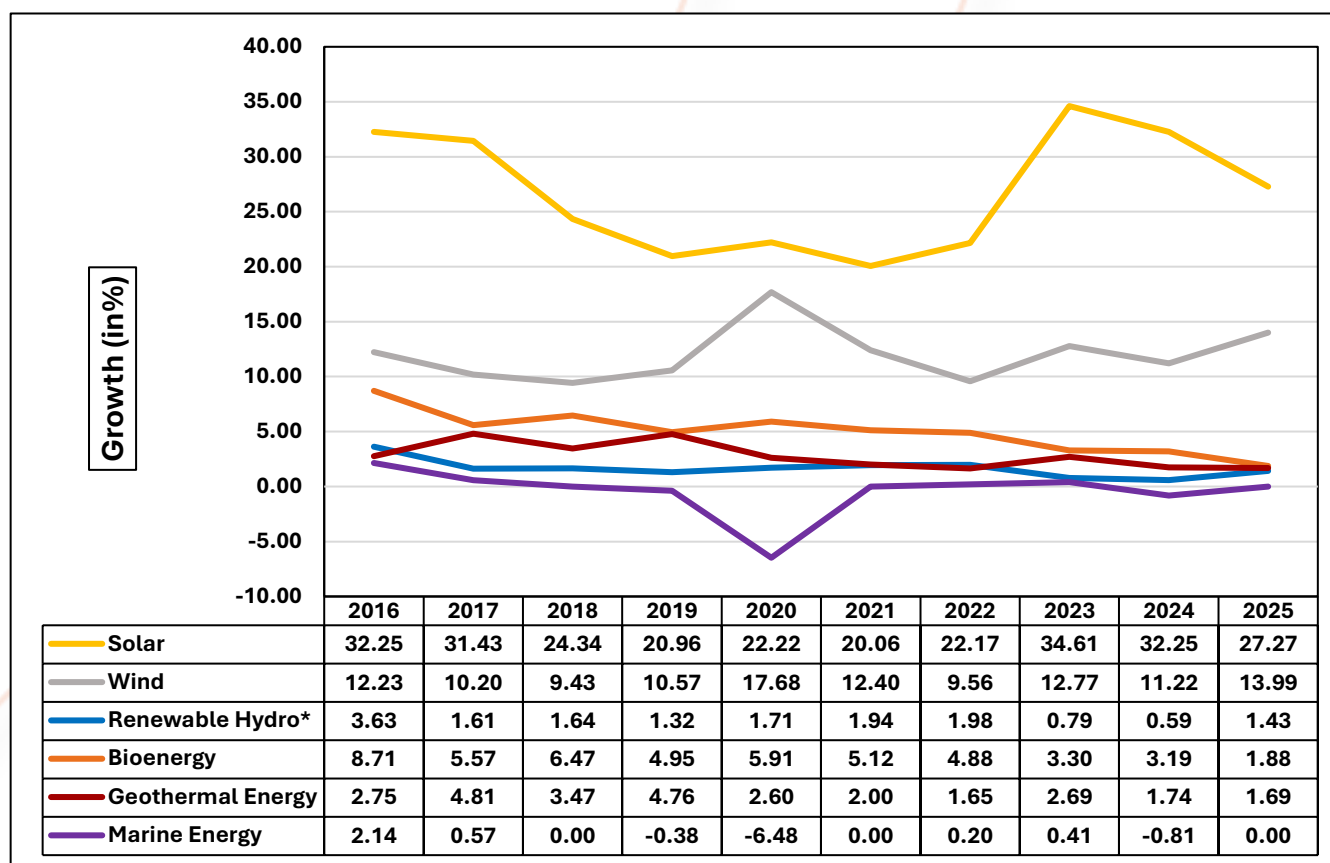
(in GW)



Installed capacity under geothermal energy increased steadily from 11.84 GW in 2015 to 15.62 GW in 2025 whereas, installed capacity under marine energy remained largely stable during the period, declining marginally from 0.527 GW in 2018 to 0.49 GW by 2024, with no capacity addition recorded in 2025.

Overall, the trend indicates a clear transformation in the renewable energy landscape, with solar power emerging as the primary driver of capacity growth, wind power strengthening its position as a major contributor, and renewable hydro maintaining a stable but comparatively slower growth trajectory.

Fig 16.2.2 Annual Growth (%) in electricity installed Capacity



*Excluding Pumped Storage

From 2016 to 2025, installed capacity under solar power consistently recorded the highest annual growth among all renewable energy sources, reaching a peak growth rate of 34.61% in 2023 and remaining above 20% in all other years during the period. Wind power exhibited fluctuating growth, with the lowest annual growth rate of 9.43% in 2018 and the highest of 17.68% in 2020.

Renewable hydro, bioenergy, geothermal, and marine energy recorded comparatively lower growth rates. Renewable hydro registered annual growth of less than 2% from 2017 onwards. Bioenergy growth ranged between 1.88% and 8.71%, while geothermal energy maintained relatively low growth, peaking at 4.81% in 2017 before declining to 1.69% in 2025. Marine energy exhibited fluctuating growth, ranging from -6.48% to 2.14%, with no growth recorded in 2018, 2021, and 2025.

CHAPTER 17

Energy Generation

17.1 Energy generation in RE & Non-RE sector:

From 2015 to 2024, global electricity generation from renewable energy (RE) sources recorded a robust upward trend, significantly outpacing the growth in electricity generation from non-renewable energy (Non-RE) sources. Electricity generation from RE sources increased from 5,516.41 TWh in 2015 to 9,836.13 TWh in 2024, registering a growth of 78.31% with a Compound Annual Growth Rate (CAGR) of 6.64%. In comparison, electricity generation from Non-RE sources increased from 18,784.96 TWh to 21,192.67 TWh during the same period, recording a comparatively modest growth of 12.82% with a CAGR of 1.35%.

The share of renewable energy in total global electricity generation increased from 22.70% in 2015 to 31.70% in 2024, while the share of Non-RE sources declined from 77.30% to 68.30%. Year-on-year growth in electricity generation from RE sources remained consistently positive, reaching a peak of 9.82% in 2024. However, growth in electricity generation from Non-RE sources remained relatively subdued, with the highest annual growth of 5.04% recorded in 2021.

Overall, the data reflects a gradual but sustained shift in the global electricity generation mix towards renewable energy, with RE expanding at a considerably faster pace than Non-RE and strengthening its contribution to meeting the world's growing electricity demand.

Table 17.1.1 Energy generation in RE and Non RE sector from 2015 to 2024

(in TWh)

Year	RE	Non-RE	Total	Share (%)		Growth (%)	
				RE	Non RE	RE	Non RE
2015	5516.41	18784.96	24301.37	22.70	77.30	–	–
2016	5883.55	19046.75	24930.30	23.60	76.40	6.66	1.39
2017	6248.49	19360.08	25608.57	24.40	75.60	6.20	1.65
2018	6645.58	19936.74	26582.32	25.00	75.00	6.35	2.98
2019	7013.06	19960.25	26973.31	26.00	74.00	5.53	0.12
2020	7480.22	19427.05	26907.27	27.80	72.20	6.66	-2.67
2021	7896.72	20406.94	28303.66	27.90	72.10	5.57	5.04
2022	8473.71	20645.57	29119.28	29.10	70.90	7.31	1.17
2023	8956.92	20899.48	29856.40	30.00	70.00	5.70	1.23
2024	9836.13	21192.67	31028.80	31.70	68.30	9.82	1.40
Gr (2015-2024)	78.31%	12.82%	27.68%				
CAGR(2015-2024)	6.64%	1.35%	2.75%				

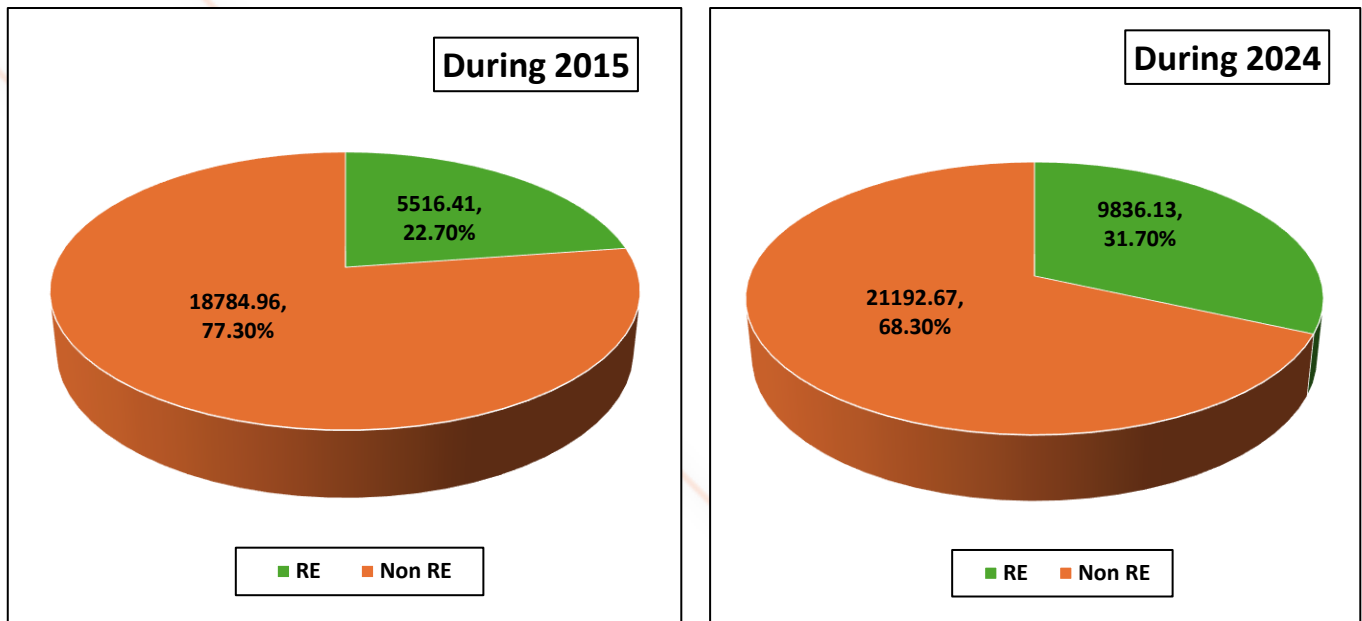
Source: IRENA – Renewable Energy Statistics- 2026

Gr=Growth (%)

CAGR=Compound Annual Growth Rate

Fig 17.1.1 Share of RE and Non RE in total Energy generation

(in TWh)



In 2024, global electricity generation from renewable energy sources reached 9,836.13 TWh, up from 5,516.41 TWh in 2015, registering a growth of 78.31%. During the same period, the share of renewable energy in total global electricity generation increased significantly from 22.70% to 31.70%, reflecting the growing contribution of renewable sources to the global electricity mix.

Fig 17.1.2 Trend in Energy Generation

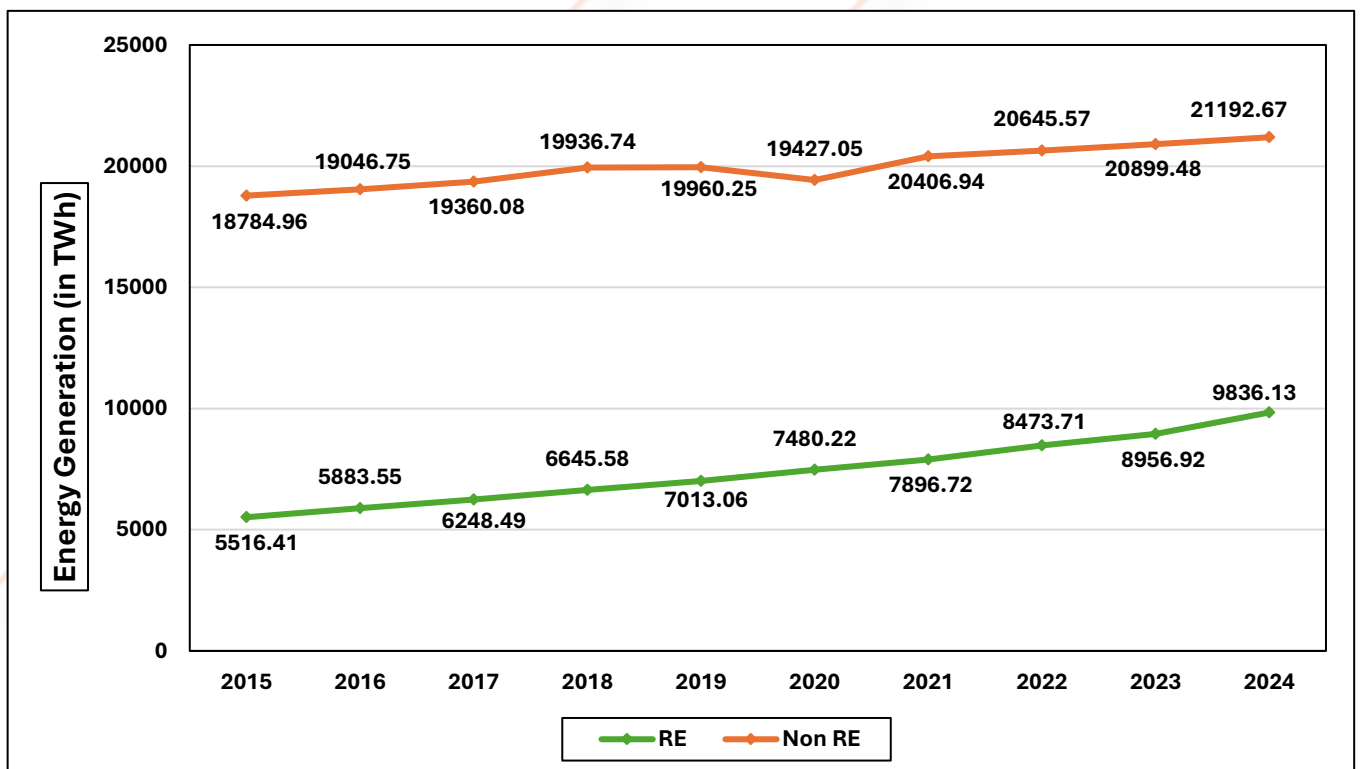
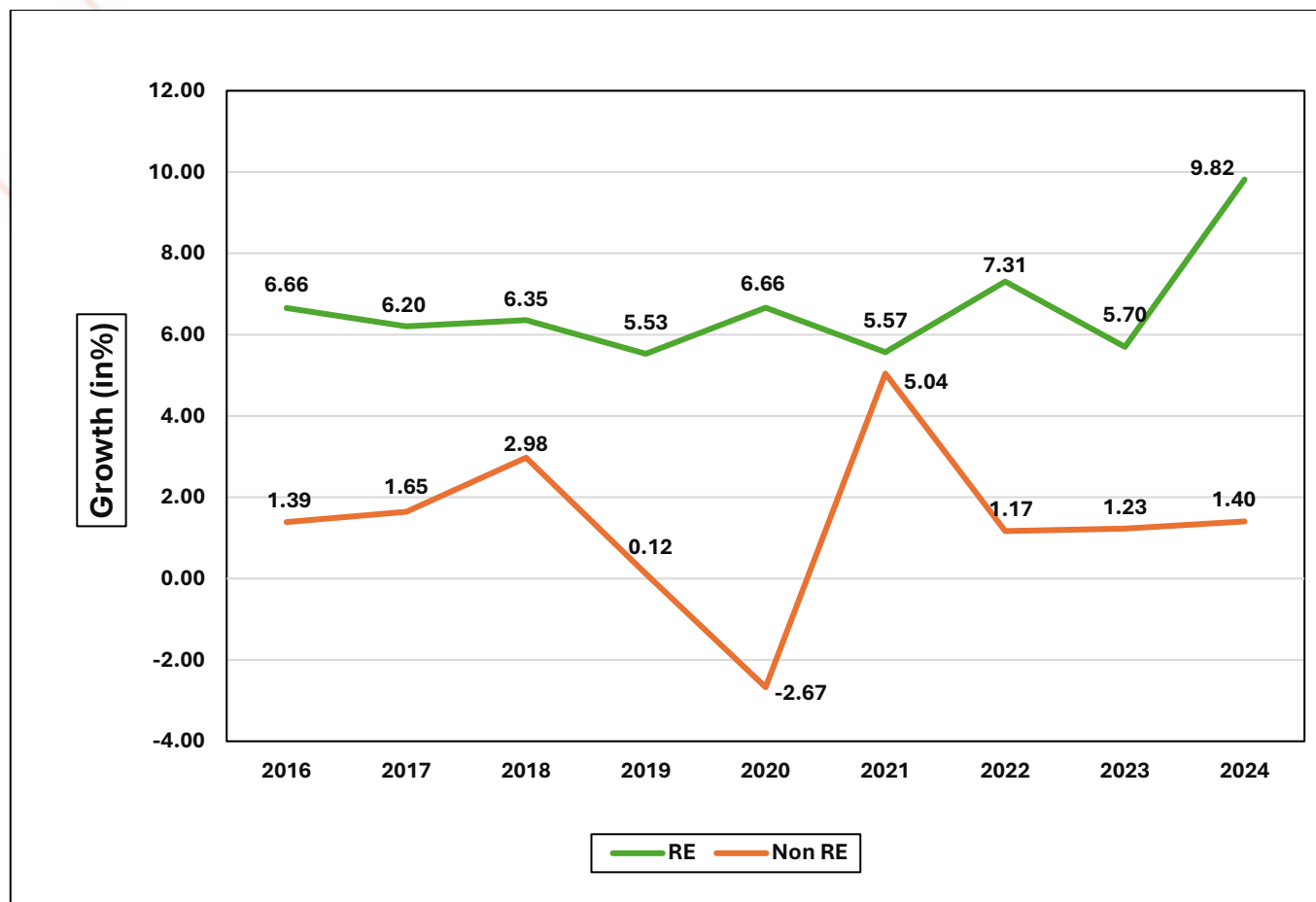


Fig 17.1.3 Year wise Growth (%) in Energy Generation



The trend in electricity generation from Renewable Energy (RE) and Non-Renewable Energy (Non-RE) sources shows that the gap between their electricity generation is gradually narrowing. Electricity generation from the RE sector has consistently recorded higher year-on-year growth than the Non-RE sector. The highest growth in RE electricity generation was registered in 2024. Throughout the period from 2016 to 2024, the annual growth in electricity generation from renewable energy sources consistently outpaced that of non-renewable energy sources.

17.2 Energy generation in various RE sources:

Between 2015 and 2024, electricity generation from renewable energy sources increased from 5,516.41 TWh to 9,836.13 TWh, registering an overall growth of 78.31% with a Compound Annual Growth Rate (CAGR) of 6.64%. Solar power recorded the highest growth, with electricity generation increasing by 734.64% and a CAGR of 26.59%, followed by wind power, which grew by 201.85% with a CAGR of 13.06%. Electricity generation from renewable hydro increased modestly by 14.75%, while bioenergy generation grew by 44.65%. Geothermal energy recorded steady growth of 20.25% with a CAGR of 2.07%, whereas marine energy remained marginal and registered an overall decline of 19.64%, with a CAGR of -2.40%.

The years 2016, 2018, 2020, 2022, and 2024 witnessed notable growth in renewable electricity generation, with the highest annual growth rate of 9.82% recorded in 2024. Overall, the expansion in electricity generation from renewable energy sources was driven primarily by the rapid growth of solar and wind power.

Table 17.2.1 Energy Generation from RE sources of solar, wind, renewable hydro, bioenergy, geothermal and Marine energy from 2015 to 2024

(in TWh)

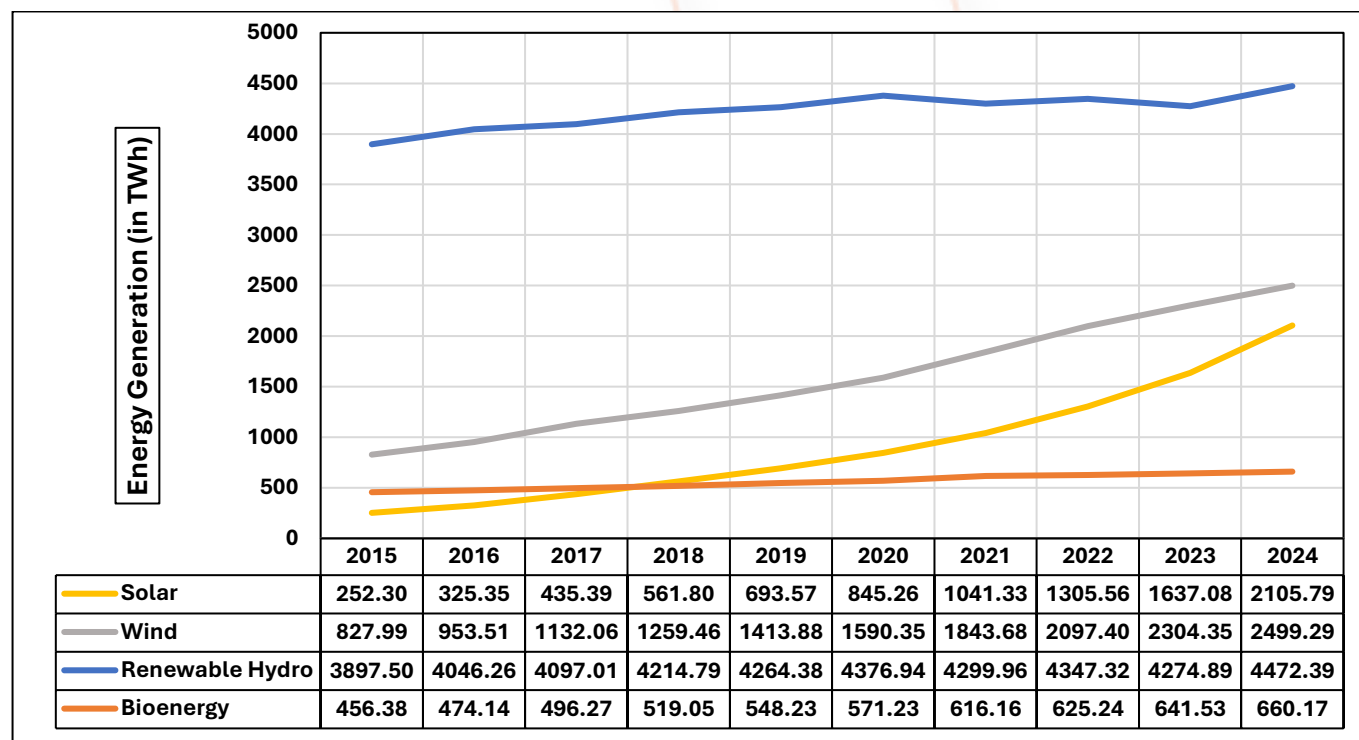
Year	Solar	Wind	Renewable Hydro	Bioenergy	Geothermal	Marine	Total RE
2015	252.30	827.99	3897.50	456.38	81.23	1.01	5516.41
2016	325.35	953.51	4046.26	474.14	83.24	1.04	5883.55
2017	435.39	1132.06	4097.01	496.27	86.71	1.05	6248.49
2018	561.80	1259.46	4214.79	519.05	89.46	1.02	6645.58
2019	693.57	1413.88	4264.38	548.23	92.00	1.00	7013.06
2020	845.26	1590.35	4376.94	571.23	95.45	0.99	7480.22
2021	1041.33	1843.68	4299.96	616.16	94.63	0.97	7896.72
2022	1305.56	2097.40	4347.32	625.24	97.23	0.96	8473.71
2023	1637.08	2304.35	4274.89	641.53	98.14	0.92	8956.92
2024	2105.79	2499.29	4472.39	660.17	97.68	0.81	9836.13
Gr (2015-2024)	734.64%	201.85%	14.75%	44.65%	20.25%	-19.64%	78.31%
CAGR (2015-2024)	26.59%	13.06%	1.54%	4.19%	2.07%	-2.40%	6.64%

Source: IRENA – Renewable Energy Statistics 2026

Gr=Growth (%)

CAGR=Compound Annual Growth Rate

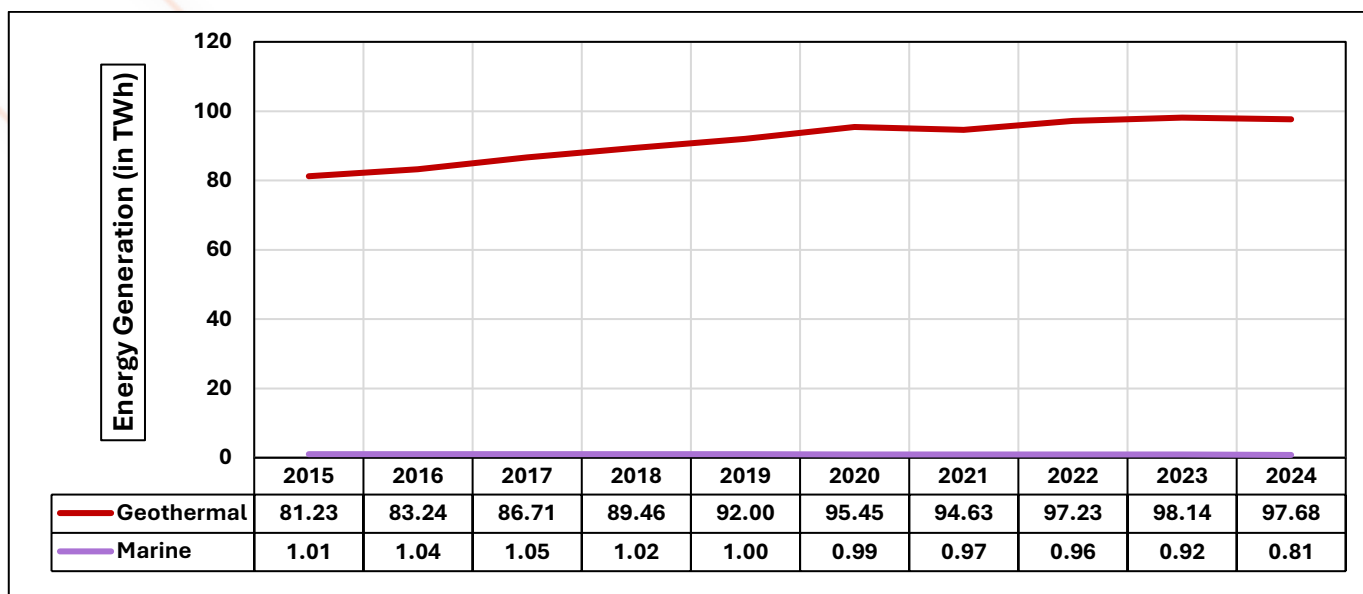
Fig 17.2.1 (1) Trend in Energy Generation



Electricity generation from renewable energy sources exhibited varying growth trends during the period from 2015 to 2024. Solar power recorded the most remarkable increase, with generation rising from 252.30 TWh in 2015 to 2,105.79 TWh in 2024. Electricity generation from wind power also increased substantially, from 827.99 TWh to 2,499.29 TWh during the same period. Bioenergy generation grew steadily

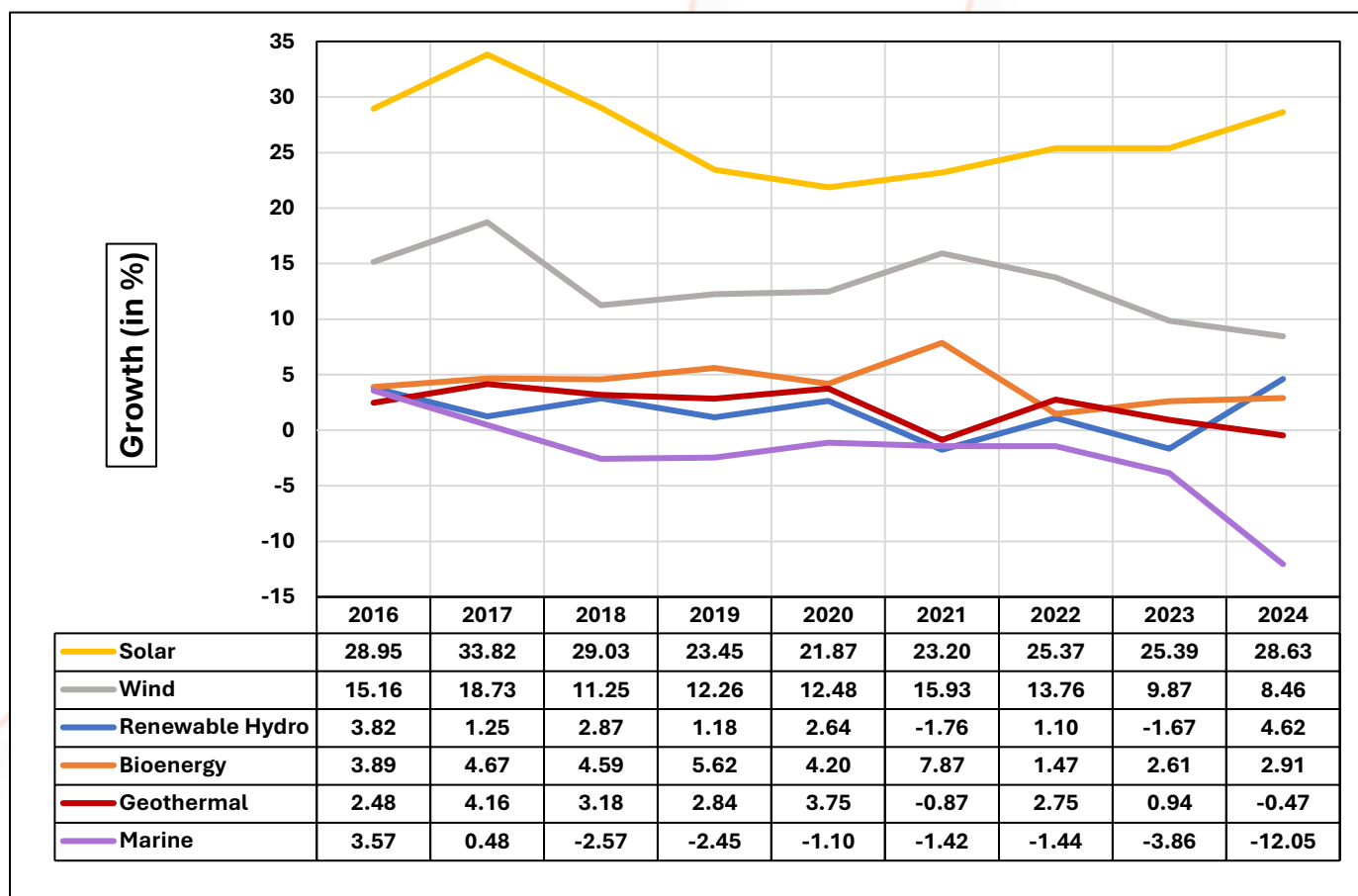
from 456.38 TWh to 660.17 TWh, while electricity generation from renewable hydro (excluding pumped storage) increased from 3,897.50 TWh in 2015 to 4,472.39 TWh in 2024.

Fig 17.2.1 (2) Trend in Energy Generation



Electricity generation from geothermal energy increased steadily from 81.23 TWh in 2015 to 97.68 TWh in 2024, whereas electricity generation from marine energy declined from 1.01 TWh in 2015 to 0.81 TWh in 2024, remaining a marginal contributor to global renewable electricity generation.

Fig 17.2.2 Year wise Growth (%) in Energy Generation.



During 2016 to 2024, solar energy recorded the highest and most consistent year-on-year growth among all renewable energy sources, peaking at 33.82% in 2017 and remaining above 21% in all subsequent years. Growth in wind energy generation, though steady, moderated from 18.73% in 2017 to 8.46% in 2024. Renewable hydro recorded fluctuating growth in electricity generation, reaching a peak of 4.62% in 2024.

Bioenergy exhibited modest growth throughout the period, attaining a peak of 7.87% in 2021, indicating steady expansion in electricity generation. Geothermal energy recorded relatively low and fluctuating growth, reaching a peak of 4.16% in 2017 before declining marginally to -0.47% in 2024. However, marine energy displayed an overall declining trend, recording negative growth after 2017, with the sharpest decline of 12.05% in 2024.

Overall, solar energy emerged as the principal driver of growth in renewable electricity generation, while wind and bioenergy contributed steadily and renewable hydro recorded fluctuating growth.

Installed capacity and energy generation

18.1 Installed Capacity in RE and Non-RE sector:

Total installed capacity under Renewable Energy (RE) recorded a consistent upward trend across all major regions during the period from 2016 to 2025, with Asia emerging as the principal driver of global renewable energy capacity additions. In Asia, RE installed capacity increased from 722.70 GW of 2015 to 2,895.41 GW by 2025, registering an overall growth of 300.64% with a Compound Annual Growth Rate (CAGR) of 14.89%. Installed capacity under Non-RE sources in the region also recorded a moderate increase of 41.53% during the same period. Europe recorded a 101.98% growth in RE installed capacity, increasing from 464.01 GW of 2015 to 937.21 GW by 2025, while installed capacity under the Non-RE sector declined by 16.17%, reflecting a clear shift towards clean energy. North America registered a 99.02% increase in RE installed capacity, reaching 612.10 GW by 2025, whereas Non-RE installed capacity remained almost unchanged, recording a marginal decline of 0.45%. In South America, RE installed capacity expanded by 82.10%, while Non-RE installed capacity increased by 18.16% during the same period. A detailed region-wise analysis of installed capacity and electricity generation under RE and Non-RE sources is presented in this chapter.

Table 18.1.1 Total RE & Non-RE Installed capacity from 2015 to 2025 (in GW)

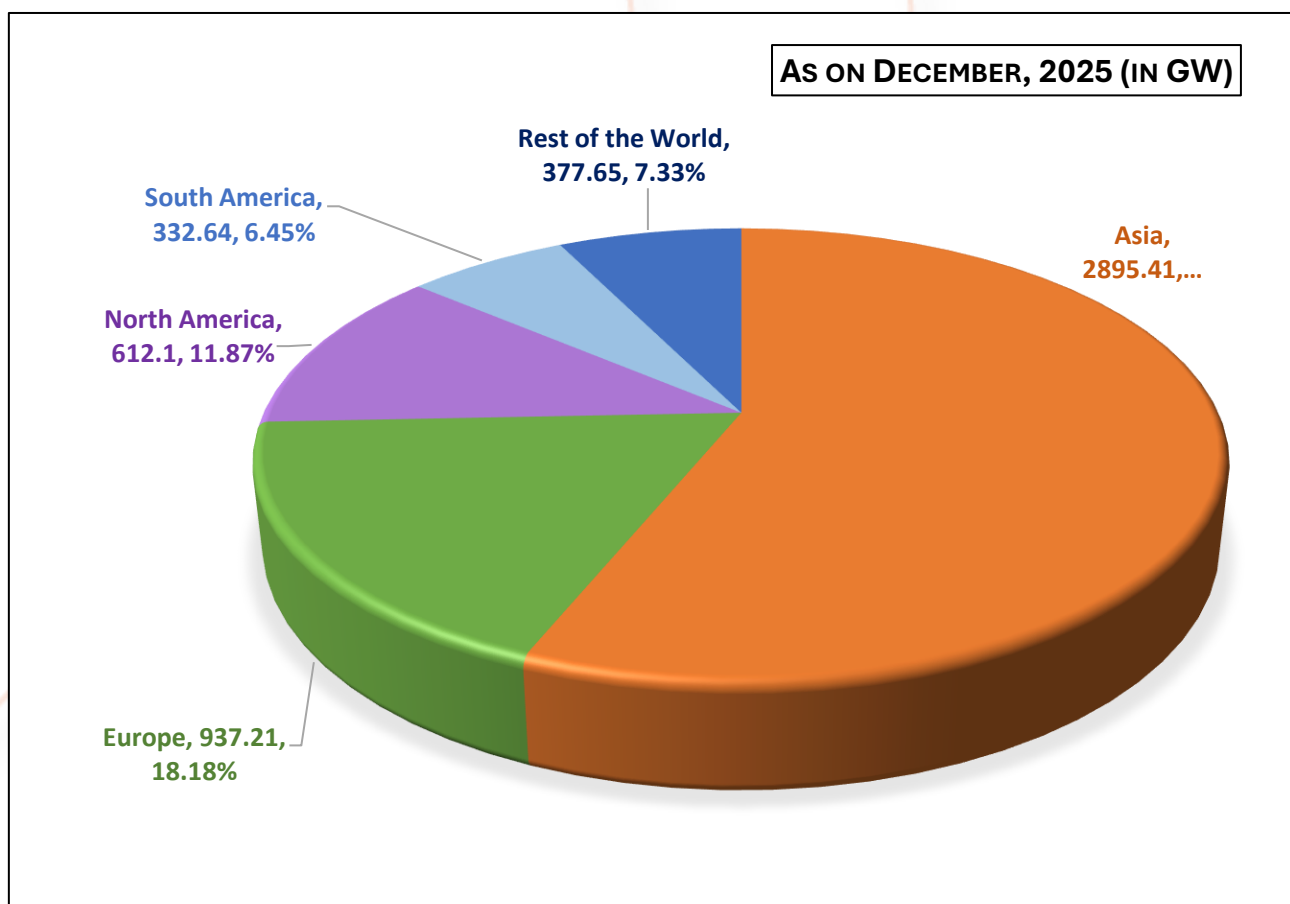
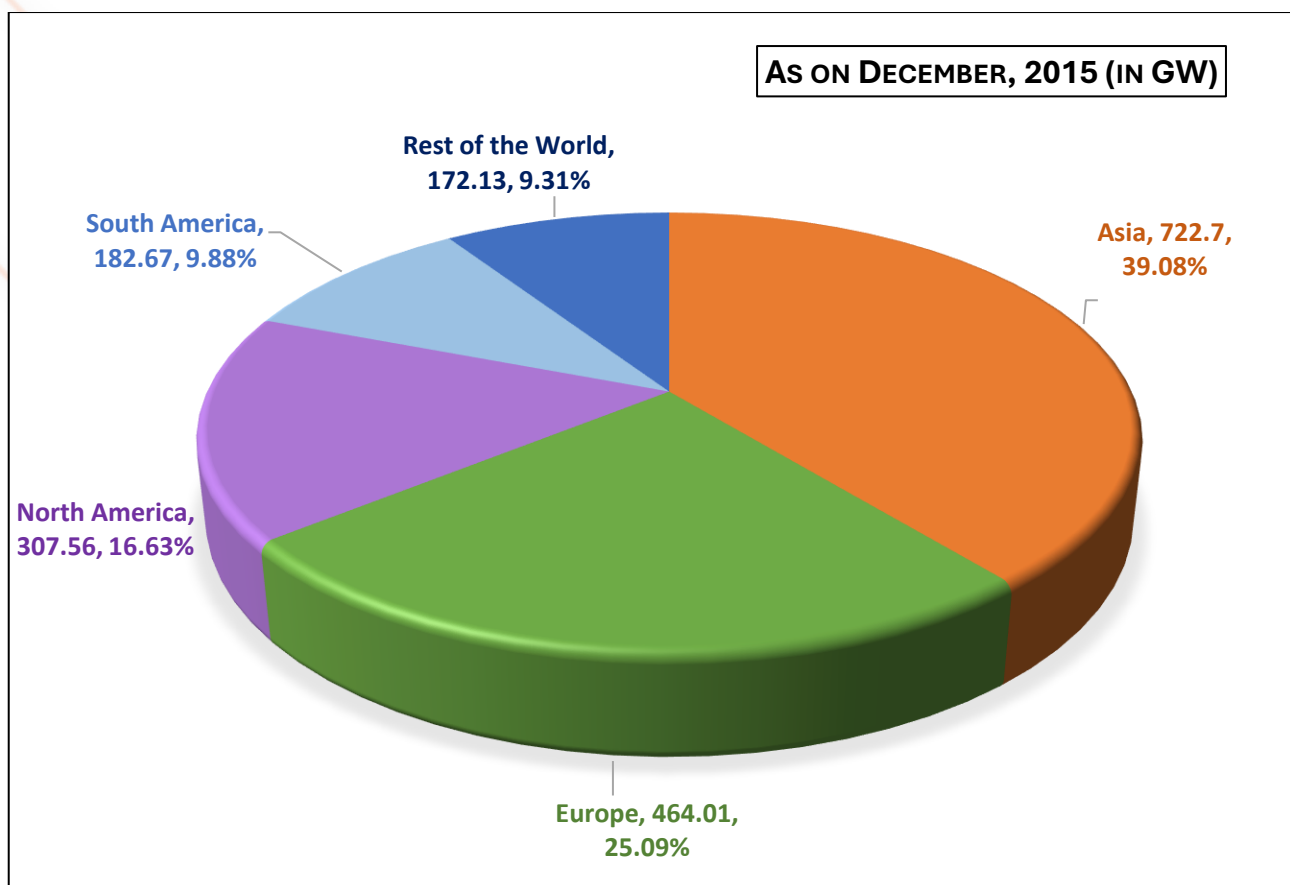
Year	Asia		Europe		North America		South America		Rest of the World	
	RE	Non-RE	RE	Non-RE	RE	Non-RE	RE	Non-RE	RE	Non-RE
2015	722.70	1934.29	464.01	662.23	307.56	973.94	182.67	100.98	172.13	747.53
2016	813.65	2031.28	487.98	649.50	331.18	972.68	203.99	106.50	184.50	781.40
2017	920.77	2108.08	511.72	640.80	347.62	974.13	210.44	109.86	197.02	794.42
2018	1025.58	2209.69	536.40	645.10	365.96	989.45	217.01	112.79	213.20	809.14
2019	1125.38	2274.56	573.52	626.31	390.52	979.73	223.52	112.60	228.96	832.73
2020	1301.50	2344.16	606.86	614.19	422.33	971.50	232.55	117.15	247.87	822.53
2021	1456.06	2406.17	649.57	609.29	460.82	970.30	246.83	118.84	263.84	831.61
2022	1630.46	2476.49	706.89	602.17	490.07	972.83	267.36	117.88	284.46	857.46
2023	1961.33	2547.47	783.60	598.41	525.71	972.04	289.79	116.65	315.33	861.34
2024	2381.35	2621.49	859.86	559.05	570.10	966.56	312.99	117.53	337.33	868.64
2025	2895.41	2737.68	937.21	555.16	612.10	969.55	332.64	119.32	377.65	877.43
Gr (2015 to 2025)	300.64%	41.53%	101.98%	-16.17%	99.02%	-0.45%	82.10%	18.16%	119.40%	17.38%
CAGR (2015 to 2025)	14.89%	3.53%	7.28%	-1.75%	7.12%	-0.05%	6.18%	1.68%	8.17%	1.62%

Source: IRENA – Renewable Energy Statistics 2026

Gr=Growth (%)

CAGR=Compound Annual Growth Rate

Fig 18.1.1 Region wise share in RE installed Capacity



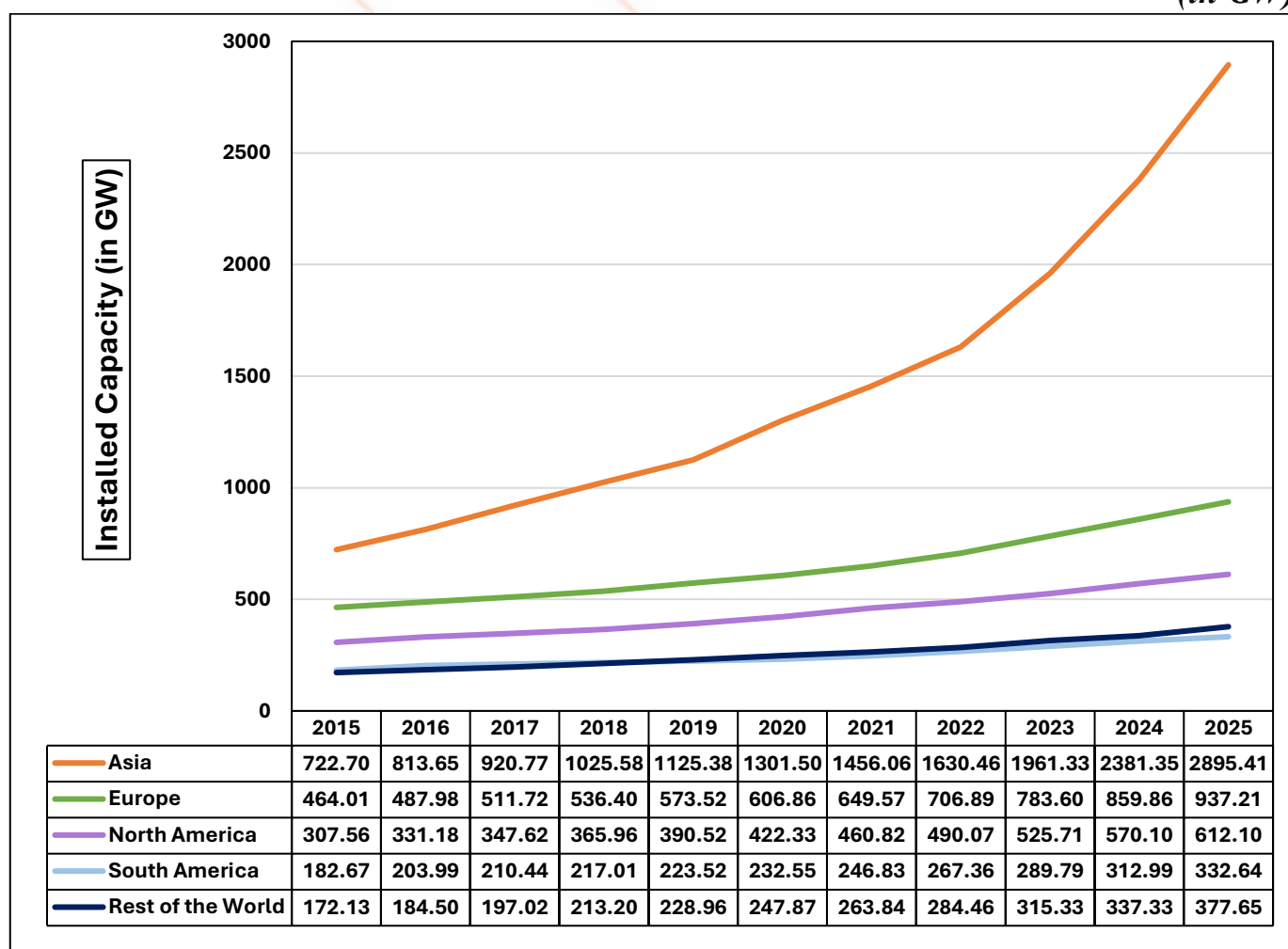
The regional distribution of renewable energy (RE) installed capacity witnessed significant changes in both volume and share between 31st December 2015 and 31st December 2025. As on 31st December 2015, Asia accounted for 722.70 GW of RE installed capacity, representing 39.08% of the global total, followed by Europe with 464.01 GW (25.09%). North America accounted for 307.56 GW, constituting 16.63% of global RE installed capacity, while South America contributed 182.67 GW with a share of 9.88%.

By 31st December 2025, Asia's RE installed capacity had increased sharply to 2,895.41 GW, accounting for 56.17% of the global total. Europe reached 937.21 GW with a share of 18.18%, while North America's RE installed capacity increased to 612.10 GW, representing 11.87% of the global total. South America's installed capacity rose to 332.64 GW, accounting for 6.45% of the world's total RE installed capacity.

The decade highlights Asia's dominant and accelerating growth in renewable energy installed capacity, while Europe and North America recorded moderate increases in capacity.

Fig 18.1.2 Region wise trend in RE installed Capacity

(in GW)



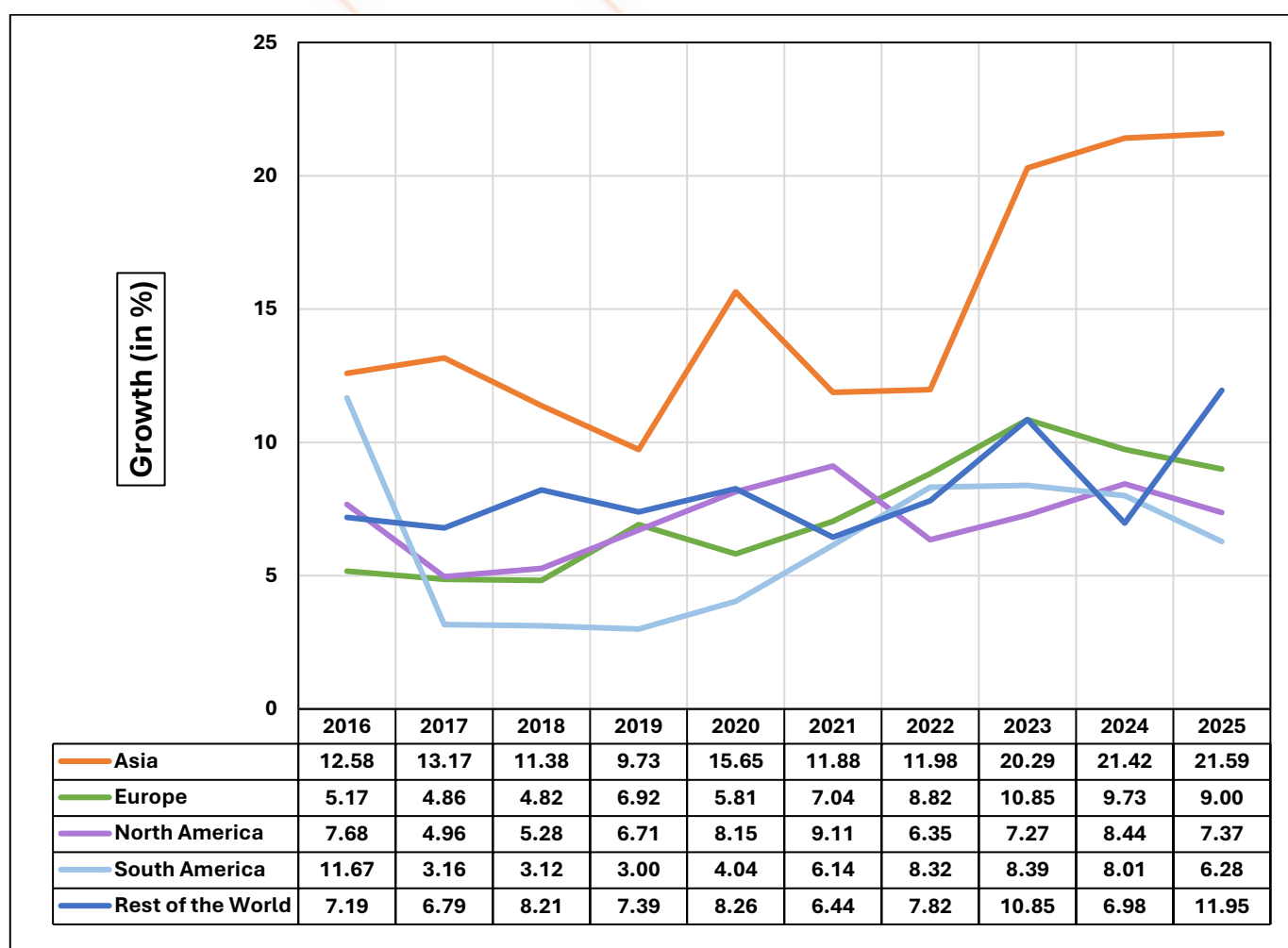
During the period from 2016 to 2025, installed capacity under Renewable Energy (RE) sources recorded a consistent and significant upward trend across all major regions. Asia registered the highest absolute increase, with its RE installed capacity more than four times during the decade. Europe and North America also recorded substantial additions in RE installed capacity, while South America witnessed steady growth.

Overall, the trend reflects sustained global momentum in renewable energy deployment, with Asia contributing the largest share of installed capacity additions, followed by significant expansion in Europe and North America and continued growth in South America.

18.2 Region wise growth (%) in RE installed Capacity:

During 2025, Asia recorded the highest annual growth in renewable energy (RE) installed capacity at 21.59%, followed by Europe, North America, and South America. Although all major regions experienced fluctuations in their year-on-year growth rates during the period from 2016 to 2025, Asia consistently maintained the highest growth rate and remained the leading contributor to global renewable energy installed capacity throughout the decade.

Fig 18.2.1 Region wise growth (%) in RE installed Capacity



18.3 Region wise electricity generation from RE sources:

Asia led global renewable energy (RE) electricity generation, increasing from 2,033.20 TWh during 2015 to 4,589.49 TWh during 2024, registering an impressive growth of 125.73% with a Compound Annual Growth Rate (CAGR) of 9.47%. Europe followed, generating 1,758.04 TWh from renewable energy sources during 2024, reflecting a growth of 49.74% over the period. All other major regions also recorded positive

growth in electricity generation from renewable energy sources. However, in the case of electricity generation from Non- RE sources, Europe, North America, and South America registered an overall decline during the same period.

Table 18.3.1 Electricity Generation from RE & Non-RE sources from 2015 to 2024.

(in TWh)

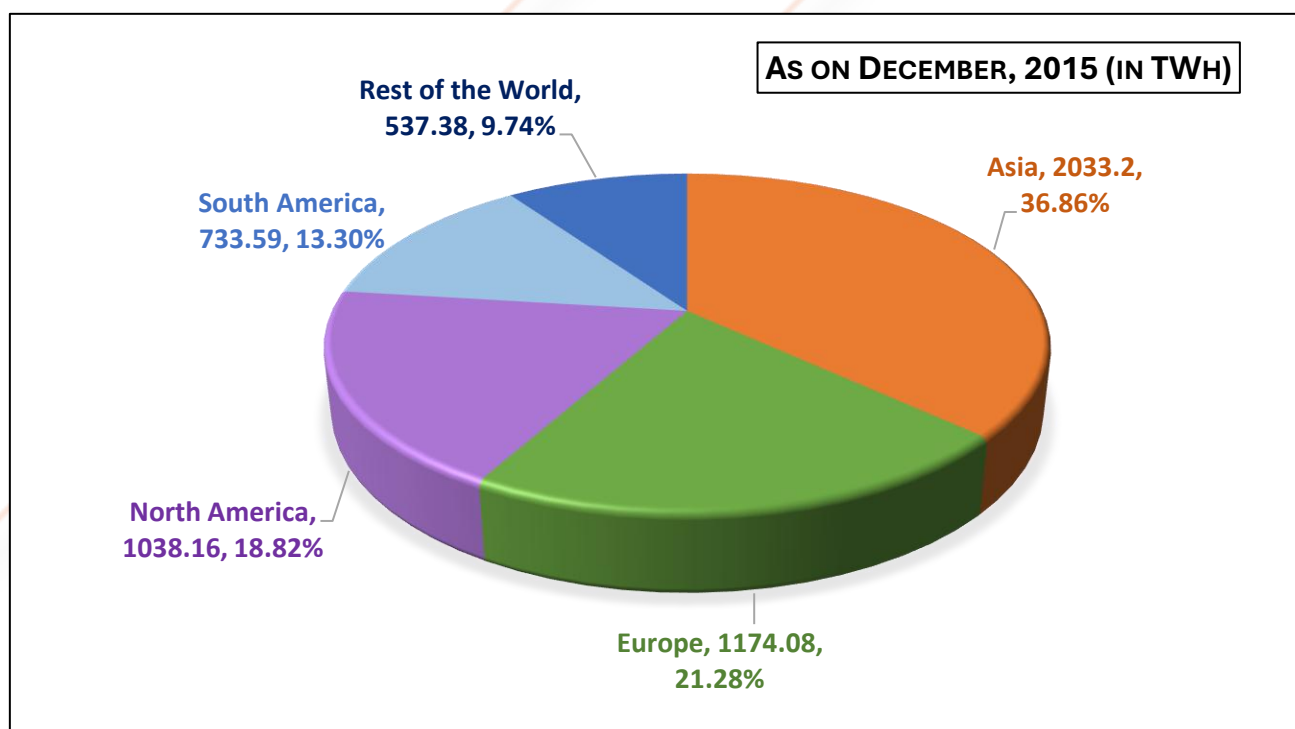
Year	Asia		Europe		North America		South America		Rest of the World	
	RE	Non-RE	RE	Non-RE	RE	Non-RE	RE	Non-RE	RE	Non-RE
2015	2033.20	8287.61	1174.08	2576.97	1038.16	4258.57	733.59	436.41	537.38	3225.39
2016	2220.59	8664.66	1196.84	2578.68	1117.83	4179.94	773.38	400.19	574.91	3223.28
2017	2432.73	9042.41	1211.31	2585.90	1211.80	4056.90	805.74	373.97	586.91	3300.91
2018	2651.70	9568.12	1298.95	2499.15	1234.08	4226.45	836.07	346.49	624.78	3296.56
2019	2869.22	9826.44	1331.79	2398.71	1255.47	4132.81	850.45	338.99	706.13	3263.29
2020	3104.44	9830.73	1451.53	2168.25	1335.20	3900.88	851.57	324.63	737.48	3202.56
2021	3434.86	10471.46	1472.93	2274.98	1385.42	3963.69	848.45	374.10	755.06	3322.71
2022	3760.61	10592.86	1461.35	2146.92	1495.12	4001.64	955.10	295.03	801.53	3609.11
2023	4016.00	11138.72	1640.20	1894.71	1451.11	4004.19	1016.96	290.19	832.65	3571.66
2024	4589.49	11457.68	1758.04	1844.50	1534.64	4066.24	1046.76	309.15	907.20	3515.09
Gr (2015-2024)	125.73%	38.25%	49.74%	-28.42%	47.82%	-4.52%	42.69%	-29.16%	68.82%	8.98%
CAGR (2015-2024)	9.47%	3.66%	4.59%	-3.65%	4.44%	-0.51%	4.03%	-3.76%	5.99%	0.96%

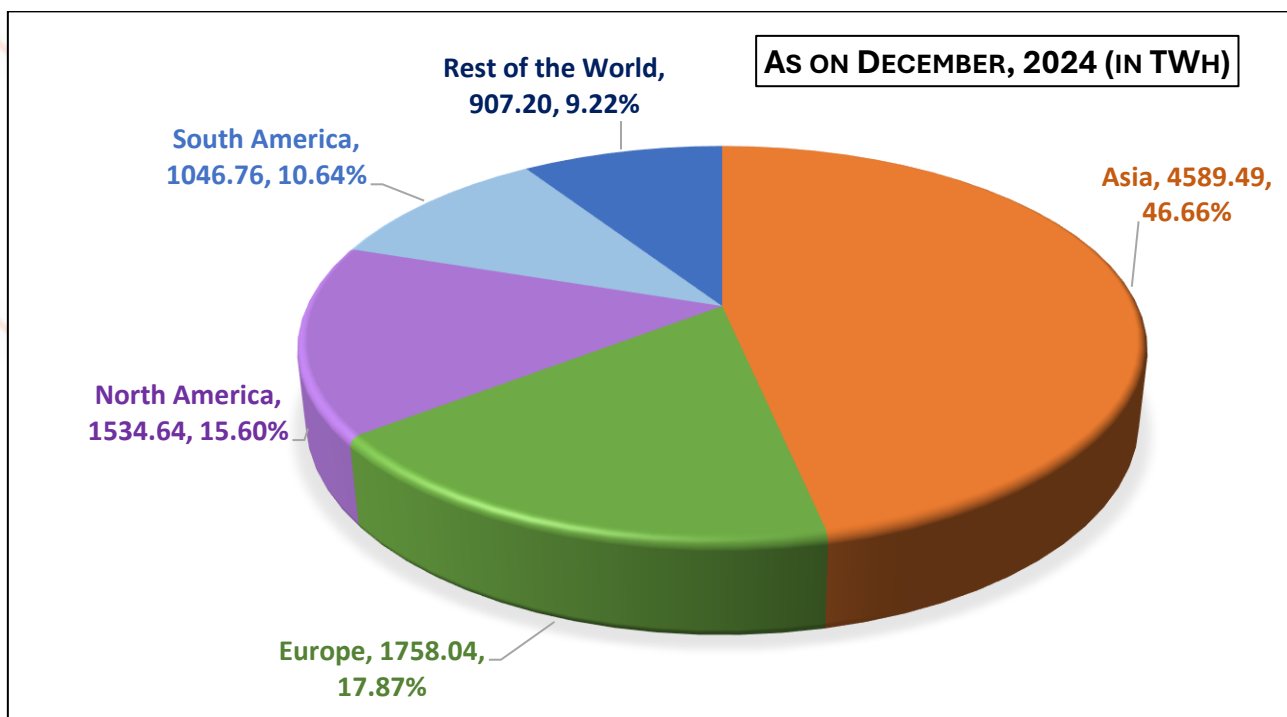
Source: IRENA – Renewable Energy Statistics- 2026

Gr=Growth (%)

CAGR=Compound Annual Growth Rate

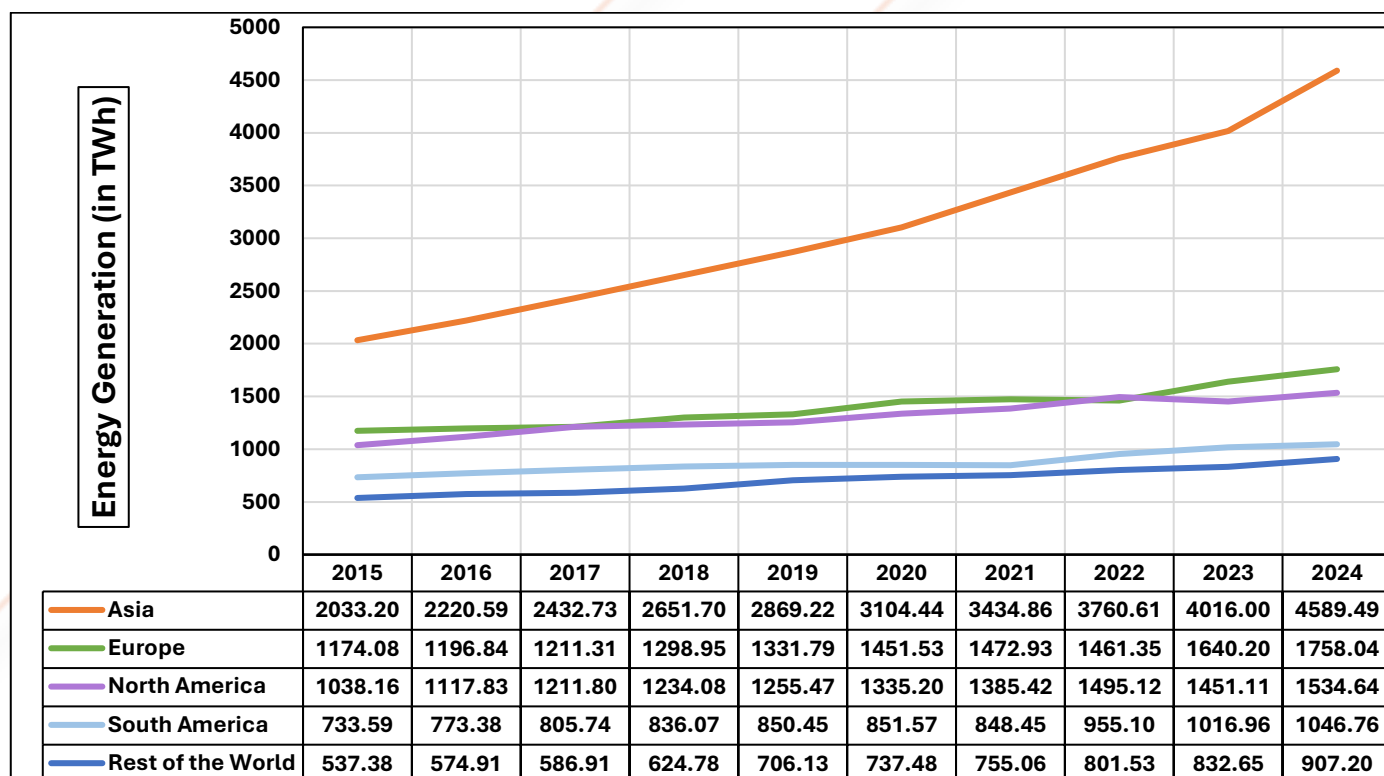
Fig 18.3.1 Region wise share in RE Generation





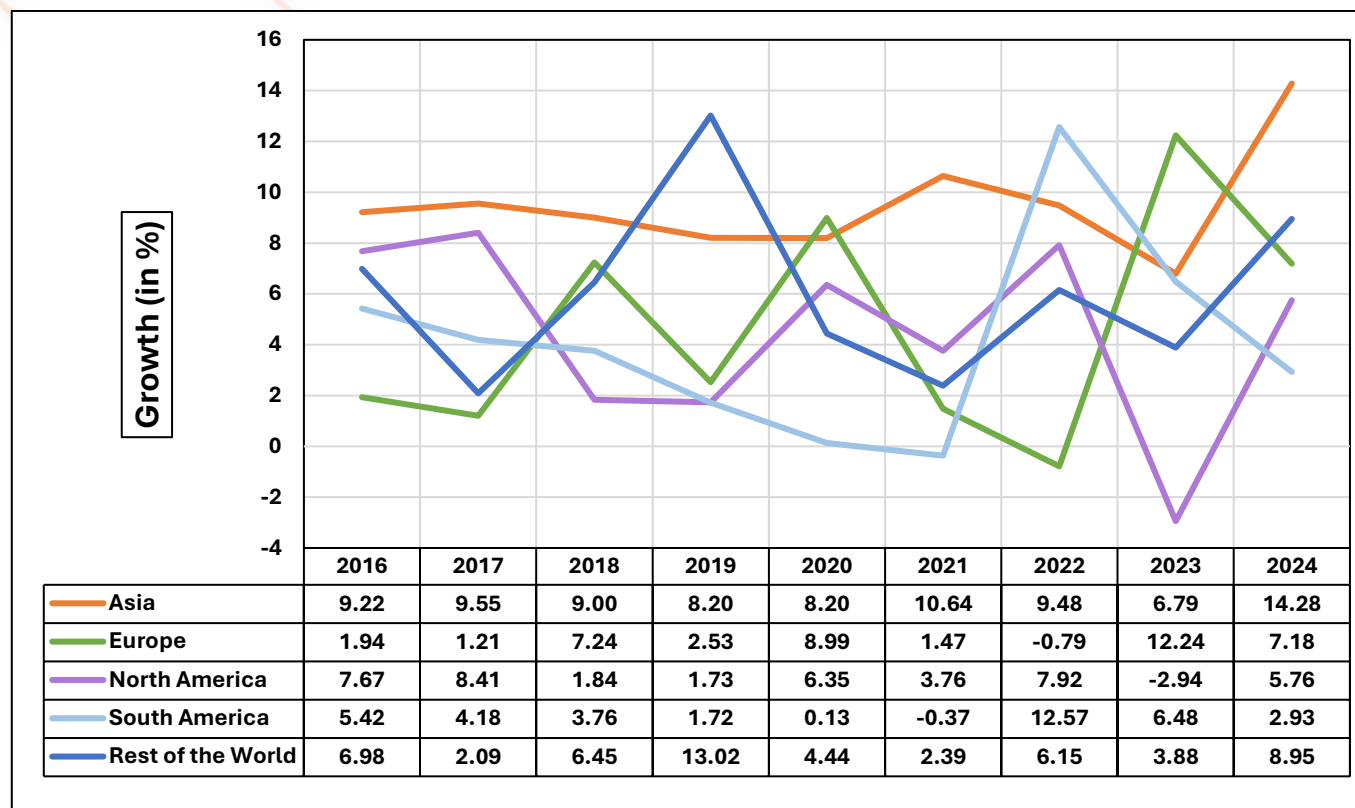
During 2015, Asia accounted for the largest share of global renewable energy (RE) electricity generation at 36.86%, followed by Europe with 21.28% and North America with 18.82%. By 2024, Asia's share had increased significantly to 46.66%, while Europe and North America remained the second and third largest contributors, respectively. The data indicate substantial growth in renewable electricity generation across all major regions during the period. However, Asia recorded the largest increase in both electricity generation and global share, whereas the other regions experienced a decline in their relative shares despite registering positive growth in renewable electricity generation.

Fig 18.3.2 Region wise Trend in Renewable Energy Generation



The graph clearly illustrates that Asia recorded a sharp increase in electricity generation from renewable energy sources over the years, whereas the other major regions registered comparatively moderate growth.

Fig 18.3.3 Region wise growth (%) in RE Generation



During the period from 2016 to 2024, Asia consistently recorded the highest and most sustained year-on-year growth in renewable energy generation among all regions, reaching a peak of 14.28% in 2024. Europe exhibited fluctuating growth, with strong increases of 8.99% in 2020 and 12.24% in 2023. North America showed moderate growth over most of the period but registered a decline of 2.94% in 2023 before recovering to 5.76% in 2024. South America experienced highly variable growth, recording the highest increase of 12.57% in 2022. Overall, renewable energy generation growth varied across regions, while Asia remained the most consistent and fastest-growing region throughout the period.

COUNTRY WISE ANALYSIS

CHAPTER 19

Installed Capacity and Energy Generation

19.1 Installed Capacity

19.1.1 Top 10 countries in RE Installed Capacity: As on 31st December 2025, China continued to lead the global renewable energy sector with an installed capacity of 2,258.02 GW, accounting for 43.80% of the world's total installed renewable energy capacity, followed by the United States with 466.45 GW, representing 9.05% of the global total. During the year, India overtook Brazil to become the third-largest country globally in installed renewable energy capacity, with 250.50 GW, accounting for 4.86% of the global total, while Brazil ranked fourth with 228.20 GW and a 4.43% share. Collectively, the top 10 countries accounted for more than 75% of the world's total installed renewable energy capacity, highlighting the significant concentration of renewable energy deployment among leading countries (**Refer Table 19.1.1**).

Table 19.1.1 Top 10 countries by electricity installed capacity under RE sector as on 31st December, 2025

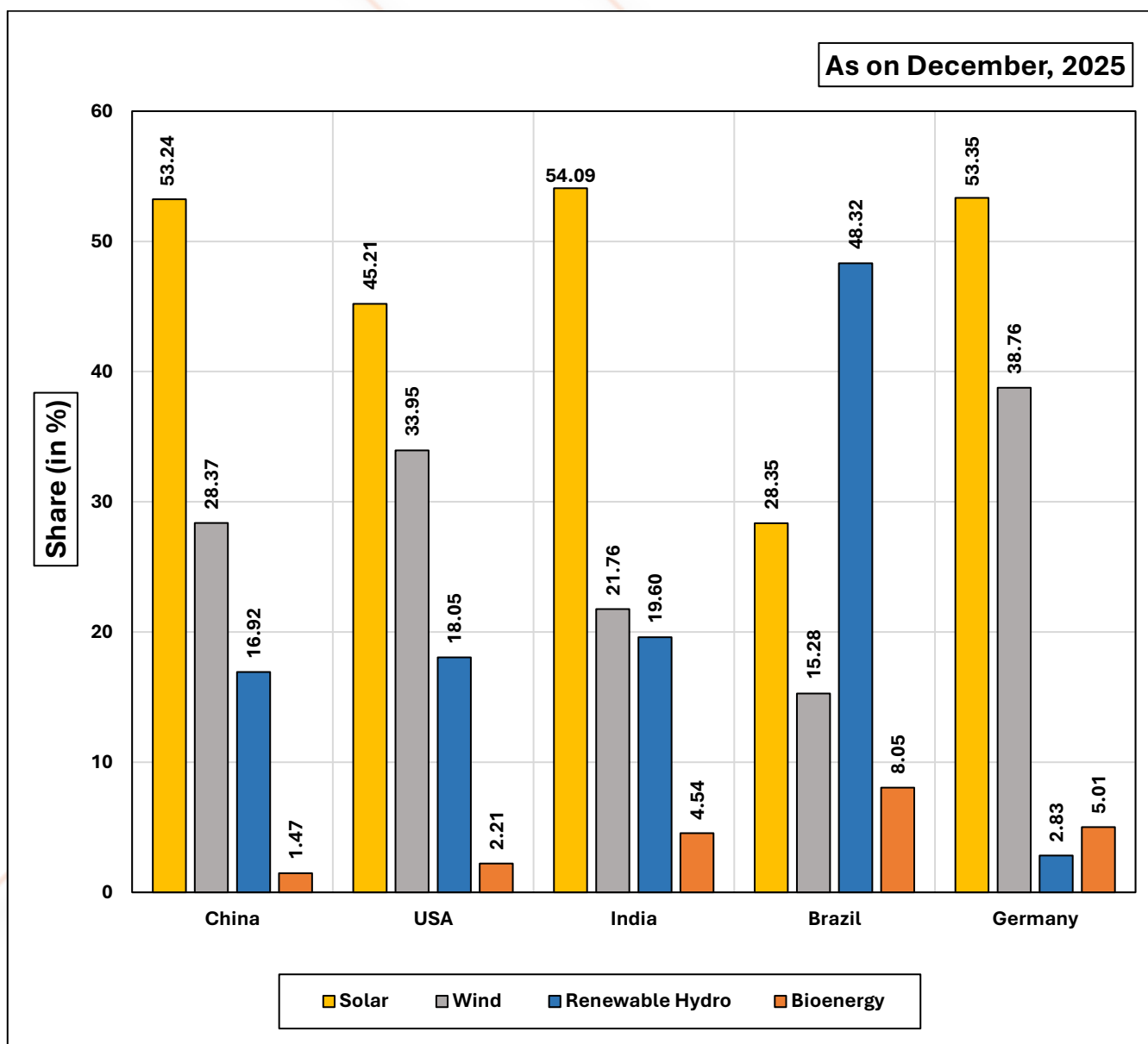
Country	RE Installed Capacity (GW)	Contribution in Total RE installed capacity of the World (in %)
China	2258.02	43.80
USA	466.45	9.05
India	250.50	4.86
Brazil	228.20	4.43
Germany	200.90	3.90
Japan	134.95	2.62
Canada	110.39	2.14
Spain	98.61	1.91
France	83.85	1.63
Italy	78.28	1.52
World	5155.01	

Source: IRENA – Renewable Energy Statistics 2026

19.1.2 Share of installed capacity of top 5 countries (in RE installed capacity) within the country:

As on 31st December 2025, China, USA, India, Brazil, and Germany ranked among the top five countries globally in terms of total installed renewable energy capacity. Among these countries, solar power constituted the largest share of renewable energy capacity in India, Germany, China, and USA, highlighting the growing dominance of solar energy in their renewable energy portfolios. Renewable hydropower dominated Brazil's renewable energy sector, accounting for 48.32% of its total installed renewable energy capacity. Bioenergy represented the smallest share of renewable energy capacity in all these countries, except Germany. Germany also had the lowest share of renewable hydropower among the top five countries (Refer Fig 19.1.1).

Fig 19.1.1 Share of various RE installed capacity of top 5 (in RE Installed Capacity) countries within the respective country



19.2 Renewable Energy Generation

19.2.1 During 2024, China led the global renewable energy sector in terms of electricity generation, producing 3,340.36 TWh, which accounted for 33.96% of the world's total electricity generation from renewable energy sources. The United States ranked second with 1,049.24 TWh, representing 10.67% of the global total. Brazil and Canada ranked third and fourth, generating 661.18 TWh and 411.80 TWh, with shares of 6.72% and 4.19%, respectively. India ranked fifth, generating 380.34 TWh of electricity from renewable energy sources and accounting for 3.87% of the global total. Collectively, the top 10 countries contributed more than 70% of the world's total electricity generation from renewable energy sources, highlighting the concentration of renewable electricity generation among leading countries (Refer Table 19.2.1).

Table 19.2.1 Top 10 countries by electricity generation from RE sources during 2024

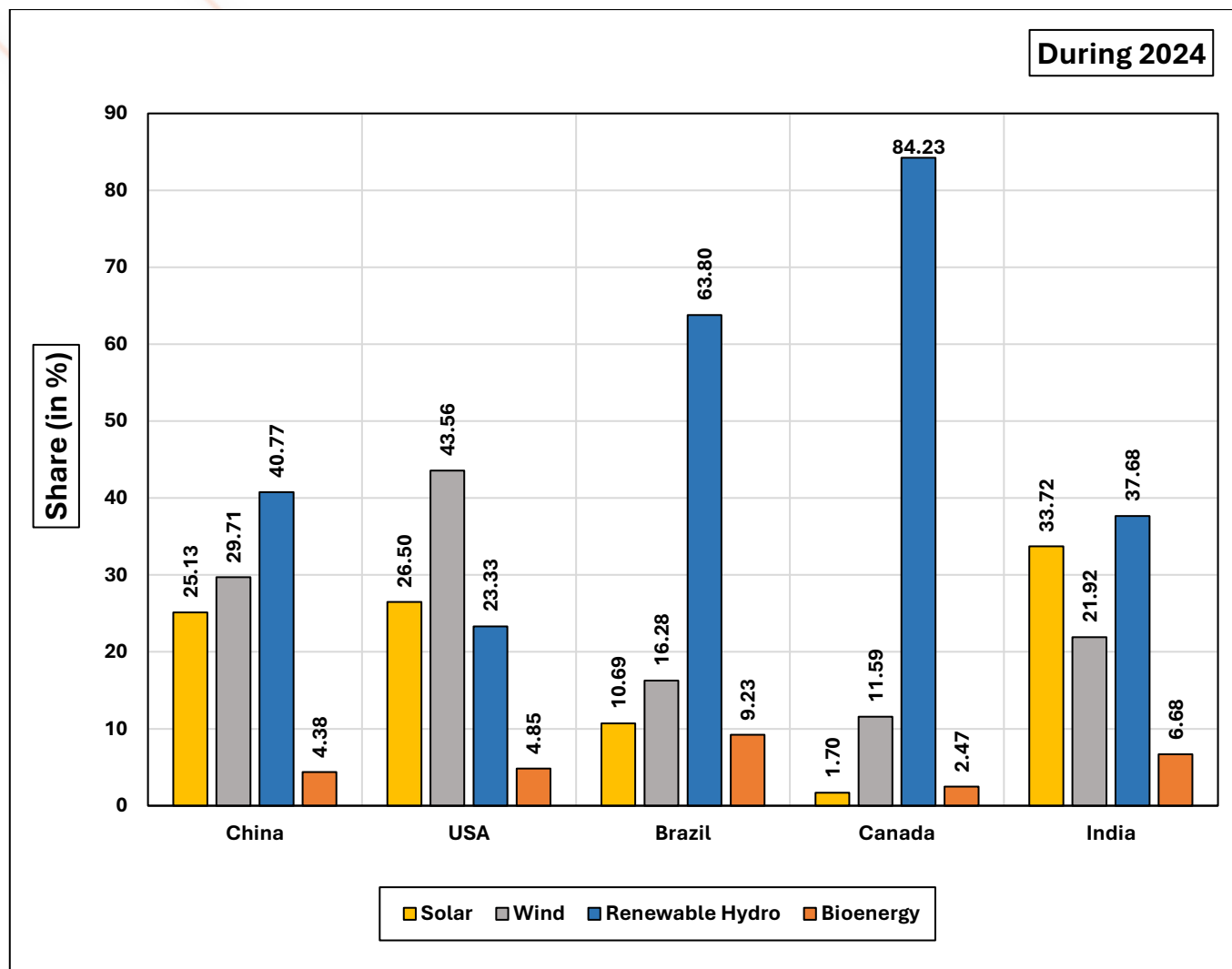
(in TWh)

Country	RE Generation (TWh)	Contribution in the Total RE generation of the World (in %)
China	3,340.36	33.96
USA	1,049.24	10.67
Brazil	661.18	6.72
Canada	411.8	4.19
India	380.34	3.87
Germany	289.42	2.94
Japan	230.47	2.34
Russian Fed	229.58	2.33
Spain	161.02	1.64
Norway	155.27	1.58
World	9,836.13	

19.2.2 Share of electricity generation from RE sources of top 5 (in RE generation) countries within the country:

During 2024, China, USA, Brazil, Canada, and India ranked among the top five countries globally in total electricity generation from renewable energy sources. Renewable Hydropower accounted for the largest share of renewable electricity generation in Canada, Brazil, China, and India, while wind power was the leading renewable source in electricity generation in USA. Among the top five renewable energy generating countries, bioenergy accounted for the smallest share of total renewable electricity generation, except in Canada. Canada also recorded the smallest share of solar power in its renewable electricity generation mix among these five countries. The detailed contribution of various renewable energy sources to the respective countries' renewable electricity generation is presented in Fig. 19.2.1.

Fig 19.2.1 Share of various RE sources in the total RE generation of top 5 (in RE generation) countries within their respective country



Metadata

1. Contact	
1.1. Contact organization	Ministry of New and Renewable Energy (MNRE)
1.2. Compiling Agency	Statistics Division, MNRE
1.3. Custodian Agency	Statistics Division, MNRE
1.4. Contact Details	Deputy Director General (MNRE) Atal Akshay Urja Bhavan, Lodhi Road New Delhi 110003 ddgmnre@gov.in
2. Data Description and Presentation	
2.1. Data Description	
The statistics represent information about electricity installed capacity and electricity generation from non-RE sources and from various sources of Renewable Energy viz. Solar, Wind, Hydro and Bio Power. At national and state levels, the analysis is limited to installed capacity and electricity generation from utility scale power projects. For international statistics, data includes electricity installed capacity and electricity generation from both utility scale and non-utility scale power projects.	
2.2. System of Classification	
Cumulative installed capacity and electricity generation from non-RE and from various sources of Renewable Energy viz. Solar, Wind, Hydro and Bio Power at international, national and state level.	
2.3. Concepts and definition	
Electricity Installed Capacity and Electricity generation from Non-Renewable Energy and Renewable Energy sources such as Solar, Wind, Hydro and Bio Power their Growth and share over the years.	
2.4. Unit of Compilation	
International, National and States/UTs	
2.5. Population Coverage	
Electricity Installed Capacity and Electricity generation from Non-Renewable Energy and Renewable Energy sources such as Solar, Wind, Hydro and Bio Power their Growth and share over the years at national and international levels	
2.6. Reference Period	
Reference period for the Publication of “Renewable Energy Statistics 2025-26” is the financial year 2025- 26 and the previous financial years since 2015-16	
2.7. Duration and period of enumeration	
Publication is based on secondary data	
2.8. Sample size/ Dataset Size	
No sample selection as data represents the overall electricity installed capacity and electricity generation at national, state and international level	

3. Institutional mandate

3.1. Legal Acts and other agreements

Publication is based on secondary data

3.2. Data Sharing / Dissemination

website: <https://mnre.gov.in>

3.3. Release calendar

By November

3.4. Frequency of dissemination

Annual

3.5. Data access

Website: <https://mnre.gov.in/en/renewable-energy-statistics/>

Title: Renewable Energy Statistics

Dataset Edition: Third

Presentation format: .pdf

Dataset language: English

4. Quality Management

4.1. Documentation on methodology

Publication is based on secondary published data. So specific statistical methodology is not there except calculation of share, growth etc

4.2. Quality Documentation

Data is based on secondary published sources.

4.3. Quality Assurance

Data is based on secondary published sources.

5. Accuracy and Reliability

5.1. Sampling Error

No sampling involved.

5.2. Measures of Reliability

Measurement of parameters are not involved

6. Timeliness

6.1 Timeliness

Electricity installed capacity of utility scale power projects under Non-RE and RE sources are available within one month after the reference year. Electricity generation is available within two months of reference year. In respect of international data on electricity installed capacity, is published within three months of completion of a reference year by IRENA and international electricity generation data is published within 19 months after the end of the reference year.

7. Coherence and Comparability

7.1 Comparability over Time

Data represents of population and therefore, comparable.

7.2 Coherence

Data represents of population and therefore, coherence with other data sources.

8. Data Processing

8.1 Source data type

Publication is based on administrative data sources

8.2 Frequency of data collection

National data on installed capacity and electricity generation is collected on monthly basis and international data by IRENA on annual basis

8.3 Mode and Method of Data Collection

Publication is based on secondary published data.

8.4 Data validation

Publication is based on secondary data

8.5 Data Compilation

Publication is based on secondary published data
