

An overview of  
**Western States** and their  
Recent Policy Developments on  
**DECARBONISING  
THE STATE ECONOMY**



# AN OVERVIEW OF WESTERN STATES AND THEIR RECENT POLICY DEVELOPMENTS ON DECARBONISING THE STATE ECONOMY



## 1. THE WESTERN REGION AT A GLANCE - KEY STATISTICS

### Economic and Demographic Parameters for the Year 2021-22

Parameter	Unit	Chhattisgarh	Goa	Gujarat	Madhya Pradesh	Maharashtra
<b>GDP (Base: 2011-12) Current Price</b>	Crores	4,06,416	82,604	19,57,583	11,36,137	31,08,022
<b>Population</b>	Number	29,493,000	1,559,000	69,788,000	84,516,000	124,437,000
<b>Per capita income (Base: 2011-12) Current Price</b>	Rs/capita	₹117,615*	₹431,351*	₹2,35,969*	₹124,685	₹2,15,233

Source: India Climate and Energy Dashboard (ICED)

\*Value for the year 2020-21

### Electricity Sector Parameters for the Year 2022-23

Parameter	Unit	Chhattisgarh	Goa	Gujarat	Madhya Pradesh	Maharashtra
<b>Installed Capacity* (Geographical Location-based)</b>	MW	25,107.82	74.88	45,654.27	30,090.08	44,267.58
<b>Peak Demand</b>	MW	5,399	718	21,382	17,238	28,914
<b>Peak Demand Date</b>	Date	04/03/2023	15/03/2023	29/04/2022	13/01/2023	07/04/2022
<b>Electricity Sales</b>	MU	27,503.18	4,241.87	103,452.16	68,801.64	1,30,125.88
<b>Share of RE in total electricity purchase</b>	%	13.7%	18.0%	18.5%	22.4%	16.5%
<b>T&amp;D Losses</b>	%	16.94%	10.25%	10.72%	19.77%	14.37%
<b>ACS-ARR (Electricity Sales) Gap</b>	Rs/kWh	-0.53	0.98	-0.08	0.13*	-0.84

Source: India Climate and Energy Dashboard (ICED)

\*Available for 2021-22

## Comparison of Key Policies

State-wise Electric Vehicle Policies					
Particulars	Chhattisgarh	Goa	Gujarat	Maharashtra	Madhya Pradesh
Policy	Chhattisgarh State Electric Vehicle Policy - 2022	Goa Electric Mobility Promotion Policy – 2021	Gujarat Electric Vehicle Policy - 2021	Maharashtra Electric Vehicle Policy - 2021	Madhya Pradesh Electric Vehicle Policy - 2019
Details	Notified for a period of five years, commencing from April 2022, the state EV policy aims to make the state a leader in EV adoption and manufacturing. The policy provides for financial incentives, waivers, charging infrastructure creation, skill development, recycling, and state EV funds, amongst others	<p>The vision of the policy is to establish Goa as a model of International Standards for Electric Vehicle adoption across passenger and commercial segments, supported by a world-class charging infrastructure and ecosystem. The key objectives of the policy include</p> <ul style="list-style-type: none"> <li>• 30% of annual vehicles registered in Goa will be electric, starting from 2025.</li> <li>• To promote the conversion of ICE vehicles to EVs subject to approval from RTO.</li> <li>• To convert 50% of all ferries to electric by 2025.</li> <li>• To create 10,000 direct and indirect jobs in the sector by 2025.</li> </ul>	Notified for a period of four years in 2021, the EV policy of Gujarat seeks to achieve the target of 2 lakh EVs on road by 2025. The policy provides for upfront subsidy, charging stations to be deployed at petrol pumps, incentives for EV owners and manufacturers, and subsidies, amongst others.	The EV Policy of the state aims to promote electric vehicles, address infrastructure needs, boost economic development, and ensure a sustainable and greener transportation future.	The Madhya Pradesh Electric Vehicle Policy (2019) was formulated to promote electric mobility in the state in a sustainable manner, reducing vehicular emissions – resulting in improved air quality. To achieve this target, the Madhya Pradesh government aims to drive the adoption of electric vehicles (both electric cars and electric two-wheelers) across the state so that at least 25% of all new public vehicles are electric vehicles by 2026.

Source: Respective State Policy Documents

## State-wise Renewable Energy Policies

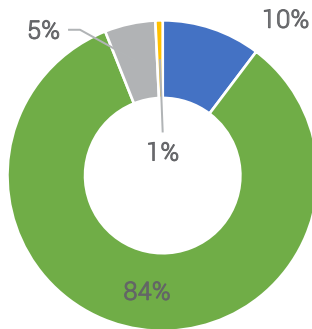
Particulars	Chhattisgarh	Goa	Gujarat	Maharashtra	Madhya Pradesh
Policy	Chhattisgarh Solar Energy Policy 2017-27	Goa Solar Energy Policy - 2017	Gujarat Solar Energy Policy - 2021	Maharashtra Renewable Energy Policy - 2020	Madhya Pradesh Renewable Energy Policy - 2022
Details	<p>Notified for a period of 10 years, the state solar energy policy aims to meet the growing energy demand in an environmentally and economically sustainable manner. The policy provides financial and non-financial incentives for the promotion of grid-connected solar installations as well as decentralised solar energy including solar rooftops.</p>	<p>Notified for a period of seven years, the policy provides for various incentives, subsidies and guidelines for different categories of solar power generators in the state of Goa. These include prosumers, producers, REC mechanism, reverse bidding mechanism, third-party sale solar power, and solar rooftops, amongst others.</p>	<p>Notified by the Energy and Petrochemicals Department, Government of Gujarat, the solar power policy of the state aims to rapidly scale up the solar energy capacity, reduce dependence on fossil fuels and further the energy security in the state.</p>	<p>The state's RE policy aims to get the least purchase obligation of 17% by 2025; to promote the development of renewable energy resources; use of renewable energy in agricultural and commercial fields; create a conducive environment for the development of Renewable Energy in Maharashtra; promote research and development in the field of renewable energy resources; attract investments in renewable energy; create employment opportunities in the state.</p>	<p>The objectives of the policy include:</p> <ul style="list-style-type: none"> <li>• garnering investments in the renewable energy generation sector in the state;</li> <li>• attempting to have the RE mix as 50 % by 2030 for the state and, till the said target is met, ensuring that all annual RPO targets are also met;</li> <li>• supplying RE power to other non-RE rich states;</li> <li>• endeavor to transform 20%, 50% and 100% of State level Government Departments as 100% green energy compliant by 2024, 2027 and 2030 respectively, leaving a net zero carbon footprint;</li> <li>• deploying renewable energy technologies through the development of Model RE Cities and Green Zones by 2030 using the net zero framework;</li> <li>• attempting to develop 20%, 50% and 100% of all heritage cities as Green Cities by the year 2024, 2027 and 2030 respectively.</li> </ul>

**Source:** Respective State Policy Documents

## II. CHHATTISGARH

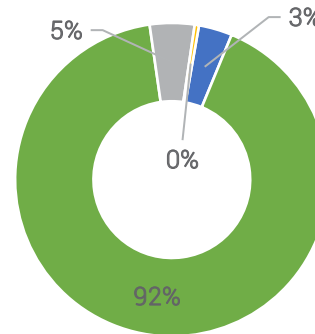
### Emission Profile

Economy-wide GHG Emissions (2005)  
~ 389.1Mt



- Agriculture, Forestry and Other Land Use
- Energy
- Industrial Processes and Product Use
- Waste

Economy-wide GHG Emissions (2018)  
~ 1069.4Mt



- Agriculture, Forestry and Other Land Use
- Energy
- Industrial Processes and Product Use
- Waste

Source: GHG Platform India

### Green Initiatives

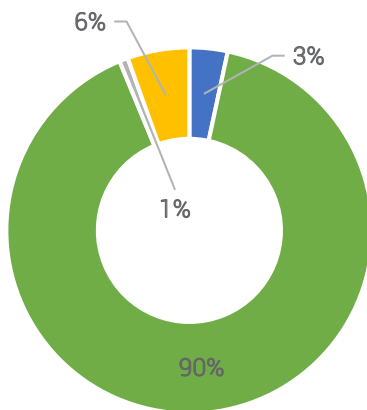
As an outcome of COP26, the Government of Chhattisgarh has taken<sup>1</sup> a pioneering initiative of establishing a first-of-its-kind Green Council that aims to reduce carbon footprint while creating economic opportunities within the state. Under the leadership of the Hon'ble Chief Minister Shri Bhupesh Baghel, the Chhattisgarh government along with the support of Swaniti Initiative, an organisation that works with the government to deliver development solutions across the country, aims to address the issues pertaining to environmental protection as well as economic growth. The Council will include sector leaders, academic experts, and multilateral foundations who will offer technical counsel to the state government on issues of climate change and sustainability.

As part of a mass awareness campaign on Mission LiFE, the Environmental Information, Awareness, Capacity Building and Livelihood Programme (EIACP) conducted<sup>2</sup> a series of activities on 2nd June 2023, leading up to the World Environment Day 2023 celebrations. More than 18 activities and over 2300 participants took part in various events organised by EIACP Centres across India. EIACP Programme Centre at CECB, Raipur set a world record with over 12.38 lakh people taking the LiFE pledge to conserve the environment. The programme was organised by the EIACP PC Hub at Chhattisgarh Environment Protection Board under the Mission LiFE programme.

## II. GOA

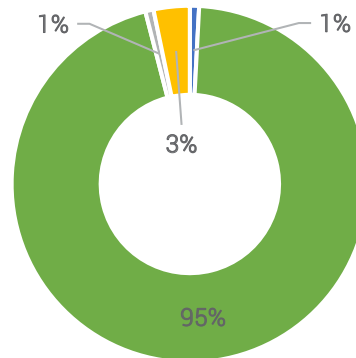
### Emission Profile

Economy-wide Emissions (2005)  
~ 13.5 Mt



- Agriculture, Forestry and Other Land Use
- Energy
- Industrial Processes and Product Use
- Waste

Economy-wide Emissions (2018)  
~ 26.6 Mt



- Agriculture, Forestry and Other Land Use
- Energy
- Industrial Processes and Product Use
- Waste

Source: GHG Platform India

### Green Initiatives

Since 2019, Goa has harnessed<sup>3</sup> solar power and increased solar-based electricity generation by sevenfold. Guided by the state's energy vision, the state aims to achieve 100 percent renewable energy supply to all the key sectors by the year 2050.

The Chief Minister of Goa also announced<sup>4</sup> that the state will be developed into a green tourism hotspot, one of the first such destinations globally. He further stated that a strategic roadmap is already in place, and the state will soon introduce several energy-efficiency and renewable energy solutions to decarbonise the nature-driven tourism sector.

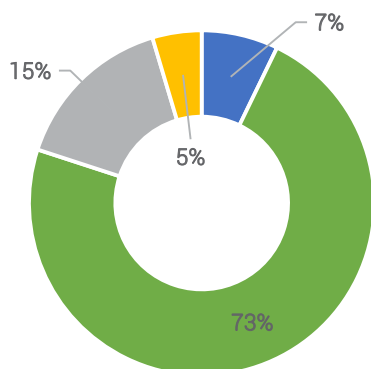
The state action plan for climate change (SAPCC) report prepared for Goa has prompted the establishment<sup>5</sup> of a full-fledged climate change cell in the state, which has already initiated the collection of information from all the departments within the state regarding any measures being implemented in response to climate change.

Further, the state has also taken steps to promote<sup>6</sup> green initiatives such as the cleaning of beaches, reduce-reuse-recycle campaigns and greening of the agriculture sector. Such initiatives taken up by the Department of Environment and Climate Change, Goa State Biodiversity Board (GSBB) and the Goa State Climate Change Cell & supported by the Ministry of Environment, Forest and Climate Change, Government of India, seeks to promote *Jan Bhagidari* or people's participation in environmental conservation.

### III. GUJARAT

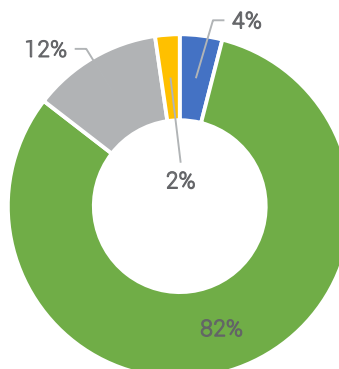
#### Emission Profile

Economy-wide GHG Emissions (2005)  
~ 582.8Mt



- Agriculture, Forestry and Other Land Use
- Energy
- Industrial Processes and Product Use
- Waste

Economy-wide GHG Emissions (2018)  
~ 1285.3Mt



- Agriculture, Forestry and Other Land Use
- Energy
- Industrial Processes and Product Use
- Waste

Source: GHG Platform India

#### Green Initiatives

Gujarat has become a pioneer in the green hydrogen sector. Recently, the state cabinet has approved<sup>7</sup> a draft land allocation policy for green hydrogen projects. Over 1.99 lakh hectares of land has been designated for five key private sector players seeking to venture into green hydrogen in the state.

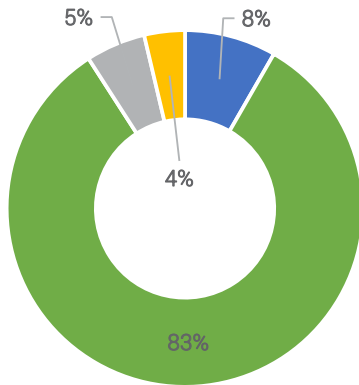
The Gujarat Electricity Regulatory Commission (GERC) has issued<sup>8</sup> the draft Terms and Conditions for Green Energy Open Access Regulations 2023 to include rules for banking and other open access charges applicable for clean energy open access consumers.

To commemorate the 50th World Environment Day in 2023, UNICEF and Elixir Foundation, in partnership with the Department of Climate Change and Press Information Bureau organised<sup>9</sup> Gujarat's first-ever Climate Action Summit in Ahmedabad. The summit served as a unique platform to foster collaboration and innovation around climate action. During the summit, the Gujarat Climate Champions Forum (GCCF) was launched as a critical initiative aimed at addressing the challenges of climate change and promoting sustainability in the state.

## IV. MAHARASHTRA

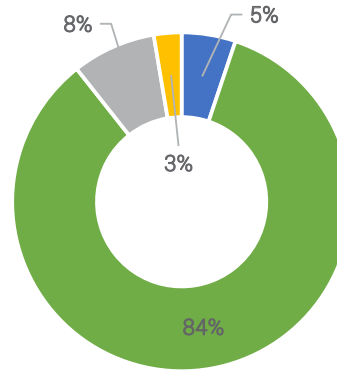
### Emission Profile

Economy-wide GHG Emissions (2005)  
~ 719.8Mt



- Agriculture, Forestry and Other Land Use
- Energy
- Industrial Processes and Product Use
- Waste

Economy-wide GHG Emissions (2018)  
~ 1321.3Mt



- Agriculture, Forestry and Other Land Use
- Energy
- Industrial Processes and Product Use
- Waste

Source: GHG Platform India

### Green Initiatives

In July 2023, Maharashtra became<sup>10</sup> the first state in the country to announce its Green Hydrogen Policy, thereby providing a boost to renewable energy projects in the state. The cabinet also sanctioned Rs 8,562 crore for the implementation of the policy.

Maharashtra State Power Generation Co. Ltd.(MAHAGENCO) organised<sup>11</sup> the 'Maharashtra Energy Global Partnership' session on the World Earth Day and entered into a collaboration with Australia and Germany. The program was organised by Circular Economy Alliance Australia (CEAA) and Theistic Business Consultants in partnership with MAHAGENCO. A Memorandum of Understanding was signed with CEAA on adoption of successful templates for circular economy in the areas of fly ash utilization and carbon footprint reduction. The event also launched 'Maharashtra Australia Sustainable Energy Alliance – MHAUSEA' – a proposed think tank of global experts in energy sector.

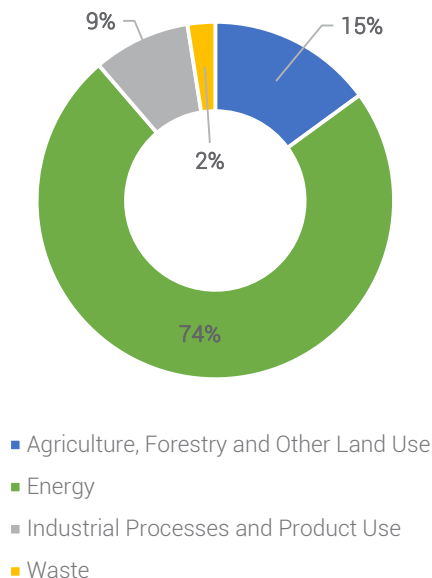
In 2020, the Government of Maharashtra launched<sup>12</sup> a green initiative called 'Village Transformation' aimed at creating community drinking water systems and local resources for the local communities and schools in Satara Village.



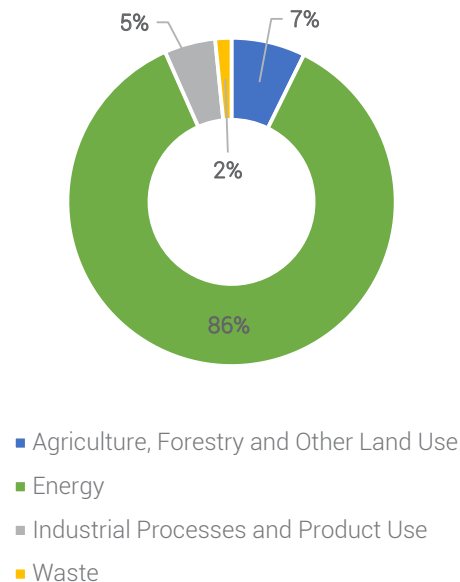
## V. MADHYA PRADESH

### Emission Profile

Economy-wide GHG Emissions (2005)  
~ 414.9Mt



Economy-wide GHG Emissions (2018)  
~ 961.9Mt



Source: GHG Platform India

### Emission Profile

The Government of Madhya Pradesh intends<sup>13</sup> to invest Rs 150 billion by 2024 and Rs 500 billion by 2027 for renewable energy generation in the state while aiming to generate 20 percent of state's electricity through renewable sources by FY 2024, 30 percent by FY 2027 and 50 percent by FY 2030.

The Indore Municipal Corporation came<sup>14</sup> up with a 'Green Bonds' initiative to fund a 60 MW solar power project, worth Rs 305 crore. According to the officials, the bonds provided civic bodies with a viable alternative source for funding, reducing their reliance on central and state grants for large-scale projects. As per the Indore Smart City Development Limited (ISCDL), Indore Municipal Corporation (IMC) has been spending Rs 300 crore a year (Rs 25 crore a month) on electricity for supplying Narmada drinking water from the neighbouring Khargone's Jalud Pumping Station, 80-km away from the city.

The Government of Madhya Pradesh also released guidelines<sup>15</sup> to promote Pumped Hydro Storage (PHS) projects in the state. These guidelines provide a clarification of the methods for allotment of project sites, tax waivers, and project completion timelines, amongst others.

## B I B L I O G R A P H Y

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# NOTES

