

# Natural Capital



## SDGs impacted



**Goal 7**  
Affordable and Clean Energy



**Goal 12**  
Responsible Consumption and Production



**Goal 13**  
Climate Action

## Material topics:

- > Climate Change, Energy Efficiency & Emission Reduction
- > Resource Efficiency & Waste Management
- > Water Efficiency
- > Green ICT Solutions

At Airtel, we are committed towards responsible and sustainable growth while creating value for our stakeholders, protecting, preserving, and restoring the environment. We promote and encourage the use of sustainable, efficient and environmentally friendly technologies and energy resources. Our environment health and safety policy, reinforces our commitment to adopt sustainable environmental management practices in our operations and across the value chain.



Airtel is the first Indian telecommunications company to join the United Nations (UN) Global Compact with an alignment of its Environmental, Social and Governance (ESG) initiatives to the UNGC's 10 principles spanning Environment, Human Rights, Anti-Corruption and Labour. Airtel also joined the United Nations Energy Compacts, a global initiative that aims to drive climate change mitigation through advancing process on SDG 7 (affordable and clean energy).

Airtel is undertaking various measures to advance progress on its targets and commitments. We have reduced our operations' environmental footprint by investing in solar DG hybrid systems. We have incorporated greener technologies in our data centres and outdoor Base Transceiver Station (BTS) sites, which consume less power and generate lower emissions. We are in the process of implementing the most advanced green energy solutions in the upcoming data centres pan India.

# 91,375.98

Renewable energy consumed in our operations (MWh)

# 2,951

E-waste recycled (tonnes)

# 12,263<sup>&</sup>

Energy saved (MWh)

# 512.76

Sheets of paper saved through e-bill initiatives (Mn)

<sup>&</sup>Includes savings from Facilities, Data centres and MSCs

## Key achievements

### Energy Efficiency & Emission Reduction

**We implemented 64 Solar-DG hybrid sets across our operations. This unique solution uses 5.2 kW capacity solar panels optimised by hybrid solar controllers along with a battery bank, which has reduced our DG running hours to one-third. This year, we have deployed 177 KWp rooftop solar capacity on 19 Transmission network REG sites.**

#### Other Initiatives on Energy Efficiency

- Rooftop solar plants have been installed across 31 locations till FY 2021-22 at our data centers and main switching centres with the total installed capacity of 1.78 MWp, estimated saving of 1,354 tonnes of CO<sub>2</sub> emission. Rooftop solar plants have also been installed in our facilities, which led to energy savings of 100.8 MWh in FY 22
- During the reporting year, we increased our purchase of renewable energy through signed open access contracts or power wheeling agreements to 91,261 MWh in Main Switching Centres (MSCs) and data centres, which has reduced our carbon emissions.

### Energy consumption in our operations

Categories	Units	FY 2021	FY 2022
Renewable Energy Consumption	MWh	82,917	<b>91,376</b>
Grid Electricity Consumption	MWh	1,115,011	<b>1,238,825</b>
Diesel Consumption	KL	16,338	<b>18,720</b>

- 22%\* Reduction in CO<sub>2</sub> emission per rack in our data centres
- 62%\* Reduction in network emission intensity for mobile (CO<sub>2</sub> emissions per terabyte)
- 65%\* Reduction in CO<sub>2</sub> emission per square feet in our facilities

\*(FY2018-19 as base year)

### Scope 1 and Scope 2 emissions

Parameter	Unit	FY 2021	FY 2022
Total Scope 1 emissions	Metric tonnes of CO <sub>2</sub> equivalent	42,955.39	<b>49,215.99</b>
Total Scope 2 emissions	Metric tonnes of CO <sub>2</sub> equivalent	880,859.27	<b>978,671.91</b>

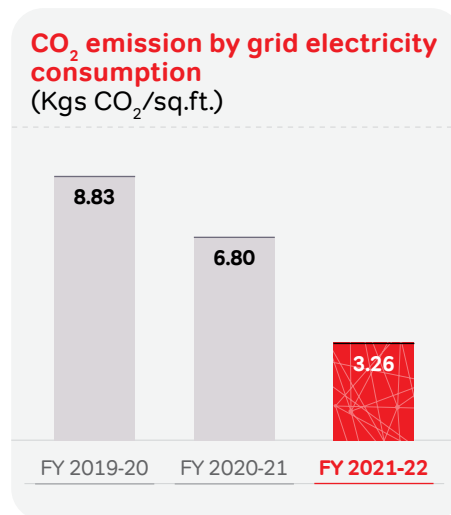
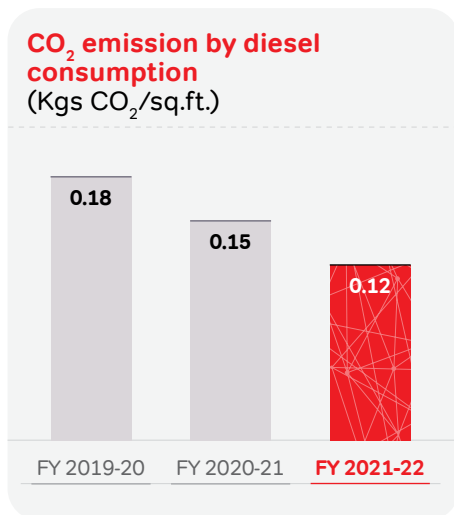
**Scope 3 Emission categories**

Parameter	Unit	FY 2020-21	FY 2021-22
Total Scope 3 emissions	Metric tonnes of CO <sub>2</sub> equivalent	43,67,602.71	<b>46,66,583.86</b>
Category 1: Purchased Goods and Services	Metric tonnes of CO <sub>2</sub> equivalent	29,209.63	<b>34,333.61</b>
Category 2: Capital Goods	Metric tonnes of CO <sub>2</sub> equivalent	12,510.77	<b>15,901.71</b>
Category 3: Fuel - and Energy - Related Activities Not Included in Scope 1 or Scope 2	Metric tonnes of CO <sub>2</sub> equivalent	31,224.12	<b>35,047.80</b>
Category 4: Upstream transportation and distribution	Metric tonnes of CO <sub>2</sub> equivalent	60,857.28	<b>48,904.39</b>
Category 7: Employee Commuting	Metric tonnes of CO <sub>2</sub> equivalent	80,118.92	<b>60,748.91</b>
Category 8: Upstream Leased Assets	Metric tonnes of CO <sub>2</sub> equivalent	41,53,681.99	<b>44,71,647.44</b>

Note: The emissions inventory has been developed in accordance with 'The GHG Protocol-A Corporate Accounting and Reporting Standard'. The GHG Protocol lays internationally accepted accounting and reporting standards for businesses and has been developed by World Resources Institute (WRI) and World Business Council for Sustainable Development (WBCSD).

**Emission trends at facilities**

- UPS optimisation: In the FY22, we replaced 160 kVA UPS with more energy efficient 80 kVA UPS, which resulted in energy savings of 82,372 KWh.
- Lighting optimisation: Replacement of linear lighting with more energy efficient LED lighting at various facilities has resulted in energy savings of 187,974 KWh.
- Motion sensors: Installation of motion sensors in facilities to optimise energy consumption, has resulted in savings of 13,333 KWh.



**42%** Reduction in diesel CO<sub>2</sub> emissions per square feet compared to FY 2018-19

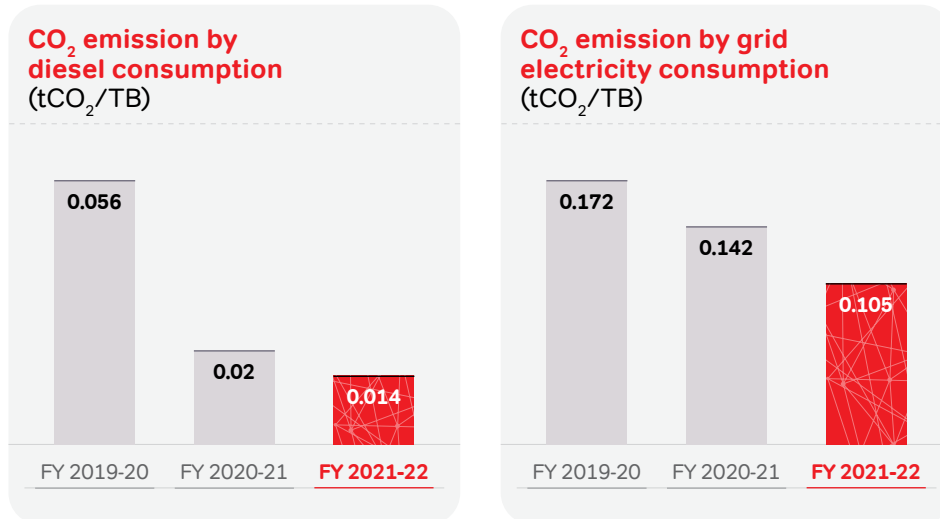
**66%** Reduction in Grid CO<sub>2</sub> emissions per square feet in our facilities compared to FY 2018-19

**Network Infrastructure**

We have undertaken various energy conservation and emission reduction measures across our network infrastructure to reduce dependence on fossil fuels. Some of the key highlights include:

- Increasing outdoor BTS – We converted 3911 indoor BTS sites to outdoor sites, reducing BTS energy consumption.
- Site sharing – Our strategy of site sharing with partners has optimised our resource consumption and reduced carbon emissions significantly through higher utilisation of passive infrastructure. 23.5% of sites have been deployed as shared sites reducing energy consumption compared to standalone sites.
- Lean Towers- We deployed 12,460 towers as Lean Towers, i.e., towers that do not operate on diesel, thereby reducing emissions by 69%.
- A "Project Green City" – We are transforming our sites into green sites by collaborating with our network infrastructure partners. Over 98,773 sites, including Airtel owned and partner sites have been tagged as green sites, consuming less than 100 litres of diesel per quarter kWh of energy usage till date.
- Hybrid battery bank solutions – We have installed advanced VRLA (Valve-Regulated Lead-Acid) batteries and lithium-ion batteries to optimise energy consumption and reduce our reliance on diesel. A total of 43,373 VRLA and Li-ion batteries were installed by March 2022.
- Auto-shutdown in non-peak hours – An auto-resource shutdown feature at 164,608 sites, including all 4G sites, has reduced energy requirement at non-peak hours.
- Electrification of non-electricity board sites – We have electrified our network towers to reduce diesel consumption, which has also improved our network uptime at BTS tower sites.
- Installation of DC air conditioners – DC air conditioners of 48 volts is an optimal cooling solution for telecom shelters by using less energy compared to rudimentary cooling solutions. This has helped us reduce the overall energy demand by 25%.

## Emission trends in network infrastructure



# 28%

**Renewable energy consumption in data centres as a percentage of total energy consumption**

## Highlights from our Data Centres and MSCs

'Nxta by Airtel' consists of largest network of hyperscale, core and edge data centers in India to deliver utmost reliability, reach, flexible power configurations and carrier-dense ecosystem for a superior customer experience. Being associated with both data center and telecom industry for more than 2 decades, we provide a platform of hyper-connected state-of-the-art 12 big data centres and 120 edge

data centres. We enable businesses to accelerate their digital journey and host their applications closer to their customers than ever before.

Power Usage Effectiveness (PUE) helps us to track the energy efficiency of data centres, specifically. It is the metric that illustrates how efficiently data centres optimise their power resources. We have improved the average PUE of our core data centres by 20% from 2.00 in FY 2016-17 to 1.60 in FY 2021-22.



Nxta by Airtel is continually increasing the Renewable Energy share in the overall energy mix of data centres via sourcing green energy through open access and installing on-site solar rooftop plants. Till date, we have invested in 8 companies to develop renewable power plants to source more than 1,80,000 MWh of green energy annually. In FY22, we have commissioned rooftop solar plants for open access sourcing in the state of Uttar Pradesh (28 MWp), Maharashtra (21MWp). We have also started sourcing from a 9 MW small hydro power plant to our edge data centres in Delhi NCR.

We have been successfully driving the demand-side decarbonisation by reducing electricity consumption at our data centres. To be energy efficient, we have focused on optimising the operation needs, using highly energy-efficient equipment, design efficiency of new data centres, training and development. We are committed to operate and provide

products and services in an environmentally responsible and sustainable manner.

- › Ensuring energy efficiency – We have undertaken various measures to optimise data center facilities to ensure cost efficiency and improve our operations through energy conservation. We installed energy-efficient equipment and improvised processes across our data centres to reduce overall GHG emissions.
- › Optimum cooling – Cooling optimisation through the installation of active tiles, set points management, and air diverters saved 2,355,259 kWh of energy at our data centres.
- › Cold aisle/Hot aisle containment – Cold aisle/hot aisle containment at different locations saved 191,907 kWh of energy.

## Natural Capital

- › Other Main Switching Centre initiatives – We installed LED lights, motion sensors, air diverters, active tiles and blanking panels in our Main Switching Centre sites. In addition, we installed solutions for temperature, rack, UPS and SMPS optimisation, cold aisle containment and natural cooling to reduce energy consumption. These measures helped us save 11,941 MWh of energy in the reporting year.

### Green ICT solutions

Airtel is well-positioned as a leading telecommunication service provider company to enable a transition to a low-carbon economy while providing innovative digital products and services. We have adopted smart technologies that help in reduction of energy consumption and emissions. We offer Internet of Things (IoT) based solutions such as Asset Tracking and Vehicle Telematics, along with energy efficient data centres.

- › Asset Tracking enables customers to manage their assets in real time from a remote location, which is helping improve efficiency in global logistics by optimising the flow of goods, as well as preventing travel, thereby reducing GHG emissions.

- › Similarly, Vehicle Telematics are equipped with tools that can perform engine diagnostics, suggest shorter routes and provide reminders for timely servicing of vehicles. These features help improve fuel efficiency, reduce usage and avoid GHG emissions.
- › Our solutions are enabling energy and utilities companies to offer innovative products that help them to reduce waste generation, improve supply efficiency, optimise power consumption by customers, streamline operations, achieve customer satisfaction and open up new business opportunities.

## Water Efficiency

### Water Management

At Airtel, we understand the importance of water and thus, promote sustainable approaches towards its conservation and maximising recycle and reuse. Majority of our large facilities are promoting 'Zero Liquid Discharge' and therefore have installed wastewater treatment plants to ensure that treated wastewater is recycled and repurposed for activities like gardening. Other notable water conservation measures include sensor-based water taps across most of our circle office and reduction of wastage and leakage. In our Data Centres, leading measures for ensuring water efficiency is undertaken. This includes installation of Sewage Treatment Plants (STPs), Rainwater Harvesting (RWH), low water-efficient plumbing fixtures, sensor-based water taps etc. We have initiated discussion with multiple partners for making our infrastructure more robust via implementing metering for rainwater harvesting and IoT enablement for real time monitoring and dash boarding.

KPI	Performance (FY22)
Total water used (KL)	72,614
Water Recycled (KL)	19,713
Water consumed from recycled and harvested sources (%)	27%





## Resource Efficiency & Waste Management

We are committed to promote resource efficiency and minimise waste— both hazardous and non-hazardous, through adopting the 3 R strategy – Reduce Reuse Recycle, across our operations We practice waste segregation in terms of organic,

hazardous, and e-waste collected across our warehouses and dismantle them for recycling or repurposing. Our recyclers are authorised by the Central and State Pollution Control Boards.

KPI	Performance (FY22)
Waste generated <sup>1</sup>	
(a) Hazardous	<b>809.3 tonnes<sup>2</sup></b>
(b) Non-Hazardous	<b>1,471.4 tonnes</b>
Waste diverted from disposal*	
(a) Hazardous	<b>809 tonnes</b>
(b) Non-Hazardous	<b>1,462.1 tonnes</b>
Waste directed to disposal	
(a) Hazardous	<b>0</b>
(b) Non-Hazardous	<b>1 tonnes</b>

\* This includes waste that was recycled/repurposed by Airtel either directly or through authorised third-party vendors.

<sup>1</sup>Amount of waste processed and disposed does not tally with the amount of waste generated due to waste which is stored and will be processed in the subsequent year.

<sup>2</sup>Includes battery waste and lube oil.



### Promoting Circular Economy

At Airtel, we aspire to deliver positive impact on the ecology and environment by creating strategic changes in the value creation model and converting the linear model to a circular model. Our focus on the circular economy is realised through the transformative digital initiatives across our operations and supply chain via new collaborations and partnerships. We, at Airtel have identified key focus areas in circularity which includes:

- > Disposal of e-waste through authorised recyclers across the value chain
- > Reduction of e-waste from office (mainly, organic waste and paper waste) generation
- > Leveraging on digital economy for bill payments to minimise paper waste generation

We have also begun various initiatives with external stakeholders to recycle products post usage and to reduce value leakage by discarding the products.

- > **e-waste:** At Airtel, faulty modules are repaired in-house as well as through third party repair centers to reduce the purchase of virgin materials. Airtel has partnered with Metal Scrap Trade Corporation Limited for all scrap auctions.

- > **Paper waste:** The increasing adoption of digital practices across business processes has helped us reduce paper consumption.

KPI	Performance (FY22)
Paper used	<b>54.09 tonnes</b>
Tonnes of paper saved through e-bill initiatives	<b>666.5</b>

**For our partners:** We encourage and recommend our logistics partners to use minimum packing materials and identify resources that are recyclable, hygienic and protective for goods transportation. We promote waste minimisation, recycling and reuse of materials among all our suppliers/ business partners.

- > **Set-top boxes:** Airtel collaborates with third parties for waste collection, including collection of used Airtel Setup boxes for upcycling and remanufacturing

We have committed to **reduce our absolute scope 3 GHG emissions** by 42% by 2031 in accordance with Science-based Target. We introduced guidelines **on energy efficiency and carbon emission reduction** for our suppliers as a part of our [Code of Conduct for Business Associates](#). Airtel is engaging with suppliers including equipment manufacturers to drive initiatives for enhancing energy efficiency of supplied equipment through innovative solutions.