

Protecting **the planet**

We have built a resilient and energy-efficient infrastructure system to support the growing telecom user base, extending our sustainability philosophy. We, at Airtel, we ensure efficient use of natural resources while contributing effectively to a circular economy.



Airtel along with its network-infrastructure partners is committed to re-invent and reduce the environmental footprint of their business and operations. We are also continuously in search of more energy efficient technologies and innovative solutions for a greener future. Our efforts are focused towards reducing our direct and indirect environmental impact. We have invested in innovative energy conservation technologies, resource optimisation and waste management by recycling waste and optimising resource utilisation. Over the years we are targeting towards eradicating use of fossil fuel in our network and transitioning towards grid supply and renewable energy which have constantly shown an increase.

Through our persistent efforts, along with our network partners, we have been able to upgrade and convert the existing telecom towers into energy efficient towers, reducing the reliance on electricity from grid or diesel. In addition to this it is our constant endeavor to maximize the adoption of reliance on green energy through wheeling agreements for sourcing our power from renewable sources and in the process, reducing our carbon footprint.

71%

Reduction in network emission intensity for mobile (carbon emissions per terabyte) from FY 2017-18

30.48%

Reduction in CO₂ emission per rack in our data centres from FY 2015-16

10,147.78 KL

Diesel saved since 2015-16 in our own mobile network infrastructure

~72,255 MWh

Renewable energy consumed in our operations

18 Tonnes

Paper recycled/reused in our facilities

Reduction of

939.60 MWh

Electricity consumption in our facilities

~6,399 Tonnes

Paper saved through e-bill initiatives since FY 2011-12

33.7%

Reduction in diesel consumption in our operations in FY 2018-19 as compared to last year

3,347

Solar-enabled towers by owned and partner sites till FY 2018-19

360.92 Mn

Sheets of paper saved through our --online acquisition of mobility customer

20.22%

Increase in deployment of renewable energy in our own operations from FY 2014-15



Our climate change interventions

Network Infrastructure



- ≡ Deployment of renewable energy solutions like solar, wind in our towers and Main Switching' Centres (MSCs)
- ≡ Auto shutdown in non peak hours
- ≡ Low Power consuming BTS
- ≡ Power factor correction
- ≡ Real time energy monitoring
- ≡ Hybrid battery bank solutions
- ≡ Free Cooling Units (FCU) & Natural Cooling Units (NCU)
- ≡ Deployment of shared sites
- ≡ Conversion of indoor BTS to outdoor BTS

71%

Reduction in network emission intensity for mobile (carbon emissions per terabyte) from last year

7,678.58 KL

Of diesel saved since last year in our own mobile network infrastructure

Data Centres



- ≡ Excess load surrender
- ≡ Equipment optimization and utilization
- ≡ Cooling optimization
- ≡ Cold Aisle Containment
- ≡ Diesel usage optimization
- ≡ Hot spot rectification
- ≡ Power utilisation efficiency correction
- ≡ Improved Power Usage Efficiency
- ≡ ISO 14001:2015 implemented to enhance environmental performance

7%

Reduction in CO₂ emission per rack from last year

Over

5,000 MWh

Energy saved in our data centres

Facilities



- ≡ Power factor correction
- ≡ Energy efficient lighting and motion sensors
- ≡ Photovoltaic Solutions
- ≡ Facility consolidation and optimum space utilisation
- ≡ Power purchasing agreements
- ≡ Excess demand surrender
- ≡ UPS optimization
- ≡ Adiabatic cooling system to reduce power consumption of chiller

4.8%

Reduction in CO₂ emission per square feet from last year

Reduction of over

939.60 MWh

Electricity consumption in our facilities

Exploring Green Energy Solutions

Airtel is working relentlessly along with its partners on expanding their green energy portfolio by embracing various technologies like solar energy, biomass, zero emission batteries etc.

Solar-DG Hybrid Solution

A unique and innovative solution that uses 3 KW -7 KW capacity solar panels in tandem with battery banks, which helped reduce the DG running hours from 20 to 6 hours a day by providing 18 hours of power. The system is further optimized by a hybrid solar controller. Currently **3,347** (cumulative) own and partner network sites implemented solar hybrid solution with installed capacity of over 17 MWp.

Rooftop Solar Energy at Main Switching Centers (MSC)

Over the past 5 years, **18** rooftop solar plants were set up at our main switching centers, with a total generation capacity of over 1 MWp.

Migration to Battery solution

In FY 2018-19, over **800** sites were installed with advance VRLA batteries and Lithium-ion battery solutions to reduce the running of DG set with our telecom network infrastructure partners. Few network sites were also installed with Lithium-ion battery banks by utilizing ground based mast designs with lithium ion battery solution.

Green Wheeling

Leveraging the opportunity provided by Open Access (Electricity Act, 2003) for non-discriminatory sale/purchase of electric power from various sources, including renewable sources:

- ≡ Procured over **71,157.13 MWh**

green energy in FY 2018-19 through various Power Wheeling agreements. Green energy procurement helped us to save over **58,348.84 tonnes** of CO₂ emissions per annum in our data centers.

Project Green City

Was launched with our network infrastructure partners few years back; and **59,772 sites** have been tagged as green sites till date that have less than 100L of diesel consumption in a quarter.

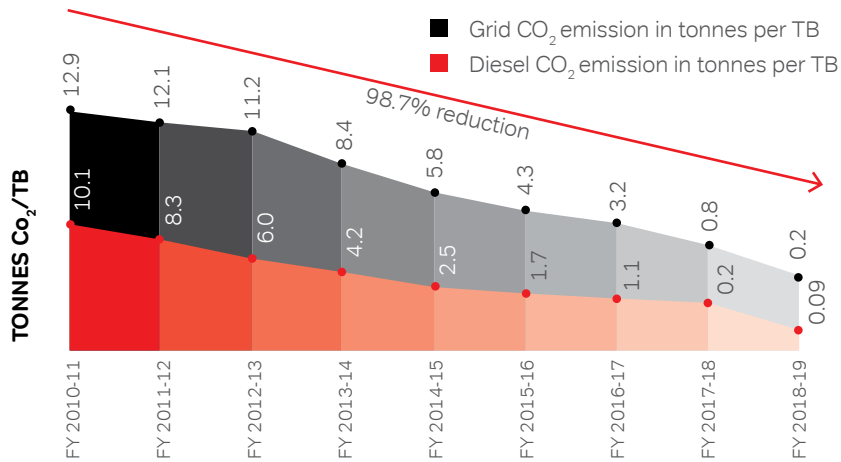
71,157.13 MWh

Green energy procured in FY 2018-19 through various Power Wheeling agreements.

Our impact

We have made sustained efforts in the sphere of acquiring green energy, achieving efficiency, reducing demand and innovating for clean energy solutions. These are evident in the emission reduction we have managed to achieve over time. The graphs below shows a comparative analysis of the emission levels for the last few years in our network infrastructure, facilities and our data centers. This will decline progressively with the adoption of newer, better technology making renewable energy more viable, this will decline progressively.

Emission trends in our network infrastructure



71%

Reduction in network emission intensity for mobile (carbon emissions per terabyte) from last year

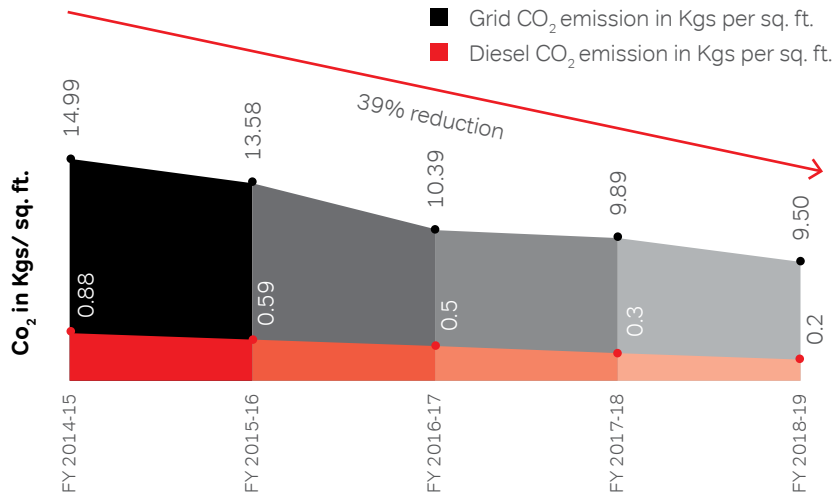
98.7%

Reduction in network emission intensity for mobile (carbon emissions per terabyte) from FY 2011-12

10,100 KL

Reduction in diesel consumption in our network infrastructure from FY 2015-16

Emission trends for our facilities



77.27%

Reduction in diesel emissions from FY 2014-15

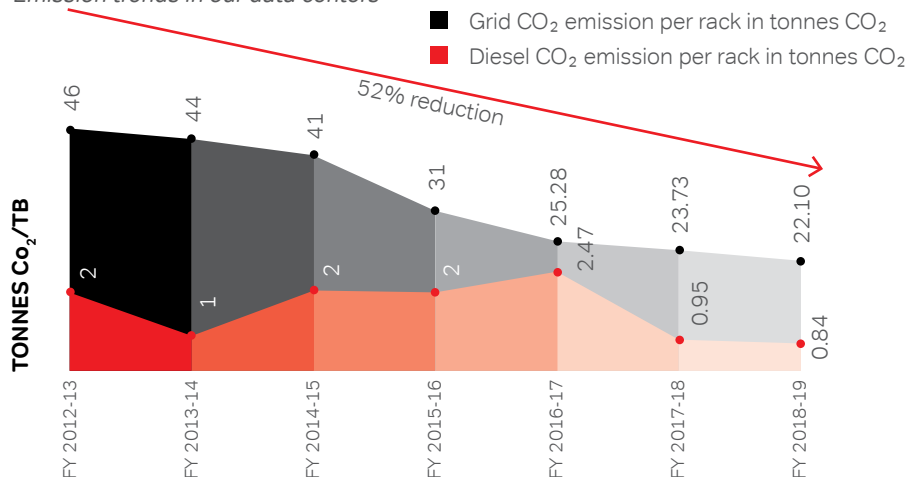
4.8%

Reduction in Grid CO₂ emissions per square feet in our facilities from last year

33.33%

Reduction in diesel emissions per square feet in our facilities from last year

Emission trends in our data centers



52,258 MWh

Procured from renewable energy sources

31%

Decrease in diesel consumption as compared to FY 2014-15

30.48%

Reduction in CO₂ emission per rack in our data centres from FY 2015-16

Resource and Waste Optimization

As a leading company in the telecommunication industry, we ensure that we make a positive impact through demonstration of environmental stewardship. This drives us to keep a sharp eye on our resource utilization, waste generation and its disposal. We have been able to considerably cut down on waste generation through

deployment of innovative technologies to reduce waste at source. We have been ensuring responsible recycling of all our e-Waste even before the legislation was in place i.e., before 2012. We have developed a systematic approach for resource optimization across our operations. Our effective waste management policies ensure

segregation, reuse, refurbishment and recycling. We significantly reduced the total waste disposed from our operations in 2018-19 to 20.07 tonnes. All waste disposal is carried out as per the national rules and regulations. Apart from that, we also influence our partners and suppliers to reduce their environmental footprint and disclose the same publicly.

Moving towards a Greener Paperless Future

We have made significant strides in reducing paper consumption and thereby preventing paper waste through our initiatives on digitalisation of processes

- ≡ Encouraging electronic billing and online payment methods in place of physical copies of bills and receipts. In FY 2018-19, **142.4 Mn** Ebills were

sent to our customers. This led in saving over **427 Mn** sheets of paper, **89%** increase since FY 2015-16.

- ≡ Automated queue-management-based printing solutions and automated intra-office approval processes to reduce paper consumption.

- ≡ Promoting recycling of used paper in our facilities. In FY 2018-19, **105.30 tonnes** of paper was used, of which **17.1%** was recycled through our partners.

- ≡ Blue bins have been installed to maximize collection in offices.



Waste management

At Airtel, the e-waste generated from technology upgradation, capacity augmentation and others, is traced end-to-end, handled and recycled as per the Waste Electrical and Electronic Equipment (WEEE) guidelines.

Waste collected at the warehouse is segregated and dismantled further to be recycled and in some cases, recovered using chemical processes. The batch of waste is scavenged and swapped to revive working parts, ensuring reusability and inter-operability, hence,

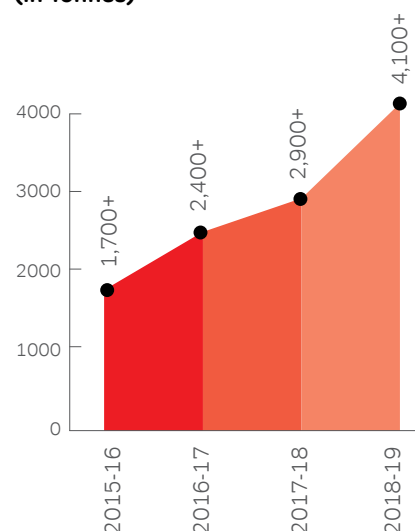
minimising the waste generated. All the non-reusable hazardous waste including lead batteries are disposed through authorised recyclers, who have acquired requisite clearance from the Central/State Pollution Control Boards. In past 5 years, almost more than 10,000 tonnes of ewaste generated was recycled. In addition over **4,168.25 tonnes** of ewaste from IT and network infrastructure was responsibly recycled in 2018-19 through our authorised partners.

~4,168 tonnes

Of e-waste from IT and Network Infrastructure was responsibly recycled in FY 2018-19



Total amount of E-waste recycled (in Tonnes)



Responsible water management

Water management is not a material issue for us being a telecommunication services industry where water is used only in our facilities for domestic purposes. However various initiatives were undertaken last year to conserve and recycle water such as:

1. All our facilities are equipped to reduce water consumption and augment rainwater harvesting wherever feasible, as well as minimize waste generation, and maximize reuse and recycling.
2. We have installed efficient water fixtures, sensors and retrofitted water fixtures with aerators and float adjustments to reduce water volume utilization.
3. Sewage Treatment Plants (STPs) are installed in facilities for handling domestic wastewater, which is recycled for use in HVAC cooling towers, washroom flushing and gardening.

78,519 KL

Water consumption in FY 18-19