AT&T Gigaton Goal Overview and Methodology

(2025 Update)

Company Overview

AT&T Inc. is a global leader in telecommunications, helping more than 100 million U.S. families, friends and neighbors, plus nearly 2.5 million businesses, connect to greater possibility. As one of the world's largest companies, AT&T can play a role in creating a better, more environmentally sustainable future. Acting to address a changing climate and prepare for its impacts is important for our business, our customers and the communities we serve.

Background on AT&T's Gigaton Goal

AT&T has long understood that connectivity can enable our customers to reduce greenhouse gas (GHG) emissions to mitigate climate-related issues and in 2015 established the 10x goal to enable customer carbon savings 10 times the footprint of our operations by 2025. This goal was intentionally set as a ratio to create an incentive to both reduce AT&T's own operational emissions and quantify and grow the emissions reductions that AT&T's connectivity and other services enable. The good news is it worked. At the halfway mark of the 10x goal, AT&T had already achieved over 54% of the goal.

AT&T Gigaton Goal Overview

In 2020, AT&T announced the goal to be carbon neutral by 2035. With this new goal, AT&T committed to significantly reduce its own emissions over the coming years, resulting in a dramatically lower 10x ratio target for customer emissions reductions. This prompted the need for a new, ambitious enablement goal, separate from AT&T's own footprint.

So, in 2021, AT&T decided to go even bigger with its commitment and announced the AT&T Gigaton Goal: to develop connectivity solutions that enable customers to reduce a gigaton (1 billion metric tons) of greenhouse gas emissions by 2035.

Methodology update

This methodology update, developed by AT&T in collaboration with Carbon Trust, aims to align AT&T's approach with the most current guidance. In particular, it considers many of the terms and principles of the Net Carbon Impact Assessment Methodology for Information and Communication Technology (ICT) Solutions, published in 2024 by the European Green Digital Coalition (EGDC), and the Guidance on Avoided Emissions, published in 2023 by The World Business Council for Sustainable Development (WBCSD).

All new solution calculations will follow this updated methodology, while previously calculated solutions will continue to use the earlier methodology. This is because updating historical work is often not feasible, especially when the differences in impacts are minimal.

This document reiterates key points from earlier methodologies and highlights any differences that will be used to track progress toward the Gigaton Goal. Some terminology used for different components of a carbon abatement calculation has been updated to match EGDC definitions, but the underlying principles of carbon abatement measurement remain the same.

AT&T's Gigaton Goal

AT&T's Gigaton Goal is an absolute target to deliver connectivity solutions that enable the avoidance of a gigaton (1 billion metric tons) of GHG emissions, measured in metric tons of CO_2e. AT&T will calculate the cumulative impact of emissions reduction from 2018-2035 and report progress annually.

AT&T's Net Carbon Impact Assessment

AT&T's Net Carbon Impact Assessment aims to measure the carbon savings enabled by its technology and services as part of its Gigaton Goal. Note that this calculation is separate from AT&T's annual reporting of its GHG emissions from its operations or other parts of its value chain.

The process begins by identifying enabling technologies, which are technologies that help enable the reduction of carbon emissions. The carbon savings for these technologies is calculated by determining the carbon abatement factor, which is the total carbon savings minus the emissions from producing and using the technology. This factor is multiplied by the volume of enabling technologies used by AT&T's customers over a year to measure the net carbon impact savings of that enabling technology.

The volume of AT&T's services used by customers is based on sales data, such as the number of connections or the number of customers using a specific service.

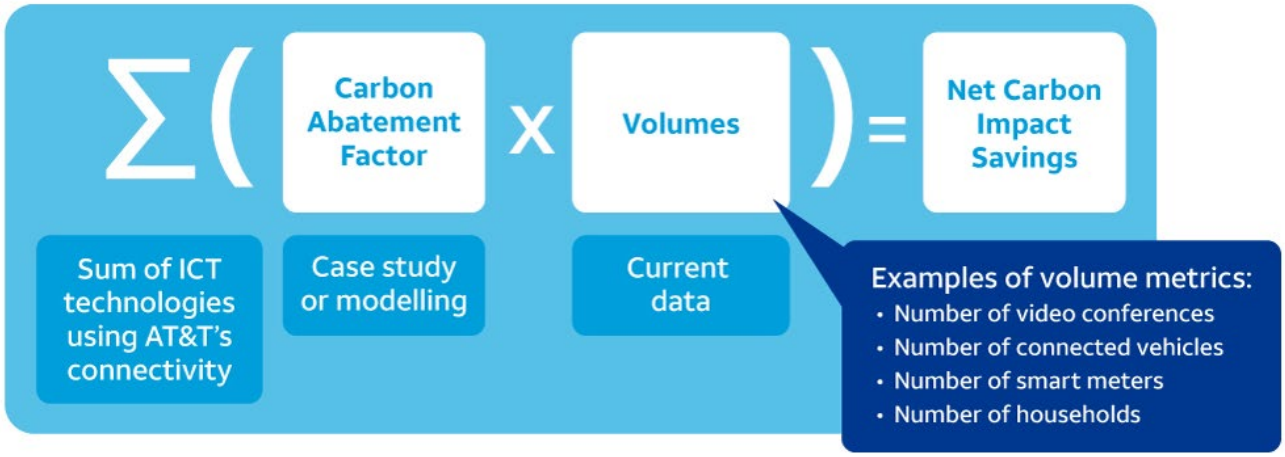

Figure 1 *Net carbon impact savings methodology*

To reach a cumulative figure, AT&T sums all of the carbon emissions avoided through the use of each enabling technology. AT&T plans to expand the number of enabling technologies included in its carbon savings calculations as new data and technologies become available.

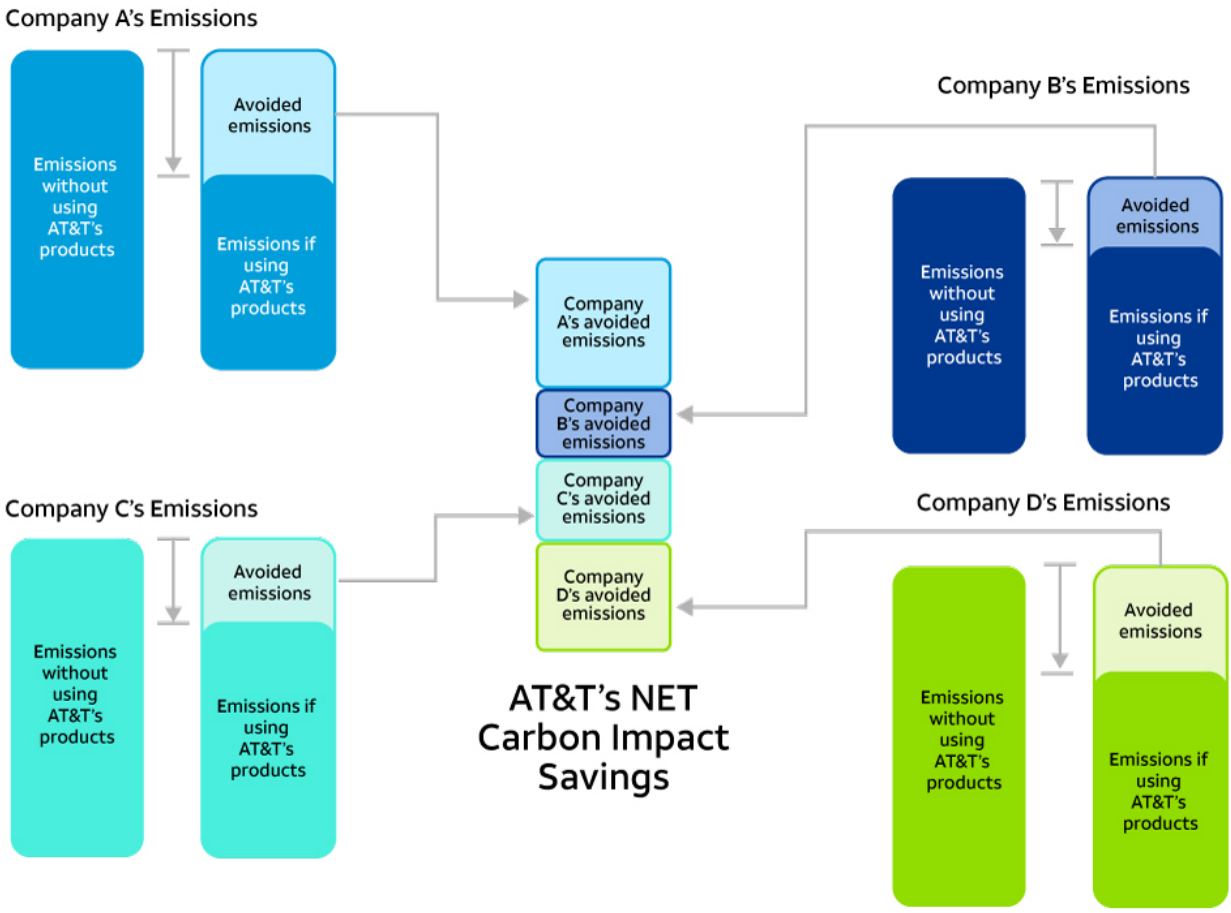

Figure 2 *Composition of AT&T's net carbon impact savings*

To maintain consistency, all solutions identified and included in the net carbon impact savings calculations, along with their baseline scenarios, will remain the same for the entire duration of the Gigaton Goal. The value of the carbon abatement factor will only change due to annual changes in external variables, such as electricity or fuel emission factors, or if there are fundamental changes made to the ICT solution or its intended use.

Key Concepts of AT&T's Carbon Abatement Methodology

This section explains the important concepts, the method for calculating net carbon impact savings, and how new carbon abatement factors are developed.

Carbon

Carbon refers to greenhouse gases and is measured in metric tons of CO_2e (carbon dioxide equivalent).

Baseline Scenario

The baseline scenario – sometimes referred to as "reference scenario" in other guidance documents – represents the "before" situation without AT&T's enabling solution. This sets the reference point for calculating the carbon reduction. Although the baseline scenario can change as technologies become common, to track against a cumulative target consistently, the established baseline scenario for each enabling solution will remain the same for the duration of the Gigaton Goal. The baseline scenario will be defined based on the time of the impact assessment and will stay fixed unless a robust forecast suggests otherwise. In some instances, where business as usual behavior shifts to closer align to the ICT solution scenario, this may cause overestimation of the net positive impact of solutions.

ICT Solution Scenario

The ICT solution scenario represents the "after" scenario, in which the ICT solution provided by AT&T has been implemented. The solution will either modify the baseline activities (e.g., reducing energy consumption) or replace them with alternative activities (e.g., substitution of travel). There may also be some activities that remain unchanged.

Functional Unit

The functional unit defines the system boundaries in which the baseline scenario is compared to the ICT solution scenario. The functional unit quantifies the system's performance and serves as a reference to describe the carbon impacts of the ICT solution. It provides a common basis for measuring carbon in both the baseline and ICT solution scenarios, enabling a consistent comparison between them. To quantify cumulative net carbon impact savings, the functional unit for all carbon abatement factor calculations will cover an annual period.

Implementation Context

The implementation context will be determined as a set of parameters that should be constant between the baseline and ICT solution scenarios. If the implementation context varies significantly, appropriate adjustments will be made to the calculation to account for differences in parameters such as geography, time, scale, etc.

Components of a Net Carbon Impact Assessment

The net carbon impact assessment compares the full life cycle carbon emissions between the selected ICT solution scenario and the baseline scenario within the same boundary. Net carbon impact assessments include three main effects:

First Order Effects – First order effects are the direct impacts associated with the life cycle of the ICT solution itself. First order effects will be calculated for all life cycle stages of the ICT solution, for which data is available and/or reliable estimates can be made. Embedded and end-of-life emissions will be allocated equally across the lifetime of the solution and included according to the period of the assessment. Embedded and end-of-life emissions of any ICT equipment that were already in place in the baseline scenario and are also part of the ICT solution scenario will be excluded from the calculation of first order effects.

Second Order Effects – Second order effects are the indirect impacts that occur due to changes to the baseline scenario following the implementation and use of the ICT solution. Second order effects can have positive (reduction of GHG emissions) or negative effects (increase of GHG emissions). The GHG impact of second order effects will be calculated with a life cycle perspective.

First or second order effects may be excluded from the net carbon impact assessment if it can be demonstrated that the total effect contributes less than 5% of the total net carbon impact per functional unit. For any exclusions, justification and supporting calculations will be documented.

Higher Order Effects – Higher order effects are the indirect impacts that occur as a result of second order effects. These effects can occur because of behavioral or consumption pattern changes. Like second order effects, higher order effects can be positive or negative. Negative impacts typically occur as rebound effects that cause an increase in consumption due to improved efficiency of the system after an ICT solution is implemented. A qualitative assessment will be conducted for all identified higher order effects, and where quantitative assessment is possible, the GHG impact of all identified higher order effects (both positive and negative) will be calculated. Higher order effects deemed significant but not quantifiable will be supported by justification and reported alongside the net carbon impact quantitative results in a case study-specific document.

During the initial stage of a net carbon impact assessment, AT&T maps out all activities that occur during baseline and ICT solution scenarios and identifies potential GHG emissions sources related to those activities. Through this process AT&T will identify effects and estimate the magnitude of their impact on GHG emissions.

AT&T takes a conservative approach to calculations of all aspects of net carbon impact assessments to ensure that total net carbon impact savings are not overestimated.

Attribution

AT&T provides essential connectivity for ICT solutions, enabling them to function and fulfils their intended purpose. This connectivity, which is new to the ICT solution scenario, must play a fundamental role in achieving the net carbon impact in order to be qualified as an enabling technology.

Technology Portfolio

For the AT&T Gigaton Goal, AT&T focuses on technologies that have positive carbon benefits. Only solutions with positive emissions impacts that "do no significant harm" to other environmental indicators are included.

AT&T may include net carbon impact savings related to methane leak detection and prevention, including leaks from gas systems. Such solutions are only included if they are judged to limit the negative impact of degrading infrastructure rather than increasing reliance on fossil fuels. AT&T recognizes the importance of addressing methane leaks and believes their technology is crucial in preventing emissions that would otherwise occur.

To avoid double-counting, AT&T reviews its technology portfolio for overlaps between different enabling technologies to ensure the same net carbon impact savings is not counted multiple times. If overlaps are found, the overlapping net carbon impact savings is only counted once.

As AT&T continues to focus on adding new solutions, the number of connectivity and other services included in the technology portfolio will increase, providing a more comprehensive and representative set of technologies.

Data Quality – Types of Data, Assumptions, and Sources

Net carbon impact savings calculations for the enabling technology rely on a mix of primary and secondary data, with a priority on using available primary data. If reliable primary or secondary data is not available, data from sampling, proxies, and assumptions can be used. AT&T evaluates data needs at the start of each carbon abatement factor calculation, based on an estimation of materiality, to decide which data should be gathered. Some primary data is used for all new net carbon impact savings calculations. This primary data can relate to either the baseline scenario, the ICT solution scenario, or both.

To avoid the use of assumptions and data from biased sources, multiple sources are considered for a single parameter and compared whenever possible. Data, such as electricity grid emissions factors, and secondary data used in the calculations are periodically reviewed and updated.

Transparency

For savings calculated through case studies of enabling technologies, AT&T provides a detailed summary of the calculations, ensuring that no commercially sensitive information are compromised. For enabling technologies not developed as part of a detailed case study, AT&T offers an overview of the calculations, including relevant assumptions and data sources. All this information is published as part of the annual Gigaton Goal Progress Update.

Reporting

AT&T tracks and reports progress of the Gigaton Goal on an annual basis, communicating the results of the carbon abatement calculations in metric tons of CO_2e as a single value in AT&T public reporting documents, including the Gigaton Progress Update. AT&T aims to report on all relevant information (data sources, assumptions, breakdown of results, etc.), as highlighted by the EGDC's recent framework.

Documentation

Moving forward, AT&T will clearly document the following for each individual AT&T service that is included in the technology portfolio:

- Description of the enabling technology and explanation of the fundamental role of AT&T's service in enabling the carbon abatement
- Functional unit
- Materiality
- Implementation context
- Baseline scenario
- First, second and higher order effects
- Exclusions
- References for data sources and assumptions used to calculate the carbon abatement
- The methodology used to calculate the carbon abatement factor
- Results of the carbon abatement calculation published as a carbon abatement factor in metric tons CO_2e per functional unit

AT&T provides an overview of this information in its annual Gigaton Progress Update. All other documentation inputs are reported in individual carbon abatement factor reports.

Review and Verification Process

To build confidence in the net carbon impact savings enabled by AT&T's services, AT&T follows an evolving review and verification process. Recognizing that best practice involves an external, independent review of the calculations, AT&T plans to expand this review process as data and methodology improve. Currently, AT&T conducts an independent internal review with the aim of transitioning to a more thorough external audit in the future.

AT&T collaborates with The Carbon Trust, which provides strategic guidance on emerging emissions measurement best practices, updates on progress towards AT&T's Gigaton Goal, and engages with customers to investigate the emissions impacts of their use of connectivity.

Steps in the internal review process may include:

1. Conducting a sense check across all collected data and assumptions used for the carbon abatement calculations enabled by AT&T's service. This involves comparing the results of AT&T calculations with other related data and calculations to ensure the findings are in line with other credible sources.

2. Cross-checking against other available sources and comparing total carbon abatement figures with published figures for comparable products, if available.

3. Reviewing calculations to ensure they do not use outdated assumptions and data and updating them as necessary.

4. Performing a light-touch sensitivity analysis, where relevant, to inform the analysis and drive product innovation internally. This involves varying key parameters of the carbon abatement calculation by a certain percentage and evaluating the impact on the overall results. These steps help ensure the accuracy and reliability of AT&T's net carbon impact savings calculations.

Appendix

Summary of Reviewed Documents

There are several guidance documents on this topic, which have been reviewed and taken into consideration. All documents reviewed here are specific to ICT, but are based on more generic ISO standards, the GHG Protocol standard and the Avoided Emissions Framework developed by the Net Zero Compatible Innovations Initiative (NZCII). AT&T will continue to monitor any developments in this area and the applicability to its own methodology.

Established / Historic Documents

- GeSI ICT Enablement Methodology
- ITU-T L.1410
- ETSI TS 203 199
- Forum for the Future: Measuring your way to net positive
- ITU-T L.1430
- IEC TR 62725: 2013
- IEC TR 62726:2014
- BT 3:1 Carbon Abatement Methodology
- GeSI Mobile Carbon Impact Report
- GeSI ICT Handbook
- NZCII Avoided Emissions Framework
- GSMA The Enablement Effect

Newer Documents

- **EGDC, Net Carbon Impact Assessment Methodology for ICT Solutions:** framework for evaluating the carbon emissions of ICT solutions throughout their life cycle. It assesses both direct and indirect impacts, highlighting ICT's role in enabling carbon reductions while accounting for its own emissions. The methodology promotes standardized reporting to help organizations align with EU climate neutrality goals.

- **WBCSD, Guidance on Avoided Emissions:** structured methodology for quantifying emissions reductions that result from the use of a company's products or services, relative to a baseline scenario with higher emissions. It outlines principles for calculating, reporting, and verifying avoided emissions, ensuring consistency with global standards such as the GHG Protocol. The guidance focuses on defining appropriate baselines, identifying system boundaries, and addressing uncertainties to provide robust and credible emissions avoidance claims.

- **ITU L.1480:** technical standard developed by the International Telecommunication Union (ITU) to provide a framework for assessing the environmental impact of digital technologies and services and helping organizations to quantify their environmental footprint. The standard integrates with the broader ITU L-series recommendations for sustainable ICT practices, ensuring consistency with international GHG protocols and methodologies. ITU L.1480 is intended to support ICT companies in achieving sustainability targets by offering a standardized approach to environmental impact assessment.