Science-Aligned Electricity Intensity Target: Methodology

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Reducing the Carbon Intensity of Our Electricity Emissions: a Science-Aligned Pathway to 2030

In 2019, Amazon co-founded The Climate Pledge, our goal to reach net-zero carbon emissions by 2040 in line with climate science.[1] To measure and track our progress along the way, we are setting a 2030 interim carbon intensity (CI) target for our company-wide electricity consumption designed to meet three criteria:

Boundary: Covers all emissions within our operational control[2] from power we generate on-site (Scope 1) and the electricity we purchase (Scope 2);

Pathway: Is indexed to a third-party decarbonization pathway developed by the International Energy Agency (IEA) that aligns with current climate science documented by the Intergovernmental Panel on Climate Change (IPCC); and

Timeframe: Covers a period of no more than five years from the target-setting date of 2026.[3]

See Appendix B for full Criteria

In this document, we summarize our approach to 1) defining the target boundary and metric, 2) setting a carbon intensity reduction target indexed to a credible climate science-aligned global decarbonization pathway, and 3) identifying guardrails to address limitations we've identified with this methodology.



Target Boundary and Metric

Our target covers emissions from two sources within our operational control: emissions from fuel combustion for on-site power generation (Scope 1) and emissions from purchased electricity (Scope 2), which we refer to collectively as "electricity consumption emissions".[4] Electricity from these sources supplies power for our servers and warehouse equipment, for our facility operations and electric vehicles (EV) charged on-site, and for backup power systems across our operations. *See FAQ 2 on what is out of scope.*

We measure performance against this target as carbon intensity: total emissions in metric tons of carbon dioxide equivalent (tCO_2e)[5] divided by total electrical load (MWh) in a given

1. As shorthand, the terms "decarbonization" and "carbon" in this document refer to all greenhouse gases (GHGs) measured and expressed in CO_2-equivalent units (CO_2e). Similarly, Amazon's "net-zero" goal refers to Amazon's ambitions for all GHGs. The gases covered in our inventory include the seven gases regulated under the Kyoto Protocol: carbon dioxide (CO_2); methane (CH_4); nitrous oxide (N_2O); hydrofluorocarbons (HFCs); perfluorocarbons (PFCs); sulfur hexafluoride (SF_6); and nitrogen trifluoride (NF_3). Our target includes methane, just as our emissions inventory does, even though the IEA NZE Scenario's electricity generation pathway doesn't cover it.
2. Amazon utilizes the operational control approach, as defined by the GHG Protocol, to establish the relevant operations for the purposes of Amazon's Scope 1 and Scope 2 GHG emissions reporting. More information can be found in our carbon methodology: https://sustainability.aboutamazon.com/carbon-methodology.pdf
3. Bounding the target period reduces the risk that a target ambition, as set at the outset, becomes outdated. Over long-time horizons, shifts in underlying assumptions or methodologies can cause ambition to diverge materially from current pathways. The baseline year serves as a historical reference point for measuring progress and is distinct from the target setting date.
4. Unless specifically mentioned, throughout this document when we refer to electricity emissions, we mean Scope 1 power generation and Scope 2 purchased electricity emissions (as shown in Table 1).
5. The IEA measures and projects emissions in CO_2-only units, while our footprint is reported in CO_2e. For the activities covered by this goal, non-CO_2 gases account for less than 1% of emissions, which is not material. Indexing to a CO_2-only pathway therefore introduces negligible error and remains a valid benchmark for these activities.

period (e.g., year). *See Appendix A.2 for detailed definitions and assumptions.*

We selected a carbon intensity metric because it aligns directly with the per-unit emission intensity pathway published by the IEA and used in voluntary and regulatory emissions measurement frameworks. An electricity consumption carbon intensity metric enables us to continue decoupling emissions from business growth on our path to net-zero by 2040.

To ensure our methodology is up to date, we will assess progress annually and refine the methodology as science and data evolve.

Indexing the Target to the IEA NZE Scenario

To leverage a credible third-party pathway, we've tied our electricity consumption carbon intensity (tCO_2e/MWh) reduction target to the intensity reduction trajectory outlined in the Electricity Generation pathway of the IEA's Net Zero Emissions by 2050 Scenario (IEA NZE Scenario), as updated in the World Energy Outlook 2025.[6,7] This pathway is consistent with Paris Agreement objectives.

Table 1– Mapping of emissions from on-site generation and purchased electricity to the IEA NZE Scenario.[8] The emissions associated with these activities are combined in line with their treatment as a single activity in the same sector.

Scope	Emissions	Source	Description	Selected IEA NZE Decarbonization Pathway
Scope 1	Combustion	On-site Power Generation	Emissions from fuel combustion for on-site power generation across company facilities and operations.	Electricity Generation
Scope 2	Electricity	Purchased Electricity	Emissions from purchased electricity. When tracking reductions in carbon intensity over time, we account for the exercise of market-based instruments for carbon-free electricity (e.g., renewable energy certificates, solar and wind PPAs, guarantees of origin, and utility green tariffs).	Electricity Generation

Pathway Evaluation

We evaluated the IEA NZE Scenario against alternative pathways and tested four design choices before making our selection: the quality of scenario data, the geographic resolution of the pathway, the ability to account for different sectors, and the range of ambition across various climate scenarios. Like all forward-looking decarbonization pathways, the IEA NZE Scenario includes inherently uncertain projections of business growth, economic trends, climate science, and technology advancement. However, a variety of factors supported our selection of the IEA NZE Scenario over other pathways: the IEA is a widely-cited authority on energy decarbonization pathways, its data is updated regularly with transparent communication of underlying model assumptions, and the IEA NZE Scenario constructs its trajectories at a sector level, which aligns with how we plan and measure abatement across our businesses.[9]

- **Best-Available Data:** To ensure that our target reflects the latest scientific consensus on climate change, we selected the most recent version of the IEA NZE scenario available, as published in the World Energy Outlook 2025. This scenario contains the latest available data on the global carbon budget allocated to sectors, expected technology deployment timelines, and other key assumptions (e.g., the data used for projected 2030 Electricity Generation intensity). Climate science and scenario development continue to evolve, particularly as the Intergovernmental Panel on Climate Change (IPCC) updates its assessments. As our target date approaches, we will assess changes to the latest IEA NZE Scenario, its underlying methodologies, sector-specific trajectories, and mapping of emissions-generating activities to index

6. https://www.iea.org/reports/net-zero-by-2050

7. Although the IEA NZE Scenario targets a global net zero date of 2050, net-zero across Electricity Generation is achieved by 2040, in line with the timeframe of The Climate Pledge. Other adopters of this methodology should ensure that there is no conflicting ambition between a sectoral pathway selected and the adopter's desired target timing.

8. Key pathway mapping assumptions include: 1) Company operations' Scope 2 emissions follow similar decarbonization trajectories as their respective power generation industries; and 2) Initial mappings serve as approximations, to be refined through operational data and industry research.

9. The IEA NZE Scenario still has some limitations such as the incompleteness of the sectors included (e.g., agriculture is excluded) and its focus on CO_2-only emissions. These limitations do not materially influence the single-sector target indexed to the Electricity Generation pathway.

ourselves against current climate science, using the IPCC as the authoritative source for any future target-setting activities.

- **Regional Specificity:** Grids decarbonize at different speeds in different parts of the world, so we looked at whether to use regional pathways weighted by where we actually use electricity. Today, though, the IEA NZE Scenario only publishes global pathways for each sector and doesn't break them out by region in a form we could apply directly. Some other models offer more regional detail, but we decided that regular, transparent updates mattered more, especially with sectors like AI changing so quickly. As future scenario releases add regional data, we will assess the applicability to our targets and update where appropriate.

- **Sectoral Methodology:** Every sector decarbonizes at its own pace. Power, transportation, steel, and cement each rely on different technologies, and those technologies vary in how mature they are and how much supply exists. A sector-level approach captures those differences. The IEA NZE Scenario sets a separate rate of intensity reduction for each sector over time, based on the sector's historical carbon intensity trend and how mature its decarbonization technologies are.[10] For any given period, that rate is the average slope of the sector's global intensity pathway. That enables us to set a target for our own sector tied to a credible, science-based pathway. See Pathway Application below for details of how we applied this sectoral pathway to calculate a goal.

- **Range of Ambition:** We assessed multiple publicly recognized climate pathways, including several 1.5°C-aligned trajectories (with no or limited overshoot): the IEA NZE Scenario, the Network for Greening the Financial System (NGFS) Net Zero 2050 scenario, and the IPCC Sixth Assessment Report (AR6) Category 1 (C1) and Category 2 (C2) pathways. For "well below 2°C", we considered the IEA's Announced Pledges Scenario (APS). Across these scenarios, the implied decarbonization ratios for electricity generation over the 2020–2030 period ranged from approximately 0.77 for C1 (no or limited overshoot) pathways to 0.51 for C2 (high overshoot) pathways. The IEA NZE Scenario's decarbonization ratio of approximately 0.65 falls within this range, confirming that it offers comparable ambition while providing the benefits described above.

10. The application of the sectoral IEA NZE Scenarios to Scope 1 and Scope 2 activities involves the Electricity Generation sector pathway – see Table 1

Pathway Application

We define the decarbonization ratio between the baseline and target emissions intensity as follows:

$$Decarbonization\ ratio_i = 1 - \frac{CI_{i,target\ year}}{CI_{i,base\ year}} \quad (1)$$

Where:

- $CI_{i,\ base\ year}$ is the carbon intensity for a given sector *i* (e.g., tCO_2e/MWh for Electricity Generation) at the base year.
- $CI_{i,\ target\ year}$ is the target carbon intensity for that sector at the end of the defined target period.

For example, the IEA NZE Scenario (using data from the initial IEA NZE Special Report and World Energy Outlook 2025) shows that:

- Global annual emission intensity from Electricity Generation in 2019 was 0.468 tCO_2e per MWh[11]
- Global annual emission intensity from Electricity Generation by 2030 should decrease to 0.165 tCO_2e per MWh[12]

11. Taken from the IEA NZE Special Report, Table A.5, CO_2 intensity of electricity generation.

12. An interpolated value from the World Energy Outlook 2025 report, Table A.5c, CO_2 intensity of electricity generation (see Appendix A.3 for interpolation)

That works out to a decarbonization ratio of 0.65 for Electricity Generation for the period 2019 to 2030. For Amazon, that implies that our 2030 carbon intensity for electricity consumption emissions, after accounting for market-based instruments, should be no higher than 35% of our 2019 carbon intensity, measured before any market-based instruments. Put simply, *our goal is to reduce our combined power generation and electricity consumption carbon intensity by approximately 65% by 2030, from a 2019 baseline.*

This approach indexes the carbon intensity reduction of the activities covered by our target with that of the IEA NZE Scenario between a base year and 2030.[13] However, we also appreciate that a static endpoint target only tracks where we end up in 2030 and does not account for the emissions released along the way. A company with an endpoint target could put off action, still reach the same 2030 intensity, yet emit far more in the meantime, increasing the cumulative emissions load. Accordingly, the section below introduces guardrails to track our performance every year and limit cumulative emissions. *See Appendix A.3 for implementation requirement considerations for the methodology.*

13. Amazon's base year is 2019, the year in which we began reporting carbon emissions and actions towards The Climate Pledge.

Additional Guardrails and Cumulative Electricity Emissions

How much the planet warms depends on the cumulative amount of carbon emissions over time. That's why we pair our intensity target with two guardrails: the first checks our trajectory each year, and the second assesses cumulative electricity consumption emissions. Together, they show how we're progressing against the benchmark pathway and how much we're emitting in total on the way to our target.

Guardrail 1 – Annual Intensity Cap for Electricity Consumption Intensity

Each year between the base year and the target year, our electricity consumption carbon intensity should not exceed the IEA NZE Scenario's benchmark for that year, as described in the World Energy Outlook 2025. That turns the target from an endpoint check in 2030 into an annual trajectory. If we put off action or fall behind the sector pathway in a given year, it shows up in that year. We will reassess this guardrail annually.

$$CI_{company,t} \leq CI_t \quad (2)$$

Where:

- $CI_{company,t}$ is Amazon's carbon intensity for electricity consumption at any year t after the base year
- CI_t is the carbon intensity for Electricity Generation from the IEA World Energy Outlook 2025 in that same year t

Guardrail 2 – Company Allocated Cumulative Electricity Consumption Emissions

As demand for our services grows, it may push activity in the power sector above what the IEA NZE Scenario projected in the World Energy Outlook 2025. To account for that, we set ourselves a cumulative emissions allocation for electricity consumption. Each year, we are allocated a share of the sector's electricity generation emissions in proportion to our share of sector activity, and those yearly shares add up over the target period:

$$Allocated\ Electricity\ Consumption\ Emissions = \sum_{t=base}^{Target\ Year} E_{i,t-fix} * \left(\frac{Company\ Activity_{i,t}}{Sector\ Activity_{i,t}}\right) \quad (3)$$

Where:

- $E_{i,t\text{-}fix}$ is the global emissions for a given sector i (e.g., tCO_2e for Electricity Generation) under the IEA NZE Scenario for a given year t after the base year, fixed to the projections from the version the target was set (the World Energy Outlook 2025): this

ensures there is no drift in ambition based on slower decarbonization across the entire sector

- Company Activity$_{i,t}$ and Sector Activity$_{i,t}$ are the actuals of activity for sector *i* (e.g., MWh of electricity consumed/produced) from the organization and sector respectively in that same year *t*. (Actuals would come from each new edition of the World Energy Outlook and company sustainability reports)

Because the budget depends on actual sector data, we can only check it after the fact, once the IEA publishes its numbers. Between publications, we will use our own projections of our load and emissions to assess cumulative emissions, and we'll adjust our decarbonization plans if we're falling behind.

FAQs

1. Who is this methodology for?

The methodology in this document was developed for Amazon. It has been applied to set a 2030 interim target for Amazon's emissions from the electricity we generate ourselves (Scope 1) and the electricity we purchase (Scope 2).

2. What is outside the scope of this target and methodology?

This target covers only emissions from on-site power generation (Scope 1) and purchased electricity (Scope 2) that are within our operational control. It excludes all other Scope 1 sources, including fleet fuel combustion, stationary combustion for heating, and refrigerants. It also excludes Scope 3 categories such as purchased goods and services, embodied carbon in buildings and hardware, upstream fuel- and energy-related activities (FERA), third-party transportation, use of sold products, business travel, and employee commuting. This methodology also does not address the actions Amazon will take to achieve the target, the associated reporting practices, or the integrity criteria for the instruments used. Amazon is pursuing a range of decarbonization activities across its operations and value chain, which are described in our latest Sustainability Report.

3. Why was the World Energy Outlook 2025 selected as opposed to other versions of the IEA NZE Scenario?

The rapid growth of data center operators was largely unanticipated as recently as two years ago, meaning that older scenario vintages may not accurately reflect demand on power generation. We elected to utilize the latest scenario available to help minimize this risk of underestimating the growth of these companies, and therefore reflect ambition based on current understanding of demand. We do acknowledge that this iteration reflects a lower global ambition than previous iterations, projecting an overshoot to 1.65°C before returning to 1.5°C by the end of the century. However, the carbon intensity reduction of electricity generation on the timeframe of this target is the highest in the World Energy Outlook 2025 report since the initial report published in 2021, which helps to ensure we have a sufficiently high level of ambition associated with the target.

4. What Scope 2 accounting method will we use to assess our baseline-year emissions intensity and our progress toward the target?

The IEA NZE Scenario describes the rate of decarbonization needed from the power sector, expressed as a global sector average, over the coming years, based on historical intensity (tCO_2e/MWh). To index with the IEA values, we use our location-based Scope 2 intensity as the 2019 baseline, which describes the weighted-average sectoral intensity across the regions

we operated in. Our 2030 target is measured through our market-based Scope 2 intensity, which includes the market-based levers Amazon is using to decarbonize our electricity consumption and is designed to meet or exceed the rate outlined by the IEA NZE Scenario by 2030. Although this approach compares two different accounting methodologies, this was chosen to anchor the target to global sector average intensity values and then measure progress through the market-based instruments we deploy within our own operations. We will publicly report our performance on both a location-based and a market-based approach to measure progress against this target. This reflects recent thinking in the Science Based Target Initiative (SBTi) Corporate Net Zero Standard (CNZS) version 2 and draft version of the International Organization for Standardization (ISO) Net Zero Aligned Organizations standard 14060, which both acknowledge the use of market instruments and the market-based inventory to demonstrate progress towards a target.[14] We chose 2019 as the baseline because it is the year we committed to The Climate Pledge, consistent with the convention of a pre-action baseline. To ensure that our mitigation actions are also helping to address our physical footprint, we will monitor our location-based intensity during the target timeframe, while recognizing that location-based reductions may not fully reflect our mitigation activities as the broader grid decarbonizes. Note: We also considered using Amazon's market-based intensity as a baseline, however, this already included certain market-based decarbonization levers. A MBM baseline would therefore not represent a global sector average in the regions in which we operated, so we do not see this as aligned with the IEA NZE Scenario, and exclusion of those levers would artificially inflate our starting carbon intensity.

14. SBTi Corporate Net Zero Standard V2 requires ambition for Scope 2 targets based on the physical inventory (location-based), with market instruments and "activity pool" instruments being permitted during target implementation.

5. Why is an electricity generation intensity pathway used for a target related to both electricity consumption and generation?

Global decarbonization pathways, including the IEA NZE Scenario, are built from a production-side perspective, allocating carbon budgets to production sectors such as steel, cement, and power generation. No standalone consumption pathway exists for electricity procurement. This is nonetheless appropriate because purchased electricity emissions are fundamentally the same emissions as those from electricity generation, viewed from the demand side. Likewise, Scope 1 on-site power generation is functionally equivalent to power sector generation, occurring within our own operational boundary. Using a single electricity generation pathway for both scopes is therefore well-justified.

Appendix A

1. Carbon Intensity Calculation

In line with carbon intensity formulations used by the IEA, IPCC, and various peer-reviewed academic publications, we define electricity consumption emissions carbon intensity in a given year t as follows:

$$CI_t = \frac{Scope\ 1\ Power\ Generation\ +\ Scope\ 2\ Purchased\ Electricity\ (tCO_2e)_t}{Load\ (MWh)_t} \quad (4)$$

Where:

- Emissions (for the selected boundary, e.g., power generation and electricity consumption) is obtained from Equation (5).
- Load represents the total electrical load across company facilities, measured in Megawatt-hours (MWh).
- t indexes each year in range between a base year and a target year (inclusive of the base and target years).

Assumptions and Definitions:

Emissions from on-site power generation (Scope 1) and purchased electricity (Scope 2): This is the carbon

footprint associated with fuel combustion for on-site generation, and indirect emissions associated with electricity consumption of purchased power.

The remainder of this Appendix describes a general methodology for computing this carbon footprint. Our current implementation focuses on electricity consumption emissions, which we can measure with a high degree of accuracy under established accounting standards. For each relevant activity, we calculate the associated emissions following the Greenhouse Gas Protocol (GHGP) using Equation (5). See Amazon's carbon measurement methodology for a more detailed description of our calculation and assumptions.

$$Emissions_t = \sum_{i=1}^{N} Activity\ Amount_{t,i} \sum_{g=1}^{G} EF_{t,i,g} * GWP_g \quad (5)$$

Where:

- $Activity\ Amount_{t,i}$ is the quantitative measure of activity *i* at time *t*. The set *N* includes all operations related to Scope 1 power generation and Scope 2 purchase electricity within our carbon footprint. For example, we measure purchased electricity in MWh used.[15]
- $EF_{t,i,g}$ is the emission factor for activity *i* and greenhouse gas (GHG) *g* at time *t*. The set *G* includes all gases regulated under the Kyoto protocol. An example emission factor is the grid carbon intensity for purchased electricity.
- GWP_g Global Warming Potential of GHG *g*, which allows us to convert an emission factor expressed in tons of gas *g* per unit of activity to an emission factor expressed in tons of CO_2-equivalent (tCO_2e) per unit of activity. We specify this conversion factor using current values of 100-year horizon global warming potential provided by IPCC.[16]

15. https://sustainability.aboutamazon.com/renewable-energy-methodology.pdf

16. AR6 GWP values: https://www.ipcc.ch/report/ar6/wg1/chapter/chapter-7/#7.6 (Section 7.6.1.1)

Assumptions:

- Emission factors are derived from third-party sources (e.g., GHGP, regional databases such as DEFRA).
- Data for each activity are aggregated on an annual basis.
- Consistent with GHGP, we include the following GHGs in our emissions factors for CO_2e: carbon dioxide (CO_2); methane (CH_4); nitrous oxide (N_2O); hydrofluorocarbons (HFCs); perfluorocarbons (PFCs); sulfur hexafluoride (SF_6); and nitrogen trifluoride (NF_3).

The boundary for emissions covers the power we generate (Scope 1) and the electricity we purchase (Scope 2). We assess coverage against our company's carbon footprint, which is calculated on an annual basis and assured by independent third-party assurance providers.

For the electricity consumption carbon footprint, we consider the following emissions (see detailed list in Table 1):

- **Scope 1 power generation emissions** are direct emissions from fuel combustion for on-site power generation across company facilities and operations. We determine the carbon intensity for the baseline year using standard fuel combustion emission factors.
- **Scope 2 purchased electricity emissions** are indirect emissions resulting from the consumption of purchased energy across company facilities and operations, such as the purchased electricity consumed by facilities. We determine the carbon intensity for the baseline year without the inclusion of any market instruments, based on a weighted average grid emission factor weighted by our load in different geographic locations. To measure the progress in reducing this carbon intensity over time, we take into account market-based instruments that we purchase and retire over time.

2. Interpolation of data from the IEA NZE Scenario

Where data is missing from a selected third-party pathway, it may be necessary to interpolate the missing values to apply the formulas identified in this methodology. Where necessary and appropriate, the following geometric interpolation equation can be leveraged:

$$Pathway\ CI_t = Pathway\ CI_X * \left(\frac{Pathway\ CI_Y}{Pathway\ CI_X}\right)^{\frac{t-X}{Y-X}} \quad (6)$$

Where:

- X and Y are the closest datapoints bounding the missing data entry in year t, such that X < t < Y
- X and Y are within the reported base year and net zero year of the pathway

For example, using data from the most recent World Energy Outlook 2025 dataset, the intensity for 2024 and 2035 is reported. We can leverage Equation (6) to impute the intensity value in 2030:

$$Pathway\ CI_{2030} = \frac{0.446\ tCO_2e}{MWh} * \left(\frac{0.072\ tCO_2e/MWh}{0.446\ tCO_2e/MWh}\right)^{\frac{6}{11}} \approx 0.165\ tCO_2e/MWh$$

3. Note on Implementation Requirements

Implementing the methodology in this document (that is to say, applying the relevant equations above to set targets) to other business activities should reflect the following considerations:

1. The definition of emissions boundaries should be consistent with carbon measurement methodology aligned with established standards (e.g., GHG Protocol).
2. The definition of activity boundaries should be consistent with the carbon emissions boundary.
3. The carbon intensity numerator and denominator should be consistent, based on the temporal nature of emissions accounting for the relevant activity. For example:
4. For electricity consumption emissions carbon intensity within our operational control, Equations (1) and (4) are applied using total load (in MWh) as the denominator for emissions intensity (as in Table 1). The numerator comprises emissions from our own generated power (Scope 1) and the electricity we purchase (Scope 2) within our operational control in a given year, and the denominator (MWh) is similarly an operational metric and is thus consistent with the numerator.
5. Selection of decarbonization scenarios, e.g., IEA, and mapping business activities (emissions sources) to the sectoral pathways from those scenarios

Appendix B: Science-Aligned Electricity Target Criteria

We have voluntarily prepared the Science-Aligned Electricity Intensity Target: Methodology (the Methodology) in order to support the establishment of a science-aligned interim carbon intensity and decarbonization target (the Target), indexed to the International Energy Agency's (IEA) Net Zero Emissions by 2050 Scenario (NZE Scenario). The Target covers Amazon's company-wide emissions from fuel combustion for on-site power generation (Scope 1) and from purchased electricity (Scope 2) within our operational control, which we refer to collectively as electricity consumption emissions.

The Target is indexed to the sectorial decarbonization pathway outlined in the IEA NZE Scenario, which presents a pathway to global net zero by 2050, aligned to guidance on climate science provided by the Intergovernmental Panel on Climate Change (IPCC). The IEA NZE Scenario provides decarbonization pathways for Electricity, Industry, Transport, Buildings, and Fossil and Low Emissions Fuel. We have selected the global annual emissions intensity for our baseline year and for future years as published by the IEA in the NZE Special Report (for 2019) and the World Energy Outlook 2025 (for 2030) under the Electricity Generation Sector. No consumption-based pathway exists independently in the IEA NZE Scenario; however, demand and generation are analogous, and both our purchased and self-generated electricity fall within this sector. We have therefore applied the Electricity Generation pathway to both activities.

To index with the IEA values, the Target uses Amazon's location-based Scope 2 intensity as the 2019 baseline, which describes the weighted-average sectoral intensity across the regions we operated in. The 2030 target is

measured through Amazon's market-based Scope 2 intensity, which includes the market-based levers Amazon is using to decarbonize electricity consumption and is designed to meet or exceed the rate outlined by the IEA NZE Scenario by 2030. Although this approach compares two different accounting methodologies, this was chosen to anchor the target to global sector average intensity values and then measure progress through the market-based instruments we deploy within our own operations. Amazon will publicly report our performance on both a location-based and a market-based approach to measure progress against this target.

The Target is set on the basis of carbon intensity by electrical load, consistent with the IEA NZE Scenario's Electricity Generation Intensity pathway.

Scenario Analysis: We assessed multiple publicly recognized climate pathways. These included 1.5°C-aligned trajectories: the IEA Net Zero Emissions by 2050 (NZE) scenario, the NGFS Net Zero 2050 scenario, and the IPCC Sixth Assessment Report (AR6) Category 1 and 2 pathways. We evaluated the IEA NZE Scenario against alternative pathways and tested four design choices before making our selection: the quality of scenario data, the geographic resolution of the pathway, the ability to account for different sectors, and the range of ambition across various climate scenarios. The IEA NZE scenario was selected due to its use in voluntary and regulatory net zero standards, its regular updates, and the transparency of its technology assumptions.

Best-Available Data: For our target, we leveraged the most recent version of the NZE scenario available as published in the World Energy Outlook 2025, with baseline 2019 values taken from the IEA NZE Scenario first report. This reflects the latest scientific thinking and recent growth in data center electricity demand. As climate science evolves, we will assess changes to the underlying methodologies and sector-specific trajectories, using the IPCC as the authoritative source for future goal setting.

Restatements and Recalculations

Our adopted baseline is 2019, and we measure progress against this goal relative to that baseline. We have not restated the 2019 baseline since it was established. We will continue to monitor for changes that could affect the baseline as it relates to this goal, such as changes to our organizational boundaries under the GHG Protocol, our methodology, or data quality. Where such changes occur, we will judge whether they are material and whether a recalculation is appropriate to assess progress against our goal.

Further Notes

The following sources, policies, and approaches were used in assessing and developing the Methodology.

1. As shorthand, the terms "decarbonization" and "carbon" refer to all greenhouse gases (GHGs), expressed in carbon dioxide equivalents (CO_2e). These include the seven gases regulated under the Kyoto Protocol: carbon dioxide (CO_2); methane (CH_4); nitrous oxide (N_2O); hydrofluorocarbons (HFCs); perfluorocarbons (PFCs); sulfur hexafluoride (SF_6); and nitrogen trifluoride (NF_3). Our goal includes methane, consistent with our emissions inventory, even though the IEA NZE Scenario Electricity Generation pathway does not.
2. Amazon utilizes the operational control approach, as defined by the GHG Protocol, to define the boundary of its Scope 1 and Scope 2 reporting. More information can be found in our carbon methodology: https://sustainability.aboutamazon.com/carbon-methodology.pdf
3. Because this is a quickly evolving area, we limit the target period to no more than five years after the setting of the target to reduce the risk that ambition set at the outset becomes outdated as assumptions and methodologies change. The 2019 baseline year is a historical reference point for measuring progress and is distinct from the 2026 target-setting date.
4. Unless specifically mentioned, electricity emissions refers to Scope 1 emissions from fuel combustion for on-site power generation and Scope 2 emissions from purchased electricity, within our operational control.
5. The IEA measures and projects emissions in CO_2-only units, while our footprint is reported in CO_2e. Non-CO_2 gases account for less than 1% of emissions from the activities covered, so indexing to a CO_2-only pathway introduces negligible error.
6. The first edition of IEA Net Zero Emissions by 2050 Scenario is available at: https://www.iea.org/reports/net-zero-by-2050
7. Although the IEA NZE Scenario projects global net zero by 2050, the Electricity Generation sector reaches near net zero by 2040, in line with the timeframe of The Climate Pledge.
8. The IEA NZE Scenario has some limitations, including incomplete sector coverage (for example, agriculture is excluded) and a focus on CO_2-only emissions. These limitations do not materially affect a single-sector goal indexed to the Electricity Generation pathway.
9. Both Scope 1 on-site power generation and Scope 2 purchased electricity are mapped to the IEA NZE Scenario Electricity Generation pathway. Their emissions and activity units are combined for a single intensity metric.

10. The decarbonization ratio of multiple IPCC AR6 and NGFS scenarios were compared to the IEA ambition. These implied 2020 to 2030 electricity decarbonization ratios of approximately 0.51 to 0.77, with the IEA NZE Scenarios at an average 0.635: https://data.ene.iiasa.ac.at/ar6/#/workspaces and https://data.ene.iiasa.ac.at/ngfs/#/workspaces
11. The decarbonization ratio is calculated as one minus the ratio of the IEA NZE Scenario Electricity Generation intensity in 2030 to that in 2019. The 2019 intensity of 0.468 tCO_2e per MWh is taken from the IEA NZE Special Report, Table A.5. The 2030 intensity of 0.165 tCO_2e per MWh is interpolated from the World Energy Outlook 2025, Table A.5c, using the 2024 (0.446 tCO_2e per MWh) and 2035 (0.072 tCO_2e per MWh) values. The resulting decarbonization ratio of 0.65 forms the basis of our target.
12. The target excludes all other Scope 1 sources, including fleet fuel combustion, stationary combustion for heating, and refrigerants. It also excludes Scope 3 categories, including purchased goods and services, embodied carbon in buildings and hardware, upstream fuel- and energy-related activities, third-party transportation, use of sold products, business travel, and employee commuting. The Electricity Consumption Intensity Methodology does not address the actions Amazon will take to achieve the target, or the integrity criteria for the instruments used.
13. Our 2019 baseline uses location-based Scope 2 emissions, which reflect the weighted-average grid intensity across the regions in which we operated and are therefore comparable with the IEA NZE Scenario global sector average. Progress is assessed using market-based Scope 2 emissions, which reflect the carbon-free electricity instruments we purchase and retire. We will also monitor our location-based intensity over the goal period.
14. More information on our approach to renewable energy and market-based instruments can be found in our renewable energy methodology: https://sustainability.aboutamazon.com/renewable-energy-methodology.pdf
15. Global warming potential values are taken from the IPCC Sixth Assessment Report (AR6): https://www.ipcc.ch/report/ar6/wg1/chapter/chapter-7/#7.6 (Section 7.6.1.1)

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