NextEnergy Group

NextEnergy Group Avoided Emissions Methodology

Version 01: June 2025

Introduction

NextEnergy Group (or **the Group**) is a specialist investment and asset manager active in the development, operation and financing of renewable energy infrastructure assets. The Group comprises five companies: Starlight (asset development), NextEnergy Capital (**NEC**, investment management), WiseEnergy (asset management), NextSTEP (VC sustainability accelerator) and NextEnergy Foundation (international charity). We are on a mission to generate a more sustainable future by leading the transition to clean energy.

Guidance to calculate avoided emissions is limited compared to calculations of actual GHG inventories. This creates a range of divergent approaches by financial market participants. NextEnergy Group recognises the importance of increasing transparency in the field of sustainable investment opportunities, as a mechanism for facilitating the growth of sustainable investment and the pursuit of a transition to clean energy. For this reason Transparency is a focus topic in our Sustainability Framework.

NextEnergy Group's Sustainability Framework is at the core of our Sustainability Strategy. It is a visual representation of how we think about sustainability.

We are committed to transparency in our sustainability and ESG approach and performance, including on our emissions avoided and their calculation. This ensures that users of our information have an accurate understanding of the meaning of our positive impact on climate change mitigation and other environmental ambitions.

This Avoided Emissions Methodology (**AEM**) applies to the calculation of the avoided greenhouse gas (**GHG**) emissions, both actual and forecasted, from solar PV assets in Starlight's development pipeline and NextEnergy Capital's funds. As the energy transition accelerates, NextEnergy Group is developing and enhancing our capabilities in other renewable energy technologies, such as wind and battery energy storage. We will update our AEM to reflect this evolution accordingly.

Methodology

Overview

NextEnergy Group follows the Greenhouse Gas Protocol (**GHG Protocol**), the leading global authority on GHG emissions measurement and management, to calculate the avoided emissions by planned and actual solar PV assets across Starlight's development activities and NEC's investments.

At the time of publication of this AEM, the GHG Protocol has not yet produced a comprehensive protocol to calculate avoided emissions. However, it has produced other sector-specific standards and guidance papers which the Group follows, particularly the Guidelines for Grid-Connected Electricity Projects.[1] We also incorporate guidance from the United Nations Framework Convention on Climate Change (**UNFCCC**), which has produced the International Financial Institution (**IFI**) Framework for a Harmonized Approach to Greenhouse Gas Accounting.[2]

The GHG Protocol establishes two approaches for emissions avoided calculations: Attributional and Consequential.

- The **Attributional** approach is best suited for those products or activities where a clear GHG inventory can be calculated and a comparison can be made between the two options; the avoided emissions are the difference between them.
- The **Consequential** approach estimates the total, system-wide change in emissions and removals that occur as the result of a change in the output of a functional unit in response to shifts in policy, regulation, technology, market and reputation factors. The key differences in the approaches are in Table 1.

Table 1: Key Differences between Attributional and Consequential Accounting (Source: Adapted from WRI (2019))[3]

Key Characteristics	Attributional	Consequential
What is described or modelled?	Static inventory of absolute emissions and removals	Change in emissions or removals caused by a specific decision or action
System boundary	Processes used directly in the life-cycle stages of the product physically produced or consumed	All and only the processes that change as a result of the decision studied, wherever they may occur in the system
How is it used to estimate comparative impacts?	Through comparisons of product GHG inventories developed using attributional life-cycle accounting (**LCA**)	Through consequential LCA or policy and action accounting

[1] The GHG Protocol (2022), *Guidelines for Quantifying GHG Reductions from Grid-Connected Electricity Projects*, available at < https://ghgprotocol.org/sites/default/files/2022-12/Guidelines%20for%20Grid-Connected%20Electricity%20Projects.pdf >

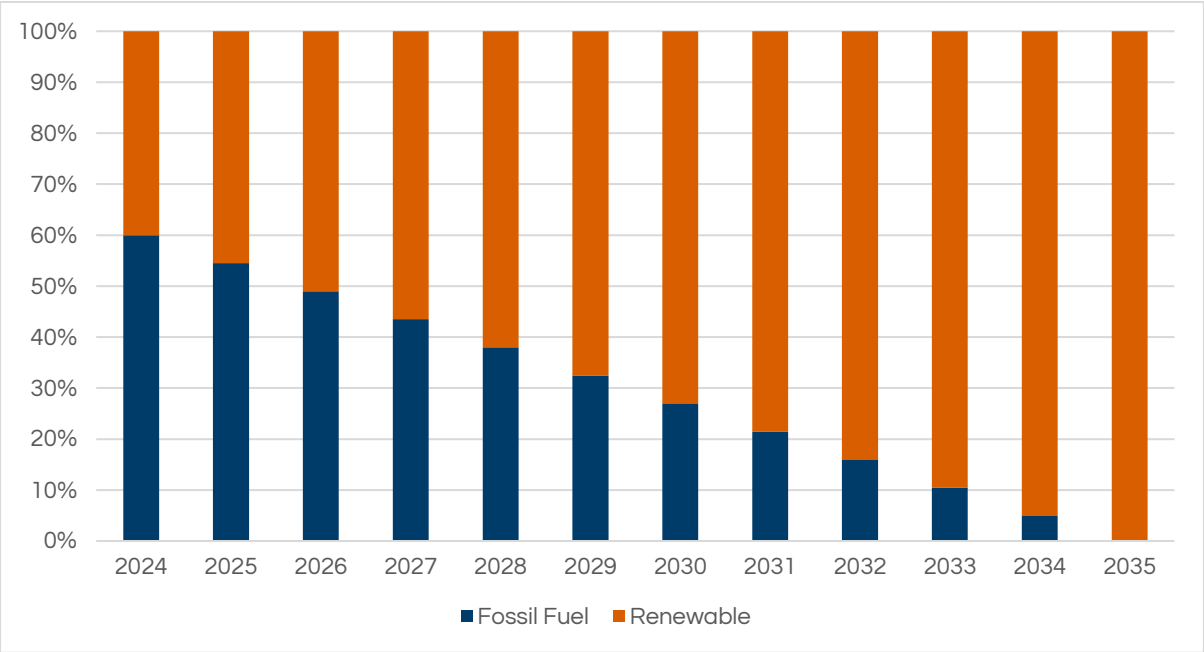
[2] UNFCCC (2015), *International Financial Institution Framework for a Harmonised Approach to Greenhouse Gas Accounting*, available at < https://unfccc.int/sites/default/files/resource/International%20Financial%20Institution%20Framework%20for%20a%20Harmonised_rev.pdf >

[3] World Resources Institute (2019), *Estimating and Reporting the Comparative Emissions Impacts of Products*, available at < https://ghgprotocol.org/sites/default/files/standards/18_WP_Comparative-Emissions_final.pdf >

Application

NextEnergy Group applies a Consequential approach to our solar PV projects. It is more appropriate than the Attributional approach because the impact of renewable energy projects is not directly comparable to a single product; rather, renewable energy projects displace fossil fuel-based energy on the grids they supply, as illustrated in Graph 1. The emissions avoided are those that would otherwise have been emitted by the blue bar.

Graph 1: Fossil fuel displacement, for illustrative purposes only (Source: NextEnergy Group)



Following the Consequential methodology, NextEnergy Group calculates:

1. The actual Scope 1, 2 and 3 emissions generated by each of our solar PV projects;
2. The alternative emissions which would have been generated by the fossil fuel-based energy that the solar PV projects are displacing on the grid; and,
3. The difference between the actual emissions (step 1) and the alternative emissions (step 2).

We adopt IFI grid emission factors, also known as **margins**, to calculate the emissions from the fossil fuel-based energy sources at the country level. These factors are updated periodically based on an analysis of the current energy mix supplying the jurisdiction and planned energy generation projects. The IFI determines three margins: Operational (**OM**), Build (**BM**) and Combined (**CM**). These are explained in the section below.

IFI Margins[4]

(a) The OM represents the cohort of existing fossil fuel-based power plants whose operation will be displaced by the renewable energy project.
(b) The BM represents the cohort of the prospective/future fossil fuel-based power plants whose construction and operation could be displaced by the renewable energy project.
(c) The CM represents a mix of the current fuel mix of the grid and the forecast mix based on all commissioned energy projects at the time of calculation.

NextEnergy Group utilises the OM to calculate our avoided emissions. The calculation is based on the cost of all energy supplied to the grid. Since fossil fuel energy has a higher variable cost than renewable energy, its costs dominate the margin. This trend is likely to continue as policy seeks to decarbonise energy systems and the cost of permits in compliance carbon markets increases. Even as the volume of renewable energy in the grid increases, additional renewable energy capacity will continue to displace fossil fuel-based energy until there such a high penetration of renewables that it dominates the CM.

Calculation

Formula

The formula applied to calculate the avoided emissions is:

Electricity supplied to grid (kWh) x OM (gCO2/kWh) = Gross Avoided Emissions (tCO_2e)

Unless explicitly stated otherwise, all figures for emissions avoided are presented as gross values and reported separately from any figures relating to the Group's actual emissions into the atmosphere. This separation ensures clarity and prevents any misinterpretation of our environmental impact data, as further detailed below.

Assumptions

The following section establishes how we interpret and apply the results of our emissions avoided calculations in the context of our overall environmental impact reporting.

We recognise that avoided emissions and actual emissions are fundamentally different concepts.

- **Climate change mitigation** – Avoided emissions represent the theoretical reduction in emissions that would have occurred if renewable energy had not been generated.
- **Atmospheric contribution** – Actual emissions are the real, measurable GHG released into the atmosphere from NextEnergy Group's operations.

We therefore do not consider our avoided emissions as an offset to our actual emissions. This is standard practice in emissions attribution methodologies.

[4] IFI Technical Working Group on Greenhouse Gas Accounting (2022), *Methodological Approach for the Common Default Grid Emission Factor Dataset*, available at <https://unfccc.int/sites/default/files/resource/IFITWG_Methodological_approach_to_common_dataset.pdf>

Actual Emissions Avoided

We use validated asset electricity generation data provided by WiseEnergy, NextEnergy Group's operating asset manager, for our calculations. This data is retrieved and vetted from metered readings, ensuring accuracy and reliability. The validated generation data is then combined with the appropriate IFI grid factors to calculate actual historical emissions avoided.

Forecast Emissions Avoided

To project the future emissions avoided by a solar PV asset, we use forecast generation data modelled by NextEnergy Capital's Investment teams that aligns with the asset's financial model. This forecast data is periodically reviewed to ensure that it remains up to date. It is combined with the grid OM to generate avoided emissions forecasts over the asset's lifetime. These generation figures are reviewed annually to ensure they align with any updates to the asset's financial model.

NextEnergy Capital Equity Share and Debt Emissions Attribution

To accurately represent the share of avoided emissions between equity and fixed income financing, the total generated electricity by the solar PV assets in NEC's funds is allocated between equity shares and debt. The allocation method considers the specific financial arrangements for each asset, including the proportion of equity owned by NEC's funds and the terms of any debt financing. This approach prevents an overstatement of avoided emissions, ensuring further transparency and reliability in the Group's disclosed contribution to climate change mitigation.

Additional Environmental Factors

NextEnergy Group also calculates other environmental indicators to provide a comprehensive view of the impact of our renewable energy projects on people and nature. These indicators include barrels of oil equivalent (**BOE**) avoided, equivalent homes powered (**EHP**), and equivalent cars off the road. They provide a tangible representation of fossil fuel consumption avoided, translating the abstract concept of emissions reduction into a more concrete and relatable measure of environmental impact. Other indicators disclosed cover air pollutants avoided, such as nitrogen oxides (**NOx**), particulate matter (**PMx**) and sulphur oxides (**SOx**). All of these additional environmental indicators are calculated using energy generation data and appropriate conversion factors.

Barrels of Oil Equivalent Avoided

The BOE avoided indicator is based on the emissions avoided by our solar PV projects to calculate how many barrels of oil would have produced the same amount of emissions that were avoided through renewable energy electricity generation. We begin by quantifying the emissions avoided by our solar PV projects. Industry-standard conversion factors are then applied to calculate how many barrels of oil would have resulted in equivalent emissions if burned.

Equivalent Homes Powered

The EHP indicator considers the specific energy consumption patterns[5] in different countries that the Group's solar PV projects could power. By dividing the total energy generated by our solar PV projects by the average household consumption in their respective countries, we can derive the equivalent number of homes powered.

Carbon Dioxide Equivalent (CO_2e) to Cars off the Road

The 'equivalent cars off the road' indicator is calculated using the total emissions avoided by our solar PV projects and standard emission factors. According to the US Environmental Protection Agency, a typical gasoline-powered passenger vehicle emits about 4.2 metric tons of CO_2e per year.[6] We divide the total emissions avoided by our projects by this emission factor to derive the equivalent number of cars taken off the road.

Other Air Pollutants Avoided

Similarly to the calculation of GHG emissions using the IFI margins, we estimate how much our actual and planned solar PV projects avoid other air pollutants, namely NOx, PMx, and SOx. These calculations use emission factors specific to the displaced fossil fuel-based energy sources in each grid, reflecting the mix of conventional power generation that would have been used in the absence of renewable energy. The process involves multiplying the energy generated by a solar PV project with the respective emission factor for each pollutant. Calculating these additional indicators allows for a more comprehensive assessment of the environmental benefits of renewable energy projects beyond just carbon emissions, providing a fuller picture of their positive impacts on air quality and public health.

Data Handling and Verification

We contract a third-party specialist climate consultant to support with NextEnergy Group's GHG emissions avoided and additional environmental indicator calculations. Considering the importance of accurate generation data for these calculations, we adopt a rigorous approach to data assurance through a comprehensive review of the generation data received from WiseEnergy. NextEnergy Group's Climate Lead is fully involved throughout the process and maintains oversight of our internal and external resources.

1. **Anomaly Detection and Sense Checking**: The consultant performs detailed analysis to:
    a. Identify any unusual patterns or unexpected values in the data.
    b. Compare the data against historical performance trends.

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[5] Energy consumption patterns vary by country. For example, in the UK, the annual electricity consumption per household is approximately 2.7 MWh (Source: Ofgem (2025), *Average gas and electricity usage*, available at <https://www.ofgem.gov.uk/information-consumers/energy-advice-households/average-gas-and-electricity-use-explained>). In Italy, the annual electricity consumption per household is about 2.61 MWh (Source: Enerdata (2024), *Sectoral Profile – Households: Energy consumption per dwelling*, available at <https://www.odyssee-mure.eu/publications/efficiency-by-sector/households/electricity-consumption-dwelling.html>

[6] US EPA (2024), *Greenhouse Gas Equivalencies Calculator*, available at < https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator > and at < https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator-calculations-and-references > and at < https://www.epa.gov/system/files/documents/2022-04/us-ghg-inventory-2022-chapter-3-energy.pdf >

c. Assess data based on expert knowledge and experience of how solar PV plants typically operate in specific countries and conditions relevant for the Group.

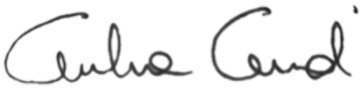
2. **Cross-verification Process**: The consultant checks the generation data against other available sources of information, such as weather data or performance reports, to ensure consistency.
3. **Data Reconciliation**: Any discrepancies or anomalies identified during the review process are investigated. This may involve communication with WiseEnergy for clarification.
4. **Final Validation**: Once all potential issues have been addressed, the consultant provides NextEnergy Group with the reviewed generation data for use in our emissions avoided and environmental indicator calculations.

Continuous Improvement

At NextEnergy Group, we strive for excellence. By combining rigorous data management, transparent calculation methodologies, and accurate allocation of avoided emissions, we seek to present a comprehensive and reliable picture of the positive environmental impact of our renewable energy investments. As industry best practice evolves, we are committed to reviewing and updating this AEM and our data-handling processes accordingly to provide our stakeholders with the most accurate and transparent information possible.

Monitoring and Review

This Avoided Emissions Methodology has been reviewed and approved by NextEnergy Group's Head of ESG and the Group's Climate Lead, and signed by the Head of ESG. It is effective from June 2025 and is re-evaluated and amended as appropriate from time to time.



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Version Control

Version	Reason for update	Date of release	Initials
01	Initial version of Avoided Emissions Methodology	June 2025	GG