

Enablement of avoided GHG emissions

OX2's approach to estimating the
climate benefit of its projects.

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Summary



Increased access to renewable energy means that fossil fuels can be avoided to a larger extent. OX2 aims to increase access to renewable energy, through renewable energy production and ancillary services, and thereby contribute to enabling the avoidance of greenhouse gas emissions from fossil energy sources.

Estimates of OX2's contribution to enabling the avoidance of GHG emissions is part of OX2's climate reporting and therefore included in the Annual and Sustainability Report.

It is in OX2's interest that the climate benefit of renewable energy is calculated in a credible and comparable way. The methodology is therefore reviewed regularly based on new guidance, standards, expectations and common practice.

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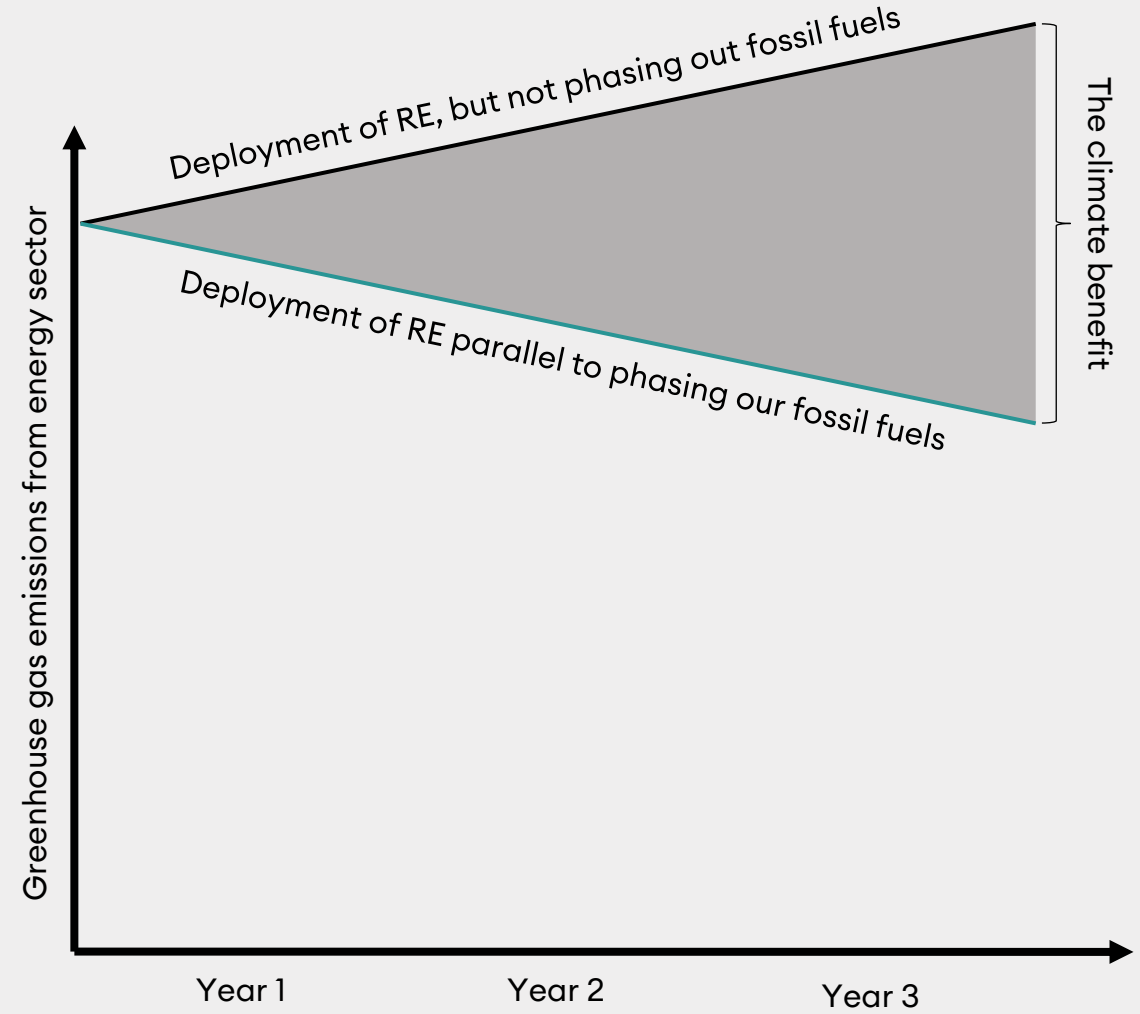
Cover page: Finley solar farm, Australia
To the right: Juniewiczze wind farm, Poland



Defining enablement of avoided GHG emissions

The climate benefit of renewable energy relies on the rate in which society deploys renewable energy and what rate renewable energy is used instead of fossil fuels. In short, the climate benefit of renewable energy relies on the phase out of fossil fuels.

OX2's contribution to climate change mitigation is through the deployment of projects¹ that increase access to renewable energy².



- 1) See defined by WBCSD's guidance on avoided emissions (Figure 11, page 16), OX2's contribution to global decarbonization efforts occurs through the introduction of solutions.
- 2) See WBCSD's guidance on avoided emissions (Figure 12, page 17), where the 'situation with solution' refers to future with OX2's projects.

Calculation methodology



Methodology

OX2's climate reporting follows the Greenhouse Gas Protocol. The methodology that OX2 applies to estimating how much its projects enable the avoidance of GHG emissions is in line with the GHG Protocol for Project Accounting. The GHG Protocol for Project Accounting defines avoided GHG emissions that stem from the anticipated generation of renewable electricity that replace grid electricity as a primary effect of developing renewable energy projects. The [World Business Council on Sustainable Development's Guidance on Avoided Emissions](#) (2023) is used for further guidance.

Benchmarking

To ensure comparability in the industry, OX2 benchmark methodology and assumption to peers such as Vestas , Orsted , and Iberdrola.

Scope

The enablement of avoided GHG emissions is estimated for technologies that generate renewable electricity (solar and wind power) and not for those that provide ancillary services (energy storage).

Calculation methodology



The enablement of avoided GHG emissions are calculated for the projects within the reporting boundary, meaning that they are commissioned during the reporting year. Avoided GHG emissions are calculated based on:

- the estimated annual electricity production (AEP) [GWh/year]
- the expected lifetime of the project [years]
- the emission intensity of the project [gCO₂e/kWh]
- the market's average emission intensity for electricity [gCO₂e/kWh]

The GHG emission intensity for electricity [gCO₂e/kWh] for respective market is used.

Equations:

$$\text{Enablement of avoided GHG emissions} \left[\frac{gCO_2e}{kWh} \right] = \text{GHG intensity of energy that can be avoided} \left[\frac{gCO_2e}{kWh} \right] - \text{GHG intensity of electricity generated in wind farm} \left[\frac{gCO_2e}{kWh} \right]$$

$$\text{Enablement of avoided GHG emissions} [tCO_2e] = \text{GHG intensity of energy that can be avoided} \left[\frac{gCO_2e}{kWh} \right] \times \text{AEP} [GWh] \times \text{Life expectancy} [\text{years}]$$

Assumptions



Life expectancy of wind farm

The longer the wind farm produced electricity, the lower the GHG emissions intensity is for electricity generated in the wind/solar farm. The calculations incorporate estimations of the wind/solar farms life expectancy.

Reference scenario

The reference scenario is assumed to be the country's electricity mix (grid) for the duration of the project. This approach is chosen as a reference scenario since it is a balanced approach, acknowledging that there are scenarios for both over and underreporting.

Underreporting: Society is increasingly electrified, meaning that the reference scenario should incorporate other energy sources, such as diesel used for road transport.

Overreporting: The grid is likely to decarbonize as a result of other projects outside of reporting scope.



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