

Residual Mix - Northmore Gordon

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Details:

[Home](#) › [Glossary](#) › [Residual Mix](#)

Residual Mix

A residual mix sets out the proportion of electricity from each generation technology—such as coal, gas, and other sources—that remain in the power grid after all certified renewable electricity has been accounted for. It represents the composition of non-renewable energy in the grid after renewable certificates and attributes have been retired or transferred. This concept is used in some jurisdictions to establish baseline emission factors for accounting purposes, particularly where renewable electricity attributes are being claimed separately from physical consumption.

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What is a residual mix?

A residual mix sets out the proportion of electricity from each generation technology—such as coal, gas, and other sources—that remain in the power grid after all certified renewable electricity has been accounted for. It represents the composition of non-renewable energy in the grid after renewable certificates and attributes have been retired or transferred. This concept is used in some jurisdictions to establish baseline emission factors for accounting purposes, particularly where renewable electricity attributes are being claimed separately from physical consumption.

How does the residual mix differ from average grid emission factors?

The residual mix isolates the generation technologies remaining after certified renewable electricity is removed, whereas average grid emission factors represent the overall composition of all electricity supplied, including both renewable and non-renewable sources. Australia reports average grid emission factors rather than using a residual mix approach. Understanding this distinction matters when establishing carbon-accounting boundaries and selecting the correct emission factors for Scope 2 reporting under frameworks like GHG Protocol guidance.

Is the residual mix concept used in Australia?

No. According to our glossary, Australia does not currently use the residual mix concept. Instead, average grid emission factors are reported for electricity accounting purposes. Organisations operating in Australia should use the applicable Australian emission factors and reporting frameworks when establishing renewable electricity claims or calculating Scope 2 emissions.

Why might the residual mix matter for renewable electricity claims?

The residual mix becomes relevant when an organisation purchases renewable electricity certificates separately from physical electricity supply. By accounting for what generation remains after renewable attributes are removed, it helps establish the counterfactual emissions that would have occurred without the renewable purchase. This supports credible market-based Scope 2 accounting under GHG Protocol guidance and helps organisations make defensible renewable electricity claims backed by appropriate emission factors.

What role does the residual mix play in carbon accounting for purchased electricity?

When using market-based accounting methods, the residual mix helps determine appropriate emission factors for the portion of electricity that is not covered by renewable certificates. GHG Protocol Scope 2 Guidance addresses purchased electricity and the quality criteria for contractual instruments used in market-based accounting. The residual mix establishes the baseline against which renewable attributes create an environmental benefit, ensuring that the claimed reduction reflects actual displacement of grid generation.

How does understanding the residual mix help with renewable certificate procurement decisions?

Understanding residual-mix concepts helps organisations evaluate whether renewable certificates genuinely represent environmental benefit relative to the grid's actual generation mix. When procuring renewable electricity attributes, organisations should confirm the applicable framework, contractual instruments, ownership and retirement evidence. We describe moREnewable100 services for renewable energy certificate procurement with technology and due-diligence support, which requires clarity on how the selected instruments interact with the underlying grid composition.

What should organisations know about residual mix when establishing renewable electricity accounting?

Organisations claiming renewable electricity should establish which accounting framework applies—whether market-based Scope 2, voluntary commitment, or another objective. The relevant framework will determine whether residual mix, average grid factors, or other emission factors should be used. Our carbon advisory services include support for establishing emissions inventories and connecting them to procurement decisions, helping organisations select the correct accounting approach and supporting instruments for their stated claim.

Does Northmore Gordon provide guidance on residual mix for international operations?

We operate in Australia and Singapore. Australia uses average grid emission factors rather than residual-mix accounting. For organisations with operations in jurisdictions that use residual-mix concepts, the applicable framework and emission-factor library would need to be established separately. Our moreData platform includes a planned emissions-factor library extension designed to support global portfolios beyond Australia's current scope, which may address residual-mix factors for relevant jurisdictions.