Microsoft Supplier Carbon-Free Electricity Guidance

General Disclaimer

This document provides guidance for Suppliers regarding Microsoft's carbon-free electricity (CFE) requirements. This guidance is subject to change as external standards and Microsoft's own standards evolve.[1]

Meeting the CFE Requirement

Microsoft's supplier CFE requirements can be met by Suppliers having claim to one megawatt-hour (MWh) of CFE generation for each MWh of Microsoft-related electricity consumption, consistent with the guidance and restrictions provided in this document.

Operational Boundary

Microsoft's supplier CFE requirement applies to Microsoft-related electricity consumption, defined as the electricity used to produce services and goods, including capital goods, for Microsoft. In the case of isolated production for Microsoft, this is equivalent to the electricity consumed in the isolated Microsoft production space. Where production for Microsoft is mixed with production for other companies, Microsoft-related electricity consumption may be determined by applying a reasonable apportionment methodology to facility electricity consumption, as aligned with Suppliers' Microsoft contact or in other written communication sent by Microsoft to Suppliers. Such apportionment methodologies **should** be based on activity data (such as production volumes) rather than spend data.

Geographic Boundary for CFE

CFE generation used to meet Microsoft's CFE requirements **must** take place in the same market as the Microsoft-related electricity consumption to which it is matched. We define the term "market" to be consistent with the market boundaries laid out in Appendix B of the December 2022 update to RE100 Technical Criteria.[2] Per that guidance, a market generally consists of a single country, with limited exceptions where there is a common set of market rules and a regional connection across countries (as in the case of parts of the European Union).

CFE Vintage

CFE generation used to meet Microsoft's CFE requirements **must** take place within the 21-month vintage eligibility window for the reporting year in which the Microsoft-related electricity consumption occurs, as specified by Green-e.[3] The 21-month window encompasses the 6 months prior to the start of the reporting year, the 12 months of the reporting year, and the 3 months following the reporting year. For example, to be used to address Microsoft-related electricity consumption that occurs during calendar year 2025, CFE generation must occur between July 2024 and March 2026.

---

[1] This guidance will be reviewed on at least an annual basis, and updates will be communicated out to Suppliers.
[2] Dec 12 - RE100 technical criteria + appendices.pdf (there100.org)
[3] Frequently Asked Questions (FAQ) | Green-e

Technologies Allowed

Microsoft defines CFE as including technologies that have zero direct carbon dioxide emissions and biogenic technologies with life-cycle emissions equivalent to other renewables. CFE technologies include wind; solar; geothermal; sustainable biomass;[4] hydropower; nuclear; fossil fuels with 100 percent carbon capture and sequestration; and storage charged with 100 percent CFE generation.[5]

CFE Procurement Types

Generation used to meet Microsoft's CFE requirements **must** fall within one of the following procurement categories, as defined in the December 2022 update to RE100 Technical Criteria.[6]

1. Self-generation from CFE generation facilities owned by the supplier. The supplier must retain any Energy Attribute Certificates (EACs) associated with this self-generation.[7]
2. Direct procurement through physical power purchase agreements (PPAs) with on-site projects or off-site projects to which there is a direct line with no grid transfers.
3. Long-term project-specific contracts the Supplier has entered into as the original project off-taker, and extensions of those contracts, including:
    a. Physical PPAs with off-site, grid-connected projects;
    b. Financial PPAs;
    c. Long-term, project-specific contracts with electricity suppliers; and
    d. Long-term, project-specific contracts for unbundled EACs.
4. Default delivered CFE from the grid, supported by unique and exclusive EACs.
5. Default delivered CFE from the grid in a market with at least a 95% CFE generation mix and where there is no mechanism for specifically allocating CFE.

To be clear, Suppliers may **not** use spot purchases of unbundled EACs from existing generators to meet this CFE requirement.

Impactful Procurement Preferences

Subject to the above procurement requirements, Microsoft's preference is that Suppliers pursue CFE procurement practices that have high "additionality" impact in that the associated CFE generation would not likely have happened in the absence of Supplier investment. Annex A lists common eligible CFE procurement options in approximate order of impact.

CFE Allocation

Proportional

Microsoft prefers that Suppliers meet Microsoft's CFE requirements by purchasing CFE to cover their entire electricity consumption and proportionally allocating CFE to all their customers.

---

[4] Sustainability of biomass (including biogas) must be established through third-party certification, such as through the Green-e Renewable Energy Standard for Canada and the United States or ISO 13065:2015 (or national equivalents of the ISO standard).

[5] Microsoft acknowledges that CFE technologies have indirect carbon dioxide emissions.

[6] Dec 12 - RE100 technical criteria + appendices.pdf (there100.org)

[7] EACs represent the environmental attributes of generation. Examples of EACs include Renewable Energy Certificates (RECs) and Guarantees of Origin (GOs).

Preferential

However, Microsoft will accept ***preferential***[8] allocation of CFE resulting from Suppliers' active CFE procurement (including through self-generation, direct PPAs, and long-term project-specific contracts the Supplier has entered into as the original project off-taker). For these procurement types, a supplier may allocate a greater percentage of CFE to Microsoft-related electricity consumption than to the supplier's other electricity consumption. Suppliers **may not** preferentially allocate default delivered CFE from the grid. Such CFE **must** be allocated across all customers in proportion to their electricity consumption.

If Suppliers' products pass through intermediate supply chain partner(s) before reaching Microsoft, Suppliers **must** communicate their allocation of CFE to Microsoft-related electricity consumption to the intermediate supply chain partner(s).

Product-specific preferential

Where possible, Microsoft prefers allocation of CFE attributes to products and services it procures (that is, low-carbon or carbon-free products referencing and substantiating CFE attributes in product carbon footprints (PCFs), environmental product declarations, or life cycle assessments).

Customer-specific preferential

Alternatively, allocation of CFE attributes can be done on a customer-specific basis by market.

Hybrid product-specific and customer-specific preferential

If PCFs with integrated CFE attributes exist for some, but not all, products that Microsoft purchases, the portion of Microsoft-related electricity not covered by PCFs may be allocated CFE attributes on a customer-specific basis within each market.

CFE Evidence, Attestation and Verification

Requirements for proof of CFE vary depending on the allocation approach used.[9]

All allocation approaches

Suppliers **must** have sole claim to environmental attributes for all CFE allocated to Microsoft (no double-counting with other electricity consumers) and proof that the CFE meets the Microsoft-specific requirements detailed above.

For self-generation, direct procurement, or long-term project-specific contracts where an EAC exists, Suppliers **must** provide Microsoft with evidence of EAC retirement or cancellation on behalf of the Supplier. For self-generation, direct procurement, or long-term project specific contracts where EACs are not issued, Suppliers **must** provide evidence of contracts that give them credible, exclusive claims to the environmental attributes of the associated CFE. For claims to default delivered CFE on grids with less than a 95% CFE generation mix, Suppliers **must** provide evidence of EACs being retired on their behalf. For electricity supplier contracts, Supplier **must** either provide

[8] See glossary and illustrative examples in Annexes B and C.
[9] See Annex D for a table summarizing requirements by allocation approach.

evidence of EACs being retired on their behalf **or** provide evidence of contracts that convey credible, exclusive claims to the environmental attributes of the associated CFE.

Suppliers **must** provide attestation that any CFE allocated to Microsoft-related electricity consumption is not allocated to any other customers (no double-counting across suppliers' consumers), unless those customers are supply chain partners between the Supplier and Microsoft.

Product-specific preferential allocation

If Suppliers engage in product-specific preferential CFE allocation, they must secure third-party review of the allocation of CFE to products provided to Microsoft. This can be done as part of a broader review for a product life cycle assessment's compliance with ISO 14040/14044 or independently.

Customer-specific preferential allocation

Suppliers that engage in customer-specific preferential CFE allocation **must perform and attest[10] to Microsoft their performance of the following**:

- Directly communicate to any customers known or expected to report their emissions publicly that preferential allocation has been used, and provide the residual market-based emission factor(s)[11] for their use; and
- In any public reporting where the Supplier communicates its scope 2 emissions and CFE use, disclose that preferential allocation has been used and provide a global average residual market-based emission factor.

Microsoft reserves the right to designate a third party to confidentially audit any preferential allocation of CFE attributes and calculation of residual emissions factors to ensure there are sufficient CFE attributes to support all allocations.

Refer to your supply chain sustainability contact for details on how to submit the attestation and required information to Microsoft.

[10] See Annex E for sample attestation.
[11] See glossary in Annex B.

Annex A: Impact Level of Eligible CFE Procurement Options

(1) Onsite Generation (Highest impact)	(1a) On-site self-generation	Energy is generated onsite by a system located behind the electric meter; both equipment and any EACs are owned by Supplier
	(1b) Onsite or near-site PPA	Energy is generated onsite or nearby with direct transmission to facility; Supplier does not own equipment but receives electricity and EACs
(2) Offsite Generation from New Assets (High impact)	(2a) Offsite physical or virtual PPA	Energy is generated offsite; Supplier has long-term financial contract to compensate CFE developer for electricity and EACs; Supplier retains EACs
	(2b) Direct or tax equity investment	Supplier finances CFE project development through direct or tax equity investment; energy is generated offsite but Supplier retains EACs
	(2c) Project-specific retail agreements	Supplier has financial contract to procure electricity and EACs over long term from a retail electricity provider who signs a PPA with a CFE developer
	(2d) Attribute purchase agreement (APA)	Supplier purchases EACs independently of electricity through long-term, project-specific financial contract
(3) Default Delivered CFE (Lower impact)	(3a) Default delivered CFE with EACs	As part of default electricity supply, utility owns or signs PPAs for CFE assets and retires associated EACs on behalf of all ratepayers (for example, to comply with Renewable Portfolio Standards)
	(3b) Default delivered CFE from a grid with at least 95% CFE mix	Grid is more than 95% CFE by default and there is no mechanism for more actively sourcing CFE from the grid

Annex B: Glossary

When CFE use is greater than 0 and less than 100%, Suppliers can choose to allocate CFE use to customers *proportionally* or *preferentially*. CFE can also be allocated to products or to customers, resulting in four options for CFE allocation.

CFE allocation methods	Proportional Allocation	Preferential Allocation
Allocation to Products	All products (within same geography) same CFE %	Some "green" products allocated higher CFE percentage than other products
Allocation to Customers	All customers (within same geography) same CFE %	Some "preferred" customers allocated higher CFE percentage than other customers

Proportional allocation: Suppliers can allocate the same proportion of CFE to all products or customers (within a market). For example, if a Supplier has claim to CFE attributes equal to 60% of electricity use in the United States, it can allocate all products or customers within that geography 60% CFE.

Preferential allocation: Suppliers can choose to allocate CFE to a particular product line and reflect this allocation in that product's carbon footprint or environmental product declaration. Or Suppliers can choose to allocate more CFE to one or more "preferred" customers and less or none to other customers.

Residual emission factor: Preferential allocation that results in above-proportional allocation of CFE to one or more customers necessitates below-proportional allocation of CFE to other customers. Once all preferential allocations have been made, any remaining CFE is typically allocated proportionally to the other customers. The percentage of the remaining MWh matched with CFE attributes is the residual CFE percentage, which can be used to calculate the residual market-based emission factor. Remaining customers should incorporate this residual emission factor into their supply chain emissions reporting. These other customers need to receive notice of their CFE allocation or residual emission factor to limit the risk of them reporting supply-chain emissions based on their own estimated proportional CFE allocation (which would represent inappropriate double-counting).

Annex C: Illustrative Examples

1. Proportional customer allocation example: 100% CFE

A supplier with claim to CFE equivalent to 100% of electricity use will allocate 100% CFE to each customer.

Supplier total MWh	Supplier CFE MWh	Total % CFE
3,000,000	3,000,000	100%

Customer	Allocated Supplier Electricity Use (MWh)	Supplier CFE Allocated (MWh)	Allocated % CFE	Comments
Customer 1	2,000,000	2,000,000	100%	All customers receive the same % allocation
Customer 2	700,000	700,000	100%	
Customer 3	300,000	300,000	100%	

CFE Evidence, Attestation and Verification requirement in this case would be proof of sole claim to environmental attributes for all CFE allocated to Microsoft.[12]

---

2. Proportional customer allocation example: 40% CFE

A supplier with claim to CFE equivalent to 40% of electricity use who elects to allocate the CFE attributes proportionally will allocate 40% CFE to each customer.

Supplier total MWh	Supplier CFE MWh	Total % CFE
3,000,000	1,200,000	40%

Customer	Allocated Supplier Electricity Use (MWh)	Supplier CFE Allocated (MWh)	Allocated % CFE	Comments
Customer 1	2,000,000	800,000	40%	All customers receive the same % allocation
Customer 2	700,000	280,000	40%	
Customer 3	300,000	120,000	40%	

CFE Evidence, Attestation and Verification requirements in this case would include:

- Proof of sole claim to environmental attributes for all CFE allocated to Microsoft; and
- Attestation that any CFE allocated to Microsoft-related electricity consumption is not allocated to any other customers.

[12] In all cases, this verification must include proof that the CFE meets the Microsoft-imposed CFE requirements detailed above.

3. Preferential customer-specific allocation example: 40% CFE

A supplier with claim to CFE equivalent to 40% of electricity use who elects to allocate the CFE attributes preferentially will allocate varying amounts of CFE to each customer.

Supplier total MWh	Supplier CFE MWh	Total % CFE
3,000,000	1,200,000	40%

Customer	Allocated Supplier Electricity Use (MWh)	Supplier CFE Allocated (MWh)	Allocated % CFE	Comments
Preferred Customer 1	1,000,000	1,000,000	100%	Customer with a 100% CFE commitment
Preferred Customer 2	1,000,000	200,000	20%	Customer with a preferential CFE request is allocated remaining CFE
Other Customers	1,000,000	0	0%	Remaining customers

CFE Evidence, Attestation and Verification requirements in this case would include:

- Proof of sole claim to environmental attributes for all CFE allocated to Microsoft;
- Attestation that any CFE allocated to Microsoft-related electricity consumption is not allocated to any other customers; and
- Attestation that residual emission factors have been calculated and shared with customers.

---

4. Preferential product-specific allocation example: 40% CFE

A supplier with claim to CFE equivalent to 40% of electricity use who elects to allocate the CFE attributes preferentially to products will allocate varying amounts to each product, reflecting this in product carbon footprint documentation.

Supplier total MWh	Supplier CFE MWh	Total % CFE
3,000,000	1,200,000	40%

Product Line	Allocated Supplier Electricity Use (MWh)	Supplier CFE Allocated (MWh)	Allocated % CFE	Comments
Product 1	500,000	500,000	100%	100% CFE product
Product 2	500,000	300,000	60%	Low carbon product
Other Products	1,500,000	400,000	27%	Remaining products

CFE Evidence, Attestation and Verification requirements in this case would include:

- Proof of sole claim to environmental attributes for all CFE allocated to Microsoft; and

- Third-party review of the allocation of CFE to products provided to Microsoft.

---

5. Preferential customer-specific allocation example: grid-based and actively procured CFE

A supplier with claim to CFE equivalent to 33% of electricity use, where part of the CFE is actively procured and part is delivered by default from the grid, must proportionally allocate the default grid-based portion of the CFE attributes.

	Supplier total MWh	Supplier CFE MWh	Total % CFE
Actively procured	500,000	500,000	100%
Default grid-based	2,500,000	500,000	20%
Total	3,000,000	1,000,000	33%

Customer	Allocated Supplier Electricity Use (MWh)	Supplier CFE Allocated (MWh)	Allocated % CFE	Comments
Preferred Customer 1 – Actively procured	500,000	500,000	100%	Actively procured CFE can be preferentially allocated
Preferred Customer 1 – Default grid-based	500,000	100,000	20%	Grid-based CFE must be proportionally allocated
Preferred Customer 1 – Total	1,000,000	600,000	60%	Maximum CFE for preferred customer in this case is 60%
Other Customers – Actively procured	0	0	-	No actively procured CFE remains to be allocated to other customers
Other Customers – Default grid-based	2,000,000	400,000	20%	Grid-based CFE must be proportionally allocated
Other Customers – Total	2,000,000	400,000	20%	Remaining customers get the default delivery CFE proportion of 20% CFE

CFE Evidence, Attestation and Verification requirements in this case would include:

- Proof of sole claim to environmental attributes for all CFE allocated to Microsoft;
- Attestation that any CFE allocated to Microsoft-related electricity consumption is not allocated to any other customers; and
- Attestation that residual emission factors have been calculated and shared with customers.

---

6. Preferential customer-specific allocation example: multiple markets

A supplier with claim to CFE equivalent to 45% of electricity use across multiple geographies who elects to allocate the CFE attributes preferentially will allocate varying amounts of CFE to each customer, and these will vary by market.

Market	Supplier total MWh	Supplier CFE MWh	Total % CFE
United States	1,000,000	800,000	80%
China	1,000,000	100,000	10%
Global Total	2,000,000	900,000	45%

Customer	Allocated Supplier Electricity Use (MWh)	Supplier CFE Allocated (MWh)	Allocated % CFE	Comments
Preferred Customer - US	100,000	100,000	100%	Full CFE coverage in US
Preferred Customer - China	200,000	100,000	50%	Available CFE covers only 50% in China
Preferred Customer - Global Total	300,000	200,000	67%	Preferred customer global allocation
Other Customers - US	900,000	700,000	78%	Remaining CFE is allocated proportionally
Other Customers - China	800,000	0	0%	No remaining CFE
Other Customers - Global Total	1,700,000	700,000	41%	Remaining customers' global allocation

CFE Evidence, Attestation and Verification requirements in this case would include:

- Proof of sole claim to environmental attributes for all CFE allocated to Microsoft;
- Attestation that any CFE allocated to Microsoft-related electricity consumption is not allocated to any other customers; and
- Attestation that residual emission factors have been calculated and shared with customers.

Annex D: CFE Evidence, Attestation, and Verification Requirements

Allocation method	Concern Addressed	Requirements for proof of CFE allocated		
		Attestation	Evidence	Third-party verification
All	Has CFE been obtained that meets MSFT quality criteria?		Evidence of EAC retirement or cancellation, or contracts	
	Has CFE been double counted?	Exclusive Allocation Attestation - not allocated to any other customers		
Product-specific preferential	Is there a risk of double counting among products?			Third-party review of the allocation of CFE to products provided to Microsoft
Customer-specific preferential	Is there a risk of double counting by Supplier's other customers?	Transparency in Preferential Allocation Attestation: preferential allocation has been disclosed to customers directly and publicly		

Annex E: Attestation Templates

Exclusive Allocation

(*For use by all direct suppliers to Microsoft*) Supplier X confirms that the CFE allocated to Microsoft-related electricity consumption is not allocated to any other customers.

(*For use if supplier X customers are supply chain partners between the supplier and Microsoft*) Supplier X confirms that the CFE allocated to Microsoft's supply chain partner is not allocated to any other customers.)

Transparency in Preferential Allocation

(*For use if preferential allocation has been applied*)

Supplier X confirms that:

- We have directly communicated to any customers known or expected to report their emissions publicly that preferential allocation has been used, and we have provide the appropriate residual market-based emission factor(s) for their use; and
- In any public reporting where we communicate our scope 2 emissions and CFE use, we have (or will by X date have) disclosed that preferential allocation has been used and have provided a global average residual market-based emission factor.

Supplier X confirms that Microsoft reserves the right to designate a third-party to confidentially audit any preferential allocation of CFE attributes and calculation of residual emissions factors to ensure there are sufficient CFE attributes to support all allocations.

Signed by _____ (Supplier X executive)