

3.2 Renewable energy

Background

As we face the challenges posed by climate change, it has become increasingly important for companies to transition to renewable energy sources. By increasing the share of renewable electricity in the final assembly of certified products, the product carbon footprint and climate impact of the certified product are reduced. This also increases the demand for Energy Attribute Certificates (EACs), which increase the economic incentive to build new generators for renewable electricity in many regions where most electricity is generated from non-renewable sources.

Applicability

All product categories.

3.2.1 Mandate

At least 15% of the electricity used in each final assembly factory of certified product must be procured and/or generated from renewable sources. This ratio must be reported yearly.

Submit the following to an approved verifier:

Once a year, and for each final assembly factory manufacturing certified products, the following must be proved:

- the total electricity used (MWh)
- the total renewable electricity ratio for the whole factory (%)
- the renewable electricity ratio for the brand owner's manufacturing of certified products at the factory (%)

The following is submitted to TCO Development:

- A copy of the verification report(s) from a verifier approved by TCO Development.
- For each final assembly factory manufacturing certified products, proof of the following must be reported in TCO Certified portal once a year:
 - the total electricity used (MWh)
 - the total renewable electricity ratio for the whole factory (%)
 - the renewable electricity ratio for the brand owner's manufacturing of certified products at the factory (%)

3.2.2 Clarification

Brand owner reporting

The reporting by the brand owner must be submitted by 31 August each year and applies until one year after the certificate has expired. The reporting must cover a consumption period (when the electricity was consumed by the factory) which must be the previous calendar year. This consumption period must be mentioned on the retirement statement of the EACs used. The production period of Energy Attribute Certificates (when the renewable electricity was generated) must be within 6 months before, and up to 3 months after the consumption period.

Exception for new factories

For factories where no TCO Certified Generation 10 product was certified (for any brand) before 31 August, the brand owners manufacturing at this factory must be in compliance the following calendar year. However, the brand owner must still report the renewable electricity share of their manufacturing (even if not in compliance), each 31 August.

Reporting for the whole factory or for a share of the manufacturing

Brand owners can choose to report on the whole factory level or only on their share of the manufacturing. Reporting on their share of the manufacturing is useful if they want to purchase additional EACs for their own manufacturing to achieve a higher ratio than the factory. In this case, the share of the total electricity used to manufacture products for the brand owner is estimated to be the same as the brand owner's share of the factory's revenue or manufacturing volume.

If a product is manufactured at several final assembly factories, the reporting must cover the manufacturing at each factory, and each must pass the criterion. (Combining the factories in an average value is not allowed.)

For each reporting period and final assembly factory, the brand owner must report the following:

If the ratio of renewable electricity used by the factory is $\geq 15\%$, reporting may be done only on the factory level and must include:

- Documented proof of the total electricity consumption of the factory (X)
- Any EACs designated to the factory (with the factory name) for the renewable electricity (Y) generated or purchased by the factory during this period.

Calculations:

- The ratio of renewable electricity by the factory ($R_F = Y/X$).

Otherwise, reporting must be more detailed and include:

- Documented proof of the total electricity consumption of the factory (X)
- Any EACs designated to the factory (with the factory name) for the renewable electricity generated or purchased by the factory during this period (Y).
- Documented proof to estimate the brand owner's share of the electricity consumption:
 - by the total number of units manufactured (Z) and the number of units manufactured for the brand owner (W) during the period.
 - or by the total revenue of the factory (Z) and the revenue for the brand owner's manufacturing at the factory (W) during the period.
- Any EACs (S) designated to the factory and brand owner (with the factory name and brand name) for the manufacturing of products for the brand owner at the factory.

Calculations:

- Estimated electricity used to manufacture products for the brand owner ($E = X/Z \cdot W$)
- Ratio of renewable electricity for all manufacturing at the factory ($R_F = Y/X$).
- Ratio of renewable electricity only for the brand owners manufacturing ($R_B = S/E$)
- Total ratio of renewable electricity for the brand owners manufacturing ($R_T = R_F + R_B$)

Renewable electricity must be generated from:

- Wind,
- Solar,
- Geothermal,
- Hydropower (pumped hydro storage is only accepted if the amount of grid-imported electricity used to run the pumps is specified on the submitted EAC and deducted from the generated electricity)
- Biomass (agriculture waste and residues, forest biomass, biofuels plants)

Energy Attribute Certificates (EACs)

Renewable electricity can be purchased or generated by the factories. Generators might be on-site or off-site, on the grid, or entirely off-grid. The generation must be issued with Energy Attribute Certificates (EACs). Factories can consume directly from their generators, retain the EACs and claim the use of renewable electricity. They can also sell electricity to the grid, retain the EACs, and claim the use of renewable electricity.

Both for self-generation and market-purchased EACs, the attributes (and certificates) must be sourced and purchased from within the same national region as the factory using the electricity. Also, the renewable electricity production facility for which the certificates are issued must be within the same national region. The national region constitutes a "market" for the purpose of transacting and claiming attributes.

Exception for a high market price of EACs

If the market price of all accepted EACs in the market in question is above 10 USD / MWh it is allowed to source accepted EACs accounting for 30% of the renewable electricity purchased from markets with neighboring borders.

If the market price of all accepted EACs in the market in question is above 30 USD / MWh, it is allowed to source accepted EACs accounting for 70% of the renewable electricity purchased from markets with neighboring borders. (For Taiwan EACs may be purchased from China, Japan, Philippines and South Korea under this exception.)

An EAC must be recognized on the list below to be accepted as proof of compliance. Other countries and credible systems may be added to the list after independent review and acceptance from TCO Development.

Country	Accepted EACs
Brazil	I-REC
Canada	REC, I-REC
China	I-REC, GEC, TIGR
Czech Republic	EECS-GO
Egypt	I-REC
Hungary	EECS-GO
India	I-REC, Indian national EAC system, TIGR
Japan	J-Credit, FIT-NFC, GEC
Malaysia	I-REC, TIGR
Mexico	I-REC
Poland	National Guarantees of Origin
Portugal	EECS-GO
Singapore	I-REC, TIGR
Taiwan	T-REC, I-REC, TIGR, (CPPA is not an EAC but allowed)
Thailand	I-REC, TIGR
USA	REC, I-REC
Vietnam	I-REC, TIGR
South Korea	Korean national EAC system, TIGR

Verification guidelines of factory data

At a minimum, this criterion requires documented proof of total electricity consumption and EACs designated to the factory.

For brands that prefer to report on their own share of the manufacturing instead of on the whole factory level, the following proof is also required:

- A copy of all EACs designated to the brand owners manufacturing at the factory
- One of the following
 - Documented proof of the total units manufactured by the factory and the share of units manufactured for the brand owner.
 - Documented proof of the total revenue for the factory and the share of revenue for the brand owners manufacturing at the factory.

Examples of documentation to prove a factory's annual electricity use normally include energy bills, metering records, energy audits, and monitoring system data. (The total is added to the Accepted Factory List and only needs to be verified once per factory and year.)

Examples of documentation to prove a factory's annual total revenue or number of units manufactured, as well as the revenue share or number of units manufactured for the brand owner during the period, typically include production records, shipping logs, internal financial documents, external audits, and contractual agreements. It must be a copy of a document or digital system that can be verified during an onsite audit. (The brand owner share is added to the Accepted Factory List and only needs to be verified once per factory, brand name and year).

Verification of Energy Attribute Certificates (EACs)

The brand owner must present proof that Energy Attribute Certificates are exclusively owned by, have been permanently retained by or retired on behalf of the specific factory or by the brand manufacturing at the specific factory. This means that EACs designated to the factory must have the factory name on them, and EACs designated to the brands manufacturing at the factory must have both the factory name and brand name on them (to avoid double counting).

Energy Attribute Certificates are part of tracking systems in which certificates are electronically serialized and issued to generators with accounts on the system. There, they are traded and ultimately permanently retired when they are used to support a claim.

For more information on how to verify the authenticity of the EAC with each certificate body, a guideline can be found here: <https://tcocertified.com/industry/certification-documents/>

Simplified verification process of EACs:

1. The authenticity of the EAC is verified with the relevant EAC certificate body.
2. The consumption period is the previous calendar year
3. The production period of EAC (when the renewable electricity was generated) is within 6 months before, and up to 3 months after the previous calendar year.
4. The amount of renewable electricity that is represented by the EAC.
5. The certificate ownership is to the specific factory (and brand owner) in question.
6. The certificate is retired (not for sale) when making a claim about renewable energy.