

Beyond annual matching: The evolution of time-stamped RECs

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A time-stamped REC includes a generation timestamp, enabling hourly or sub-hourly matching of renewable electricity with consumption. Conventional annual REC procurement matches total yearly consumption against total yearly renewable generation, without regard to timing. Time-stamped RECs reveal whether renewable electricity was actually available when consumed, providing a higher-resolution view of renewable-electricity claims. This distinction matters for corporate sustainability programs seeking to demonstrate deeper alignment with clean-electricity availability rather than just annual volumetric balance.

Publication context: This article reflects its publication date. Market prices, program rules, reporting duties and deadlines may have changed. Confirm current official guidance before making a decision.

For more than a decade, Renewable Energy Certificates (RECs) have underpinned global renewable electricity procurement. By purchasing RECs equivalent to their annual electricity consumption, organisations can demonstrate that an equivalent amount of renewable electricity has been generated and supplied to the grid, supporting commitments under RE100 , the Science Based Targets initiative (SBTi), the GHG Protocol and other voluntary renewable electricity frameworks.

But one question is gaining attention:

Does it matter when renewable electricity is generated?

Increasingly, the answer is yes.

From annual matching to hourly matching

Traditional REC procurement is generally based on annual volumetric matching for Scope 2 emissions from electricity. A company consuming 10,000 MWh of electricity during a calendar year purchases 10,000 MWh of RECs generated within the same year.

While this approach has successfully driven demand for renewable energy, it does not distinguish between when renewable electricity is generated and when it is consumed.

For example, electricity generated by a solar farm at noon can be matched against electricity consumed at midnight under annual accounting. Although the annual renewable volume matches, this approach does not show whether renewable electricity was available at the time it was consumed, nor does it necessarily encourage renewable investment during peak demand periods.

Time-stamped RECs aim to address this gap.

What is a time-stamped REC?

Time-stamped RECs, sometimes referred to as granular certificates or hourly energy attribute certificates, include a generation timestamp. This allows electricity consumption to be matched with renewable generation on an hourly-or potentially sub-hourly-basis.

Rather than asking:

"Did I buy enough renewable electricity this year?"

companies can begin asking:

"Was renewable electricity available when I was actually consuming power?"

This provides a clearer picture of how closely renewable generation aligns with electricity demand.

Why is this gaining attention now?

The move towards time-based matching is being driven by several factors.

First, corporate sustainability programs are becoming more sophisticated. Many organisations that have achieved annual renewable electricity targets are now looking for ways to demonstrate higher-quality procurement.

Second, emerging industry initiatives-including discussions within the Greenhouse Gas Protocol review process, the Science Based Targets initiative and Climate Group's work on 24/7 carbon-free energy-are increasingly recognising the importance of temporal matching.

While requirements are still evolving, the direction of travel is towards greater transparency over when renewable electricity is generated.

Finally, advances in metering and data systems are making hourly accounting more practical. Renewable generation and electricity consumption can now be tracked at much finer intervals than was previously possible.

Recent developments

The GHG Protocol published its feedback summary from the first public consultation on 29 July 2026. Hourly and regional matching, in the form proposed, received relatively low stakeholder support.

A second consultation is expected later in 2026, with a final standard projected for 2027 and implementation potentially beginning in 2028.

This is significant because the market had expressed concern that hourly matching could make annual I-RECs non-compliant for Scope 2 market-based reporting. The stakeholder response provides more time for the current instrument regime and may reduce the near-term risk of declining demand for annual I-RECs.

EnergyTag has also published a Taiwan-specific analysis examining the country's potential pathway towards sub-hourly matching.

Taiwan currently issues monthly T-RECs despite having 15-minute metering capability. This suggests that a move towards granular or hourly certificates is technically achievable and aligned with the country's policy direction.

Taiwan could therefore become an early mover in 24/7 renewable electricity matching in Asia, ahead of any future requirements adopted by the GHG Protocol.

What we are seeing in the market

Australia's time-stamped Renewable Electricity Guarantee of Origin certificates, or REGOs, will also recognise renewable electricity discharged from energy storage. This may allow renewable electricity generated earlier to be matched with periods of peak electricity demand.

Leading multinational companies are beginning to pilot time-stamped RECs in selected markets before considering wider implementation.

Selected Asian markets are emerging as early pilot locations, supported by sophisticated electricity markets, widespread interval metering and a concentration of regional corporate headquarters.

This reflects where the market currently stands. Annual RECs remain the dominant procurement instrument, but forward-looking organisations are exploring how time-of-generation data available through existing mechanisms could strengthen future sustainability reporting and renewable energy strategies before fully time-stamped RECs become widely available.

What does this mean for renewable energy markets?

Time-stamped RECs are not necessarily a replacement for conventional RECs, but they may represent the next stage in their evolution.

Adding temporal information creates new market signals by highlighting when clean electricity is abundant and when it is scarce. Over time, this could encourage greater investment in technologies that improve hourly matching, including battery storage, flexible demand response and complementary renewable generation.

For energy buyers, there is no immediate need to replace existing REC procurement programs. Rather, this is an opportunity to understand how procurement expectations are evolving and prepare for a future in which renewable energy claims may increasingly consider not only how much renewable electricity is purchased, but also when it is generated.

As corporate decarbonisation strategies mature, time-stamped RECs are likely to become more relevant for organisations seeking more transparent and credible renewable electricity procurement.

Contact Northmore Gordon to learn more about how renewable electricity purchasing is evolving and what time-stamped RECs could mean for your procurement and reporting strategy.

Scheme and certificate context

Before using a certificate or grant figure, confirm the current scheme method, eligible activity, effective date, evidence requirements, price date and registration or application process.

Related guidance

Certificate services

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Read the original article for the source publication and its full context.

What is a time-stamped REC, and how does it differ from a conventional annual REC?

A time-stamped REC includes a generation timestamp, enabling hourly or sub-hourly matching of renewable electricity with consumption. Conventional annual REC procurement matches total yearly consumption against total yearly renewable generation, without regard to timing. Time-stamped RECs reveal whether renewable electricity was actually available when consumed, providing a higher-resolution view of renewable-electricity claims. This distinction matters for corporate sustainability programs seeking to demonstrate deeper alignment with clean-electricity availability rather than just annual volumetric balance.

Why is temporal matching of renewable energy certificates attracting corporate attention?

Corporations that have met annual renewable-energy targets are increasingly seeking higher-quality procurement to demonstrate genuine temporal alignment with clean electricity. Industry initiatives—including the Greenhouse Gas Protocol's ongoing review, the Science Based Targets initiative, and Climate Group's 24/7 carbon-free energy work—are recognising hourly matching as a more sophisticated standard. Advances in metering, data systems and interval billing now make hourly accounting technically practical, enabling organisations to move beyond annual aggregation toward demonstrating renewable electricity availability during peak demand periods.

What did the GHG Protocol's first public consultation reveal, and what is the expected timeline for implementation?

The GHG Protocol published its first-consultation feedback summary on 29 July 2026, showing that hourly and regional matching in the proposed form received relatively low stakeholder support. This extended timeline reduces near-term risk to existing annual REC markets. A second consultation is expected later in 2026, with a final standard projected for 2027 and implementation potentially beginning in 2028. This staged approach gives organisations and procurement teams time to monitor developments and adjust strategies accordingly.

How do Australia's time-stamped REGOs expand the scope of renewable-electricity matching?

Australia's time-stamped Renewable Electricity Guarantee of Origin certificates will recognise renewable electricity discharged from energy storage, not just directly generated. This allows renewable electricity generated in earlier periods—such as solar generation in the morning—to be matched with consumption during peak demand hours through storage discharge. This feature creates new commercial signals and may encourage investment in battery storage and flexible demand response to improve hourly matching and address grid scarcity periods.

What market conditions are making Asia an early-mover region for granular renewable certificates?

EnergyTag's Taiwan analysis shows the region has 15-minute interval metering capability and monthly T-RECs, suggesting technical readiness for hourly certificates aligned with policy direction. Selected Asian markets demonstrate sophisticated electricity markets, widespread interval metering, and concentrated corporate headquarters—creating both technical infrastructure and demand from multinational companies piloting time-stamped instruments. This positions Asia ahead of many other regions in 24/7 renewable electricity matching evolution.

Are time-stamped RECs intended to replace conventional annual RECs entirely?

Time-stamped RECs represent the next stage in REC evolution rather than a wholesale replacement. Organisations with existing annual REC procurement programs have no immediate requirement to change; instead, this is an opportunity to understand evolving market expectations and plan procurement strategies accordingly. Our moREnewable100 service can help organisations assess whether temporal matching aligns with their reporting framework, sustainability commitments and risk tolerance, and how current instrument choices may need to adapt as standards develop.

What new market signals could emerge from adding temporal information to renewable certificates?

Temporal data highlights when clean electricity is abundant and when it is scarce, creating price and investment signals that encourage technologies improving hourly matching—battery storage, flexible demand response, and complementary renewable generation. Over time, these signals may reshape how organisations approach renewable procurement, storage investment and electricity timing decisions. Understanding these evolving incentives is relevant for corporate energy strategy and for assessing future commercial returns from renewable projects in emerging temporal-matching markets.

How should organisations approach renewable-certificate procurement decisions given the uncertain timeline for time-stamped REC standards?

Current best practice involves understanding the GHG Protocol consultation timeline, establishing clear renewable-electricity claims and reporting frameworks, and assessing whether temporal matching aligns with organisational sustainability goals and investor expectations. Our carbon advisory services—including instrument selection, procurement strategy and due-diligence support—can help organisations evaluate trade-offs between current compliance certainty and future market positioning. A documented procurement evidence checklist ensures ownership, registry and retirement evidence remain robust regardless of standard evolution.