

# RECS' POLICY POSITION ON GRANULAR ELECTRICITY TRACKING AND MATCHING

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## Introduction

Having consistently engaged with initiatives seeking to increase the granularity of matching renewable electricity consumption with production, RECS is well versed in the pros and cons of this new trend in renewable energy markets. A trend which, following recent legislation in the EU and US may be on the verge of accelerating, particularly in sectors like renewable hydrogen.

While RECS is open to any development which can enhance renewable energy markets and help accelerate the transition to efficient and fully renewable energy systems, we maintain that the role of standard energy attribute certificate (EAC) markets remains as valid and important as ever. These standard, annual markets still work to deliver significant added income to producers which they can and should re-invest into developing more renewable generation.

Proponents of granular energy tracking and matching present standard EAC markets as disconnected from

the reality of the grid and inadequate to ensure renewable energy production in every hour of every day. Therefore, before setting out RECS' view on the possible role of greater granularity in renewable electricity markets, this paper addresses the claims of the proponents of greater granularity and makes the case for standard EAC markets. In order to do this, we first need to understand the fundamentals of power markets in general, and renewable power markets in particular.

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# Understanding how power systems and markets work

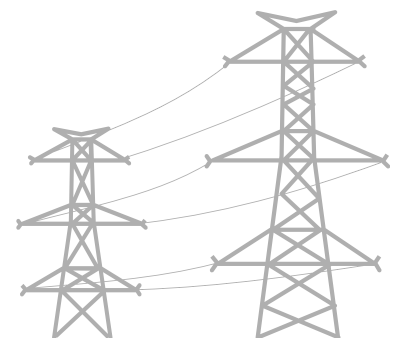
Power markets are based on two realities: the physical reality of how consumers get power, and the legal reality of how that power is bought and sold.

## The physical reality

While electricity ‘travels’ at close to the speed of light, individual electrons do not move within power lines from producer to consumer. Instead, their oscillation allows what is better understood as a power ‘charge’ to be diffused across the grid. So, rather than ‘flowing’ power from producer to consumer, grids work by maintaining the availability of charge by keeping a balance between inputs (injecting power into the grid) and off-take (taking power out of the grid).

The electrons that are injected into the grid do not ‘flow’ but oscillate to maintain the charge and balance of power on the grid. Because of this lack of flow, there is no direct movement of specific electrons between input and offtake on the power grid. Instead, the grid is maintained at a constant state of charge and so power is available at all times. The signal requesting this charge travels at a speed that would allow it to circle the earth 5 times in one second. This signal does not follow a linear route, instead it follows the path of least resistance. All this means that the distance between the production and consumption of power is immaterial. The balance of charge on a grid and the speed and nature of the signal means that all power production is essentially available to all power consumers all of the time.

When we understand the physical nature of power grids and acknowledge that the electricity network is shared by all Europeans, we can accept that yes, power that is injected into the grid in Spain, or Norway, does help to provide power to consumers in Greece or Poland. The European grid does not strictly follow national borders. Indeed, points of congestion and resistance are as likely to occur within a country as they are between countries.



When we understand the physical nature of power grids and acknowledge that the electricity network is shared by all Europeans, we can accept that yes, power that is injected into the grid in Spain, or Norway, does help to provide power to consumers in Greece or Poland. The European grid does not strictly follow national borders. Indeed, points of congestion and resistance are as likely to occur within a country as they are between countries. Germany is a classic example, with lots of power generation in the North, lots of consumption in the South, and limited transmission in between. Following the path of least resistance, and with no concern for distance, the power signal simply disperses itself through neighbouring countries to bridge the gap.



Given all of the above, a consumer might wonder whether it is even possible to choose a specific type or source of power – such as that generated by their local wind farm. The answer is that physically they can't, but economically, they can. This is because the electricity grid is governed by physical laws, but the market is governed by legal tools. While these tools take some account of the physical reality of the grid, they grossly simplify it in order to create a system that allows us to act as consumers.

## The legal reality

Renewable electricity markets rely on two contractual mechanisms – balancing responsibility and attribute certificates. Balancing responsibility values when and where electricity is injected into a power grid. Attribute certificates markets, such as those for European Guarantees of Origin, complement electricity markets by valuing how electricity is produced.

In well maintained modern electricity grids, power has to be available at all times – literally at the flick of a switch. This is achieved by forecasting and monitoring supply and demand to ensure that the grid's charge remains in balance – within strict tolerances. If this balance fails, we suffer black outs, which can be geographically limited thanks to system fail safes. The importance of maintain the balance of charge on the grid means that grid level producers and consumers have a legal 'Balancing responsibility' to ensure that they act in a way that helps to maintain the grid's power balance – clearly signalling when and where they will inject or take-off power from the grid.

The power market is essentially the trading of these balancing responsibility duties. This can be done on forward markets on the basis of forecasts, or on spot markets on the basis of the current reality on the grid. If there is a lot of production and limited demand prices fall to reduce production and help to maintain grid balance. If there is a lot of demand and limited supply prices rise to curtail consumption and help to maintain balance. So, the power market clearly values when and where power is, or is expected to be, produced, and consumed. But it gives no value to the type of power because this is impossible to identify power once it is injected into the grid. It was this missing piece of information and value that RECS and other instigators of EAC markets wanted to fill in. It is key to understand that both balance responsibility and origin tracking are using what we can consider to be certificates based on book and claim systems. Both markets use comparable tools to certify what power is injected into and withdraw from a grid within a given period and geographic area.

It is crucial to understand that it is not possible to trade physical power through a shared power grid. Therefore, in this document, when we are talking about power markets, we mean the balance responsibility market and not a market for 'physical' electricity.

Energy Attribute Certificates like the European Guarantee of Origin are issued to electricity producers when they inject their production into the grid. They can then be sold together or

separately from the power they certify using a contractual instrument like a power purchase agreement, EAC only contract, or supplier green tariff. Any contractual instrument that includes an EAC and another product are in fact 'tied' or 'bundled' contracts that combine different financial products aimed at valorising different aspects of the physical reality (balance responsibility, EAC, capacity etc). EACs allow consumers to buy the attributes of the power that a particular producer adds to the grid. By buying them, in whatever contractual form, consumers are valuing and supporting the production of renewable energy. RECS maintains that producers should use the income from these certificates to build more renewable energy generation.

As their name suggests, Energy Attribute Certificates contain a wealth of information about the attributes of the unit of energy

(usually a megawatt hour) that they are certifying. This includes the location of the generating plant, the energy source (coal, wind, solar), the age of the generating plant, and much more. This information allows a consumer to buy specific types of power and in doing so provide both additional income and a market signal that should encourage producers to invest in the production of more of this type of energy – accelerating the energy transition. Note that in the EU, and in many other markets, an EAC is the only means of identifying the attributes of a unit of energy injected into a grid.



## 2 realities, 2 instruments, 2 markets - for 2 tasks

As we have seen, power markets do not trade anything physical. Rather they trade the responsibility of market actors to keep the power grid in balance. Power markets place a value on when and where a market participant produces or consumes power and whether this

supports the balance of the grid at a specific time and in a specific place. Equally, EAC markets do not trade anything physical. Rather they trade the attributes of a given unit (MWh) of energy. EAC markets place a value on how energy is produced and the extent to which consumers want to buy that particular type of energy in a natural supply and demand dynamic. This is a clear case of two specific instruments for two specific jobs.

Because well maintained power grids are critical to our societies and economies, they must be kept functional, in balance, at all times. For this reason, power is traded forwards based on forecasts, but also in high frequency (imbalance settlement periods of 5 to 60mins depending on the market) based on the current state of the grid. In contrast, the ownership of the attributes of a given unit of energy is not critical to our short-term well-being. Therefore, EACs can be traded over much longer intervals. Typically, as in Europe, EACs are tradable for a year after the production period. Again, this is a clear case of two specific markets with two specific objectives.

There are many benefits to having separate instruments that embody balancing responsibility and energy attributes, and separate markets for trading them. For example, the central role of power systems and markets in our societies and economies means that they must be governed by strict and detailed laws. Drawing EACs into this legislative framework in any way would add huge administrative and cost burdens that could render renewables markets unviable. Equally, the annual nature of EAC markets, combined with the fact that they can be traded freely across large jurisdictions like the EU, mean that renewable energy markets can be quite liquid. This means that market participants can offer their consumers a wide range of products with different characteristics and values, meaning that all consumers have a practical and efficient way to support renewable energy generation with their purchases.

Liquidity is very important for a market to be efficient. This is the reason why balance responsibility defines power with only two attributes: the balancing zone, and the time period. Adding more attributes would reduce liquidity and thus the capacity of the market to function efficiently. The EAC is here to complement a power market not to replace it.



## What role for granular EACs?

Rather than recognising the benefits of having specific instruments and markets that reflect specific realities and deliver specific objectives, proponents of granular certificates are more likely to present the differences between power and EAC instruments and markets as a problem. They suggest that the lack of connection between balancing responsibility in power markets and EACs in renewables markets means that there is a disconnect between the power that a consumer can claim to be using by buying EACs and the power they are actually using when taking electricity from the grid.

Their solution to these concerns is the use of granular EACs, which in addition to the information on standard EACs, also specify more precisely when the power being certified was produced. Granular EACs can also be issued for much smaller units of energy, down to the watthour. These characteristics, for granular EAC proponents, mean that energy consumers can buy renewable energy that was produced at a specific time, and match it with their consumption, hour by hour. They state that this means the buyers of granular EACs are more likely to be using renewable energy and are therefore less dependent on fossil fuels and can make more reliable claims about the energy they are using, and the emissions related to its generation. Proponents state that granular EACs:

1. Enable consumers to support decarbonisation by supporting the generation of renewable energy for every hour of their consumption,
2. Enable the production of carbon-free products, like renewable hydrogen, without any reliance of fossil fuels,
3. Provide greater transparency by linking energy production and consumption in 'real-time',
4. Support power storage and demand side flexibility by providing a new price signal for the value of renewable energy in each hour of each day,
5. Facilitate risk management by helping to avoid fossil-fuel based electricity pricing.

This paper will examine these claims before establishing RECS position on granular EACs

## Do granular EACs support decarbonisation of the grid?

The proponents of granular tracking and matching claim that it can accelerate the transition to renewables and the decarbonisation of the grid by providing an hour-by-hour investment signal for renewable energy. This, they say, should encourage investment in renewable technologies that can generate outside of the sunny and/or windy periods that wind turbines and solar panels can already fully exploit. They say that granular certificates can provide a precise signal as to when consumers want renewable energy, along with additional income to invest in appropriate generation technologies.

As is noted above, there are two markets related to the buying of renewable energy – the power market and the EAC market. The power market values when and where power is generated, and the certificate market values how the power is generated. Because each of these markets uses a specific instrument, balancing responsibility, and certificates respectively, they can give very precise investment signals and reliable income. The power market trading of balance responsibility sees swings of thousands of euros and can even swing negative giving very clear signals of over or undersupply that inform producers as to when their power is needed. The certificate market, with its average annual pricing is not so specific in this regard, but it is very exact about what type of power consumers want.

Producers are more than capable of putting these two signals together. Combining the when, where, and how of consumer demand for renewables into granular certificates means asking consumers to pay twice for the when and where element of their purchase. The proponents of granular tracking are overlooking the role of the power market and are thus making a mistake of market design. Furthermore, many consumers already balk at the idea of voluntarily paying more for renewables they may find it impossible to accept paying twice for the time and location value of their consumption. Finally, this proposed market design might actually lead to a decrease in corporate commitments to buy renewables by offering a new opportunity to green wash energy consumption.

Granular EACs offer the opportunity to track a huge proportion of an organisation's consumption during hours when there is a renewable power supply surplus at a price approaching 0€/MWh. The flip side of this is that during hours of renewable energy supply deficit, granular EACs will be very expensive. In a voluntary market, if a consumer already

tracks 80 to 95% of their power consumption at little to no cost, they may feel that they have done enough without having to pay significantly more to reach 100% renewable energy consumption and zero scope 2 emissions. The whole aim of EACs generating an investment signal and additional income to help energy transition could then be lost.

It should also be noted that granular certificate proponents often conflate renewable energy with carbon free energy (CFE). They also often claim that the income and investment signal of granular certificates will lead to the development of newer renewable energy generation technologies that will support total decarbonisation of the energy grid. However, carbon free energy and renewable energy are not the same thing, and the technologies underpinning current 24/7 are far from cutting edge. CFE includes two of the oldest 'carbon free' generation sources – nuclear and hydro power.



Given the sustainability issues related to each, of waste management and environmental disruption, neither is seriously viewed as the solution to grid decarbonisation. The one new technology that is included in CFE offerings is carbon capture and storage. However, CCS/U is still yet to be proven economically or practically at grid scale and is often considered to be a cover for fossil fuel generation to continue – often unabated while waiting for retrofitted CCS technology. To the extent that it could be used, CCS/U is likely to be focused on very hard to abate smokestack emissions in industry, rather than in the power sector where real carbon free technologies already exist. tracks 80 to 95% of their power consumption at little to no cost, they may feel that they have done enough without having to pay significantly more to reach 100% renewable energy consumption and zero scope 2 emissions. The whole aim of EACs generating an investment signal and additional income to help energy transition could then be lost. It should also be noted that granular certificate proponents often conflate renewable energy with carbon free energy (CFE).

## Do granular EACs provide greater transparency?

RECS has both technical and fundamental concerns regarding this statement.

Technically, granular certificate proponents claim that they provide more transparency by linking production to consumption in 'real-time'. However, as noted above, RECS understands that market participants and system operators still perform the granular matching of production with consumption retrospectively, and that this may remain the case for the long-term. Therefore, there is no 'real-time' signal for producers to prioritize renewable generation at a given moment.

Furthermore, temporal information can, and often already is, included to a high level of precision in standard EACs. National systems such as Norway's have added the start and end time of the production of a MWh of renewable energy on standard EACs. The most recent EU law for the bloc's EACs, known as guarantees of origin, states that the start and end date of production included on a GO can, for renewable gases be specified at an hourly or sub-hourly level, and for renewable electricity in accordance with the relevant imbalance settlement period. This law thereby standardises the level of time detail expected in national GO systems. RECS believes that the EU could and should achieve greater harmonisation and clarity on this point by simply requiring all MS to specify the minute or second when the production of a given MWh of power or cubic meter of gas started and ended.

Fundamentally, the idea that increasing granularity gives more transparency to the system is questionable. Greater granularity of EACs corresponds to the false perception that there is a market for physical electricity. Even a highly granular EAC market will not accurately reflect the physical reality of the power grid. The electric signal is propagated at a speed of two third of the speed of light. That means that an hour is almost as close to physical reality as a year. Thus, hourly granularity might have a huge cost, not of implementing a system which is quite easy, but of having bad market design in which the roles of balance responsibility and EACs overlap and create inefficiencies. Trying to satisfy people's intuition by providing a superfluous market tool is dangerous. Instead, RECS seeks to inform all consumers about the physical realities of the electricity system, the role of different market instruments, and the technicalities of carbon disclosure methodologies in order to convince a majority of people to join the effort of supporting the energy transition by buying renewable energy through EACs. And let's not forget that the existing system is already succeeding in this goal.

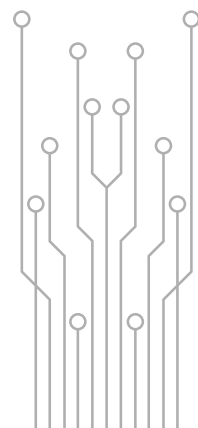
## Do granular EACs support storage and flexibility?

Those who actively support the development of granular EAC systems and markets claim that they support storage and flexibility by providing a new price signal in favour of the provision of renewable energy at specific times, via storage. This claim is challenged on the same basis as others that relate to the fundamentals of the balance responsibility and EACs systems and markets. Storage operators should already have the signals they need by combining their understanding of when and where power is in demand through the trading of balance responsibility and their understanding of what type of power is in demand by studying the certificate market. Why should consumers be expected to pay twice through the new instrument of granular EACs to give a demand signal that producers and storage operators should already be able to deduce using existing tools?

## Do granular EACs facilitate risk management?

The final principal claim of the supporters of granular EACs make is that they can facilitate better risk management by avoiding volatile fossil-based electricity pricing. This claim is based on evidence that more hourly matching in a PPA contract means more price certainty and less exposure to the volatile electricity markets from which electricity would have to be purchased with lower levels of hourly matching. While this may be the case, as this paper has previously shown, such an outcome may be facilitated by granular certificates, but is not dependent upon them.

PPAs are inherently designed to manage risk and limit exposure to volatile spot prices for both producers and consumers. And granular certificates are not specifically required to achieve hourly matching, as standard certificates can be timestamped to provide the necessary information. Furthermore, greater granularity in EACs could increase market volatility as power shortages and the use of fossil fuel generation are highly correlated. Pricing a PPA based on the power market with around 3 years visibility is already a difficult task. If EACs prices are based on the same granularity, the task will become even more difficult.



## Summary: Do granular EACs offer a unique selling proposition?

Power producers, through the power market, already know with great precision, when and where consumers want power to be produced. They also know, through EAC markets, what kind of power consumers want to buy. These two sources of information should already give them sufficient information to know what generation they should be investing in. Standard EACs can also be enhanced through time stamping, reducing the need for granular certificates. Furthermore, granular EACs do nothing to change our understanding of the physical realities of the power system, which mean that just because power was produced at a particular time and in a particular place does not mean that this is the power coming out of your plug.

It would seem then, that granular EACs are asking consumers to pay twice for the temporal aspect of their electricity use despite the fact that standard EACs can be enhanced to provide the same information and granular EACs provide no greater certainty that the power you are paying for is delivered to your plug. At a time where there is still concern about energy prices, is it reasonable to request consumers to move to granular matching?

## How to maximise standard EAC systems and markets

Standard EAC systems and markets have already proven that they can deliver great value for producers and consumers of renewable energy.

In Europe, the standard EAC market has shown that it can provide billions of euros of additional income to renewable energy producers. National auctions in France, Italy, Portugal, Hungary, Luxemburg, Croatia and Slovakia have raised hundreds of millions of euros a year which can be reinvested into national renewables support schemes. Such additional income can be invested to develop more renewable energy in order to meet demand. If the correct technical and regulatory conditions are in place, this additional renewable energy production can displace fossil fuel power generation, thereby helping to cut emissions.

In addition to state run auctions, the 'private' EAC market in Europe also supports renewable energy generators with significant income. In mid 2023, European GOs markets were quite

balanced in terms of supply and demand and revealed a price between €4-6/MWh. This price level helps to better value the investments in new power plants through PPAs for example.

With over 700m MWh of certificates cancelled each year, the total annual market value of European GOs at these prices is €2.8-€4.2bn. Looking forward, this value, if leveraged for renewables investments, could deliver over 337 TWh/yr of additional renewable electricity production by 2030.

This demonstrates two related points. First, if EAC supply and demand are in balance, there appears to be a strong willingness to pay (price elasticity) among consumers. Second, this willingness to pay can raise billions for renewables producers to reinvest.

Therefore, rather than investing significant resources into developing more granular EACs, RECS believes that those seeking to support the transition to renewables through energy certificate markets should focus on maximising standard EAC systems and markets. This could be done through three key steps:

1. Reinforcing the clear link between EACs and carbon disclosure,
2. Implementing full disclosure,
3. Focusing on the impact of renewable energy purchases.



## 1. Reinforcing the link between EACs and GHG emissions reporting

The GHG Protocol sets out how companies and other organizations should measure and report on their greenhouse gas (GHG) emissions. The protocol is currently (2024) undergoing a review which could lead to significant updates. Given the strength and importance of the Protocol, and the fact that it was developed in its current form following years of consensus building work, RECS only sees scope for updates that maintain and enhance its fundamental basis.

Under the GHGP, companies and organizations are expected to report their emissions using both a location-based and a market-based methodology. Location-based methodologies rely on knowing the emissions intensity (grams of CO<sub>2</sub> emitted for every MWh of electricity produced) of a consumer's power grid and multiplying it by the consumer's total power use. This is a blunt tool that reflects the use of a shared grid but does not reflect a consumer's individual choices to buy energy of a specific type or generator. By contrast, the market-based method recognises that consumers can buy energy from specific generation source and allows those that do so to report only the emissions related to the energy generation that they have paid for.

RECS supports the use of the market-based method since it makes the clear link between consumer choice for renewables, as demonstrated by EACs with more precise GHG emissions reporting.

RECS and its members recommend five key changes to the GHG Protocol to update it in a way that maintains its fundamental basis while recognising new developments and best practices. The GHGP should:

- Be simplified to provide greater clarity and focus on its core principles.
- Recognise the drawbacks of GHG emissions reporting that uses the simplistic location-based method, rather than the sophisticated market-based method that relies on EACs.
- Encourage the most impactful options for the purchasing of renewable energy.
- Recognise that many stakeholders are still in the learning process of GHG emissions reporting and should receive support rather than facing overwhelming reporting demands.
- Enhance the role of all stakeholders in the energy transition by actively encouraging the understanding and appreciation of the protocol itself.

## 2. Implementing full disclosure

RECS' priority for the development of EAC markets is first to achieve total system and market transparency through full consumption disclosure. RECS has long advocated for full consumption disclosure, which is the practice of requiring all consumers, or suppliers on their behalf, to document the origin of all the energy they are buying. This means that every consumer has information about what energy they have paid for, be it solar or coal power, renewable or fossil hydrogen. When provided with complete and transparent information, consumers can make clear choices as to what energy they want to pay for.

In addition to boosting consumer information and choice through greater transparency, prioritising full consumption disclosure on an annual basis can also help to accelerate the energy transition by showing producers exactly what types of energy consumers are willing to pay for.

Full disclosure, especially if it included GHG emissions values on EACs, would also greatly help consumers and regulators in understanding the distribution of emissions related to the consumption of energy (scope 2). Every consumer could easily calculate their scope 2 emissions by summing the GHG value of each EAC by the total number of such certificates. Stakeholders would no longer need to make scope 2 GHG estimations based on imprecise information such as production or residual mix data.

Once full disclosure is in place in an EAC system and market, then system operators and market participants could seek to offer greater granularity incrementally, by using full timestamping of all EACs. Such incremental steps could see requirements for granular matching move to a monthly, then weekly, then daily, then hourly or sub-hourly level. In some circumstances, greater granularity might go alongside, but should not precede, the introduction of full disclosure.

### 3. Focusing on impact of renewable energy purchases

Finally, there is the open question of what stakeholders should consider as having greater impact on the energy transition: a company that is 75% matched for granular CFE power consumption, or a company that is 100% matched for annual renewable power consumption? Factors that would contribute to any such assessment are complex and would include:

- What generation is in the CFE mix? Old Nuclear? Experimental CCSU?
- What generation is in the renewables mix? Old hydro? New PPA based solar?
- What do the producers do with their EAC income?

Assessing the possible economic, social, and environmental impacts of any energy purchase is complex and can include some subjective judgements. It is not easy to clearly differentiate the relative merits of granular or standard EAC purchases for CFE or renewable energy. RECS is, therefore, concerned that a claim to being e.g., 75% matched for granular CFE power may give the unsubstantiated impression of being inherently having greater impact on the energy transition. This is particularly concerning when consumers can achieve 75% granular CFE matching using old nuclear power while the remaining 25% of their consumption may only be the residual mix without any related certificates.

Therefore, RECS believes that market participants could significantly enhance the value of any granular matching if they did it in addition to 100% annual matching for renewable energy. This would mean that organisations must first prove that all of their power consumption is renewable, and then demonstrate the proportion of their consumption that they also match on a more granular level.



## Conclusion: RECS' view of granular EAC systems and markets

As this paper shows, RECS has been, and remains open to innovations in EAC systems and markets. However, RECS is also aware that unproven innovation could threaten the crucial role that standard EAC markets already play in supporting the transition to renewable energy systems. Therefore, RECS' view of EAC systems and markets is summarised in a clear 10-point plan:

1. RECS' priority for the development of EAC markets is full consumption disclosure, which European and other mature markets should implement as soon as possible.
2. RECS wants to maintain and reinforce the clear and sustainable link between EACs and GHG emissions reporting.
3. RECS' mission is to accelerate the transition to 100% renewable energy systems, driven in part by the purchase of renewable energy through EACs.
4. RECS supports the precise timestamping of all EACs, which can allow market participants to facilitate granular matching by those consumers who choose it.
5. RECS is open to incremental increases in temporal granularity of EAC systems and markets, starting with monthly matching, and then weekly/daily/hourly matching.
6. RECS does not advocate CFE energy procurement, which can include unsustainable or uneconomic options like old nuclear and CCSU generation.
7. RECS believes that all energy consumers, especially corporate consumers, should purchase 100% renewable energy, annually before considering any increase in the granularity of their EAC matching.
8. RECS recognises that the purchase of 100% renewable energy can have different impacts depending on what renewable energy a consumer buys, and how they buy it.

9. RECS calls on consumers to buy energy from sources and in the way they believe has greatest impact on accelerating the energy transition to 100% renewables.
10. RECS calls on all energy producers to invest as much of their income as possible into the development of new renewable energy generation.

RECS looks forward to engaging with all stakeholders in standard and granular EAC systems and markets on the basis of this paper.

### About the authors

The RECS Secretariat produced this document with the support of RECS Members and the oversight of the RECS Board. The RECS Energy Certificate Association (RECS) is a non-profit foundation dedicated to tackling climate change by reducing emissions through an accelerated transition to renewable energy that is supported by consumer demand. We do this by fostering the development of existing and emerging Energy Attribute Certificate (EAC) markets, which are the foundation of trading renewable energy. With well over 100 members across the world, RECS is the leading industry association representing the users of EACs, from renewables producers, through traders, to consumers. RECS is dedicated to enhancing the knowledge, motivation, and confidence consumers need to buy 100% renewable energy