

# RENEUM MARKET ANALYSIS

JULY  
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# FROM FINANCIAL INSTRUMENTS TO FINANCIALLY INSTRUMENTAL



## ABSTRACT

As a blockchain-based climate platform, Reneum utilizes the most important technological innovation of our generation to face our collectively biggest challenge: climate change.

Reneum is a climate marketplace built to fund climate initiatives around the world, helping catalyze the energy transition by targeting its biggest obstacle: the deployment of capital at scale. According to the International Energy Agency, “annual capital spending on clean energy needs to expand by more than seven times, to above US \$4 trillion per year, in order to put the world on track to reach net-zero emissions by 2050”.

By issuing a token representing the environmental benefit of green megawatt-hours to producers of renewable energy, Reneum offers them an additional revenue stream to boost profitability and incentivize new investment. Reneum’s inaugural token, called RENW, allows buyers to directly fund renewable energy project deployment and support existing operations around the world.

Buyers purchase to green their fossil fuel energy footprint. Companies for their ESG pledges and concerned citizens because they desire *#DirectClimateAction*.

Following the purchase of RENW tokens and subsequent burning to retire from circulation, buyers receive an ‘Eisbaer’ NFT, a digital asset signaling green values, serving as proof of contribution. NFT ownership also activates membership of the Reneum community, where participants will be able to vote on the funding of climate impact projects, to network with like-minded individuals and contribute to climate solutions. Reneum intends to transition this membership community into DAO-governance, activating a separate GOV token for commercial expansion and to diversify into other types of environmental projects and climate solutions.

By creating an instrument to drive capital into the renewable energy market, Reneum is the easiest way to participate in the energy transition and make a tangible difference.

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# OUR WHY

## CONVICTION

We are here because the future is green. We believe that environmental consciousness is the next social revolution, as ESG evolves from being a footnote on a shareholder report to a non-negotiable with financial consequences. What was once disregarded as superfluous, is now a key metric in the bottom line. With stakeholder capitalism maturing in a decentralized economy, ESG is no longer an option.

As we look forward to 2050 - the deadline scientists have identified for mandatory net neutrality - we see an opportunity to mobilize individual action at scale. The next generation will grow up in a world where climate change is not a subject to debate but a looming presence in their collective psyche.

They will be Web3 natives, oscillating between the multiverse and the metaverse, whose identities will be as much in the digital realm as the physical. Their values will be represented in their digital identities and their values will be emphatically green.



Powered by like-minded individuals who care about the future of the planet and want to expedite the energy transition, Reneum is a decentralized marketplace that empowers individuals to take direct climate action.





## CLIMATE APATHY

Surveys show that over 77% of young people think the future is “frightening” or are suffering from the newly identified clinical pathology diagnosed as Climate Anxiety.

The emotional impact of our looming climate future is palpable.; 68% feel “sad”; 63% feel “anxious” and 39% feel “hesitant to have children”. This climate depression and distress is related to the fact that, despite a general consensus on the need for massive transitions to heal our planet, climate action from governments has been largely insufficient.

We have not bent the emissions curve, despite annual climate meetings over the past 26 years. This reality manifests itself in the growing memberships of protest movements such as Extinction Rebellion and Fridays4Future around the world.

Yet, citizens worldwide have no tool to effect direct, tangible climate action themselves; they find themselves either attempting action through protest movements from the edge of an emotional precipice, or worse, in a state of hopeless apathy.

Within that context, Reneum offers a tool for any individual anywhere to take tangible, direct climate action which they can measure, to influence the fight against climate change. We must increase spending on renewable energy more than seven times in order to counteract rising emissions and achieve net-zero emissions by 2050.

Reneum offers the possibility for anyone to help achieve this seven-times push by directly funding renewable energy developments worldwide. If enough of us do so, we can bypass failing governments and fund the energy transition ourselves.



## SETTING THE STAGE

This unique moment in which the entire world is yearning for real climate impact is our opportunity. From student protests to visionary CEOs, the world is calculating how to avert a climate catastrophe, and one of the key drivers of climate change—fossil fuel use—is a critical lever to switch.

So how come we haven't already turned off the taps of fossil fuel reservoirs?

Unfortunately, it's just not that simple.

The Intergovernmental Panel on Climate Change (IPCC) found that emissions from fossil fuels are the overwhelming cause of climate change, accounting for 89% of global CO<sub>2</sub> emissions. Yet, according to the International Monetary Fund (IMF), we continue to subsidize the production and burning of coal, oil and gas to the extent of US\$5.9trillion each year. That's 6.8% of Global Gross Domestic Product (GDP). That's US\$11million every minute of every day making the climate emergency more acute. We are literally paying Big Oil to poison us. Worse still, subsidies are projected to rise to US\$6.4trillion by 2025.

We believe that the term 'subsidies' doesn't quite cut it when qualifying the externalities; instead, they should be called out as an injunction to debase our lungs, our planet and our lives at the mercy of the oil, gas and coal industries. And we are paying them to do it.

What's worse, everyone is at it: not one of the 191 countries party to the 2015 Paris Agreement prices its fuels sufficiently to reflect their true costs. Explicit subsidies make up US\$450billion of the US\$5.9trillion, with the balance being implicit subsidies like underpricing local air pollution and by-product downstream climate reparations. Cash subsidies however are projected by the IMF to increase and remain at US\$600billion from 2022 through 2025. A bewildering reality in the midst of a climate emergency. Fossil fuel subsidies alone are four times the total annual investment into renewable energy.

Imagine what could be done if we reallocated those resources into clean technologies. Simply culling fossil fuel subsidies would singlehandedly cut global CO<sub>2</sub> emissions by 36% and prevent at least two million deaths a year from dirty air.



In addition, a report<sup>1</sup> published by the International Energy Agency (IEA) found that

“The world’s energy and climate futures are increasingly hinged on whether emerging economies manage the energy transition successfully”.

Modeling for growth estimations in an unchanged energy landscape in these economies, most of which are located in Asia, Africa and Latin America, we will see a five billion-tonne increase in CO<sub>2</sub> released over the next two decades. In effect, our energy future hinges primarily on the decisions made in emerging market economies.

The challenge is that as these countries become developed economies, their leaders have tough choices to make. Often the requisite green finance isn’t available at scale to allow them to make the right choices, while fossil fuel lobbies make it very difficult for them to cut subsidies. As outlined in the IEA report, annual clean energy investment into emerging and developing economies must increase by more than seven times; an increase from less than US\$150billion in 2020 to more than US\$1trillion per year by 2030 in order to reach net-zero emissions by 2050.

Emerging markets need the financing and knowhow to build their energy systems in a sustainable way. Keeping financing costs low is critical for cash-strapped countries so that they can make investments with long-term payoffs, and with upfront capital costs being up to 60% higher for renewables, the opportunity cost to invest in them over coal often favors the incumbents.

The mobilization of capital markets to help emerging economies overcome the historically prohibitive financing hurdles they face, is mission critical.

Environmental instruments like carbon offsets and Renewable Energy Certificates (RECs) can help. You’re probably familiar with offsets by now; RECs are the lesser known but more appropriate instrument for the energy transition.

By providing a secure revenue stream for project developers, they not only enable bankability but also send an attractive price signal to capital markets that fuels further investment into these regions.

<sup>1</sup>[https://iea.blob.core.windows.net/assets/6756ccd2-0772-4ffd-85e4-b73428ff9c72/FinancingCleanEnergyTransitionsinEMDEs\\_WorldEnergyInvestment2021SpecialReport.pdf](https://iea.blob.core.windows.net/assets/6756ccd2-0772-4ffd-85e4-b73428ff9c72/FinancingCleanEnergyTransitionsinEMDEs_WorldEnergyInvestment2021SpecialReport.pdf)





## MARKET OPPORTUNITY

As became glaringly evident at COP26, despite an influx of renewable supply in developed markets, many industries and governments continue to rely heavily on polluting forces, leading stakeholders to increasingly seek alternative mechanisms to help them in the transition process.

While the carbon market's reputation precedes itself, it is worth extrapolating on the distinction between offsets and RECs. Offsets refer to the abatement of one ton of CO<sub>2</sub> from the atmosphere and may represent many types of carbon 'drawdown' initiatives, which can make their impact scientifically complex to calculate. Due to their broad application and abstruse nature, which makes them disproportionately vulnerable to greenwashing, they have been subject to severe market manipulation.

Also instruments for climate finance, RECs are purchased by individuals or companies who purchase electricity made from fossil fuels, to neutralize their emissions footprint. Distinct in their application from carbon, RECs represent only the non-power attributes of renewable energy. Thus RECs represent (mostly) solar and wind power generated and sold, greening the grid and ultimately supporting the displacement of oil, gas and coal.

These tradable commodities create additional revenue streams for renewable energy producers, powering the energy transition. They can help existing developers with operating cashflows, help them to become cost-competitive with their fossil fuel counterparts, or help secure additional capital pre-construction.

While theoretically viable however, traditional RECs, traded over-the-counter (OTC) across multiple layers of intermediaries, have effectively failed in their purpose. Similar to offsets, RECs are built on anachronistic models: analogue, centralized and no longer fit-for-purpose. Structural limitations like arbitrary geographic restrictions, opaque trading registries, fragmented and bureaucratic issuance, and a lack of standards interoperability, have together prevented ubiquitous adoption.

Instead, we need a global mechanism with integrity to democratize access, accelerate renewable energy deployment and redistribute finance to finally align incentives with objectives. Furthering impact, we see an opportunity to unleash the potential of emerging markets, prioritizing certification of these renewable energy projects in order to reach into under-served markets, sometimes for the first time. Reneum is a marketplace that opens up access to all renewable energy, in order to accelerate the energy transition.



## EVOLUTION

In auditing potential solutions to drive a wall of money to the developers on the ground, Reneum concluded that a buoyant and trusted REC market was the fastest option. Designed with integrity, it can unleash the potential of emerging markets, where capital is skittish and producers are struggling.

We went back to first principles and designed a new model from scratch.

Reneum is based on the concepts of traditional environmental markets but utilizes decentralized ledger (blockchain) technology to transcend the limitations of RECs. Unlike other environmental instruments on the blockchain which operate from a skeuomorphic vision (simply layering analogue products on top of digital infrastructure), Reneum is the first digitally native, vertically-integrated marketplace that enables unrestricted access to renewable energy.

Reneum is a return to earnest value creation in these markets. We intend to create a global, decentralized, democratized market. The distinction is unmistakable. Blockchain technology allows for a complete evolution beyond the inefficient legacy markets, for a solution that actually drives the energy transition.



# OUR WHAT

## SUPPORTING THE ENERGY TRANSITION

Renewable energy uptake is often hamstrung by the inability of developers to secure financing from capital markets, particularly in many of the markets that most need and want it.

Renium can bridge the financing gap and play a crucial role in driving necessary investment. Proceeds go directly to the renewable energy project owners—solar and wind farms, geothermal and run-of-the-river hydro plants globally—supporting developers with operating resources, providing a secure revenue stream that improves their financial risk profile to investors, and signaling to new entrants that there's renewable energy demand in the market.

Renium issues tokens to producers of renewable energy with no upfront costs, providing a direct resource to project owners and accelerating the energy transition.

## THINKING FROM FIRST PRINCIPLES

Environmental markets have been around for decades but they're still not working. Centralized databases, infused with their related bureaucratic processes and non-interoperable nature, have stifled adoption and led to bottlenecks at scale.

From a user perspective, there are minimal differences between using a traditional centralized registry and a blockchain-based platform, but the data management and reporting potential with blockchain opens up a world of benefits previously unimaginable via centralized registries.

Utilizing blockchain technology to transcend the limitations of the REC market, Renium allows for:

- Smart contracts to direct capital to those who need it most, acting like a targeted stimulus package.
- Disintermediation of brokers and traders to reduce costs and transaction times and increase price transparency.
- Disintermediation of siloed and non-interoperable platforms, radically upgrading the user experience.



- Aggregating credits on a single public marketplace, allowing anyone to purchase from anywhere in the world
- Open-source software to enable automated certification of these credits, ultimately replacing the certifiers in order to reach mass adoption.
- Allowing real price discovery based on true market value rather than artificial OTC constraints or predatory broker pricing.
- Being the first marketplace to reach all corners of the world, unrestricted by geographical boundaries.

	TRADITIONAL RECS	RENEW TOKENS
Transaction Process	Purchased OTC via brokers requiring complex and lengthy contract negotiations via multiple intermediaries.	RENEW can be purchased on the Reneum marketplace, but also are enabled for off market and bespoke solutions.
User Experience	RECs are only available via analogue UX systems that are opaque, cumbersome, and outdated for digital natives (more like Web1 than Web3).	Reneum was designed following dozens of market interviews to understand the true needs of the market. It is entirely digitally-native.
REC Issuance	Layers of centralized bureaucracy, regional restrictions and compliance processes lead to long delays and bottlenecks at scale.	RENEW are issued automatically once certification takes place, based on algorithmically-programmed smart contracts.
Transparency	RECs are transacted on private registries with no interoperability or public ledger access, meaning the risk of double counting (or double dipping) via other registries is high.	All RENEW transactions are listed on our public marketplace ledger for complete transparency and all Eisbaer NFTs include access to full proof-of-provenance data including due diligence.
Project Certification	Verification and certification are cost prohibitive and geographically limited, prohibiting suppliers in emerging markets from participation in many cases.	Verification is done via a Supervisory Control and Data Acquisition (SCADA) system and satellite imagery combined with unfalsifiable documentation, expediting certification.



## RENEUM 2050

As we look forward to 2050 we see an opportunity to mobilize individual action at scale in the climate crisis. Reneum's mission is ultimately to accelerate the energy transition. Blockchain offers the most promising mechanism for capital reallocation and that can be optimized far beyond the offsetting of environmental debt.

Renewable energy is just one climate instrument, one lever we can pull to influence the climate crisis. Reneum sees an opportunity to parlay its technology platform and utilize the token mechanics to create additional environmental instruments and climate verticals.

We see Reneum's long-term potential as a fundraising tool for environmental impact—ocean footprint, air pollution, efficiency projects, soil sequestration projects—that can be scaled up much in the way Amazon transitioned from books to an everything marketplace. Once the renewable problem is solved, we move on to other climate causes.



# PROJECTS

## QUALIFIED PROJECTS

Projects may apply to be certified on the Reneum.com website and will be prioritized according to the market demand and regional support for renewable energy. This means that projects in markets with no government subsidies or where fossil fuels are explicitly supported, will be considered top priority. Projects in markets with no existing REC framework will also be prioritized, to help them access environmental markets for the first time.

Reneum does not expressly disqualify any projects unless they operate in countries with a government-mandated REC market or have renewable portfolio standards, to avoid double-counting.

## CERTIFICATION PROCESS

### MEASUREMENT, REPORTING & VERIFICATION (MRV)

Reneum's certification standard has published its verification and approval procedures on its website, but it's worth noting that Reneum abides by industry best practices regarding certification requirements. Reneum validates project legitimacy via satellite imagery, publicly available meter readings, power-purchase agreements (PPAs) and assessment of historical crediting via other standards.

Once approved, Reneum does spot audits of generation data by reconciling meter readings with our accrued inventory to ensure projects are credited for the precise MWh generated. The audit trail is tied to the NFT metadata in a unique memo, to create assets in the public ledger with unparalleled data integrity.

Reneum's certification methodology is audited and qualified as an internationally-recognized certification process. The certification process validates all of the following criteria:

1. The project is currently generating clean energy as per the eligibility requirements.
2. Satellite imagery validates project location and estimates potential output.
3. Energy produced is verified via six-monthly historical meter readings.
4. End consumer of power is not relevant for Reneum but the project must produce its Power Purchase Agreement (PPA) or offtake agreement to evidence attribute ownership.
5. All projects must contractually commit to no future double counting.



6. All projects must produce any historical carbon or EAC certification and transaction history.
7. All projects must share plant schematics and monitoring system for online integration.
8. API SCADA connection to transmit live generation data, preventing any meter tampering or data adjustment, is best practice, though Reneum is exploring IOT integration devices for projects unable to provide API access.
9. In countries where generation data is publicly available, a project's existence and history will be confirmed through the local regulator's website.

For more on the certification methodology, see the [reneum.com](http://reneum.com) website for a downloadable manual.

#### DECENTRALIZED CERTIFICATION

One of the primary limiting features of the current market is the certification bottleneck. This means that while existing standards serve utility as a trusted stamp of approval, the arduous process and territory restrictions lead to undersupply that stifles the market.

Reneum aims to maximize project participants in the network and by accelerating the certification process. Guaranteeing the production of renewable energy is actually a fairly straightforward process that can be done entirely via technology. What's more, that verification can be fully automated.

By employing oracles, IoT devices, satellite imagery and machine learning, Reneum's marketplace will be able to automatically certify project eligibility with no intermediaries. Once the automatic certification system is built and tested, Reneum's certification business will be discontinued and replaced by an entirely digital system. Considering the complexities that come with regional nuances and technical idiosyncrasies (for example, bespoke monitoring tools or inconsistent internet access), this feature will be a critical upgrade to the entire environmental market.

At Reneum we appreciate the complexity associated with this endeavor and we do not take the responsibility of mapping an automated certification standard lightly. We will survey best practices from existing standards, conduct extensive interviews, satisfy compliance standards and collaborate with regulators to ensure we design a bulletproof system.



## DECENTRALIZED CERTIFICATION

Reneum is plans to transition into DAO governance following complete automation of the platform and to establish a buoyant an active community of climate activists who will meaningfully participate in the DAO economy.

The purpose of this is to activate complete community ownership of the energy transition, for the first time, providing individuals with true agency. The DAO timeline will be announced following the successful launch of the marketplace to provide Reneum a buffer period to develop and test the AI-powered, automatic token certification mechanism which will be the first of its kind.

This process has traditionally been a highly manual and bureaucratic process requiring contextual due diligence, that will take time to automate. A secure online application and certification system could, for the first time, allow for the complete decentralization of environmental markets.

Governance tokens would be airdropped to all present Eisbaer holders along with select pre-defined ambassadors and key partners and would constitute voting rights in proportion to token ownership.

Voting would include commercial decision making, for example which markets to certify, which technology sources to prioritize, when and whether to include additional environmental instruments, which new climate projects to finance and the defining of pricing structures for pollution penalties.

Reneum will announce more on the DAO transition in the coming months pending successful market launch.



# COMPLIANCE

## DOUBLE COUNTING

Projects are contractually obliged to notify Reneum in advance of registration of any credit registration or sales via third-party registries of any form of environmental credits, including carbon offsets. Reneum will only issue tokens to projects for periods that have not already been certified by other registries or standards.

Reneum also conducts a robust initial project inspection to verify its data and environmental integrity and all provided documentation aligns to their registration data. Once approved, the project's monitoring system will be linked to the Reneum platform directly, enabling Reneum to monitor the MWh generated in real-time. All project inspection data will be included in the project's online dashboard, similar to a data room, and available for buyers to download to conduct their own due diligence.

As an added layer of security, projects are monitored retroactively on an annual basis through spot audits conducted by certified engineers.

Lastly, the Reneum Marketplace publishes the transaction history of the complete registry, along with detailed project data is on its public dashboard, allowing anyone to cross-reference Reneum's transaction feed. This is an industry-first, and is what we believe to be best practice in the prevention of double counting.

Any double dippers will be disqualified and immediately terminated from Reneum, their present and past tokens will be cancelled, and a public statement will be made so other organizations may take appropriate action.

## ADDITIONALITY

Reneum supports IRENA's recommendations for RECs backed by the non-power attributes of renewable energy.

Reneum is designed to encourage the development of new renewable energy projects, particularly in countries and regions that have no support mechanisms in place for them, that do not reward the climate benefits of renewable electricity and/or actively support fossil fuel-generated power over clean alternatives.

Reneum therefore exists to support the accelerated deployment of additional renewable energy projects that would not otherwise happen.



At the project level, however, there is no requirement for projects looking to receive RENW to demonstrate additionality explicitly. This is because:

- Renewable energy consumption is currently at 18%, versus the 70-85% required by 2050.
- Renewable energy projects are still disadvantaged with respect to fossil fuel alternatives in many countries with fossil fuel subsidies deeply embedded in public spending budgets.
- As countries introduce renewable energy obligations, RENW tokens will either be replaced by national RECs or adopted by said countries as part of their mechanisms for demonstrating compliance.
- The renewable energy community in many countries still has no other means to bring their environmental attributes to market.

Though 'additionality' is not technically required for RECs, Reneum undertakes the following best practices to ensure it presents the most material impact to renewable energy deployment:

1. Recommending buyers to purchase RECs from new projects
2. Prioritizing project registration in under-developed or less structured markets
3. Working with utilities to create green tariff options that bundle energy with the associated RECs
4. Work with buyers and financial intermediaries to improve project bankability by accepting Reneum cashflows
5. Issuing RENW only to projects that do not receive other certificates or tokens that embody their environmental attributes
6. Closely following accounting requirements as are emerging under the Paris Agreement to prevent double counting of results in more than one country

## REGULATORY ENVIRONMENT

Reneum is considering making RENW tokens available on public cryptocurrency exchanges and therefore available to buyers anywhere where cryptocurrency purchases are allowed.

Considering that buyers purchase RENW tokens in order to green their energy footprint, they are intrinsically designed to be burned, representing retirement of the RECs. Therefore, they do not fall under the scope of securities regulations and are not subject to standard financial instrument regulations.



For project owners in countries where cryptocurrency is either illegal or regulation is undetermined, project owners can select a fiat currency payment integration. This limits any liability on the part of the project. Operationally, this means that Reneum will manage all transactions on the project's behalf, resulting in no cryptocurrency exposure whatsoever.

All that said, Reneum advises all buyers to seek compliance and legal support in their local jurisdiction to understand the risks of interacting with cryptocurrencies before engaging with the platform.

## RENEUM & BITCOIN

Reneum is creating a tool with the potential to green the entire blockchain space. We are collaborating with Bitcoin miners to provide them with solutions to procure RECs in the form of RENW tokens with complete integrity and transparency, in a way that neither the traditional REC market nor the carbon market can provide. The Reneum platform is therefore designed deliberately to support miners (among with other climate-forward crypto companies) and ease the pain in clean energy procurement, so they can focus their energy on what matters most: securing and growing the Bitcoin (or their own crypto) network.

Reneum is most specifically designed as a direct solution for Bitcoin miners and Bitcoin stakeholders who are concerned about the energy consumption of Proof-of-Work protocol mining. Bitcoin is currently about 55% powered by renewables, which makes it far cleaner than most industries, but why not use the current exposure to act as a leader in the environmental space and go 100% green? Bitcoin has an opportunity right now to truly make a difference, shepherding a green movement and transforming its reputation from the devil to the darling of ESG in more than one country.

## ENTITIES & INDEPENDENCE

Reneum remains a not-for-profit to ensure independence and credibility associated with its certification process. Reneum will follow the guidance of its legal counsel in Singapore and ensure its operations are fully compliant with Singapore's token regulations.



# THE PEOPLE BEHIND US

## THE TEAM

**[Brianna Welsh](#)** - Co-Founder and Managing Director. Brianna has been at the helm of Reneum since shortly after launch in 2018. She also managed Sindicatum Renewable Energy's carbon and REC portfolios while trading as a broker for third-parties. Brianna formerly worked in emerging markets infrastructure in M&A in various capacities and has been actively involved in crypto since 2016. She has worked and invested in blockchain since 2016, driven by the commitment to building a sustainable and climate-positive economy. She manages all things Reneum and is passionate about using tech for good. She is an ambassador for the UNDP's think-thank on deep tech's applications in emerging markets and sits in the Clinton Global Initiative's young leader committee. Having worked and lived on six continents, she is an avid explorer, surfer and skier.

**[Assaad Razzouk](#)** - Founder, Director and Chair. A climate activist, renewable energy investor and a climate podcaster, Reneum was Assaad's inception after witnessing the supreme dysfunction of the carbon markets during the crash in 2010 and the subsequent challenges in the REC markets. He is also a Board member of ClientEarth, an environmental charity that uses the rule of law to protect people and planet; a Board member of EB Impact, the Singaporean non-profit organization focused on delivering training and programs to Asia Pacific's underserved communities to generate positive sustainable development; and a member of the International Council of the National University of Singapore Yong Loo Lin School of Medicine. Assaad has a large fan base on Twitter, LinkedIn and Facebook and his podcast, the Angry Clean Energy Guy, is ranked in the top 2% of most downloaded podcasts.

**[Ankur Daharwal](#)** - Reneum's Blockchain Head. A technology expert in Web3 and decentralized applications, Ankur has been designing, architecting and building blockchain solutions for over five years. Embarking on his journey with IBM Blockchain Garage, he has brought numerous projects to fruition. With his skills in Blockchain technology, Ankur has been building practical solutions for asset management, value exchange, and traceability in many industries across the globe. He is a member of ISO TC307 DLT Standards Technical Committee as well as a member of IIB Council Blockchain Advisory Board. In order to achieve environmental sustainability goals and a climate impact worldwide, Ankur has been focused on the decentralized exchange of carbon credits and renewable energy since 2018.



**Oliver Muldoon** - Head of Community for Reneum. Since a chance meeting with the Bitstamp CEO in 2015, Oliver has been consumed with helping blockchain and crypto gain mainstream traction. Formerly global community manager for NEM Group, Oliver is a founding member of the Fixers, whose primary objective is to build a thriving ecosystem and engaged community that can organically take over leadership as they demonstrate their commitment to their community.

**Antonio Lopez** - Head of Commercial. Always focused on bringing together renewable energy, technology and business strategy for its customers all around the world, Antonio has over 10 years of experience leading the business development efforts for some of the world's leading technology providers, helping businesses to make the most comprehensible and profitable transition to sustainable energy and digital transformation using IT/OT technologies such as SCADA/DMS, ERP, Cloud and Blockchain. Antonio also holds an International Business master's degree from the Seville Chamber of Commerce and a degree in Electronic Engineering, Computers and Renewable Energy Markets and Policies from the Danish Technical University. He is also highly qualified in Business Strategy, Blockchain technologies, Analytics and IoT, has vast experience in the energy sector in developing countries and has worked with other non-profit organizations such as Engineers Sans Frontiers. Prior to Reneum he worked at Telvent, Schneider Electric, SAP and TD Synnex.

**Jessica Cheam** - Director. Jessica is the Founder and Managing Director of Eco-Business, Asia Pacific's leading independent media and business intelligence organization dedicated to sustainable development. She is widely regarded as a sustainability pioneer with two decades of experience in media, sustainable development and ESG issues globally. She is also the General Partner of the Sustainable Future Fund, which funds sustainability-focused ventures in Southeast Asia, and a member of the Singapore Institute of Directors (SID), including serving as its ESG committee member. She is also a member of the International Women's Forum Singapore and is founding Director of EB Impact, a non-profit dedicated to positive sustainable development impact in Asia. She has been recognized in many regional and international journalism and sustainability awards, including Women of the Future Southeast Asia Awards and LinkedIn's Power Profiles and is frequently invited to speak at and host discussions across the globe in her areas of expertise.



## PARTNERS

Reneum has been backed by and is a graduate of the Outlier Ventures accelerator program, backed by Polygon. Reneum is also a member of the Energy Tag initiative, the UN Climate Compact, the Global Wind Energy Council and the International Solar Alliance. On the blockchain side, Reneum is a member of the Crypto Climate Accord, Blockchain for Social Impact, Energy Web Foundation, and the Blockchain for Climate Foundation.





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