



A New Global and Trusted Standard for Recording, Measuring and Trading your Clean Energy Footprint



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# Abstract

This Whitepaper explains how we aim to deploy our NERA Blockchain technology to accelerate the widespread adoption and awareness of clean energy and green initiatives in Southeast Asia. The NERA Project is a direct call to action for every single member of the global community. Its groundbreaking vision will potentially transform and re-shape the collective “green-think”, pulling together communities to contribute to environmental sustainability in creative ways.

NERA intends to create a Blockchain ecosystem and community that is driven by a “proof-of-green” incentive system. Through the twin arms of empowerment and incentivization, we aim to deploy a decentralized autonomous framework capable of creating and preserving real economic value as a reward for consciously going green. The NERA Project will return ownership of individual green-consciousness to the community. It is a community-driven movement which will galvanize, unite and empower every single person to play a direct, tangible role in combating global emissions.

The NERA Blockchain intends to enable a transparent and consensus-based tracking of emission reduction activities at the individual level. In turn, each community member will be awarded with Emission Reduction Unit (“ERU”) as a “proof-of-green” standard of measurement. ERUs are awarded based on emission-reducing green activities, including CO<sub>2</sub> reduction efforts, clean energy adoption/production, and green campaigning efforts. In combining the inherent qualities of accountability, transparency and security of the NERA Blockchain, NERA aims to make the ERU a global standard in measuring the clean energy footprint of every individual and organization.

The proposed currency underpinning the ERUs on the NERA Blockchain will be our ERC-20 standard NERA Tokens, which will be deployed to facilitate all transactions (online and offline) within the NERA ecosystem. It is envisioned that NERA Tokens will be a widely-adopted currency, accepted by a range of institutions, businesses and merchants in support of the clean energy movement ignited by NERA.

We anticipate that the web interface for NERA will be delivered by end of Q1 2018, and the mobile interface to be delivered by Q2 2018.



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# Message from NERA

After 8 years in the Energy Markets, I witnessed first-hand how the world lags behind in renewable energy adoption, not because there is a lack of funding, but due to an uneven distribution of funding caused by layers of corporate and political agenda.

The breaking point for me came when I was in Vietnam. In 2015, my work took me to develop renewable energy projects in Vietnam as the country aims to transit to solar by 2020.

However, local investments in Vietnam are unable to keep up with the country's construction of renewable energy projects, while foreign investments into Vietnam are a complex and complicated process. While from sustainability driven initiatives such as the United Nation's (UN) REDD+, there is a rampant lack of capital and the renewable energy financing market is still closed except for big institutional players who have access to energy investments. This makes it difficult for the country to reach its renewable target. Due to this vicious cycle, foreign investors and funders have started to increase the demand on higher equity ratio for newly developing renewable energy projects. As a result, equity has become limited and hard to come by for local Vietnamese players. More alarmingly, I realized that so many people and companies do not seem to care about or even realise the importance of funding green projects - often opting instead to fund less environmentally sustainable projects for short-term returns and profit!



To address this, we formed a team of seasoned and leading green experts in 2016, with the vision to enable the 3P's (people, public sector and private sector) to contribute in their own meaningful ways in creating a cleaner world. Our vision is to form a self-sustainable ecosystem where everyone and anyone, can do their part in a transparent and rewarding way, without the interference of politics and corporate interest.

With this, NERA was born. We made use of blockchain technology to enable a decentralized system to increase transparency and credibility, and to create a global benchmark for emission recording and reporting.

The power to change, is finally in our hands. Get ready for the biggest clean energy revolution powered by blockchain. Get clean, get green, get rewarded.



**Andy Tan**  
Co-founder of NERA

# THE PROBLEM

## Carbon Emission and Climate Change

Decades of accelerated economic growth and rapid urbanization in many developing countries have resulted in an unprecedented engorgement of global energy consumption. Yet, this progress often occurs at the expense of environmental sustainability, feeding the present threat of irreversible and potentially catastrophic climate change.

In 2016, we have, for the first time in human history, surpassed a critical marker in our fight against climate change. Scientists recorded more than 400 parts per million (ppm) of carbon dioxide (CO<sub>2</sub>) in the atmosphere. The “safe” level of CO<sub>2</sub> concentration in the atmosphere, according to most scientists, is 350 ppm.

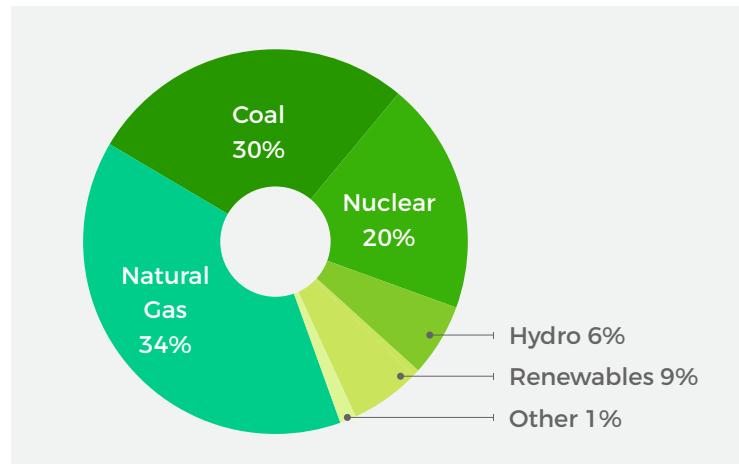
The time to act is now.

## The Paris Agreement

The 196-nation Paris Agreement, adopted in 2015, calls for capping of global temperature rise at 2°C above pre-industrial levels. With our planet out of kilter after only 1°C of warming – enough to amplify deadly heatwaves, droughts, and superstorms – the treaty also vowed to explore the feasibility of holding the line at 1.5°C.

However, the Paris Agreement rests on voluntary carbon-cutting pledges from almost every country in the world. This translates into poor results - for example, solar and wind energy have grown 14% annually since 2012, but still account for less than 4% of global energy consumption. In fact, the use of renewables is only at 15%.<sup>1</sup>

In its 'new policies scenario', where it assumes the Paris Agreement to be fully implemented, the IEA finds that solar PV and wind will provide less than 3% of our needs in a quarter-century.<sup>2</sup>



*US electricity sources, 2016. Renewable face stiff competition from more established, higher-carbon sectors.*

<sup>1</sup>[https://www.eia.gov/energyexplained/index.cfm?page=electricity\\_in\\_the\\_united\\_states](https://www.eia.gov/energyexplained/index.cfm?page=electricity_in_the_united_states)

<sup>2</sup><https://www.theaustralian.com.au/news/inquirer/climate-change-paris-agreement-makes-too-little-difference/news-story/2a375b85f996e169611d2aaaf81bcbee>

## Failure of current Carbon Market

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The lackluster results above seem somewhat contradictory to the fact that carbon trading is one of the fastest-growing specialties in financial services and its estimated market size is worth more than USD \$100 billion, with forecasts predicting growth of up to USD \$1 trillion within a decade.

In fact, according to some experts, carbon markets, due to their centralized and overly-bureaucratic nature, have resulted in a 15-year losing battle against climate change, and yet, the same system continued to be pushed.<sup>3</sup>

The two most important carbon markets so far – the EU Emissions Trading System (EU-ETS) and the UN's carbon offsetting scheme, Clean Development Mechanism (CDM) – are not yielding satisfactory results. Yet, new carbon markets based on these ineffective schemes are being planned in both developed and developing nations.

The EU-ETS scheme is over-supplied with carbon allowances more than ever before. This means that power stations and factories have been allocated more allowances than they actually need (in part also due to the serious recession in many countries, but also due to intense industry lobbying). There has also been a flood of cheap CDM carbon credits, which has contributed to the price of carbon credits being so low that it becomes a negligible cost to the industry at large, and, more importantly, dis-incentivizes investments in low-carbon technologies.

Over the last few years, market volume for carbon credits has been decreasing despite increasingly affordable prices. The overall amount of carbon offsets bought and sold on the voluntary carbon markets dropped 24% in 2016 compared to 2015.<sup>4</sup> Prices ranged from less than \$0.50/tCO<sub>2</sub>e to more than \$50/tCO<sub>2</sub>e. For example, wind offsets from Asia were bought and sold at an average of \$0.7/tCO<sub>2</sub>e, while afforestation/reforestation offsets from Africa transacted at an average of \$6.7/tCO<sub>2</sub>e. The average price across all transactions was \$3.0/tCO<sub>2</sub>e. In general, prices were lower on higher volumes traded. Most offsets sold came from wind, REDD+, or landfill methane projects, but more community-focused projects took prominence on the primary markets.

The downward pressure on the pricing of carbon credits reflects the failure of the current Carbon Market.

It is projected that if the costs of carbon credits increase over time, it will lead to a decrease in usage of traditional forms of energy and a trend towards renewable sources instead (see table below).

<sup>3</sup><https://www.theguardian.com/sustainable-business/blog/why-are-carbon-markets-failing>

<sup>4</sup><https://www.cbd.int/financial/2017docs/carbonmarket2017.pdf>

## EIA Projections of the effects of a \$25/metric ton carbon price in the electricity sector

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EIA \$25 Carbon Price Scenario				
	2015	2020	2025	2030
<b>Carbon Prices (2012 Dollars Per Metric Ton)</b>	\$25	\$32	\$41	\$52
<b>Percentage Change Versus Reference Case:</b>				
Retail Electricity Prices	6%	11%	14%	14%
Electricity Demand	-1%	-4%	-5%	-6%
Coal Usage	-18%	-64%	-74%	-85%
Natural Gas Usage	16&	51&	50&	27&
Renewable Usage	10%	24%	25%	51%
Electricity Sector Carbon Dioxide Emissions	-12%	-40%	-49%	-63%

Source: U.S. EIA's Annual Energy Outlook 2014. The Reference Case scenario is identical to the \$25 carbon price scenario except for the lack of a carbon price.

## PAIN POINTS

To resolve the problem of continued increasing carbon emissions, we need to encourage Proof of Green initiatives and make improvements to the current carbon market.

The following pain points need to be addressed:

1. Difficulty in Certification
2. Lack of Transparency & Accountability
3. Top-Down Approach and Malaise at an individual level

### Difficulty in Certification

The lengthy verification process of carbon emission programs by multiple world climate initiatives is a major pain point. - mostly related to ISO 14064-9 - requires introduction of greenhouse gas (GHG) inventory, specifying principles and requirements for baselines and verification of monitoring projects, which could be tedious, resource intensive, requires multiple vendor approvals and is costly.

Consequently, it is difficult for individuals who perform green activities or initiatives to "earn" carbon credits as consultants need to be engaged at exorbitant cost (at least USD \$100,000 from our estimates), and at its quickest, their work takes about 8 months. Both prohibitive costs and time discourage individuals to attempt acquiring carbon credits.

## Lack of Transparency & Accountability

As most top down initiatives such as the Paris Agreement are heavily reliant on voluntary participation, non-participating stakeholders (in the energy sector) and participating members have little or no incentive to commit to their agreements and show any degree of direct accountability or ownership. Due to the variety of stakeholders and actors, including consultants, carbon brokers and project developers on the one end, and validators, policy makers, NGO professionals and academics on the other end, the lack of independent oversight in the current carbon trading system makes it ripe for abuse and inefficiency at many levels.

Many Western manufacturers and 'polluters' have found a cheap way to offset their climate responsibilities (buying carbon credits from industries in developing countries) without actually adopting green practices. This imbalance between the carbon markets in developing and developed markets leave a lot of room for improvement.

Carbon markets have also fueled unsustainable practices. One example is a Thai company that generates renewable electricity by the burning of rice husks, a vital source of fertilizer in the local, sustainable economy of subsistence farmers. The reason this happens is that it sells carbon credits generated by such activity to Japanese buyers and other polluters. As a result, farmers have to rely on substitutes like petroleum-based chemical fertilizers, which create negative environmental impacts.<sup>5</sup>

This lack of transparency and accountability lead to a lingering distrust between funders beneficiaries of the energy funds. This problem hampers the deployment of vital funding to projects that need the funds, as well as preventing green funds from being channeled to deserving individuals who contribute to a cleaner world in their own capacity. Clean energy funding and grants are expected to grow. For instance, the Green Climate Fund is expected to grow from US\$10.3B in 2017 to over US\$100B by 2020 ([www.greenclimate.fund](http://www.greenclimate.fund)). Currently, there are over US\$200 billion of green funds available in the world today.

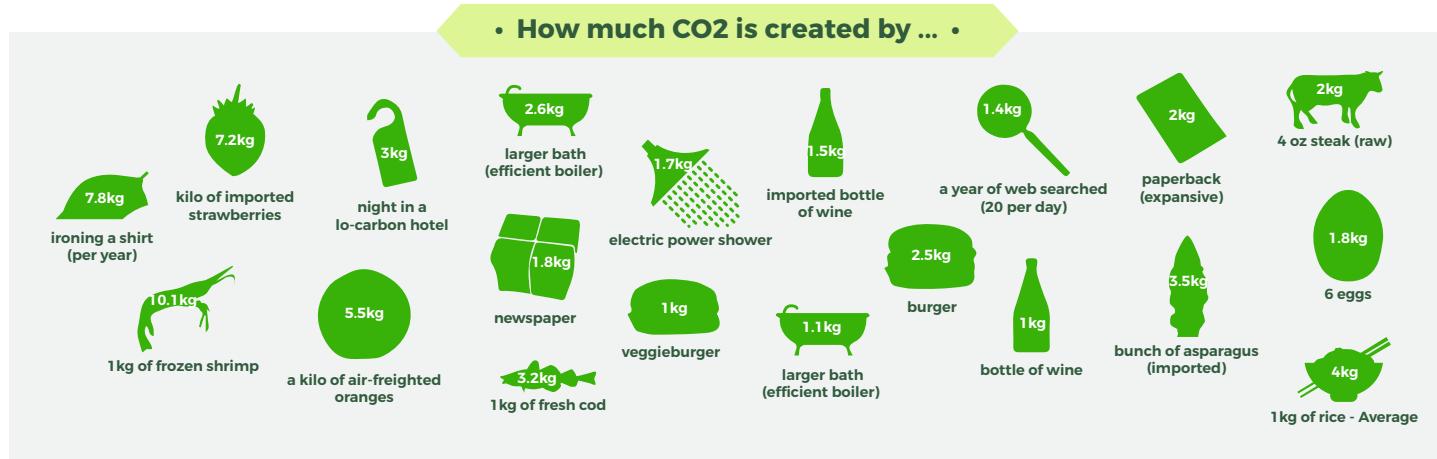
## Top-down Approach & Malaise at an individual level

We observe that the present eco governance/propagation model appears to be overly centralized and cumbersome, whereby green movements, clean energy campaigns, and policy-making are largely left to the

<sup>5</sup><http://www.resilience.org/stories/2005-04-01/why-our-food-so-dependent-oil/>

stewardship of bloated government agencies, or at the whim and fancy of larger corporations with sizeable budgets. So far, initiatives aiming to tackle climate change or introduce sustainable energy practices tend to adopt a top-down approach, with many intermediary layers and competing interests, motivations and agendas hampering efforts to produce positive results as intended.

This ignores the reality that carbon is created virtually from all forms of human activities and the power to change lies in the hands of all.



<http://webdeveloppementdurable.com/du-co2-partout-mais-combien/>

While there has been consensus about the adverse and irreversible effects of climate change on the environment and future generations, there remains little incentive to fight climate change on the individual level. Even wealthier individuals who exhibit a higher degree of eco consciousness often contribute minimally to environmental sustainability, due to the larger effects of their consumption patterns which tend to undo their efforts.

# THE SOLUTION – THE NERA PROTOCOL

We believe that the NERA protocol – a new global, patent-pending standard to record and verify ERUs – is able to address the pain points identified above.

## SUMMARY

In summary, the core elements of the NERA protocol are as follows:

### 1. The NERA Blockchain & ERUs

The NERA Blockchain will be an immutable digital record powered by blockchain technology. It will be used to record and verify green initiatives and activities in a cost-effective, accountable manner, and to keep track of the Emission Reduction Units (“ERUs”) awarded to all participants. ERUs will become “Proof of Green” measurements which are recorded in the NERA Blockchain after undergoing a proper verification process.

### 2. NERA Tokens

NERA Tokens form the currency underpinning the NERA ecosystem, and may function as a direct avenue for participants to realise their benefits and incentives for active participation in the NERA Project. NERA Tokens can only be mined/obtained by converting ERUs.

### 3. Green Nodes

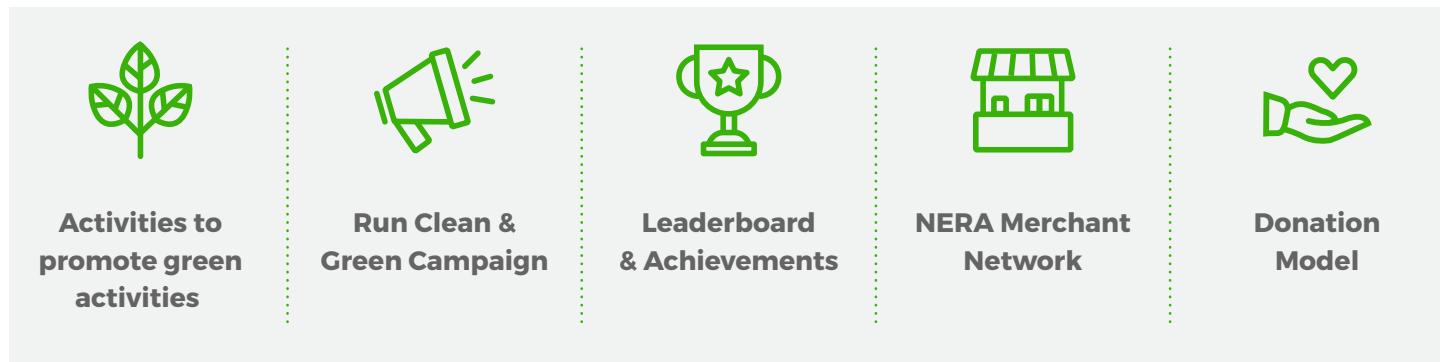
NERA Green Nodes will comprise of Green Merchants and Green Eco Cities that exhibit, host or carry out green or renewable energy-related projects, events, initiatives that support NERA network through the generation of ERU to facilitate the exchange between users/merchants generating ERU with users/merchants wanting to obtain ERU to be carbon neutral.

The vision for NERA Green Eco Cities is to challenge the current social norm that doing green cannot allow you to make a living out of it.

### 4. NERA Online

NERA Online will be the desktop application and mobile app for users to upload their “Proof of Green” documents and utilize their NERA tokens at selected merchants.

NERA will launch a mobile app that will enable and incentivize individuals to participate in green activities and to go green.



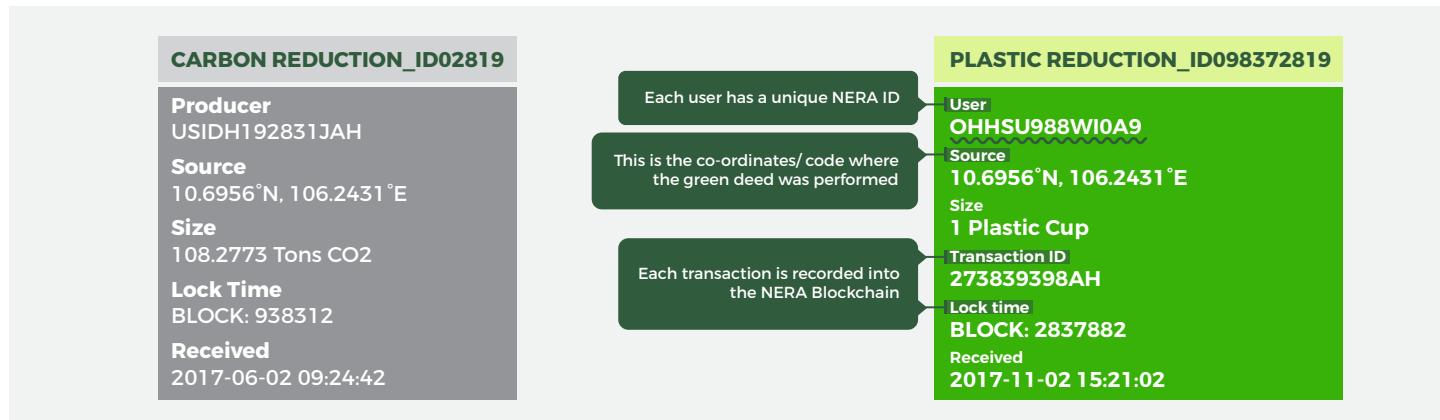
## Details About The NERA Protocol

### 1. The NERA blockchain-enabled solution

The NERA blockchain-enabled solution (“NERA blockchain”) enables a transparent and consensus-based tracking of emission reduction data, digitally signed on the Ethereum Blockchain, to produce an Emission Reduction Unit (ERU).

#### Capturing Green Initiatives

At the core of NERA blockchain are records of data and transactions, like a traditional ledger. This information can be records of CO<sub>2</sub> reduction, clean energy production, power-consumption savings, food-wastage reduction, plastic-usage reduction and even for individuals or groups running awareness campaigns. User IDs, geographic location, impact of green activity will be locked and time-stamped onto NERA blockchain.



## Emission Reduction Unit – a cost-effective, decentralised, secure and accountable carbon credit verification process

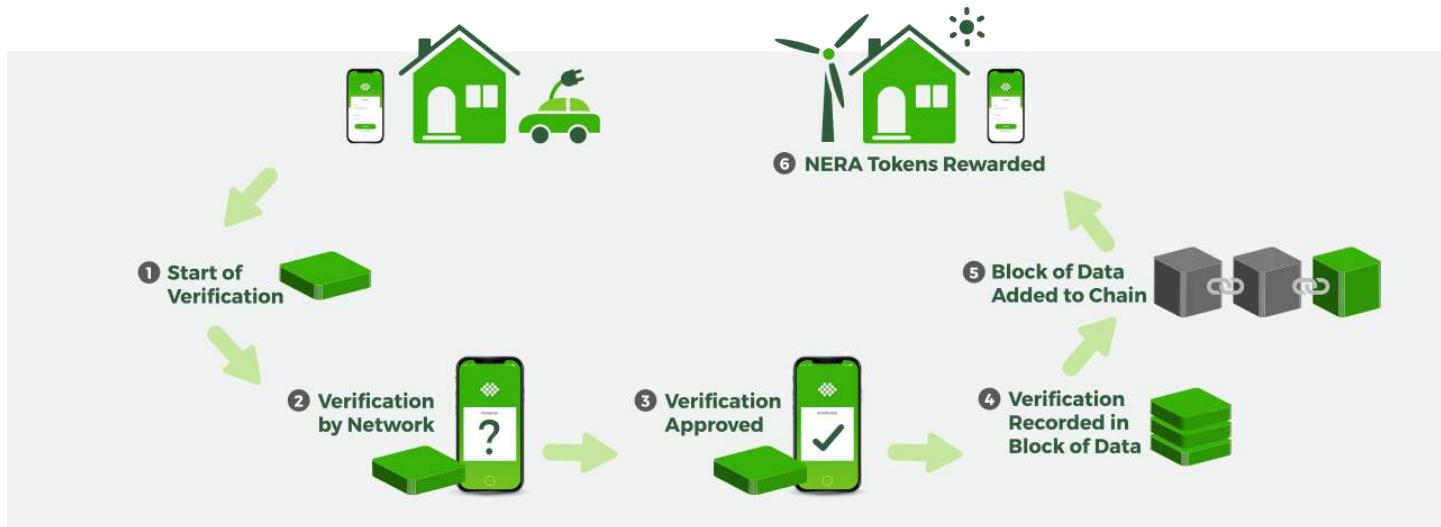
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Other than leveraging on blockchain technology to achieve transparency and accountability, the NERA blockchain also aims to reduce the need for expensive consultants to certify carbon emissions submissions, therefore making verification of green initiatives accessible to individuals and smaller businesses.

This patent-pending verification process determines whether a green initiative is sufficient to qualify for ERUs.

The baseline on cost saving is derived from the fact that NERA cuts out consultants and other intermediaries required to perform the verification process, which NERA blockchain solves. These consultant/intermediary fees cost a minimum of around \$30k USD and are thus prohibitively expensive for individuals who want to do green actions, such as small solar roof, or even saving a paper cup.

To verify a green action or initiative, NERA process involves pseudo-randomly selecting 3 verifiers from the community to ensure that the “Proof of Green” documents submitted are accurate and correct. The 3 verifier results must match in order for the “Proof of Green” to be accepted by the NERA blockchain, else another verifier would be pseudo randomly selected for verification until the results of the last 3 verifiers match in sequence. Beyond a certain number of mismatched results, the “Proof of Green” document would be flagged and pulled for administrative reconciliation.



- ERUs can be fully certified by Ramboll (<http://www.ramboll.com/>) on the Carbon Footprint calculation mechanism and a participating company. For example, if Starbucks wants to reduce the use of Paper Cup, this can be done by (a) consenting to the fact that timestamp is sufficient and (b) providing us brief details on their Paper Cup origins.

- Duly accredited green institutions can sign up as partner certification/verification authorities
- For direct data feeds (for example, solar panels), the verifying authority may be the organization in charge of ISO-14064 compliance. For social feeds (for example, when a plastic cup was recycled or saved at Starbucks), the verifying authority may be, for example, a company like Starbucks, which verifies that the transaction took place via transaction receipt number.

### Executing and recording ERUs

To make green actions quantifiable in our blockchain, as soon as the record and transaction is verified as stated above, it will go through the NERA algorithm which will award the user with a certain number of Emission Reduction Units (ERU) the activity user qualifies for. Depending on the activity and NERA's algorithm behind it, the ERU allocation may vary to balance the supply and demand. NERA's algorithm in awarding ERU is geared towards the promotion of activity, impact of activity, and the occurrence frequency of it. More weightage will be attributed to activities that are sponsored during the campaign period. Ultimately, the end goal for NERA is to create a rewarding ecosystem for everyone to participate in, no matter how small the actions are.



**ERU Algorithm Variables\*\* = (supply & demand) \* (promotion of activity, if any) \* (impact of activity on clean movement) \* (occurrence) \* (bonus or discount weightage)**

*\*\* These variables will be monitored and studied, and may be modified to improve and optimise green efforts and the performance of the NERA blockchain*

**0.423 ERU**

**45.172 ERU**

**2.64 ERU**

**156.867 ERU**

#### PLASTIC REDUCTION\_ID098372819

User OHHSU988WI0A9  
Source 10.6956°N, 106.2431°E  
Size 1 Plastic Cup  
Transaction ID 273839398AH  
Lock time BLOCK: 2837882  
Received 2017-11-02 15:21:02

#### CARBON REDUCTION\_ID02819

Producer USIDH192831JAH  
Source 10.6956°N, 106.2431°E  
Size 108.2772 Tons Co<sub>2</sub>  
Lock Time BLOCK: 938312  
Received 2017-11-02 15:21:02

#### WASTE REDUCTION\_ID292882179

User OISUHH81918UAH  
Source 1.3956°N, 103.8354°E  
Size 0.657 Tons of Waste  
Campaign ID HUAU818172  
Lock time BLOCK: 18337822  
Received 2017-11-02 15:21:02

#### CLEAN CAMPAIGN\_ID779

User YUSUA918172UAI  
Source 1.43046°N, 103.8354°E  
Size 2.427 Tons of Waste  
20,872 Audience Outreach  
Campaign ID II0A91555  
Lock time BLOCK: 221231323  
Received 2017-11-02 15:21:02

*This visual is for conceptual illustration purpose only.*

The NERA blockchain is designed to ensure information captured goes through cryptographic proof of transmission and acceptance with multiple digital signatories. The activity records and ERUs awarded are combined with other transactions into a block and time-stamped. Once the block is complete, it will also get its own time-stamp so that all information is sequential and transparent. The completed block is sent out across the NERA network, where it is appended to the chain where other participants may be simultaneously sending out their own blocks at the same time. Since all participants have a copy of the entire blockchain, any tampering will be detected when the hashes match up across all chains and all parties.

## 2. NERA Tokens

We aim to make NERA Tokens a globally accepted currency, accepted by businesses and merchants who would like to support the clean energy movement backed by NERA. This token will facilitate fund transfers, and be used to make online and offline purchases within the NERA ecosystem.

As we push for acceptance of the NERA Token as a global currency supporting the clean energy ecosystem, demand for NERA Token will be driven primarily by individuals, organizations, merchants and companies that want to support the NERA Project.

The NERA Token will be an ERC-20 standard token and there will be a finite number of 1,000,000,000 NERA Tokens.

Other than purchasing NERA Tokens, the only other way to obtain additional NERA Tokens will be by generating ERUs and converting ERUs into NERA Tokens.

### Converting ERUs to NERA tokens

The exchange of ERU to NERA Tokens will be enabled securely with smart contracts.

The value of ERU will be determined by observing the market value of Carbon Credits on:  
Clean Development Mechanism (CDM) program offered by United Nations Framework Convention on Climate Change (UNFCCC);  
Verified Carbon Standard (VCS) program; and  
International Renewable Energy Certificates (iREC) program.

For the purposes of the ICO, the average price of carbon credits based on the CDM, VCS and iREC programs

would be USD \$0.20. We anticipate that the NERA Tokens may be priced at USD \$0.12 per token, with a conversion rate of 1 ERU per/ 1.67 NERA.

The ERU/NERA Token pairing enables holders of carbon credit standards in the form of ERU to accelerate and simplify the process of realizing the value of ERU, even for the individual. Current processes based on CDM, VCS and iREC programs, have long lead times for holders of carbon credits, and are largely dependent on the assistance of marketing agents and consultants to realize its value.

In turn, the Nera Tokens will be tradeable and exchangeable for goods and services offered by Green Nodes, i.e. green merchants in the NERA ecosystem and the NERA green eco cities. As the number of Green Nodes grow, being the fuel within the NERA network, the use of NERA Tokens and implicitly, its demand would naturally increase.

Issuing pre-mined NERA Tokens in our token generation event allows the NERA Project to be directly supported by early-stage participants from all over the world. These participants will have access to NERA tokens at its creation.

### **3. Green Nodes**

One of the key continuing milestones for NERA is to help create and/or foster Green Nodes – in the form of merchants and green eco cities.

These participating entities would form a core network for all NERA initiatives. As an initial pilot, NERA would be rolled out across all Bamboo Vantage Solar infrastructure projects and city-states such as Vietnam Green City. Few others will follow, including:

- A project will be NeraWatt
- A project will be Vietnam Solar in cooperation with Bamboo Capital Group
- A project to tap into the Retail Merchant Networks
- A project in cooperation with state committee of Malaysia
- Onboarding crypto-mining companies who are piloting crypto-to-crypto emission offset schemes

#### [NERA Green Merchant Ecosystem Network](#)

Merchants can support the NERA ecosystem by accepting NERA Tokens in exchange for their goods or services. These goods or services can be part of the merchants' green programs. For example: A sporting

apparel company can decide to contribute \$1 million worth of Limited Edition green merchandises as part of its green campaign.

Traditionally, Merchants who want to run green initiatives within their business face an uphill battle as they deal with:

- Additional Cost for going Green. Marketing / Materials Cost
- Nonchalant Public Sentiments on going green as a marketing gimmick.
- Minimal impact on the actual environment

As a NERA Green Merchant, a comprehensive benefit system is created.

- As a Merchant, you reduce on all marketing cost as NERA would be your added partner in helping you help the environment and at the same time, earning from going green.
- Each and every customer that participates in the green initiative is immediately rewarded individually and also collectively acknowledged as a community - Making them aware of a wider Green movement.
- Having an actual impact on the environment as NERA is laser focused on getting more of the world to get on more sustainable energy means and ecological behaviours.

### NERA Green Eco Cities and Projects

There are increasing existing and new cities moving towards being Green and Ecological. Common traits of such cities include having cleaner energy sources and more sustainable waste generation and management systems. The NERA System becomes a natural fit to such cities. It is envisioned that these Green Eco cities will be powered by clean energy, and the NERA Tokens will be accepted as the currency of transaction, such as being used to pay utility bills and rents.

Instead of simply waiting for such cities to appear, NERA hopes to assist the development by supporting green energy projects. In fact, NERA is currently in advanced discussions to pilot a Green Eco city in the south of Vietnam, 30km away from the city centre of Ho Chi Minh City.

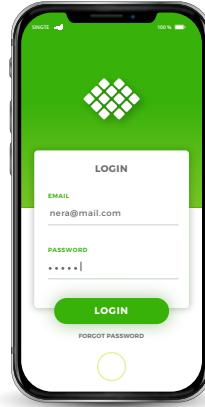
#### 4. NERA Online

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NERA will create a web and mobile interface for users to easily record green initiatives, upload their “Proof of Green” documents, earn ERUs, convert ERUs to NERA Tokens and utilize their NERA Tokens at selected merchants.



Users can log on to NERA Online and App  
to key in the record of green initiatives



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Further, it will enable the global NERA community to communicate, interact and transact with each other.

## NERA token use case

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**Leonard** is interested to do his part to save the world and wishes to participate in NERA's ecosystem. He decides to generate ERUs, which can be exchanged to NERA Tokens.

### Activities that generate ERU -socially responsible mining



Install rooftop solar panels in his property. Uses the energy generated to power his household appliances. Generates about 8kW of clean energy per month.



Choose to bring his own cups to his favorite Starbucks joint. He saves 3 cups a week, and that is 12 cups a month.



Decides to start his own mini campaign to reduce food waste. He collects about 100kg of end-day bread and donates it to Make A Wish Foundation.



Opt to convert to an Electric Car. Reduces 0.12 tons of CO<sub>2</sub> per month.

### Obtaining ERU

**Leonard** decide that he shall install rooftop solar in his home to power his mining units, as well as to bring his own cups to , wh he frequents formeetings. He logs his activities in NERA mobile app, verified by NERA consensus protocol.

Total ERU generated for the month: **3 ERUs**

*This visual is for conceptual illustration purpose only.*

# PRODUCT ROADMAP

The roadmap of NERA Blockchain Protocol will involve several phases, with a number of these phases running in parallel. The roadmap contains estimated timeframes and proposed activities. It remains subject to change.

## Phase 1: Defining boundary conditions for carbon footprinting and financial equivalency based on ISO-14064

NERA will first start with solar, carbon and plastic footprinting, followed by waste, paper, disposables and electronic waste. The scope will include:

- Determination of sources and type of materials;
- Current disposal or production practices;
- Annual scale/volume;
- Type of ERU results to be delivered; and
- Relevant international and recognized methodologies, protocols/guidelines and frameworks for carbon footprint calculations for each carbon footprint sources.

Est. delivery for solar and plastic – Done

Est. delivery for waste, paper, disposables – Q2 2018

Est. delivery for electronic waste – Q3 2018

## Phase 2: Conducting carbon footprinting

Preparation of estimates ERUs to be achieved using the boundary conditions, and broken into two types:

- Predictive: advance estimates based on projected annual scale/volume
- Actual: based on actual scenarios, calibrated to accuracy with more data input from users' input

Est. delivery for solar and plastic – Predictive (Done), Actual (Q2 2018)

Est. delivery for waste, paper, disposables – Q3 2018

Est. delivery for electronic waste – Q4 2018

## Phase 3: Mapping carbon footprinting onto Blockchain

Using calculation inputs for determining ERUs to be mapped onto NERA Blockchain

Est. delivery for solar and plastic – Q2 2018

Est. delivery for waste, paper, disposables – Q3 2018

Est. delivery for electronic waste – Q4 2018

#### Phase 4: NERA Online

Creating the web and mobile interface for NERA users to log ERUs and green activities, exchange ERUs with NERA Tokens, exchange ERUs with NERA titles/badges, and exchange NERA Tokens with goods and services provided through a network of green merchants.

Est. delivery for web interface - Q1 2018

Est. delivery for mobile interface - Q2 2018

#### Phase 5: NERA green cities/hub

To develop protocols and framework for an economy run entirely with NERA Tokens.

Est. delivery of solar farm - 40MW to be confirmed by Q2 2018

Est. delivery of pilot green city concept - Q4 2018

Est. delivery of green economy protocol - Q1 2019

# Team/Advisors

To successfully execute the vision of New Era Energy, we assembled a well-rounded combination of energy, blockchain, crowdfunding, market trading, financing, regulatory and local experts.

## Executive Team



**Andy Tan, CEO**

- 8 Years in the Energy markets with 2 years in Renewables as Project Director of Bamboo Capital Group
- 5 Years in Cloud Implementation and CRM Software applications
- Focuses on Regional Business Development to promote strategic investments and implementation of NERA



**Leonard Ng, CTO**

- 5 Years in technology implementation and project management
- Focuses on optimizing technological stack and to deliver an optimum blockchain platform on network interactivity



**Sharon Lourdes Paul, COO**

- Over 4 Years of experience in launching digital ventures and led community marketing for successful ICO projects
- Co-founder of Cipher Ventures, a digital asset advisory and venture studio
- Focuses on the operations and marketing efforts of NERA



**Alex Pham, CFO**

- Deputy General Director of Bamboo Capital Group
- Over 15 Years of experience in Finance and Operations
- Focuses on promoting strong and flexible strategic thinking to enhance profitability and create solutions



### **Matthias Gelber, Environmental Chief Officer (ECO)**

- Over 20 Years promoting environmental awareness and actions, voted the Greenest Man on Earth in 2008
- Co-founder of Maleki GmbH, specialising in high performance, low carbon footprint materials
- Focuses on promoting and campaigning for NERA

## **Advisors**



### **Nguyen Ho Nam, Chairman and Founder of Bamboo Capital Group**

- Pioneer in investment banking within Indochina and a leader in championing the renewable energy developments within Vietnam
- Took BCG from start up in 2011, to IPO in 2014 and to listed as top 100 Vietnam company in the VinalIndex in 2017



### **Andy Tian, Co-founder & Group CEO of Asia Innovation Group (AIG) & GIFT0**

- Successful serial entrepreneur (AIG, his fourth startup)
- Previously GM of Zynga China and while at Google, introduced Android to China.
- MIT BS & MA degrees in computer science.



### **Charles Thach, Chief Crypto Officer of GIFT0**

- Seasoned banker (15yrs+). AML/KYC expert. Investor in blockchain companies.
- Co-authored US patent pending technology to build a massively scalable and transactional cryptocurrency wallet.
- HEC Paris MBA and Georgetown BS degrees



### **Jack Ser, Co-founder & CEO of FundYourselfNow**

- Founder and CEO of FundYourselfNow, who has successfully listed over 12 ICOs
- An astute investor with over 8 years of experience in Fintech, Real Estate, Education and digital assets
- Singapore Business Advisor & Consultant Council 2015 Management Consultant of the Year award
- Advises NERA on ICO regulations and marketing strategies

**Kenneth Tan, Co-founder & COO of FundYourselfNow**

- Kenneth is the co-founder and COO of FundYourselfNow
- Has over 10 years of experience in software development for MNCs and government agencies
- Advices NERA on ERC20 and the optimization of NERA Blockchain

**Michael Luong, Co-founder and Chairman of Electric Energy Innovations Group (EEIG) LLC Vietnam**

- Has over 25 years of experience in product and program management; managing large projects greater than \$500M USD throughout Asia, USA, and Europe, with more than 400 engineers and professionals
- Co-Founder of a “Top 500” solar company in the world (ranked by Solar Power World Magazine)

**Loh Zheng Rong, ICO Advisory**

- Over 3 years of experience in Blockchain Development, AI, Machine Learning and Payment processing
- Involved in successful ICOs such as Gifto and Quantstamp

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There are risks involved in the technologies relating to the Ethereum blockchain, NERA Tokens, the Initial Coin Offering, and the NERA Blockchain Protocol, such as unforeseen bugs, security issues or disruptions. By way of the above and other factors not within our control, the entire sum used to purchase the NERA Tokens may be lost.

Despite our best efforts, NERA may not be able to execute or implement its goals, business strategies and plans.

There may be changes in political, social, economic and stock or cryptocurrency market conditions and/or that there is no or little acceptance/adoption of the NERA Blockchain Protocol and/or NERA Tokens, such that the NERA Blockchain Protocol and/or NERA Tokens become no longer commercially viable.

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- <http://www.ngocentre.org.vn/vi/news/vietnam-may-earn-100m-selling-certified-emission-reductions-annually>
- <https://www.cbd.int/financial/2017docs/carbonmarket2017.pdf>
- <https://www.greenchipstocks.com/report/carbon-trading-the-worlds-next-biggest-market/107>
- [http://ec.europa.eu/clima/policies/ets/index\\_en.htm](http://ec.europa.eu/clima/policies/ets/index_en.htm)
- <http://cdm.unfccc.int/>
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