



EVC COIN

# EVC

# WHITEPAPER

(English)

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## Chapter 1 | Introduction

ECC Value has a safe, state-of-the-art blockchain platform that connects the international carbon emissions trading exchanges with environmental companies. ECC Value exchanges the value of carbon credits with the international eco-friendly energy market with safe transactions, minimal fees, and quick transfer times. Our goal is to save the Earth as a hub of the international P2P exchanges, creating the value of thinking about the future of humanity. Based on our philosophy to revive nature and the environment, we present new standards for a connected blockchain based on real value assets.

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## Chapter 2 | Our Vision

### 2.1 Purpose

Our goal is to become an internet P2P exchange hub platform that exchanges true value in the hopes of benefiting the Earth. We will set a new standard for blockchain platforms based on real value assets with nature and the Earth at the forefront.

### 2.2 Mission

Go Green with your blockchain

Beginning with a focus and attention to the environment, ECC Value will bring innovative ideas with a strong platform linked with eco companies, organizations and individuals. Do more and feel better about your contribution to EVC for your wallet, and the environment. The creation of Eco Value Coin(EVC) and a cutting edge blockchain platform will integrate with a vast array of Eco industries. ECC value will streamline transactions with minimal fees and quick transfer times, enabling the user full control over a secure, global payment process, and also act as a link between international Eco energy and CO2 emission rights.

## 2.3 Value

There are other values that represent the ECC Value.

Transparency :

ECC Value is transparent. Based on blockchain technology, decentralization is available and thanks to the blockchain technology, the whole process is transparent. You might worry about the personal data spill, but as mentioned before we are free from centralization, we do not collect personal data except the interest of the token holders of EVC tokens.

Innovation :

It is our goal to figure out how inefficient the carbon-trade platforms are; which is currently only available between companies. Our goal is to extend the CERs trading platform only possible between companies to P2P platform where individuals can also actively participate in CERs trading.

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## Chapter 3 | Market

### 3.1 Climate Change

What is climate change?

General definition

It means climatic variations across nature, including man-made factors such as greenhouse effects from human activity and effects from natural factors such as volcanic eruptions and increase in stratosphere aerosol.

Definition of IPCC (Intergovernmental Panel on climate change)

For prolonged periods of time (decades or more), it includes the fluctuations in the average state of the climate or its fluctuations that are statistically significant under its variation.

### UNFCCC (United Nations Framework Convention on Climate Change)

Definition Changes in climate caused by direct or indirect human activities that transform the formation of the entire Earth's atmosphere, in addition to the observed natural climate variability over a period of time.

The Climate Change Convention is defined as "Climate Changes by Human Behavior" only. The UNFCCC distinguishes between climate changes caused by human activities that change the composition of the atmosphere and climate variability caused by natural causes.

### IPCC (Intergovernmental Panel on Climate Change)

The United Nations' Office for the purpose of assessing global risks associated with climate change and establishing international measures with the United Nations Meteorological Organization (WMO). The efforts to solve the problem were recognized and awarded the Nobel Peace Prize in 2007.

### UNFCCC Framework Convention on Climate Change (UNFCCC)

The climate change agreement was signed in June 1992 in Rio de Janeiro, Brazil, and aims to limit the release of carbon dioxide and other greenhouse gases and prevent global warming.

## Natural factors

### Climate system interactions

The main components of a climate system are interaction with the atmosphere, hydrosphere, cryosphere, geosphere, biosphere, and so on, causing changes in the climate.

### Solar Energy Changes

It causes changes in the amount of sun radiation energy or changes in climate as the number of sunspots changes. For instance, in Europe and North America, the temperature was low (high) during the periods of high (low) sunspots.

### Track Change

Changes in Earth's orbit cause changes in the amount of solar radiation created by the rate of rotation of the Earth's orbit, which changes about 100,000 years. In addition, the slope of the Earth's magnetic axis changes between 22.1° and 24.5° every 41,000 years, causing changes in the amount of sunlight at each latitude. The movement of the Earth's magnetic axis precession also causes changes in the solar-terrestrial perihelion distance.

(Precession- caused by gravity from the other planets in the solar system)

### Solar Energy Changes Due to Volcanic Explosions

Volcanic eruptions are able to rise into the stratosphere, stay in the stratosphere for months or years, absorb sunlight, and lower the temperature in the stratosphere as it rises but lowers the temperature in the tropospheric.

A man-made factor

### Greenhouse gases

The amount of greenhouse gas emissions created by human activity has increased since the pre-industrial era, and increased by 70 percent between 1970 and 2004. The third largest group of countries (December 1997) designated carbon dioxide, methane, nitrous oxide, hydrogen dioxide, perchloride, and sulfur dioxide as the six largest greenhouse gases. Greenhouse gases serve as partial blankets for the long wave radiation from the earth's surface. The blanketing effect is called the natural greenhouse effect.

Human activity enhances this blanketing effect by releasing greenhouse gases. For instance, the amount of carbon dioxide in the atmosphere increased by about 35 percent during the industrial era, mostly due to human activity, fossil fuel combustion. These greenhouse gases stay in the atmosphere for a long time or short time, changing the chemical composition of the Earth's atmosphere, and causing climate change. Aerosol effects: Aerosol is a gas that rich fine particle in which particles of liquid or solid are evenly distributed in small form within a gas, mainly air. Their size, concentration, and chemical composition vary greatly. Some aerosol is emitted directly into the atmosphere, while others are produced from the compounds emitted. Fossil-burning fossil fuels and biomass burning have increased the aerosol that contains sulfur compounds, organic goods, and soot, which like greenhouse gases, has influenced the amount of human activity that has changed the aerosol in the atmosphere. The aerosol produced by human activity only remains in the atmosphere for a few days, so it tends to be concentrated around source areas such as industrial areas.

Changes in the Land Cover and the Effects of Forest Damage: Changes in land-use caused by excess soil, firewood or charcoal extraction, and forest damage caused by road construction, logging, agricultural expansion, urbanization, and industrialization result in the effects of the surface area. Large scale forest removals can seriously affect the water circulation, negatively affecting the growth of forests and agriculture, and can also affect the greenhouse effect by releasing carbon dioxide into the air by using forest fires and others.

### Greenhouse effect

Greenhouse gases such as carbon dioxide act to heat the surface of the Earth, as they absorb the long wavelengths of radiation that are about to exit the Earth, while passing from the Sun to the short wavelengths. It works to increase the temperature of the Earth's atmosphere, which is the greenhouse effect. However, the greenhouse effect is not only negatively affected. If there is no natural greenhouse effect, the average temperature of the Earth's surface is lower than the freezing point of water,

so there is less possibility of life on Earth because of the natural greenhouse effect. However, human activities, mostly fossil fuel burning and deforestation, have greatly enhanced the natural greenhouse effect, causing global warming.

The two most common ingredients in the atmosphere, nitrogen, have very little greenhouse effect. Greenhouse effects come from molecules that are more complex and scarce than these. The most important greenhouse gas is water vapor, and the second one is carbon dioxide. Some other gases, such as methane and ozone, also contribute to the greenhouse effect. In particular, the more greenhouse gases, such as carbon dioxide, are added to the atmosphere, the stronger the greenhouse effect, and thus the greater the overall warming of the global climate. The amount of warming depended on several feedback mechanisms. For instance, as the atmosphere warms due to the increase in greenhouse gas concentrations, the water vapor concentration in the atmosphere increases, which in turn makes the greenhouse effect worse. It also causes more warming and this is how the cycle repeats.

## 3.2 Certified Emissions Reduction(CER)

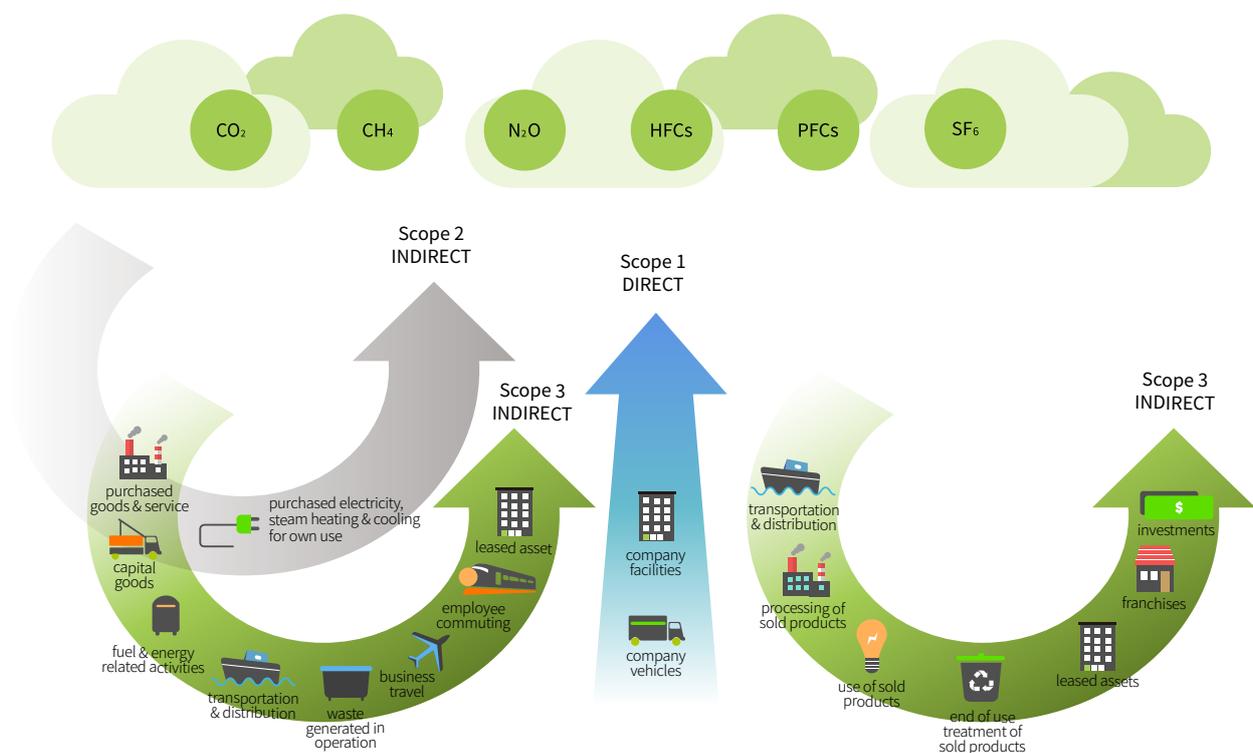
### — 3.2.1 What is CER

Carbon credits represent the right to discharge six greenhouse gases, including carbon dioxide (CO<sub>2</sub>), nitrous oxide (N<sub>2</sub>O), and methane (CH<sub>4</sub>), all of which contribute to global warming. It is called carbon credits since the proportion of carbon emissions from greenhouse gases is the largest at 80%. The international carbon market, which has reached over \$ 100 billion in 2008, is already actively traded on several exchanges around the world. Because global warming is a crisis that cannot be avoided, we are making plans to grasp the growth potential of this carbon market all over the world and to take the initiative in this market.

Carbon credits were conceived as a strategy in facilitating mitigation of Greenhouse gases, which made it become a key tool in battling climate control.

Carbon credits have worked as ‘compensation system’ permitting balance between new Greenhouse gases emissions and quantities of mitigations which were all introduced initially as mechanisms within Kyoto Protocol. Actors who needs to mitigate their emissions can offset their duties by buying mitigations from other actors as a form of certified carbon credits. This mechanism is recognized with carbon tax which makes it a cost-effective mitigation strategy that can be adopted worldwide. Carbon credits that are generated for all emission reductions must be verifiable and real. To have direct impact on Greenhouse gases emissions, any carbon credit generated has to correspond to mitigation that already occurred.

There are many types of carbon credits that exist. Certain carbon credits are addressed to markets where actors voluntarily offset their Greenhouse gases mitigations for environmental impact. It is called the Voluntary Emissions reductions. Retiring and removing verified carbon credit from circulation is the simplest way to reduce carbon emissions. Being a large corporation, a privately-owned business or a small store, buying carbon offset is the most direct way to shrink your carbon footprint.



### — 3.2.2 CER Emission Trading System

#### Why do you trade carbon credits?

Countries and businesses have an obligation to reduce greenhouse gas emissions. The national greenhouse gas reduction obligation is transferred to the greenhouse gas emission industry and to companies. The Kyoto Mechanism provides opportunities for companies to buy greenhouse gas emissions and fulfill their obligations, rather than to reduce greenhouse gas emissions at a high cost. Companies with a lower reduction cost than market price can benefit those companies by selling excess emission credits, which are less than mandatory emissions reductions, to companies with higher reduction costs.

#### Characteristics of Emissions Trading

The emission trading system is generally operated on the basis of the emission trading principle, and if the government sets the total emission allowance, the target company will be entitled to the emission allowance to be discharged only within the specified emission allowance. In addition to being allocated by the government, the emission rights can be exchanged among the target companies and this process is called emission total trading (cap and trade). 17 countries are implementing emissions trading system. Countries that occupy 40% of the global economy are looking forward to developing the carbon credits market and are trying to support institutional support and cultivate human resources.

#### Value of carbon

All economic activities generate carbon. Therefore, each activity needs to know how much carbon is emitted and how to reduce it. Carbon reduction should be thought of in connection with the securing of emission rights. Not securing the emission rights is like throwing money away from carbon reduction that does not secure carbon credits.

How much CO<sub>2</sub> would you like to remove?

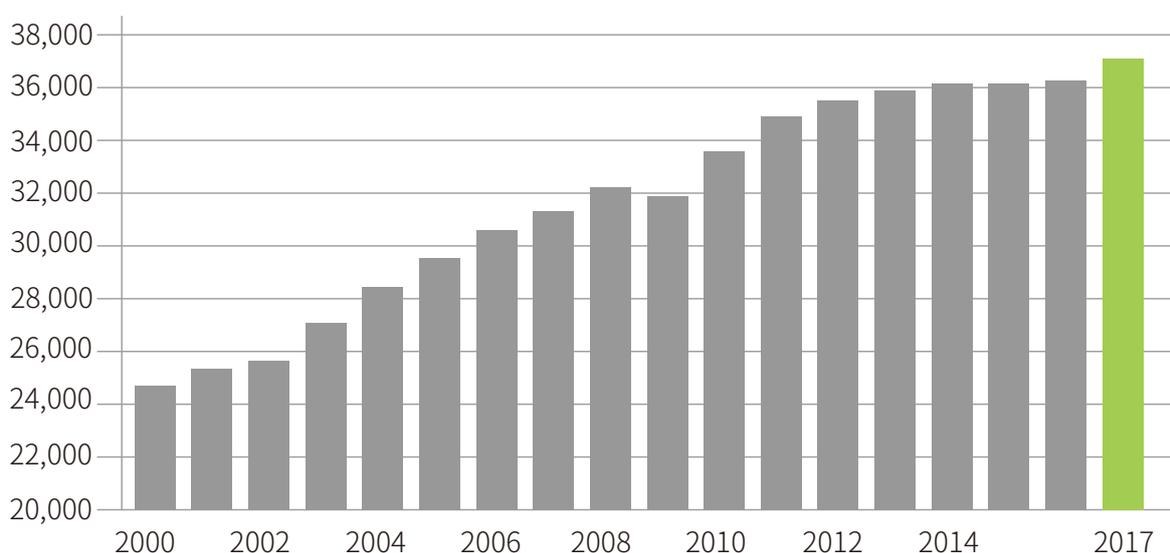
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	1 London-New York flight	=	<b>0.9</b> Tonnes CO <sub>2</sub>
	Household appliances (average)	=	<b>1.6</b> Tonnes CO <sub>2</sub>
	9000 car miles (average)	=	<b>3.0</b> Tonnes CO <sub>2</sub>
	Household heating (average)	=	<b>4.5</b> Tonnes CO <sub>2</sub>

Carbon credits internalize the unseencosts of everyday choices and allow a sustainable market place to arise by having a value on the ecosystems that support our planet. Protecting the threatened forests is the most immediate climate change solution at the price of the lowest cost. By taking more than 600 million cars off the road is equivalent to avoiding the destruction of forests. By doing so, it also brings many other benefits to the creatures of the forests, people and businesses or companies that rely heavily on the services provided by forests.

## Global CO<sub>2</sub> emissions, 2000 to 2017

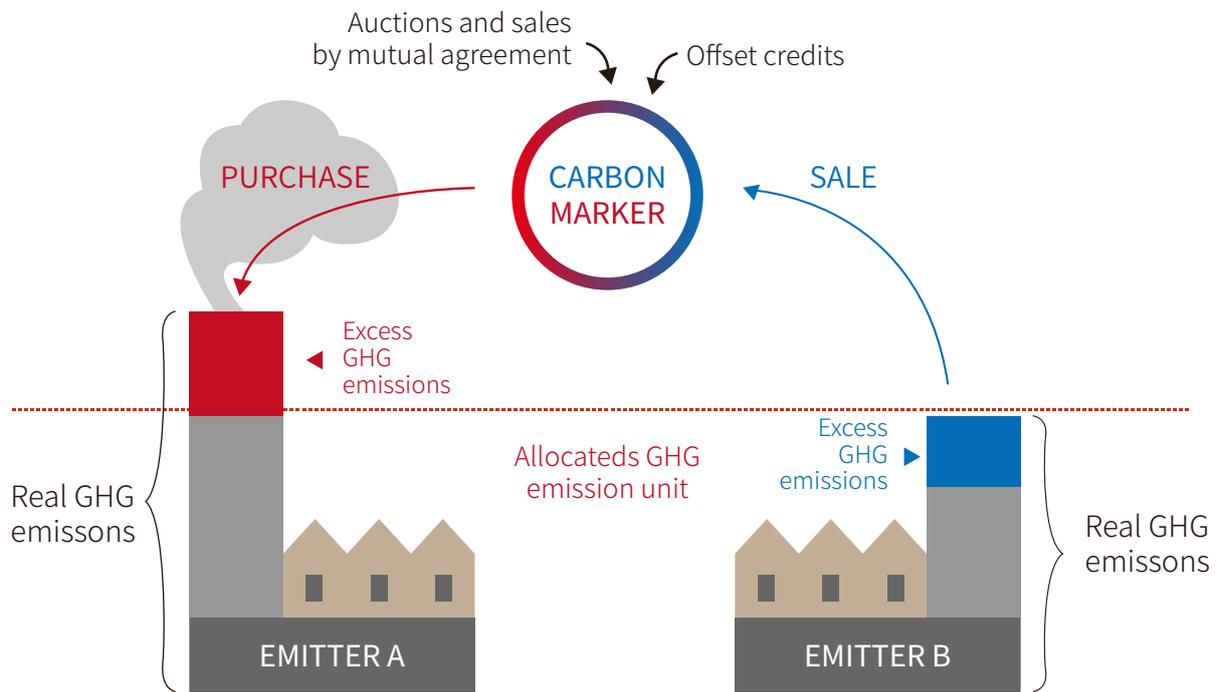
In million tonnes per year



### — 3.2.3 CER Market

#### **Certified emission reduction market**

The carbon trading market is so diverse that it is composed of various forms such as domestic companies and domestic markets as well. The carbon market is determined by whether it is a market for the fulfillment of Kyoto obligations or a voluntary motive, whether it is an emission trading market issued by the Kyoto mechanism, whether it is a permissible emission allowance or business emission credits, is different depending on whether it is a designated exchange or an over-the-counter market.



It is a market that deals with the right to emit carbon dioxide, nitrogen, and sulfur dioxide, the right to emit greenhouse gases. The CER market is formed by norms such as the Kyoto Protocol. It is expected that the US will participate in the post- Kyoto protocol system, and the market's scale will grow tremendously. The CER market is represented by 'allowance-based' and 'Project-based market'. 'Assign- based market' is a market where people trade deficit and surplus of emissions compared to emission allowances. Whereas 'Project-based market' is a market for trading the acquired credits according to the achievements of the GHG(Green House Gases) reduction project.

### Carbon emission trading

Currently, the emission trading system allocates a certain amount of emission rights to companies that emit large amounts of greenhouse gases, makes them achieve their obligation to reduce GHG emissions through the market. Companies can buy and sell carbon dioxide emission rights depending on the difference between the amount of greenhouse gas emission and the amount of actual emission. The world's greenhouse gas emission trading market has been expanding since the European Union first opened it in 2005. In 39 countries, a market worth 40 trillion won has been created, and if China,

the world's biggest carbon exporter, opens this year, it is expected to grow rapidly. The World Bank predicts that the global emissions market will reach 40 trillion won (3.5 trillion dollars) in 2020, surpassing the oil market.

The world emissions market is led by the European Union. Except 28 EU member states, the EU is expanding into non-member states such as Norway, Iceland and Liechtenstein.

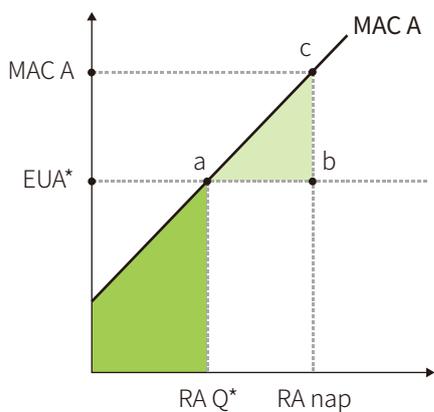
The United States, Japan, and Canada run the local market, not the entire country, but a large number of companies. The United States opened its first nine markets in 2009 in New York and Massachusetts, also opened one in California in 2012.

The U.S. market, which was expected to gather momentum as Obama ratifying Paris Agreement, halted after the launch of Trump government showing lukewarm attitude and placing growth before environment. Japan only has three markets in Tokyo, Kyoto and Saitama Prefecture.

China will open emission markets nationwide. Since 2013, it has test-operated the emissions market in seven areas; Beijing, Shanghai and Chongqing, etc. China, which accounts for 20 percent of the world`s greenhouse gas emissions, is expected to emerge as the world`s largest market, outstripping the EU. Brazil, Chile, Mexico, Russia, Taiwan, Thailand, Turkey and Vietnam are also pushing to open their markets.

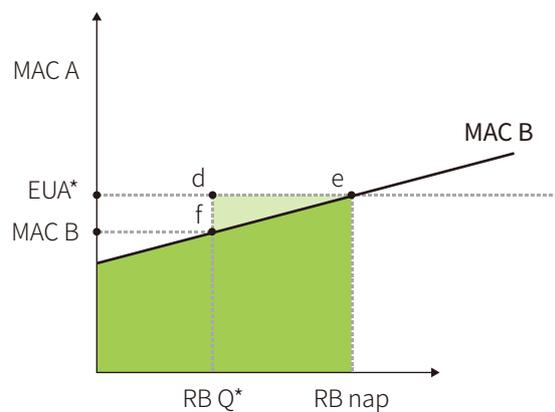
The carbon-trade market has grown rapidly thanks to the efficiency of the cap- and-trade system. It makes it more beneficial for companies that are good at selling emission rights and less capable of buying emission rights.

At this point, it is the Marginal Reduction Cost (MAC). The marginal costs are the operating costs and installation costs required to reduce the cost of reducing one ton of greenhouse gases. If power is cut to reduce greenhouse gas emissions, it is also an opportunity cost for losses at this time. Simply put, the investment costs of reducing technologies can be divided into those for reducing greenhouse gas emissions to get marginal costs.



R (Emissions Reduced in Units) →

$\Delta abc$  = Gain from Trade



R (Emissions Reduced in Units) →

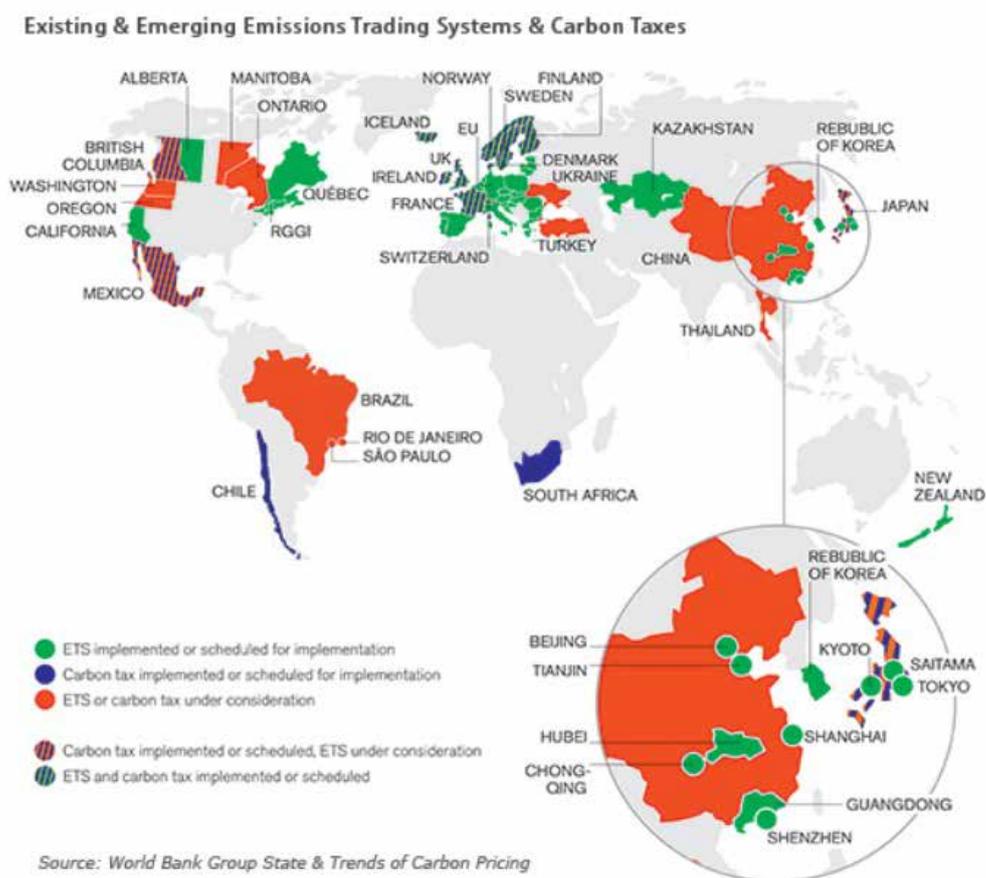
$\Delta def$  = Gain from Trade

■ The Process of Determining the Price of Emissions Based on the Differences in the Limit Reduction Costs

These are the marginal cost (MAC) curves for countries A and B. The slope of the limit reduction cost curve in countries is higher than that of national treasure B. That means it will cost a lot to reduce carbon emissions. Countries B are assigned the cut amount of  $RB_{nap}$ , and the market price ( $EUA^*$ ) of carbon credits is traded higher than the marginal cost ( $MAC_B$ ) of countries.

In this case, countries B have a comparative advantage over the price of the carbon market since they have a low marginal cost. As a result, more cuts ( $RB_{Q^*}$ ) can be made than the quota. In other words, it is likely to increase the reduction to the point where carbon market prices ( $EUA^*$ ) and  $MAC_B$  are equal. For this over-reduced portion, Korea exports it to countries with relatively higher costs to reduce the limit. Accordingly, the carbon-emitting transfer can be carried out until  $MAC_A = EUA^* = MAC_B$ . These marginal costs are an important criterion in determining the price of carbon credits.

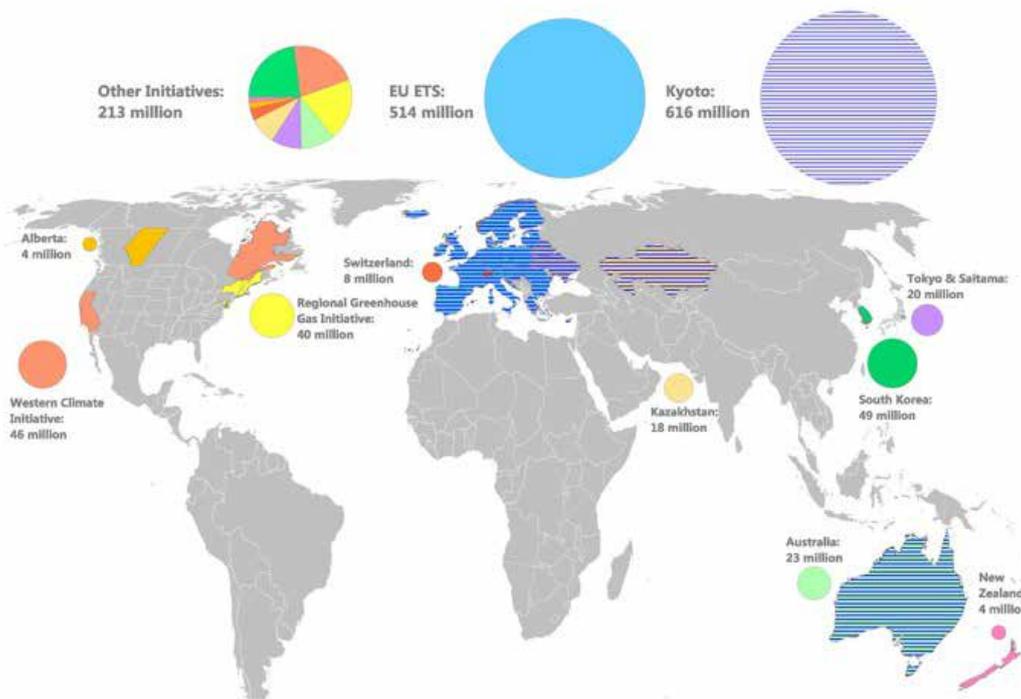
Consumers demand more and better products and services. Our platform is built to support those consumers make conscious choices by paying a price on carbon and linking it to consumer products. These knowledges will allow consumers to be lively participants in the battle against climate change.



### Market size

Starting 2017, 42 national and 25 subnational jurisdictions are putting a price on carbon. These jurisdictions are responsible for more than 22% of global emission. Over the past 5 years in 2017, the number of carbon pricing initiatives implemented or planned for implementation has almost doubled reaching 47. Overall, these movements will include almost half of global carbon dioxide emissions.

We can state that China has a goal of reducing emissions intensity by 40~45% until 2020 while launching national ETS system. Also, Colombia has covered around 24% of the country's Greenhouse gas emissions by implementing a carbon tax on all liquid and gaseous fuels used for combustion.



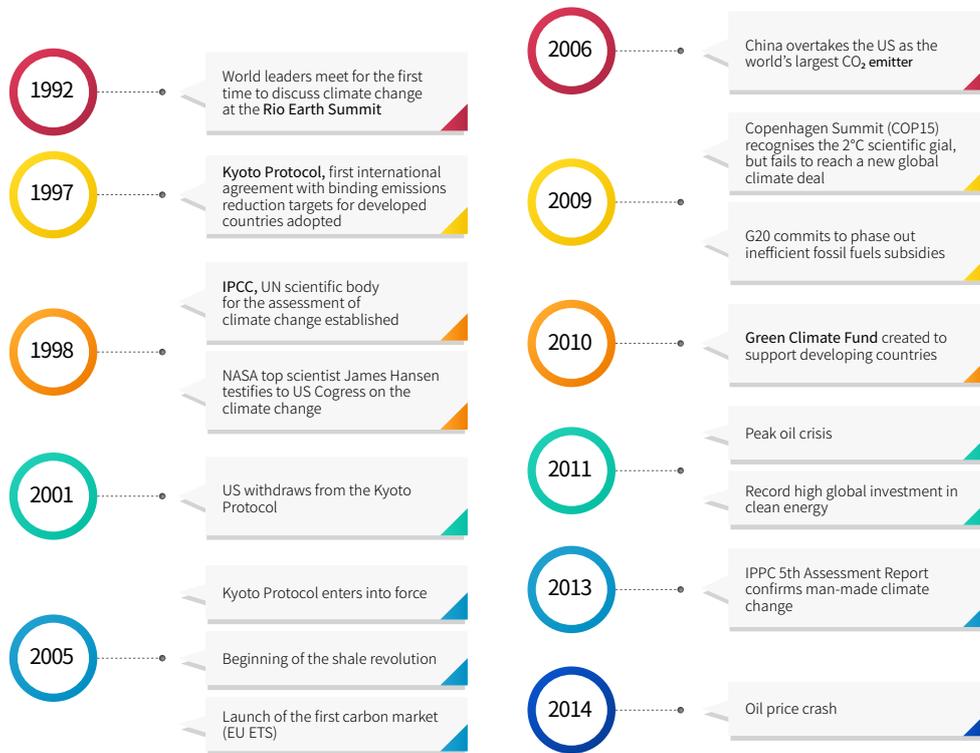
출처: Parliament of Australia

### Market Potential

According to a report published by a commission of economists and scientists, a price of about \$40 a ton along with other policies that encourage emission cuts will achieve targets in the 2015 climate deal agreed in Paris. Almost 200 countries will try to limit the global temperature increase below 2 degrees Celsius, said under the Paris agreement. Around 103 trillion USD of cumulative investment between 2016 to 2030 is needed to mitigate climate change, the organization for Economic Co-operation and Development said. This means the potential for large profits for those involved in this industry. 164 countries have submitted their national plans to battle climate change since the Paris Agreement adopted in December of 2015, also known as Nationally Determined Contributions (NDC).

### 3.2.4 Paris Agreement

#### ■ ON THE ROAD TO PARIS 2015 AND BEYOND



In November and December 2015, the 21st Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC COP21) took place in Paris. UNFCCC is an international environmental agreement on climate change, of which there are 195 States Parties.

The UN Intergovernmental Panel on Climate Change (IPCC) has warned the consequences of failing to limit global temperature rises to at least 2 degrees Celsius (above pre-industrial times), highlighting that the impacts would pose a threat to humanity and could lead to irreversible climate change.

The meeting in Paris was hailed as a make-or-break opportunity to secure an international agreement on approaches to tackling climate change, a commitment to a longer-term goal of near zero net emissions in the second half of the century and supporting a transition to a clean economy and low carbon society.

## **The key points of the Paris agreement**

The agreement is due to come into force in 2020.

NDC include programs that aim to support, renewable energy, low carbon urban development, energy efficiency, sustainable forest management industrial efficiency, transport and climate related technological development. NDC confirmed countries intentions to participate in carbon markets, carbon credits exchange and carbon mechanisms at international, regional and national level.

The notable global agreement on climate change adopted in Paris assisted with opening nearly \$23 trillion in opportunities for climate-smart investment in markets between now and 2030, said in the report launched by an International Finance Corporation (World Bank Group).

Climate protection is a long and challenging journey for governments, businesses and citizens. Carbon pricing offers economic advantages to countries that utilize them well. The advantages of the two main pricing choices are simple. Carbon trading programs offer better environmental certainty than carbon taxes, although carbon taxes offer higher cost certainty. A hybrid system offers both upper and lower price bounds for permit auctions to provide more cost certainty while allowing flexibility to trade. The context for carbon trading and taxes will vary by jurisdiction over time. Some people may start with a tax approach but at the end find a linked trading system to be more attractive in the future, as the context changes and stages of reduction become more challenging. We all hope to achieve our climate goals with economic efficiency, for our better future.

The key points of the Paris agreement ..... The agreement is due to come into force in 2020.

### 1 Mitigation: reducing emissions

- A long-term goal of keeping the increase in global average temperature to well below 2°C above pre-industrial levels;
- To aim to limit the increase to 1.5°C, since this would significantly reduce risks and the impacts of climate change;
- On the need for global emissions to peak as soon as possible, recognizing that this will take longer for developing countries;
- To undertake rapid reductions thereafter in accordance with the best available science.

Before and during the Paris conference, countries submitted comprehensive national climate action plans (NDCs). These are not yet enough to keep global warming below 2°C, but the agreement traces the way to achieving this target.

### 2 Transparency and global stock take

- Come together every 5 years to set more ambitious targets as required by science;
- Report to each other and the public on how well they are doing to implement their targets;
- Track progress towards the long-term goal through a robust transparency and accountability system.

### 3 Adaptation

- Strengthen societies' ability to deal with the impacts of climate change
- Provide continued and enhanced international support for adaptation to developing countries.

### 4 Loss and damage

- Recognizes the importance of averting, minimizing and addressing loss and damage associated with the adverse effects of climate change;
- Acknowledges the need to cooperate and enhance the understanding, action and support in different areas such as early warning systems, emergency preparedness and risk insurance.

## 5 Support

- The EU and other developed countries will continue to support climate action to reduce emissions and build resilience to climate change impacts in developing countries.
- Other countries are encouraged to provide or continue to provide such support voluntarily.
- Developed countries intend to continue their existing collective goal to mobilize USD 100 billion per year until 2025 when a new collective goal will be set.

### KEY CLIMATE CHANGE MITIGATION ACTION

- Increasing energy efficiency in Industry, buildings and transport
- Increasing investment in renewables
- Reducing the use of the least-efficient coal-fired power plants
- Phasing out fossil fuel subsidies
- Putting a price on carbon
- Forest conservation and management

### GLOBAL ENERGY MIX CONSISTENT WITH 2°C GOAL

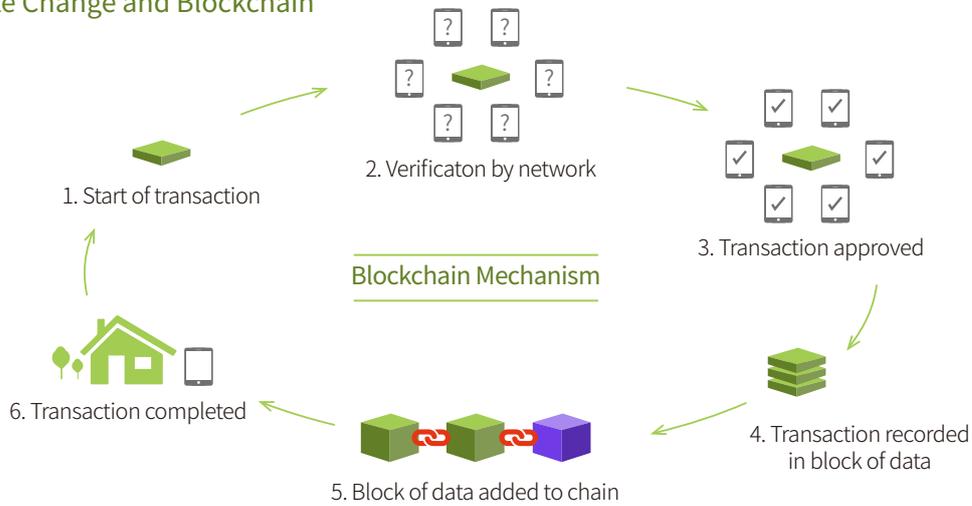
Energy	2013		2040
OIL	31.1%	●-----	21.6%
COAL	29%	●-----	15.9%
GAS	21.4%	●-----	22.2%
RENEWABLES	13.7%	●-----	29.6%
NUCLEAR	4.8%	●-----	10.7%

■ UP  
■ DOWN

### 3.3 What Is a Blockchain?

A Blockchain is a distributed database that is continuously updated and verified by its users. Each added block of data is “chained” and becomes part of a growing list of records, under the surveillance of network members. This technology enables the transfer of assets and the recording of transactions through a secure database. It is based on a mutual network, which also allows for high-level trust among users and better monitoring over the stored data.

## Climate Change and Blockchain



Blockchain technology can be used to develop peer-to-peer trade of clean energy for certified and facilitated transactions among consumers.

As countries, regions, cities and businesses work to rapidly implement the “Paris Climate Change Agreement”, they need to make use of all innovative and cutting-edge technologies available. Blockchain technology could contribute to greater stakeholder involvement, amazing transparency and engagement. It could bring trust and further innovative solutions in the fight against climate change, leading to enhance climate actions.

## Blockchain Technology for Climate Action

TARGET	13-1	TARGET	13-2	TARGET	13-3
Strengthen resilience and adaptive capacity to climate related disaster	Integrate climate change measures into policies and planning	Build knowledge and capacity to meet climate change			

For climate action, Blockchain technology could be used in the following specific ways:

### 1 Improved carbon emission trading

Blockchain could be used to improve the system of carbon asset transactions. For example, IBM and Energy Blockchain Lab are currently working together to develop a Blockchain platform for trading carbon assets in China. Recording carbon assets on a public Blockchain would also guarantee transparency and ensure that transactions are valid and settled automatically.

### 2 Facilitated clean energy trading

The technology could also allow for the development of platforms for peer-to-peer renewable energy trade. Consumers would be able to buy, sell or exchange renewable energy with each other, using tokens or tradable digital assets representing a certain quantity of energy production.

### 3 Enhanced climate finance flows

Blockchain technology could help develop crowdfunding and peer-to-peer financial transactions in support of climate action, while ensuring that financing is allocated to projects in a transparent way.

### 4 Better tracking and reporting of greenhouse gas (GHG) emissions reduction and avoidance of double counting

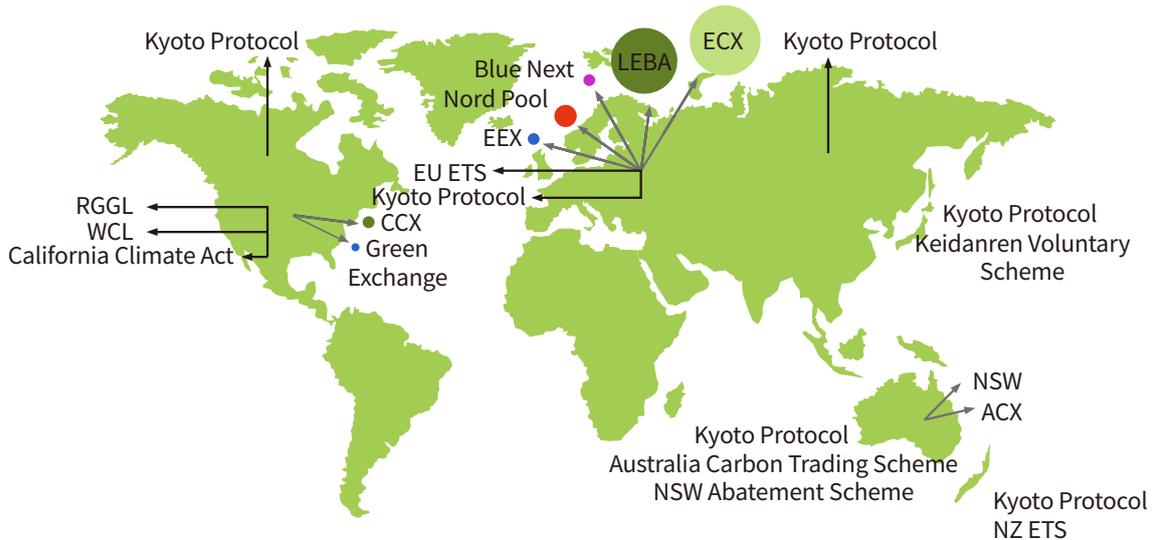
The technology could provide more transparency regarding GHG emissions and make it easier to track and report emission reductions, thereby addressing possible double counting issues. It could serve as a tool to monitor the progress made in implementing the Nationally Determined Contributions, or “NDCs” under the Paris Agreement, as well as in company targets.

Because of its distributed nature, Blockchain could improve governance and sustainability in support of collective action aimed at tackling climate change. As opposed to centralized or decentralized networks, Blockchain prevents monopolistic control over the system. The technology also records transactions openly and permanently, thus fostering transparency and traceability.

## Chapter 4 | Project

### 4.1 CER Exchange Project

#### Fragmentation of Carbon Emission Reduction Schemes



#### Carbon Emissions Reduction Exchange(CER)

Carbon Emissions Reduction(CER) exchange market is a place where CER can be purchased by governments or businesses for use as offsets in meeting emissions reduction targets. The Kyoto Protocol, which came into force in 2005, created an international exchange market for project-based credits. Investment banks and trading houses, as well as validation and verification services, acted as key market makers.

#### The World Carbon Markets



Carbon Markets	Location
ECX	London, UK
Blue Next	Paris, France
Chicago Climate Exchange	Chicago, US
LSE	London, UK
IPE	London, UK
EEX	Leipzig, German
Nordpool	Lysaker, Norway
Euronext	Amsterdam, Netherlands
Powernext	Paris, France

## Status of International Carbon Emissions Exchange

There are about 10 carbon exchanges in the world today, but they are expected to grow at a rate of 50-100 percent each year. Indeed, the World Bank statistics show that the size of the carbon-related market has jumped every year to \$ 10.9 billion in 2005, \$ 30.1 billion in 2006, and \$ 64 billion in 2007. Growth is projected to reach \$ 1.45 trillion in 2020.

Carbon exchange markets for greenhouse gas (GHG) allowances are likely to grow in number and size over the next few years as governments seek ways to meet emissions reduction targets.

In particular, new markets are expected to emerge in many U.S. states as a result of the U.S government's newly released Clean Power Plan, which sets targets for individual states.

China is set to expand its pilot schemes into a national one perhaps as early as next year, which would then be the largest in the world, surpassing the EU's Emissions Trading Scheme.

## GLOBAL CARBON MARKETS

Carbon trading is seen by many as the most effective market-based system to encourage greenhouse gas emission reductions. The World Bank estimated that carbon trading worth a total of \$4.7/bn took place during 2011.

Despite struggling carbon prices, a host of new trading schemes have been announced in countries, regions and even big business. Clearly the positive impact that carbon trading can have not just on the environment, but increasingly too.

There are a number of different trading mechanisms in operation, but most either auction or assign allowances to emit a quota of CO2. This creates an incentive to reduce emissions so that excess carbon credits can be sold to those who exceed their allocation of emissions.

**Microsoft:** The company became the first major corporation to introduce a "track and fair" system. Requirements across 100 countries will be discussed as emissions budget for energy use and at level. Microsoft will require effort to be produced out of the operating department's own budget.

**UK Emissions Framework:** Countries with emissions reduction targets as part of the Kyoto Protocol trade emissions allowances with each other or can purchase others through the Clean Development Mechanism, which in turn funds low carbon projects in the developing world.

**Western Climate Initiative (WCI):** The tie-up between California and several Canadian provinces is still under development but will eventually represent a significant chunk of global emissions. Initially, CO2 from power stations will be traded but transport emissions could be included in 2015, which would increase the scope of the scheme drastically.

**Regional Greenhouse Gas Initiative (RGGI):** Covers electricity producers in nine US states in the north east of the country including New York and Massachusetts. It has a job to reduce emissions by 10% before 2018.

**Mexico:** The Mexican government established strong climate change legislation including a 30% reduction in emissions by 2012. A voluntary cap and trade mechanism has been proposed however there are few details available on the design and a change in government in December 1, 2012 could affect the plan.

**EU Emissions Trading Scheme (ETS):** The trading scheme covers around half of the group's emissions and avoids many exports. It includes some emissions from the transport sector, specifically aviation. Charges on aviation apply to air flights using EU airports regardless of whether the airline is based, avoiding tensions with other countries. The ETS is targeting an emissions reduction of 20% by 2020.

**China:** The world's largest emitter will begin regional pilot schemes in major cities from 2013 onwards with a view to establishing a national market in the future. Heavy industry emissions and electricity production will be included at first. The agreement with the EU will see some cooperation with the design of China's trading platform.

**Tokyo:** The city-wide scheme applies to large office buildings and industry of infrastructure, which are required to use a combination of renewable energy and efficiency measures to stay within a prescribed emissions cap.

**South Korea:** An increasingly active country in climate change diplomacy, as part of the Green Climate Fund and the Global Green Growth Institute, South Korea will also begin to launch trading in 2015. This is due to the country's emissions will be covered by the scheme, which includes 300 of its business entities.

**Turkey:** The island hopes to reduce emissions back to 1988 levels by 2020 and has reported that 50% of its largest emitters have reported their emissions ahead of the launch of a cap and trade system.

**Vietnam:** The country announced plans to reduce its emissions from forestry and agriculture by 30% in May 2012. A carbon trading scheme will be established to meet the goal. The further details are available.

**India:** The country's emissions Parkers, Airlines and Trade (PAT) scheme allows rights from the other platforms with industrial entities given binding energy efficiency targets rather than emissions allowances. Over schemes can trade the fruits of their labour with other companies.

**Australia:** The country launched a carbon price of A\$25 per tonne of CO2 emitted with 300 of the country's largest emitters included. A link-up with the EU market is scheduled for 2018.

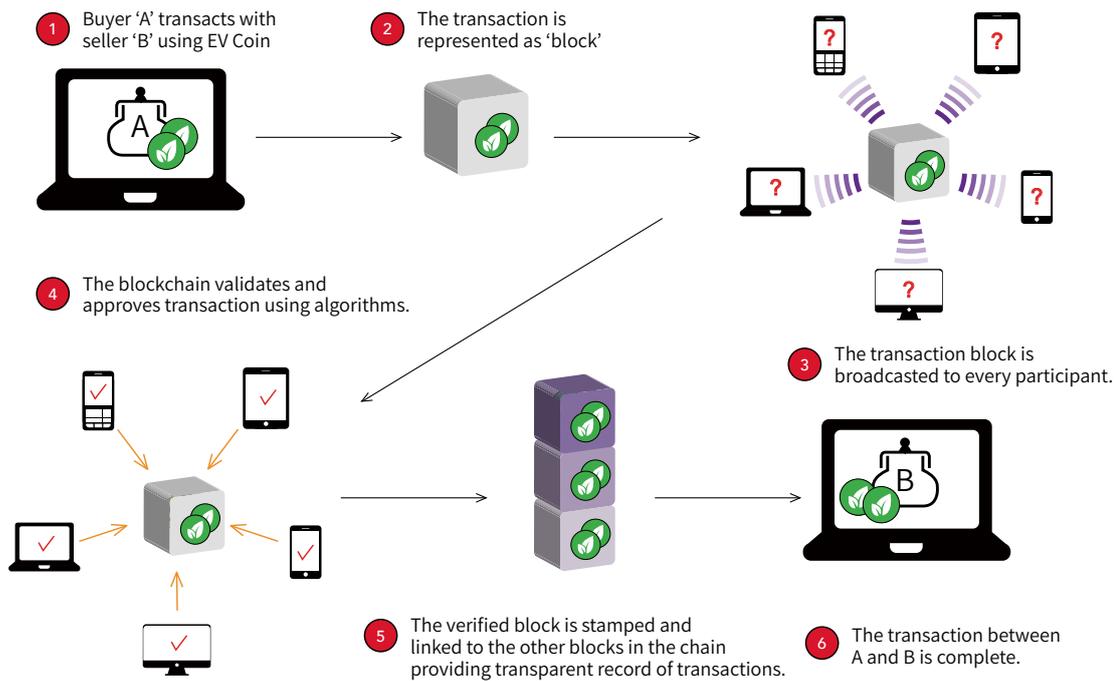
**New Zealand:** Although the system includes only energy related sectors of carbon emitted, the New Zealand trading scheme does cover a wide range of sectors including agriculture, energy, liquid transport fuels and more. It also rewards sectors such as forestry with credits for absorbing CO2 from the atmosphere.

The international carbon market and the price of carbon credits continue to rise year after year, making them a very popular investment item these days. However, Carbon emissions reductions trading is usually done between companies. At present, CER transactions are only available between companies. The Eco-Value Foundation will establish a P2P carbon trading exchange where individuals as well as corporations can trade CERs as investment product.

### World Carbon Market Size



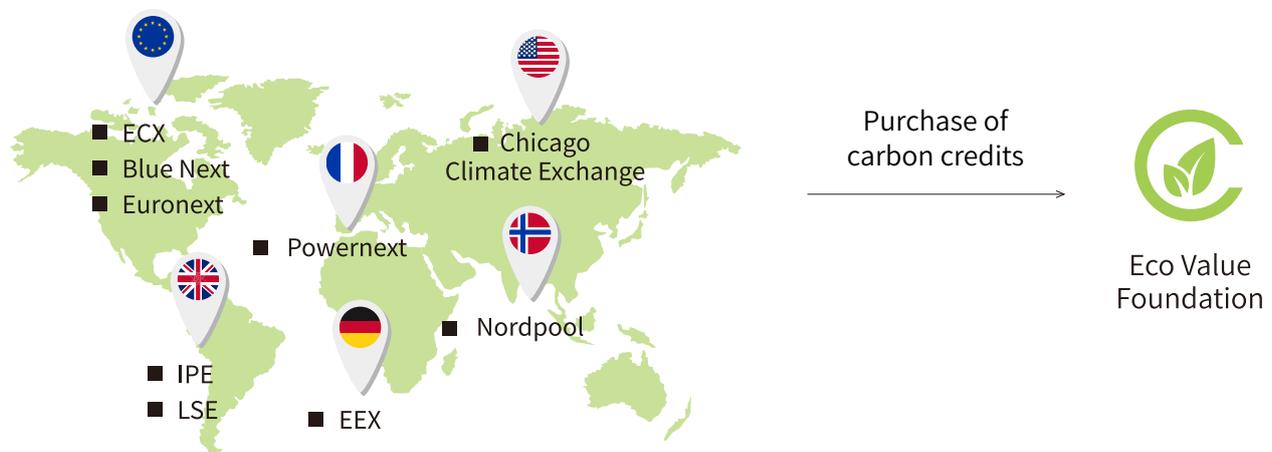
### P2P Platform



1. Buyer 'A' transacts with seller 'B' using EV Coin
2. The transaction is represented as 'block'
3. The transaction block is broadcasted to every participant.
4. The blockchain validates and approves transaction using algorithms.
5. The verified block is stamped and linked to the other blocks in the chain providing transparent record of transactions.
6. The transaction between A and B is complete.

## 4.2 CER Purchasing process

CERs prices continue to rise each year. The Eco Value Foundation owns and controls the CERs. We will increase the value of our assets by purchasing from major international carbon trade exchanges. Carbon credits are rising every year, so a company wants to buy them as an investment rather than simply selling what is lacking and left over. With the funds raised from the Eco Value Foundation, we will increase the value of our future assets by buying the carbon credits that are rising every year.



## 4.3 CDM Business Project

The Clean Development Mechanism (CDM) is an international greenhouse offset project by advanced countries and developing countries to alleviate global warming under Article 12 of the Kyoto Protocol adopted at the 1997 Climate Change Convention. Developed countries operate GHG reduction projects by providing capital and technologies to developing countries and receive the carbon emissions reduction for the proven amount of GHG emissions reduction. With the capital and technology of the developed countries, we can expect sustainable development by developing eco-friendly technologies. CDM is one of the global co-operating greenhouse offset project that will benefit both the developed and developing countries and achieve effective GHG reduction.

The 2005 Kyoto Protocol has accelerated the CDM project. CDM is a project to reduce the production of

all greenhouse gases. GHG reduction projects are approved before and after their implementation when they produce greenhouse gas reduction and environmental benefits and contribute to sustainable development in developing countries.

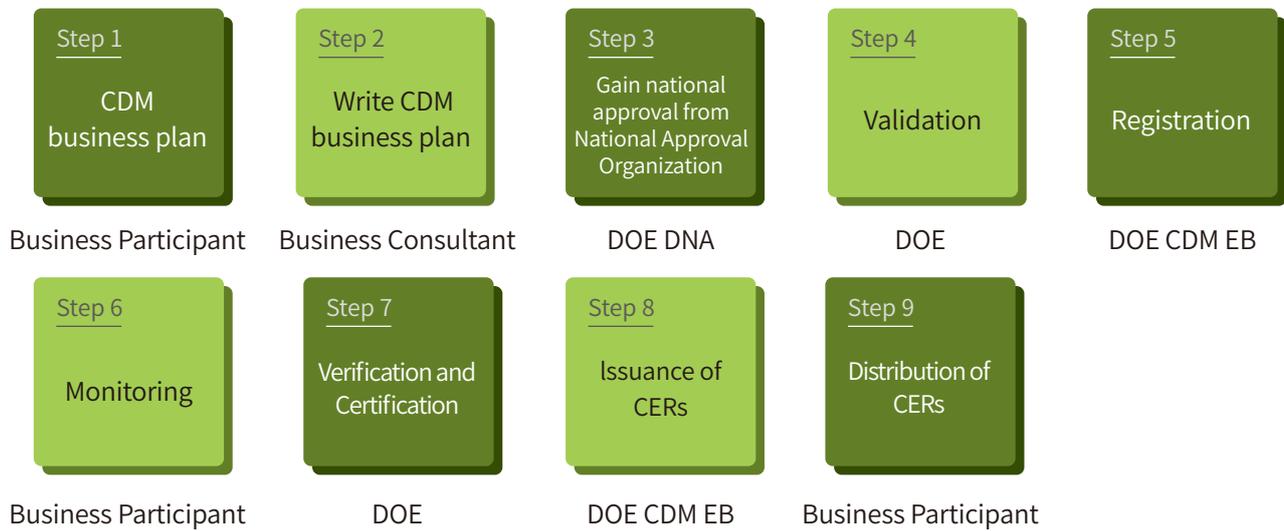
The project receives business feasibility validation from the CDM Implementation Commission(DOE), an international authorized CDM verification organization designated by the CDM Implementation Commission, before submitting its formal application for registration to the CDM Implementation Commission. In October 2011, 3,477 projects were registered by the CDM Implementation Committee, and 61 projects were registered on request for registration.

#### CDM Relevant organization

- National Approval Organization (DNA) : Issue LoA
- CDM Executive Board : Carry out CDM overall work under UNFCCC, establish CDM rules, and make suggestions to DOE designated COT/MOP
- DOE (Dedicated Operational Entity) : Verifying the feasibility of CDM business reduction projects to a recognized CDM Certification organization designated by the UNFCCC CDM Implementation Commission.

NO		NO	
1	Energy Industries (renewable/Non-renewable sources)	9	Metal production
2	Energy distribution	10	Fugitive emission from fuels (solid, oil and gas)
3	Energy demand	11	Fugitive emission from production And consumption
4	Manufacturing Industries		of halocarbons And sulphur hexafluoride
5	Chemical Industries	12	Solvents use
6	Construction	13	Waste handling and disposal
7	Transport	14	Afforestation and reforestation
8	Mining. Mineral production	15	Agriculture

## CDM사업 추진세계



### STEP 1. Plans for the CDM Project

The project describes the technical and organizational matters that are essential for the validation, registration, and verification of the project.

### STEP 2. Produce CDM Business Plan (CDM-DID)

CDM business title, brief description of CDM business, business participants, technical description of the project, description of the reduction in artificial GHG emissions, and whether public funds are received or not.

### STEP 3. Gain Approval from the Parties

The project participant shall obtain approval for voluntary participation from the National Approval Organization (DNA) of each party, including the host country.

### STEP 4. Validation

The CDM (DOE) performs independent assessments based on CDM-DID to determine the feasibility of the project by performing an independent assessment of CDM business requirements fulfillment.

### STEP 5. Registration

The project is submitted by the CDM (DOE) in accordance with the procedures to submit a business registration application to the CDM Implementation Commission (exabytes) and is required by the business participant to be registered.

### STEP 6. Monitoring

Business participants collect and write all data necessary to calculate GHG emissions reduction for their projects according to CDM-DID monitoring plans.

### STEP 7 Inspection and Certification

Verification: DOE periodically conducts independent reviews of monitored GHG emissions reduction and post-post decisions.

Certification: DOE publishes validation checks for GHG emissions reduction verification.

### STEP 8. Emissions of CERs

For proven GHG emissions reductions, exabytes can be issued a CERs, which are issued as a result of the costs of managing costs (SOT-Administrator) and the costs of supporting the adaptation costs in developing countries that are especially sensitive to climate change (SORs).

### STEP 9. Distribution of CERs

Emission rights are distributed according to the distribution ratio agreed by the project participants.

### CDM Implementation Status

With the application of the already approved baseline and monitoring methodology, the project can be registered and implemented by using the National Approval Organization (DNA) approval process and the validation procedures of the (DOE) without the approval process.

The CDM process of the Eco Value Foundation is as follows:

Step 1. Implement CDM (Clean Development System) projects in developing countries.

Step 2. After UN verifies projects, allocate carbon credits quota.

Step 3. Check assigned carbon credits from UN

#### 4.4 Energy Stocks Investment Project

We support opportunities and funding for our leading and promising green companies to move forward, so that we hold a stake of energy stock and converts it into a stake in the block chain for the coin investors. The Eco-Value Foundation continuously invests in the stocks of promising global energy and environmental companies for the growth and development of coins. The value of the Eco Value Foundation rises as the value of the stock increases. And the price of the Eco Value Foundation rises, increasing the value of the participant's assets.



Eco Value Foundation



Energy & Environment companies

#### List of IPO · Pre-IPO Energy & Environment companies

Public renewable energy companies listed by stock exchange and symbol				
Company	Exchange place	Symbol	IPO	Industry
7C Solarparken	Frankfurt	FWB: HRPK0P	-	Renewables
A2Z Group	Mumbai	BSE: 5332920P, NSE: A2ZMES0P	-	Solar Thermal
Abengoa, SA	Madrid	BMAD: ABG0P	-	Solar Thermal
Acciona	Madrid	BMAD: ANA0P	-	Wind Solar Photovoltaics Hydroelectric Biomass
Aleo solar	Frankfurt	FWB: AS10P	2006	Photovoltaics
Clean Power Investors, LTD	London	LSE: ALR0P	2004	Renewables
Alterra Power	Toronto	TSX: AXY0P	2011	Geothermal, Hydro, Wind, Solar
Anwell Technologies	Singapore	SGX: GSX0P	2004	Photovoltaics
Ascent Solar Technologies, INC	New York City	OTCQB: AST10P	2006	Photovoltaics
Aventine Renewable Energy	New York City	NYSE: AVR0P	-	Bio Energy
Ballard Power Systems	New York City	NASDAQ: BLD0P	1995	Fuel Cells
Brookfield Renewable Energy Partners LP	New York City	NYSE: BEP0P	1995	Hydroelectric, Solar, Wind
Carnegie Wave Energy, LTD	Sydney	ASX: CCE0P	1993	Wave
Canadian Solar, INC	New York City	NASDAQ: CSIQ0P	2006	Photovoltaics
Centrosolar Group, AG	Frankfurt	FWB: C300P	2005	Photovoltaics
Centrotherm Photovoltaics, AG	Frankfurt	FWB: CTN0P	2007	Photovoltaics
China Power New Energy	Hong Kong	SEHK: 7350P	1999	Wind, Hydro, Biomass
China Sunergy Co, LTD	New York City	NASDAQ: CSUN0P	2007	Photovoltaics
Contec Solar Systems Group Limited	Hong Kong	SEHK: 7120P	2009	Photovoltaics
Conergy, AG	Frankfurt	FWB: CGY0P	-	Photovoltaics
DayStar Technologies, INC	New York City	NASDAQ: DST10P	2004	Photovoltaics
DeiSolar Co, LTD	Taiwan	GTSM: 35990P	-	Photovoltaics
Dongfang Electric	Hong Kong Shanghai	SEHK: 10720P SSE: 6008750P	1994	Wind
GreatCell Solar	Sydney	ASX: GSL0P	2005	Photovoltaics
Enel Green Power S.p.A.	Milano	BIT: EGPF0P	2010	Renewables

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## Chapter 5 | EV Coin Features

### 5.1 EV Coin Benefits

#### I . Simple payment and personal remittance over mobile and PC

- Personal payments and remittance are free through the app.
- It is convenient to use EVC at an Alliance shopping mall without a certified certificate.

#### II . Safe Transactions Through Block Chain

- All transactions in EVC are written over the block chain.
- Clear the threat of hacking and cloning to ensure safe transactions.
- Access the block chain website for transparent transactions.

#### III. The EVC Cards Available in VISA Card Franchise Stores

- EVC coin cards that are linked to online accounts.
- Prepaid card is associated with Visa cards so that one can use Visa card membership anywhere.
- Any EVC user can use this card.

#### IV. Environment Value Transactions Through Smart Contact

- It is linked to carbon credits.
- Clear and easy to own and trade carbon credits listed on the carbon exchange and international standards.
- Maintain a stable currency by controlling some of the extraction for the value of money.
- It is faster, more effective than traditional coins and has a real value.

### 5.2 EV Coin Service

We provide global payment, remittance, P2P and card services by connecting digital currency and existing currency to mobile and computer devices. The Fintech open platform and application services based on blockchain technology, it can be used as cash through exchanges and card systems.

You can also earn coins for yourself via participating in eco-friendly related social movements. The main services of Eco Value Coin are as follows.

### I . Exchange

We will establish an EVC exchange to provide an environment to be able to trade other coins and currencies freely such as, dollar, euro and Bitcoin. You can access via mobile or PC, and you can exchange your desired currency.

You can Exchange EV Coin for cash and carbon credits at a carbon credit exchange created by the Eco Value Foundation. All carbon credit transactions are recorded transparently in the blockchain system.



### II . E-Wallet

Money can be transferred, exchanged and bought through EVC E-Wallet. Electronic payment is possible with EVC Coin and All transaction histories are verified by a blockchain system as well as being protected by it. You can purchase carbon credits and trade energy in the future with EVC Coin. Since it is directly linked with the exchange, it guarantees safety and convenience.

### III. Mobile Trade

#### - Fund Transfer System

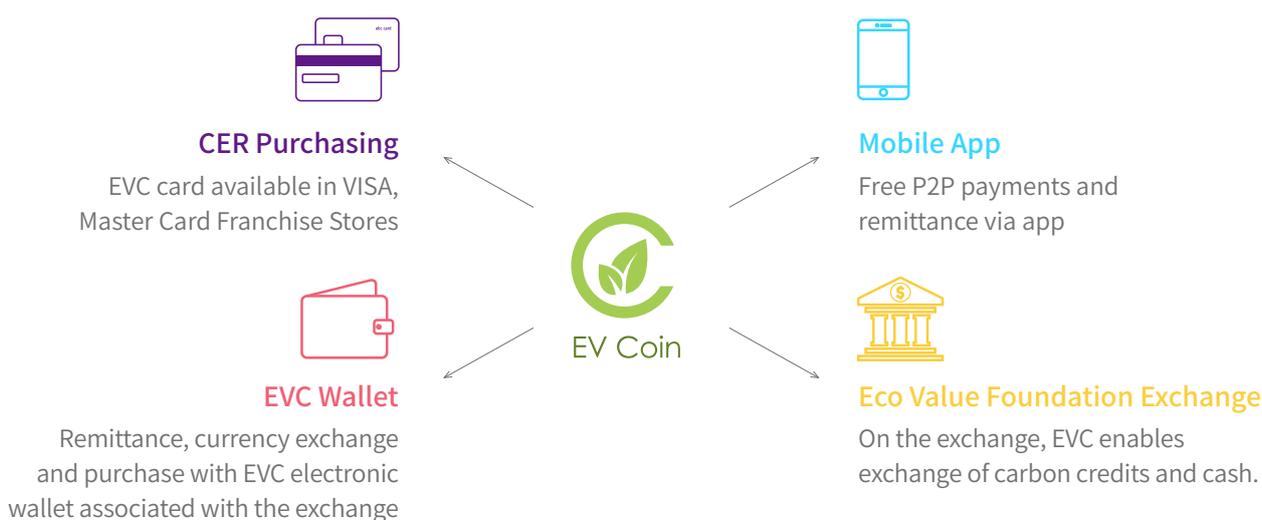
By entering the account and Fincode of the others, domestic transfer and international transfer are possible. It's possible to exchange and remit in dollars, euros, yuan and yen. You can also transfer money by using various digital coins such as Bitcoin. These are all based on exchange rate of the exchange. It is very safe because transaction records are distributed and disclosed on individual networks based on blockchain technology. The transfer fee is also significantly low.

#### - Currency Exchange System

You can check information on exchange rate and remit fund through our own exchange. You can exchange with euro, dollar, yuan, yen, Bitcoin and Goldcoin.

#### - Card System

Visa cards can be issued through the EVC website. Eco value card system allows you to use investment profits online and offline. A variety of currencies can be exchanged and it also allows you to transfer via ATM.



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## Chapter 6 | Token Sale

### 6.1 ICO Stage

The presale has been completed and the first stage of ICO will launch on the 1st of ay 2018. It will be listed in the exchange after four stages of ICO.



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## Chapter 7 | Partner



Crypto Swiss Fund

<https://cryptoswissfund.ch>

The consultant on investment products development in Switzerland and Europe.



ObitEx

<https://obitex.io>

Global OTC Trading Alliance, The exchange that buys and maintains convenient and competitively priced Crypto assets.



ARIANECAPITAL

European Hedge Fund and Private Banking Capital

Investment asset management bank based in Europe, Mauritius, India, Israel.



China IUI

Chinese Private Banking and Investment Association

Recent Cryptocurrency investments, such as Chinese asset management stocks, mergers and acquisitions, and futures trading.

