



BlueWing Motors



Introducing a Carbon Credit Platform Business via a project  
that converts fueled-powered motorcycles to electric ones

COPYRIGHT © ALL RIGHT RESERVED BY BLUE WING MOTORS

2024.05.

Identity



**Our wings make it blue.**

What we do is not just making electric motorcycles.  
We make the blue sky



The global carbon offset market grew from \$212 billion in 2019 to **\$517 billion in 2022** and, projected to **grow at a CAGR of 30.7% until 2027**

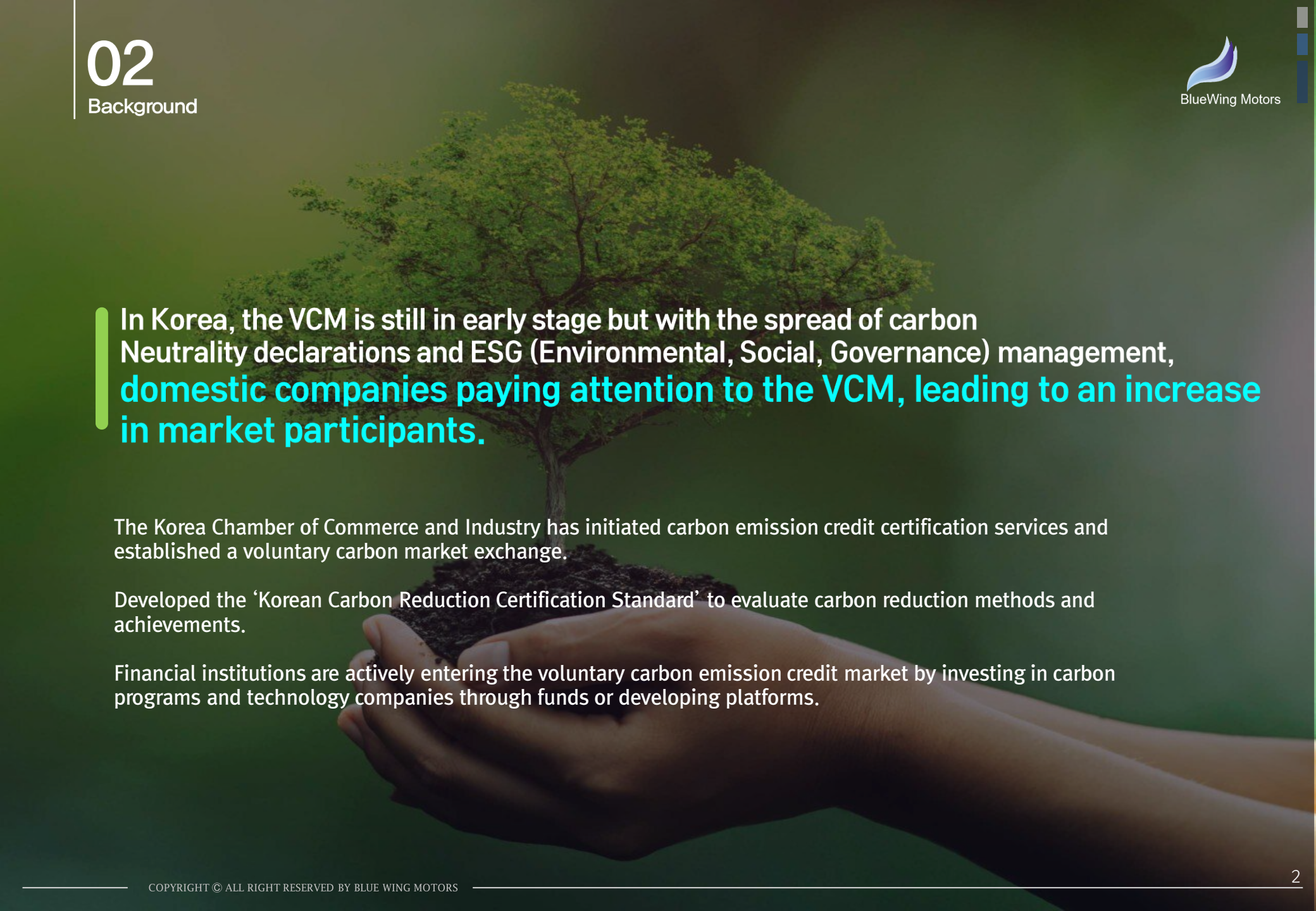
In particular, **rapid growth is expected in the voluntary carbon emission market.**

Expected increase in demand for carbon offset credits with the deepening of ESG management and net-zero issues globally in response to climate change.

**Starting from October 2023, the EU Carbon Border Adjustment Mechanism (CBAM) preparatory period begins** (Reporting of carbon emissions to the EU for exporting 6 items including cement, fertilizer, steel, aluminum, and hydrogen. Mandatory purchase of carbon emission certificates will be applied since 2026)

The scale of emission permits issued in the global voluntary carbon market has been growing at an average annual rate of 30%, from 166 million tons in 2018 to 366 million tons in 2021.

According to the global consulting firm McKinsey, **the voluntary carbon market is expected to grow to a maximum of \$50 billion (approximately 634 trillion won) by 2030.**



In Korea, the VCM is still in early stage but with the spread of carbon Neutrality declarations and ESG (Environmental, Social, Governance) management, **domestic companies paying attention to the VCM, leading to an increase in market participants.**

The Korea Chamber of Commerce and Industry has initiated carbon emission credit certification services and established a voluntary carbon market exchange.

Developed the 'Korean Carbon Reduction Certification Standard' to evaluate carbon reduction methods and achievements.

Financial institutions are actively entering the voluntary carbon emission credit market by investing in carbon programs and technology companies through funds or developing platforms.



BluewingMotors,

Carbon emissions per 1KM driven are 10 times higher than gasoline vehicles  
air pollution that is 127 times higher than hydrocarbons and 184 times  
higher than volatile organic compounds.

**Based on our conversion solution,  
we have entered the Southeast Asian market.**

120million in Indonesia,  
80million in Vietnam  
240million in major Southeast Asian countries.

❖ Motorcycle use per capita is 87% in Thailand, 86% in Vietnam, and 83% in Malaysia



Based on Bluewing Motor's core technology, we operate a business that **converts fuel-powered motorcycles to electric.** Offering **K-Conversion Kit** composed with essential components for conversion as well as OBD equipment for management and control. **We create social impact through carbon business based on collected big data.**



**OBD**  
On Board Diagnostics

**OBD attached to vehicle to monitor**



**MaaS Platform for Fleet Management System**



**Achieving carbon neutrality**

We will create a distinctive advantage by organizing conversion kits with Korean high-quality, high-performance components while maintaining competitive price compared to Chinese-made conversion kits

# [ K-Conversion Kit ]

[ Battery+Motor+Controller+Smartkey ]

## CVT Method

A mid-motor mounted to utilize the transmission and essential parts replaced without cutting the frame



- ✓ The percentage of re-using existing motorcycle rises from 70% to 90% the number of parts required decreases from 12 to 7, taking less hours to convert

## Battery pack

Non-flammable battery pack for electric motorcycle using eco-friendly activated carbon, foundation for conversion with safety and excellent performance

2024년 1분기

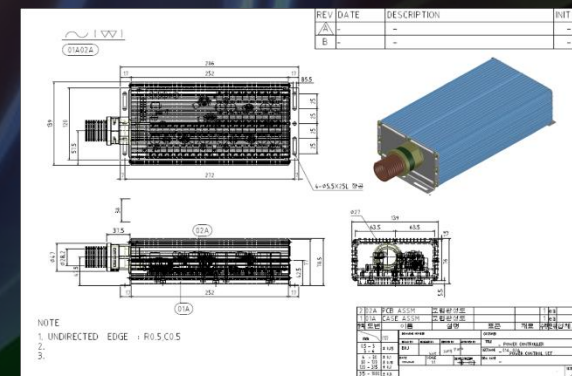


Gen 2(2세대 셀)

LFP-LIB급 수계배터리 에너지 밀도 구현(150Wh/kg)  
사용온도 범위 -20 ~ 60°C  
충방전 4C 가능

## Controller

Competitive advantage with approximately 30% performance improvement in terms of speed, climbing ability, and charging range compared to low cost Chinese products





# 03

## Competitiveness of K-Conversion Kit

### OBd and Smart Key

Out standing IoT technology for smart vehicle control system  
Differentiates Bluewing Motors from other competitors  
Real-time measurement of carbon reduction data through  
built-in OBD.





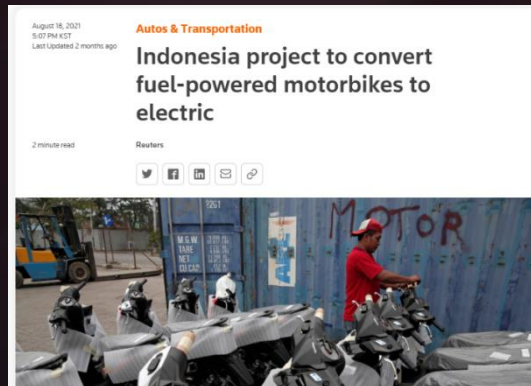
## Why BlueWing Motors first enter to Indonesia?

### Market Potential Size



- 120 million units of motorcycle in operation
- Following India and China, the third largest number in the world
- Under 150cc scooter is dominated in the market share
- Easier for charging infrastructure by using a single model

### Eco-Friendly Policy



- Plans to replace 20% of two-wheeled by 2025 based on the presidential pledge
- The government launched POC project to convert fuel-powered motorcycle to electric in 2022 and the legalization is set in 2023.

Indonesian government has implemented the mandatory campaign called “go electric”

### Government Subsidy

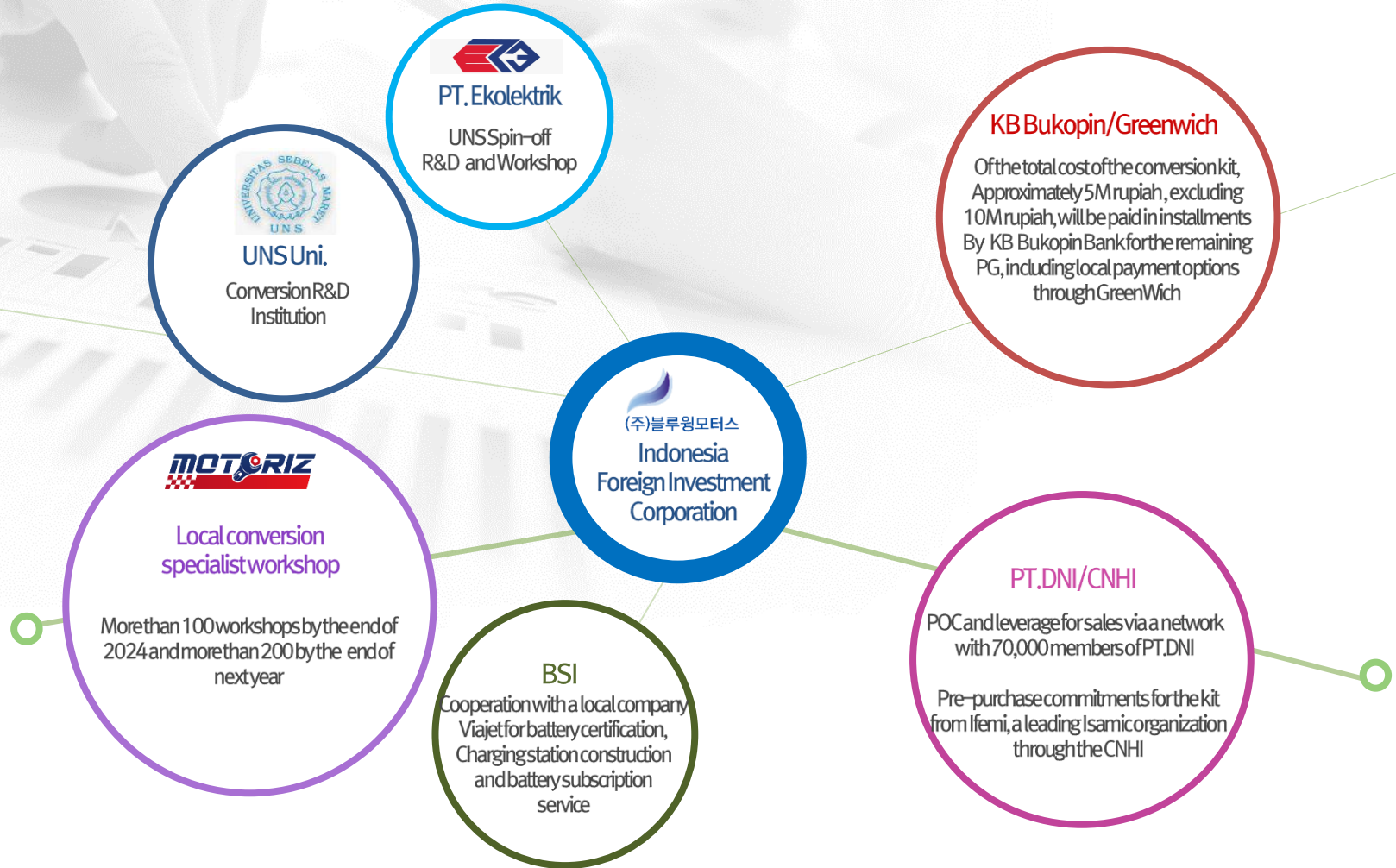


- In 2024, subsidy for 150,000 units allocated (approximately 10,000,000 IDR per a motorcycle)
- In 2025 subsidies for 200,000 units allocated



Expected that other Southeast Asian countries, such as Vietnam and Malaysia, will also quickly develop their conversion market in the future.

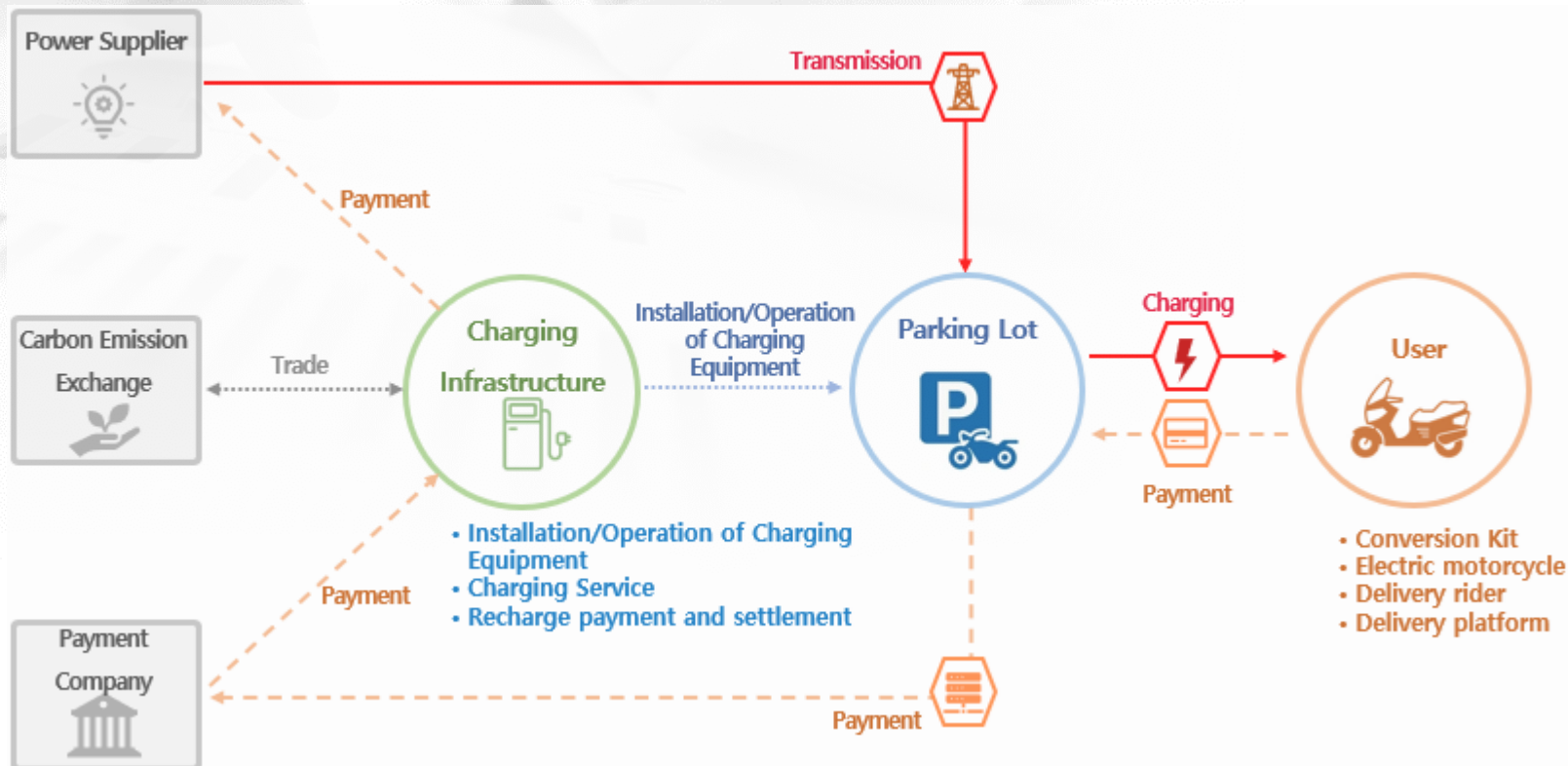






Through BWM Indonesia, we aim to develop and commercialize an electric two-wheeled vehicle charging business ecosystem. This initiative will focus on three core areas:

1) selling electric conversion kits, 2) operating charging infrastructure, and 3) providing payment services.





## Indonesia Market estimated revenue analysis

(Unit: billion)

Category	Entry	2024	2025	2026	Total
Sales of Conversion Kit(B2B)	Conversion	3000	20000	20000	43,000
	Sales	36	240	240	516
	Expenditure	30	200	200	430
	Revenue	6	40	40	<b>86</b>
Charging Stopper(B2B)	Installation Unit	100	670	670	1440
	Sales	10.8	82.8	154.8	248.4
	Expenditure	12	80.4	80.4	172.8
	Revenue	-1.2	2.4	74.4	<b>75.6</b>
Sales of Conversion Kit(B2C)	Conversion	-	20000	40000	60,000
	Sales	-	240	480	720
	Expenditure	-	200	400	600
	Revenue	-	40	80	<b>120</b>
Charging Station (B2C)	Installation Unit	-	400	800	1200
	Sales	-	72	216	288
	Expenditure	-	80	150	240
	Revenue	-	-8	56	<b>48</b>
Carbon Credit	Total Conversion	3000	40000	60000	103,000
	Revenue	2.7	38.7	92.7	<b>134.1</b>

※ Based on the selling price of KRW 1.2million for one conversion kit/expenses do not include the conversion kit cost/control, marketing promotion

※ Based on charging 30 devices per charging stopper, based on ₩12million per device/based on monthly subscription fee of KRW 30,000  
10 charging stations, charging 50 units, KRW 30,000/excluding location rental and electricity charge

※ Profits from individual components sales such as batteries and payment (PG) business and online shopping malls are not included

### Indonesia Market estimated revenue analysis

1. Converted Units : B2B 153,000 units/ B2C 150,000 units **Total 303,000 units**
  2. Charging Infrastructure: Charging Stoppers **1440 Units**/ Charging Station(Swap Type) **1200 units**
  3. Total Profit : Conversion Kit+ Charging subscription fee + Carbon credits **Total :KRW 190.65 billion**
  4. Expenses : Local corporation and battery pack, product assembly plant, Local PG company system construction, promotional expenses, labour expenses **Total: KRW 10billion**  
Rental and electricity usage cost **Total: KRW 5billion**
- ❖ **Net profit** : Total profit – Expenses = **Approximately KRW 26.37 billion**

※ BEP is expected to be reached in the first half of 2025, with profit distribution anticipated by the third quarter of 2025.

The analysis does not include ODA projects scheduled to be carried out in Vietnam, Cambodia, etc



## Conversion project for fuel-powered motorcycles and LPG tuk-tuks for carbon reduction in Cambodia

### Blue Cambodia/Green Campus



- **Blue Cambodia Project**  
Convert motorcycles from government institution and be as part of government-led carbon reduction project
- **Green Campus Campaign**  
Convert Cambodian university student's fuel-powered motorcycles used for commuting

Discussions are underway to prepare laws and supportive policies through the Cambodian Ministry of Environment

### Angkor wat Project



- Conversion project for fuel-powered two and three wheelers in the Siem Reap and Angkor Wat along with charging infrastructure using solar power
- Improve air quality and noise pollution through attraction programs, carbon credit reward systems
- Securing finances by attracting ODA funds, such as those from KOICA and KDB

### LPG Tuk-Tuk Conversion (B2B/B2C)

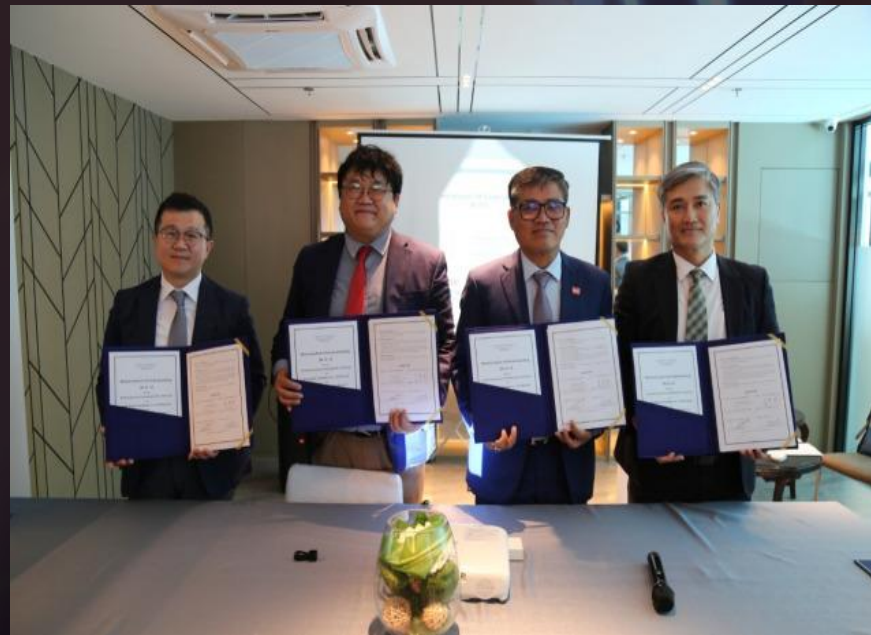


- Carbon reduction project through conversion of LPG tuk-tuks, managed by Cambodia's Forte Group
- Establish a local joint venture with Forte Group, Gridworld and WinCL for business success
- POC project is scheduled for the second half of 2024 to evaluate business feasibility

## Preparatory Achievements for a successful Conversion Project in Cambodia



- Held a briefing session on carbon reduction projects through conversion at the invitation of the Cambodian Ministry of Environment



- Signed an MOU with Forte Group, Cambodia's largest non-life insurance company, to cooperate in converting tuk-tuks to electric ones (From left to right: Park Seong-hoon, CEO of WinCL; Kim Min-ho, CEO of Bluewing Motors; Forte Group CEO Yuk Chamrueunrit; and Grid World CEO Kim Hyeong-ryeol)
- ✓ Plan to establish a JV involving a total of 4 companies, including 2 Cambodian companies and 2 Korean companies



Bluewing Motors with equipped OBD device on converted motorcycles, this upgrade **completes the establishment of a carbon emissions measurement system** capable of measuring carbon reduction in real time.

One motorcycle converted

1 year CO2 890.04kg  
reduction



1000 motorcycles converted

1 year CO2 890.04tons  
reduction



89,000 tress planted



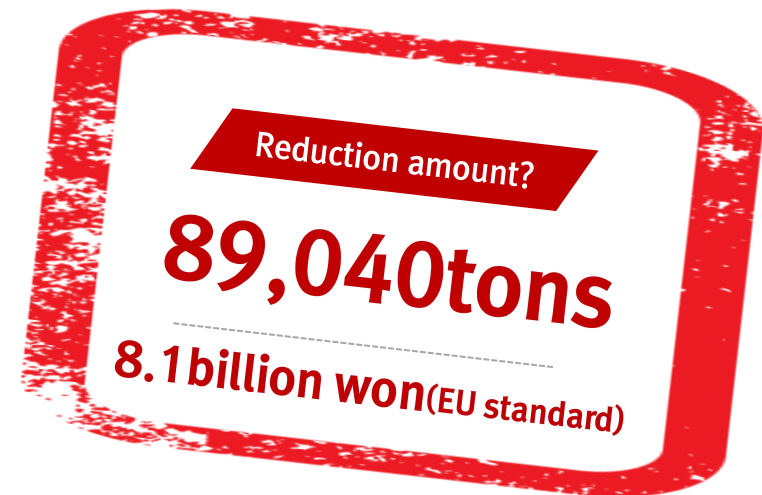
What is the annual carbon reduction? If 100,000 motorcycles converted

○ Reduction Methodology

Emission reductions by electric and hybrid vehicles

○ Standard

National Electricity Emission Factor(Vietnam): 0.08458  
Transmission and Distribution Loss Rate(Vietnam): 6.35%  
Annual Average Driving Distance : 12,000km / year  
Number of Business Vehicles (Motorcycles): 100,000units







## MAN POWER

Expertise is the foundation!  
We promise business success with unwavering determination spirit and passion



**Min-ho Kim**  
CEO

- Development of independent Wireless street lamp
- Development of battery pack for motorcycle
- Import and distribution of UPS



**Young-jin HEO**  
R%D Director

- 20-year veteran in equipment expertise**
- Samji Electronics
  - YoungWoo Telecommunication
  - Sekwang Telecommunication
  - Pilconics
  - Certified Industrial Engineer
  - Communication Cable



**Hyun-hwan LEE**  
CTO

- Korea Power Tech (technical development)
- CS Engineering
- CEO of NJ Engineering
- Certified Industrial Engineer
- Class 2 Electric Construction Technician
- Class 2 Electric Equipment Technician



**Dr. Anh Pham**  
Chief Engineer (overseas)

- Automotive Engineering
- Professor at TDMU



**Hyung-Jun CHANG**  
Global Business Director

- Newcastle University
- Internship in Welcalm
- International medical company
- AFKorea (International trading company)



**Won-sub LEE**  
Environmental Technology Director

- Master's in Economics in Chung-Ang University Graduate School (major in Climate Economics)
- CEO of NEO PLAN B
- Hyundai Aluminum Aluko Group (Carbon Marketing Management Advisory)
- Korean Environmental Education Association (Environmental Education Instructor)
- Ministry of Environment (Korea Industrial Human Resources Development Service) Greenhouse Gas Management Specialist Qualification Examination (Examination Board Member)
- ECO-NURI
- Head of Climate Change and Carbon Management Strategy Team

IP

Continue to strive for ongoing research and development based on recognized patents in the field (4 patents and 4 patent applications)



Patent Num.10-2020566  
Electricity energy control device  
and method for two and three  
wheelers



Patent Num.10-2010604  
Regenerative device



Patent Num. 10-2044563  
Energy conservation device



Patent Num. 10-2044581  
Energy conservation device



A group of hands giving thumbs up against a blue background. The hands are of various skin tones and are wearing different colored sleeves. A small white starburst is visible in the background behind the text.

We create a new market with **social values**

We create **economic value** through that market

“Make It Blue”

Blue Wing Motors

**Thank you.**

