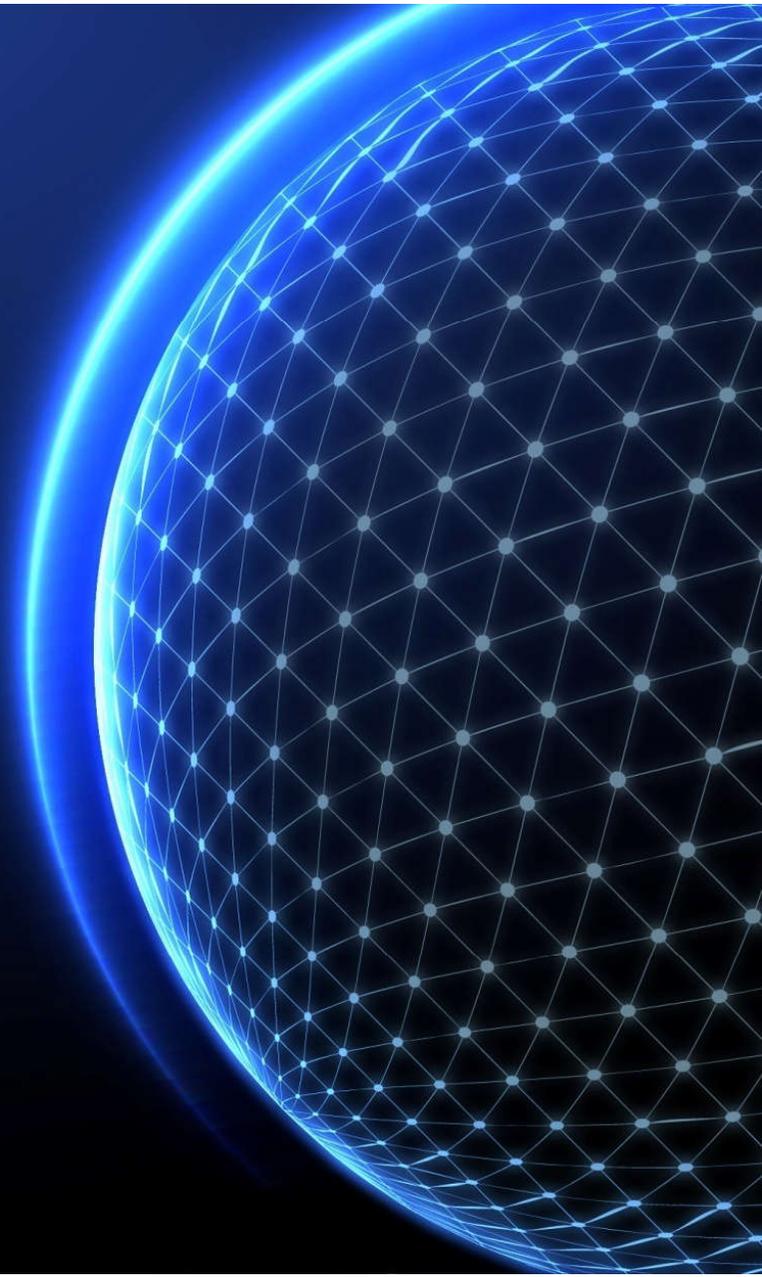


# PANUS®

DISCOVER THE NEW ERA

Mr. Panus Watanachai  
CEO, Panus Assembly Co., Ltd



# ENVIRONMENTAL CONSCIOUSNESS AWAKENS

Countries that adopt ICE sales ban proposals



2030 (30%)

2018

Europe already has 130+ low emission zones and 70+ access regulation zones.



2020

China targets 2 million EVs (~8% market share) by 2020.



2025

Rome, Madrid, Mexico City, and Athens restrict diesel access.

The European Union sharpens its EV target to 20% of total sales by 2025.

Norway bans sales of gasoline and diesel cars.



2030

12 large cities<sup>1</sup>, representing more than 32 million people, commit to no ICE vehicles in their streets via the Fossil-Fuel-Free Street Declaration

Germany, Ireland, Slovenia, the Netherlands, Israel, and Denmark plan to implement or consider 100% EV sales targets by 2030, while India is considering a 30% target.



2040

The UK, France, and Italy plan to target 100% EV sales, while Sri Lanka is aiming for a 100% EV fleet by 2040.



# 13 MILESTONE

Under the economic development plan and the national society (vol.13) 2023-2027

The third milestone: Thailand is an important production base for electric vehicles in the world.

GOAL



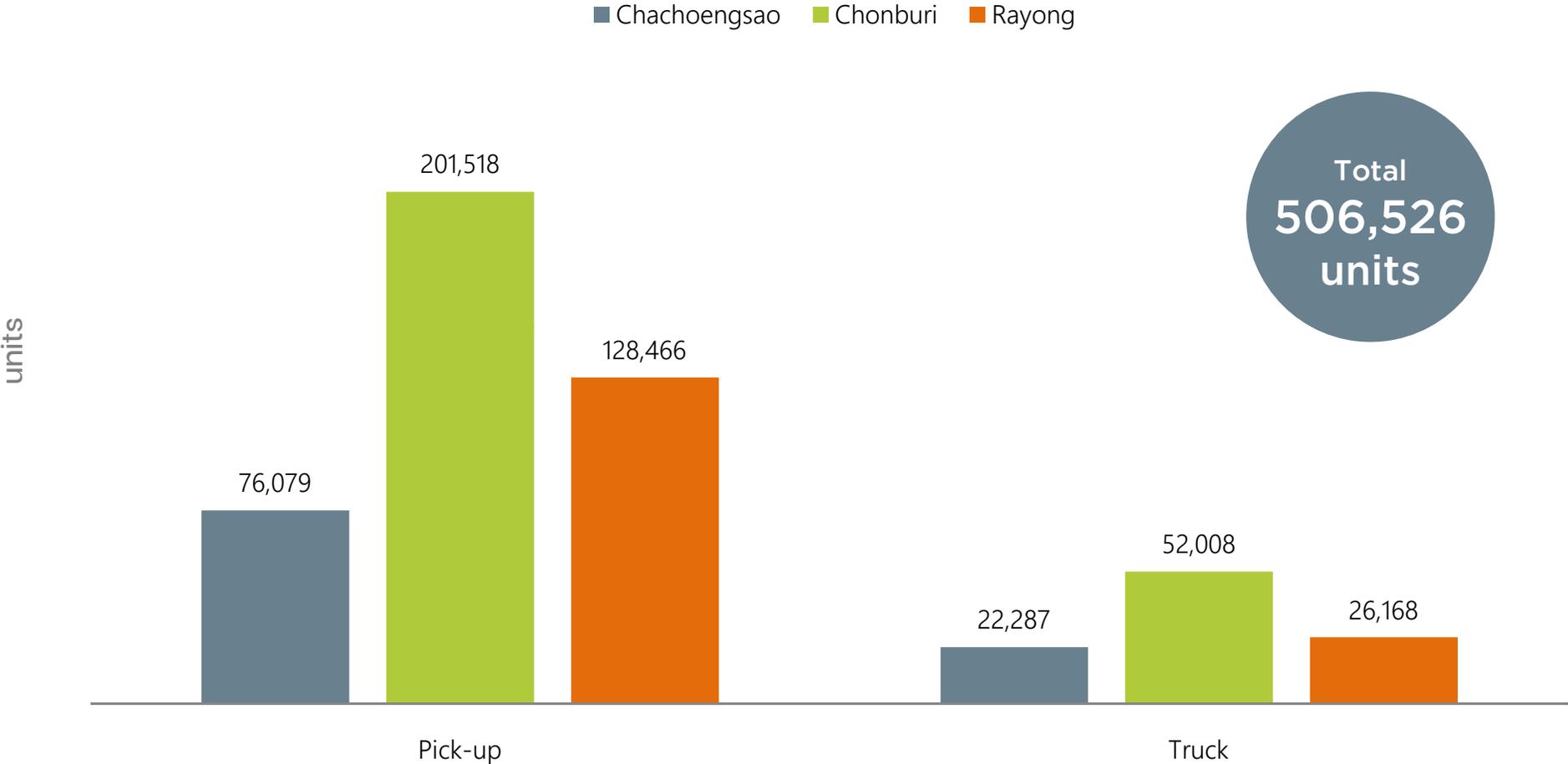
Create demand for electric vehicles, the proportion of using electric vehicles will increase to **26% by 2027**

Support investment and adaptation of former entrepreneurs, Thailand is the **No. 1 production base in ASEAN**

create the availability of A systematic contributing factor to the charging station, an increase of **5,000 discharge heads. not less than 30,000 electric vehicle workers**

# MARKET DEMAND IN EEC

Statistics of the number of Pick-up and Truck classified by vehicle age in EEC



Source: Number of Vehicle Registered in Thailand as of 31 December 2020

50

YEARS

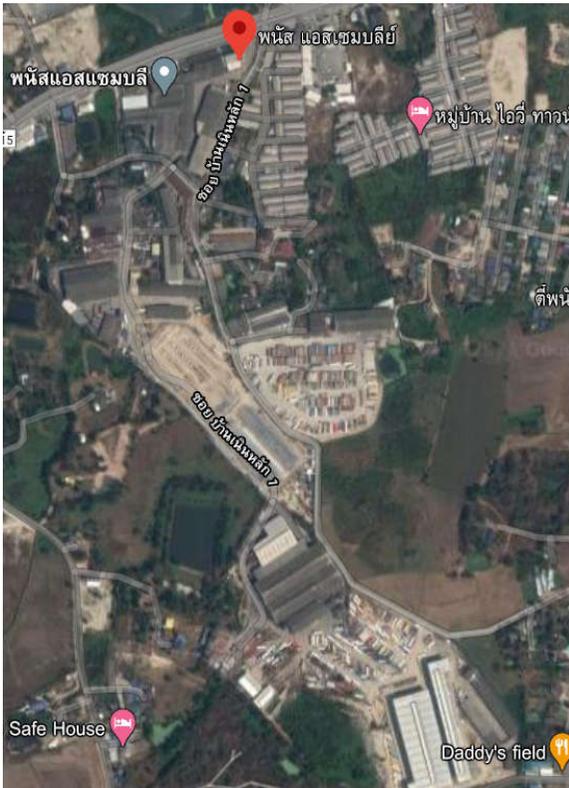
**LEADERSHIP**

**IN TRANSPORTATIONS**

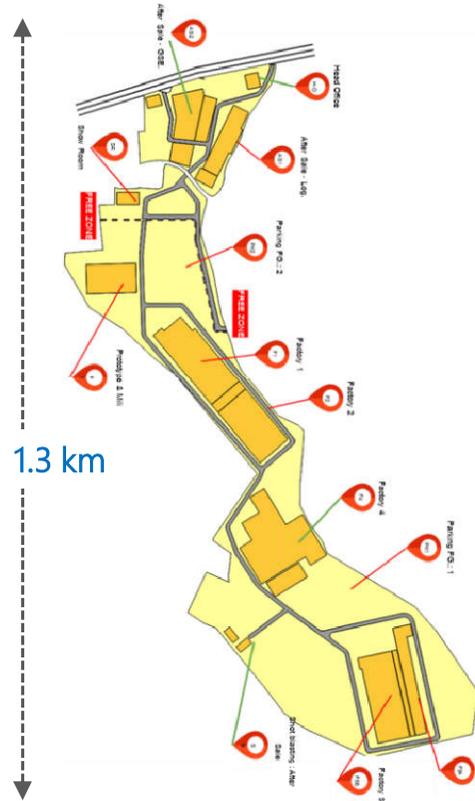


# COMPANY INTRODUCTION

9 M.USD Capital with 310 M.THB



Satellite Photo



Area map and factory location



Head Office



New Factory



Factory for trailer assembly



The largest automatic painting factory in ASEAN

# OUR BUSINESS



LOGISTICS

AVIATION

INTERNATIONAL

INNOVATION



# LOGISTICS BUSINESS

WE DELIVERED ON TIME



# AVIATION

## GROUND SUPPORT EQUIPMENT



# AVIATION

WE DELIVERED ON TIME



# AVIATION

WE DELIVERED ON TIME



# INTERNATIONAL

EXISTING TRAILERS TO NEW MARKET



# DEFENSE INNOVATION

Thailand-made all-designed Amore Vehicles



# DEFENSE INNOVATION

Thailand-made all-designed Amore Vehicles



# INNOVATION

Business Diversification



EVSE BUSINESS



CAV BUSINESS



RAIL BUSINESS



ELECTRIC TRUCK



BESS BUSINESS



ENERGY BUSINESS



E-SCOOTER BUSINESS



SMART FARM BUSINESS

eMOBILITY PLATFORM BUSINESS

# MILESTONE OF PANUS EV



World 1<sup>st</sup>  
Largest **Electric Pushback Tractor**  
(F1-350)



"**Electric Truck**"



"**Electric Scooter with Battery swapping**"



**EV Conversion Kit**  
By PanusDrive®

2017

2019

2020

2021  
Q1

2021  
Q2

2021  
Q3

**Electric Pushback Tractor**  
(F1-280)



"**Autonomous feeders**"



MoU with EGAT and NSTDA  
For **BESS** (Battery Energy Storage System)



MoU with PEA for  
**Electricity Management and Charging platform**

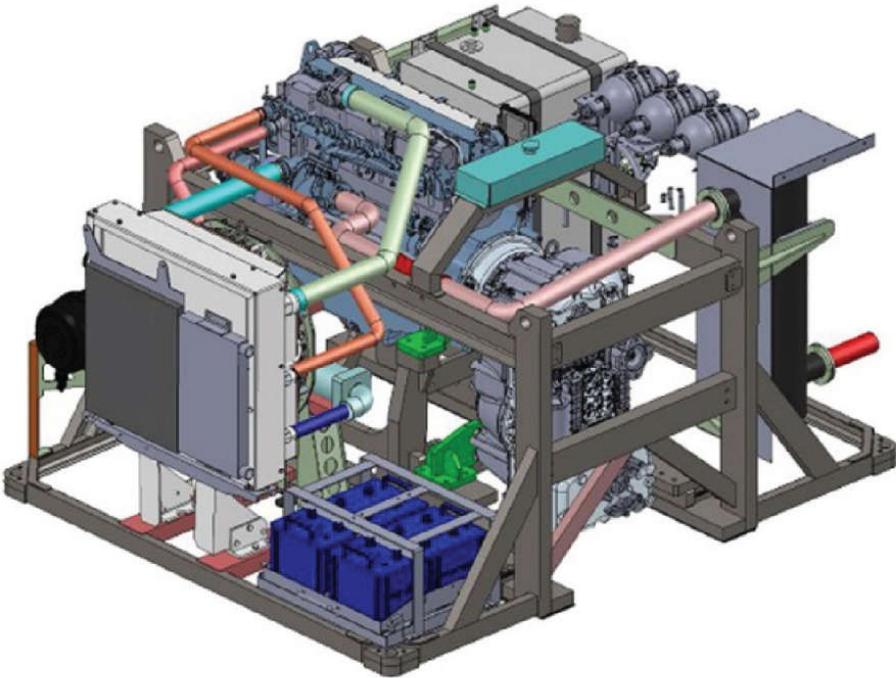


**EV Conversion Platform**

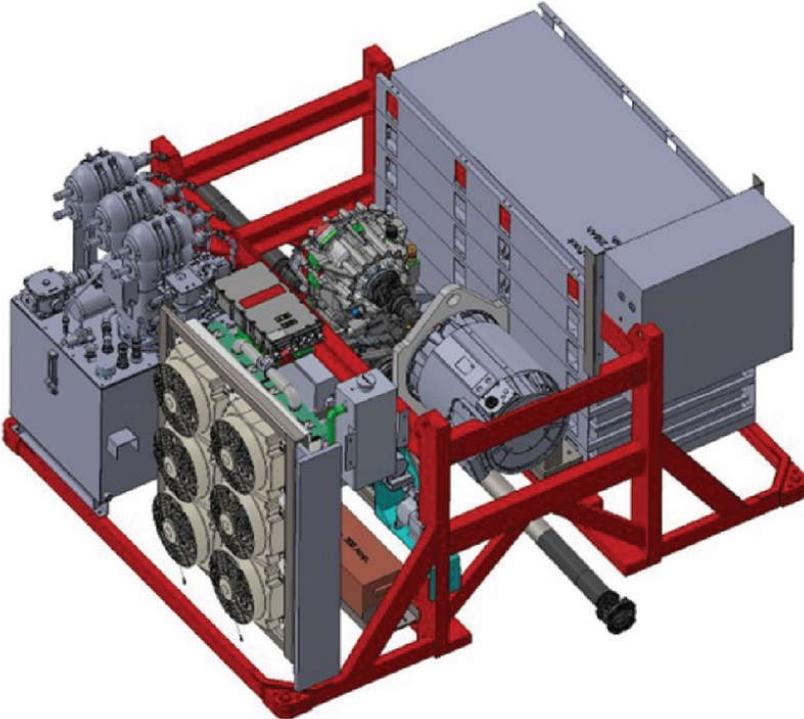


# Our LATEST MODULAR INNOVATION

Adaptability Power Unit. Electric Pushback Tractor : Modulator Replacement from ICE to EV



Internal Combustion Engine



Electrical System

## ELECTRIC PUSHBACK TRACTOR

# F1-340E



### Electric Motor

PMSM 350 kW

### Drivetrain

4-Wheel Drive  
4-Wheel Steering

### Battery

Lithium-ion 161 kWh  
2000 Cycles  
Natural Air Cooled

### Charging

GB/T Standard & CCS2 optional  
DC Charging 60 kW@80A Input  
20-100% SOC@60 kW: 160 min.

# ELECTRIC PUSHBACK TRACTOR

## F1-280E

PANUS®



### Electric Motor

PMSM 200 kW

### Drivetrain

4-Wheel Drive  
4-Wheel Steering

### Battery

Lithium-ion 161 kWh  
2000 Cycles  
Natural Air Cooled

### Charging

GB/T Standard & CCS2 optional  
DC Charging 60 kW@80A Input  
20-100% SOC@60 kW: 150 min.



EV Conersion-PA 2021

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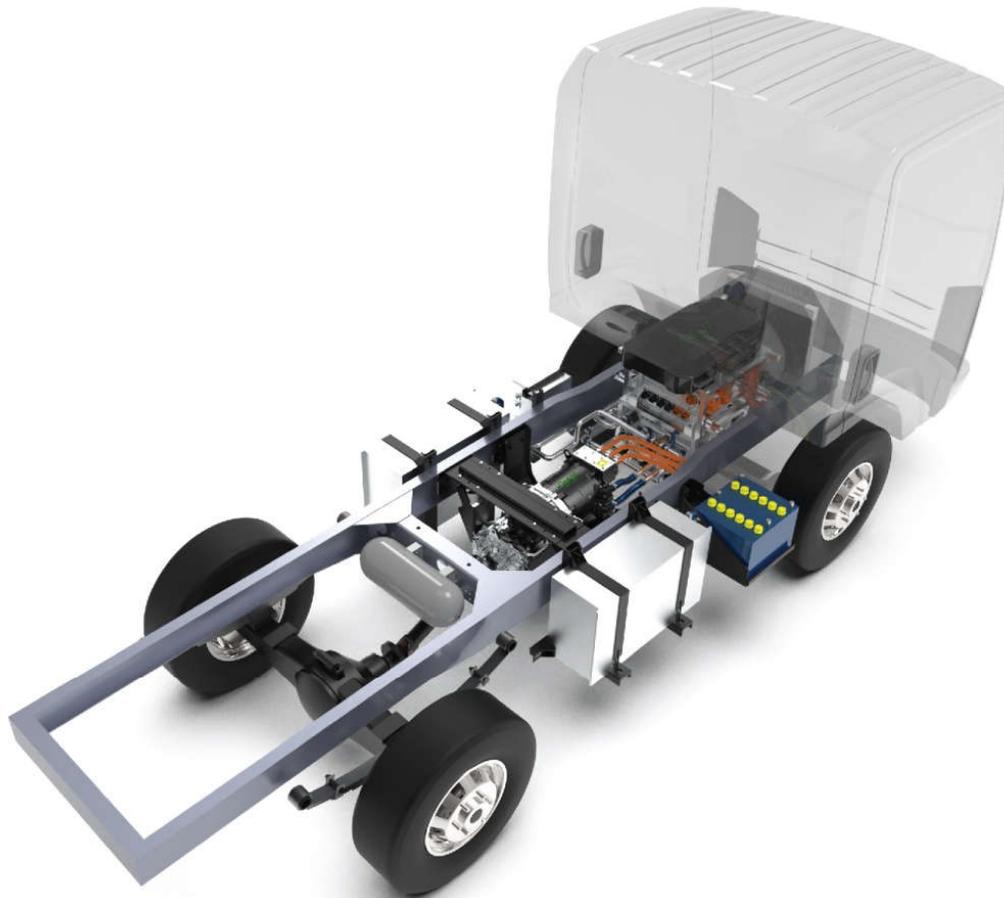
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# EV CONVERSION AND SERVICES

*Modular Platform*

PANUS®



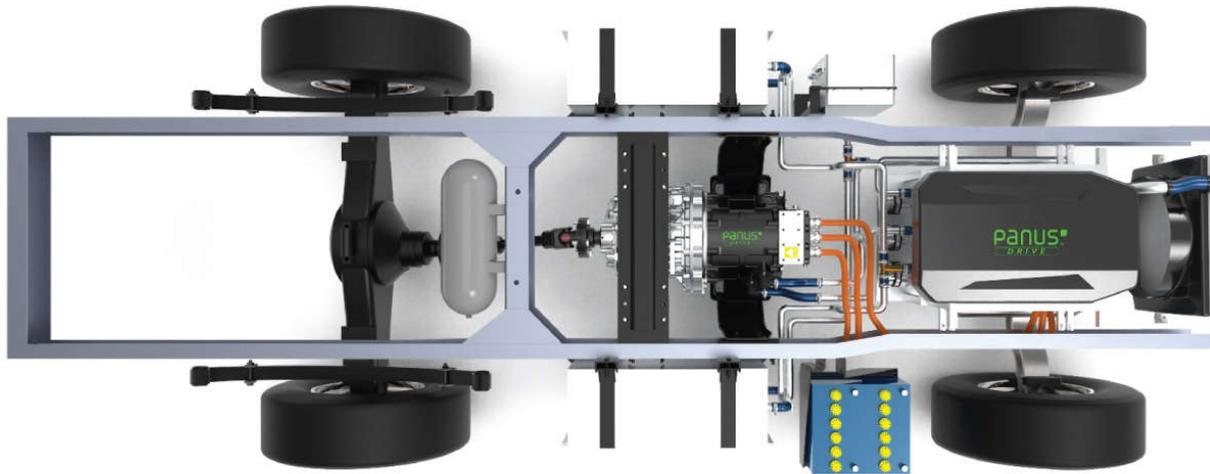
*Reduce cost of energy consumption using Electricity instead*

*Reduce CO2 Emission*

*Reduce maintenance and repair cost*

# EV CONVERSION KIT

PANUS®



PANUS®  
DRIVE



Lithium-Ion Battery Power Pack



Electric Air Condition Compressor



Electric Air Brake Compressor



Water Pump



VCU (Vehicle Control Unit)



AC/DC Onboard Charger

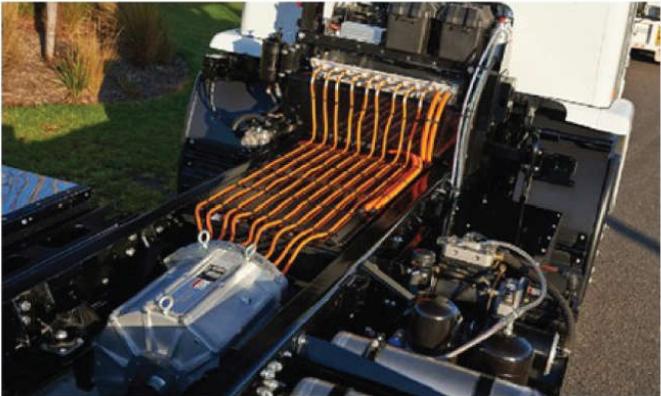
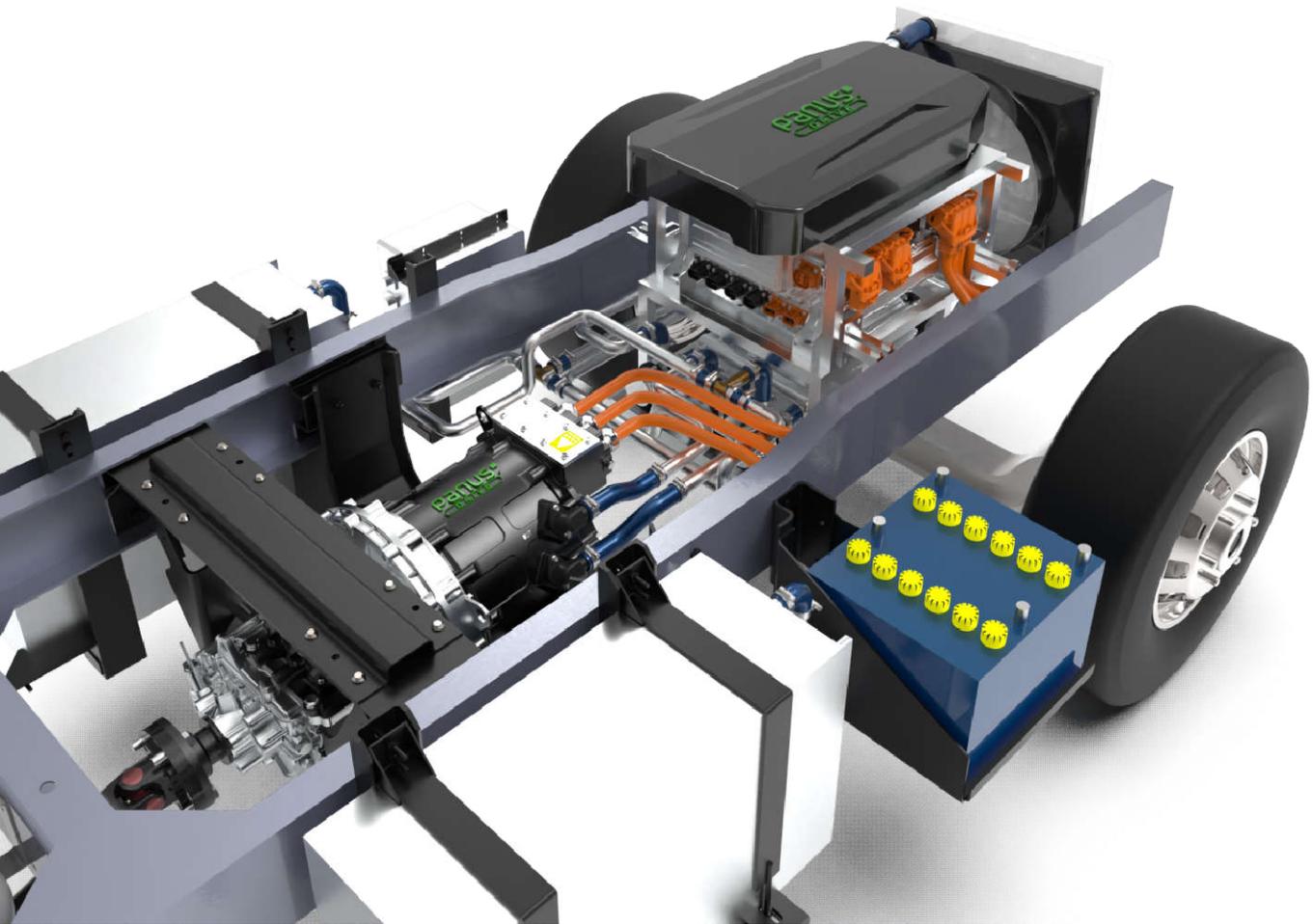
# EV CONVERSION

*Pick-up, 4 wheel, 6 wheel, 10 wheel, Prime mover*



# Our EXPERTISES

Mechanical and Electrical System Integration



# ปิดบึกดีล!“พนัส-CATL”เซ็น MOU ลุย พัฒนาแบตเตอรี่ยานยนต์ไฟฟ้าเพื่อการ พาณิชย์ในไทย-อาเซียน

โดย aek\_writer - 13/07/2021

👁 2406 🗨 0



# กฟภ.ร่วมกับ “พนัส แอสเซมบลีย์” พัฒนาโครงข่ายสถานี ประจุไฟฟ้ารองรับรถ EV

ข่าวธุรกิจ 07 ต.ค. 64 13:46น.



# RACE TO SUSTAINABILITY

At Panus, We are Charging ahead towards a Zero Emission Future.

