

Gwangju's New Leap Forward

– Gwangju Institute of Green-Car Advancement
and Gwangju Automotive Industry –

14. March. 2018

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1. Gwangju Institute of Green-car Advancement

1. Gwangju Institute of Green-Car Advancement

Purpose of Establishment

- Enhancement of green car component industry in the area, promotion of investment and establishment of industry support system
- Establishment of the global center city for the eco-friendly automotive technology by assisting policy making for fostering Gwangju automotive component industry and comprehensive support



1. Gwangju Institute of Green-Car Advancement

List of Projects

Eco-friendly automotive component establishment project

Establishment of R&D infrastructure for clean diesel vehicle component industry project

- Duration : 2011 ~ 2016 (5 years)
- Equipment : 44 items for design and system evaluation

Support project for reinforcing automotive component manufacturing capability

- Duration : 2015 ~ 2019 (5 years) / Total Budget : 2.1 million US\$
- Contents : Overall support of local manufacturing company such as test and qualification, prototype making, education, training, etc.

Ultra-light high-stiffness automotive chassis component development project

- Duration : 2015 ~ 2018 (4 years) / Total Budget : 2.5 million US\$
- Contents : Ultra-light high-hardness automotive chassis component technology development, etc.

Enhancing status as the hub city of the hydrogen economy

- Building hydrogen filling station and operation, complex charging and evaluation, etc.



2. Status of Gwangju Automotive Industry

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The 2nd largest vehicle producing city in Korea

- 50 years-long tradition of automotive industry and first mass production in Korea since 1968
- Production capacity of Kia Motors Gwangju Plant to 620,000 units per year.
- Hiring 7,800 people, total revenue of 9.5 trillion KRW, output of 569,000 units per year.

Production Models of Kia Motors Gwangju Plant



Electric Vehicle

RV



Mini Tactical Vehicle

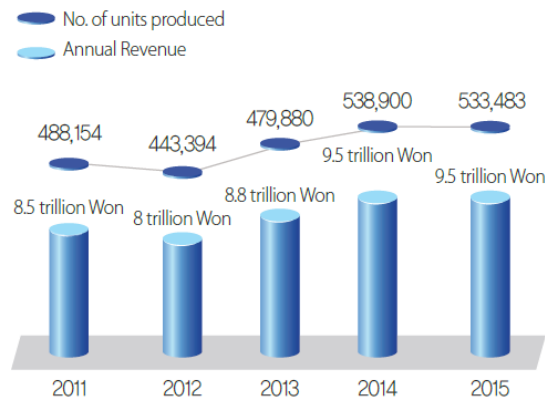


1-ton Truck



Large Bus

Annual Production Volume and Revenue



▲ Automobile export has grown 650% over the past 10 years.

300 companies related to autoparts

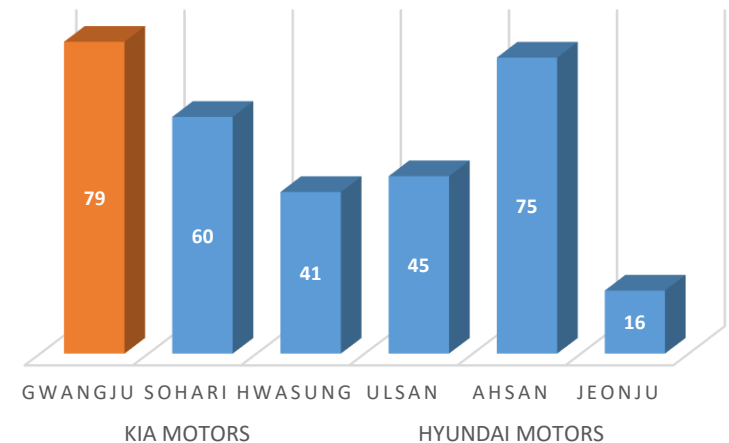


2. Status of Gwangju Automotive Industry

Statistics

- 1 Added Value: 1.48 trillion Won, 40% of the total Gwangju-area added value (2013)
- 2 Number of Employees: 13,000, 22% of the total manufacturing industry (2013)
- 3 Added Value per person is 150 mil Won, 1.3 times the national average.
- 4 26 Tier-1 Suppliers for Kia Motors Gwangju plant
- 5 Totally, 124 automotive component suppliers
- 6 Achieved top labor productivity in Korea

<Labor Productivity per Korean automotive plant>



▲ From Hyundai-Kia Homepage data (unit: number of units/person)

3. Eco-Friendly Automotive Component Cluster Establishment Project

3. Eco-Friendly Automotive Component Cluster Establishment Project –Summary

Goal

Build Eco-Friendly Automotive Component Cluster

Project Period

2016 ~ 2021(6 years)

Project Entities

Ministry of Trade, Industry and Energy, Gwangju City, Gwangju Institute of Green-Car Advancement, Component Manufacturers

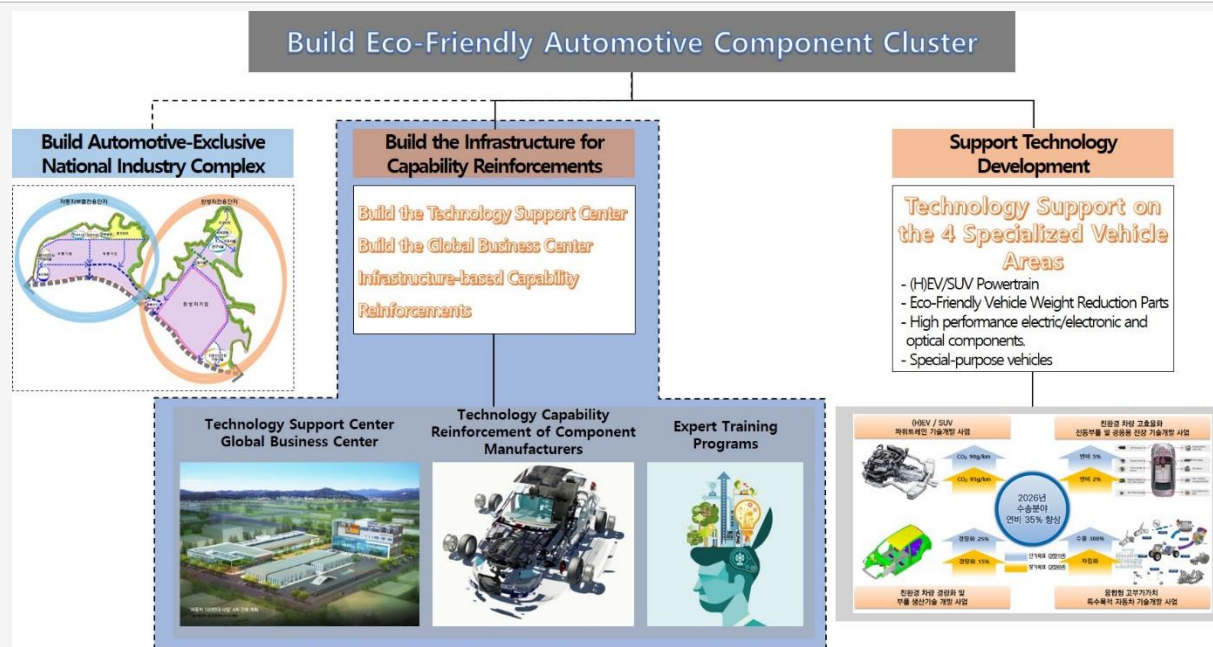
Location

BitGreen National Industrial Complex in Gwangju (4 mil m²)

Expenditure

303 Billion Won (Central Government 143.1, City 140.5, Private Sector 19.4)

Project Contents



Building the Pioneering City of Eco-Friendly Car

(Upgrade the Eco-Friendly Automotive Component Industrial Structure by Cluster Construction)

Goal

- Foster and attract the automotive component manufacturers
- Upgrade the industrial capabilities through R&D support.
- Build the Gwangju-style Employment Model

Build and Support the Industry-Friendly Environment

- 1 Build the collaboration site between Vehicle and Component Manufacturers,
- 2 Provide incentives for the incoming companies.
- 3 Build the support system on the housing, education, etc..



Build the Supporting Infrastructure for the Component Manufacturers

- 1 Support Center for the Advanced Technologies
 - * Build the Technology Support Complex, Component Testbed
 - * Eco-friendly car technology development through the R&D integration
- 2 Global Business Center
 - * Incubate the global component companies
 - * Support on the over-seas certification/marketing, etc..

Support on the Strengthening the Capabilities of the Component Manufacturers

- 1 Support on the development of the 4 specialized types of vehicle (Electric Vehicle, special-purpose, etc..)
- 2 Support on the global marketing capabilities of the component manufacturers
 - * Training employees, etc..



3. Eco-Friendly Automotive Component Cluster Establishment Project – Project Directions

Direction

Support Component Manufacturers to grow their Revenues and Create Good Quality Jobs

- ➔ Foster the eco-friendly car component manufacturing industry (foster and attract over 100 related component manufacturers)
- ➔ Foster global hidden champions through upgrading the existing component manufacturers
- ➔ Foster the export-oriented industry and create good quality jobs

Foster the Eco-Friendly Car Component Manufacturing Industry

- 1** Electrical/Electronic Components Industry
 - * Battery, Motor, Inverters, etc..
- 2** Smart Car Component Industry
 - * Communication, camera, optical technology-related, etc..
- 3** Support on the development of Core EV technologies
 - * Common platform and core components

Foster global hidden champions

- 1** Upgrade Weight Reduction Technology
 - * Ultra light, super rigid metal and composite materials
 - * Production/process, molding technology
 - * Commercialization and applied product development
- 2** Support on the Quality Improvement and achieving Cost Competitiveness
 - * Support on the certification inside and outside of the country (SQ, 5Star, VDA Germany GmbH, etc..)
 - * Support on the overseas marketing, etc..

Foster export-oriented Industry and Create Good Quality Jobs

- 1** Export-oriented industry areas
 - * Support on the development of bare chassis of the special-purpose vehicles
 - * Foster after-market component industry
- 2** Create Good Quality Jobs
 - * Incubate the start-up companies.

Make the workers content with their jobs realizing economically well-to-do community through Automotive Industry Valley.

4. Going Forward: Gwangju Automotive Industry

4. Going Forward: Gwangju Automotive Industry – Electric Vehicle

Foster Electric Vehicle Industry, especially on the areas Gwangju is doing and can do well

Pioneer the Niche EV Market

- Niche EV market that the local companies can be competitive, e.g. small utility electric vehicles



Smart surface cleaner



Transportation for the mobility handicapped



Agricultural EV



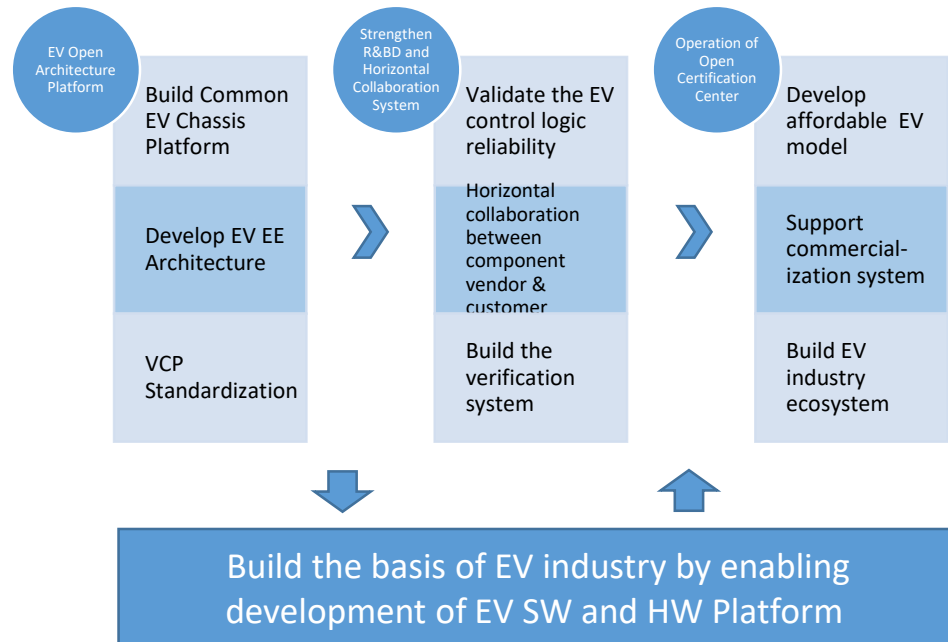
4-wheel drive



Lift

Build the Open EV Platform

- Build the Common EV Platform with modularization, standardization of EV to acquire the base ready for EV market expansion.



4. Going Forward: Gwangju Automotive Industry – After-Market

Foster Automotive After-Market Industry – 52 members in Gwangju after-market council

Build the Ecosystem for the Automotive After-market Industry

- Foster the areas that local manufacturers are focusing on.



Replacement Parts



Tuning Parts



Remanufacturing

Product Certification

- Securing design and reverse engineering technology
- Performance analysis and prototyping
- Quality assessment and securing reliability
- Train the engineers into top quality experts



Factory Certification

- Build quality certification system
- Employ smart factory systems
- Improve the production environment



Industry Coalition

- Combine overseas marketing efforts through after-market industry coalition

**Transformation
into the export-
oriented industry
through cultivating
new overseas
market**

Replacement Parts – U.S.,

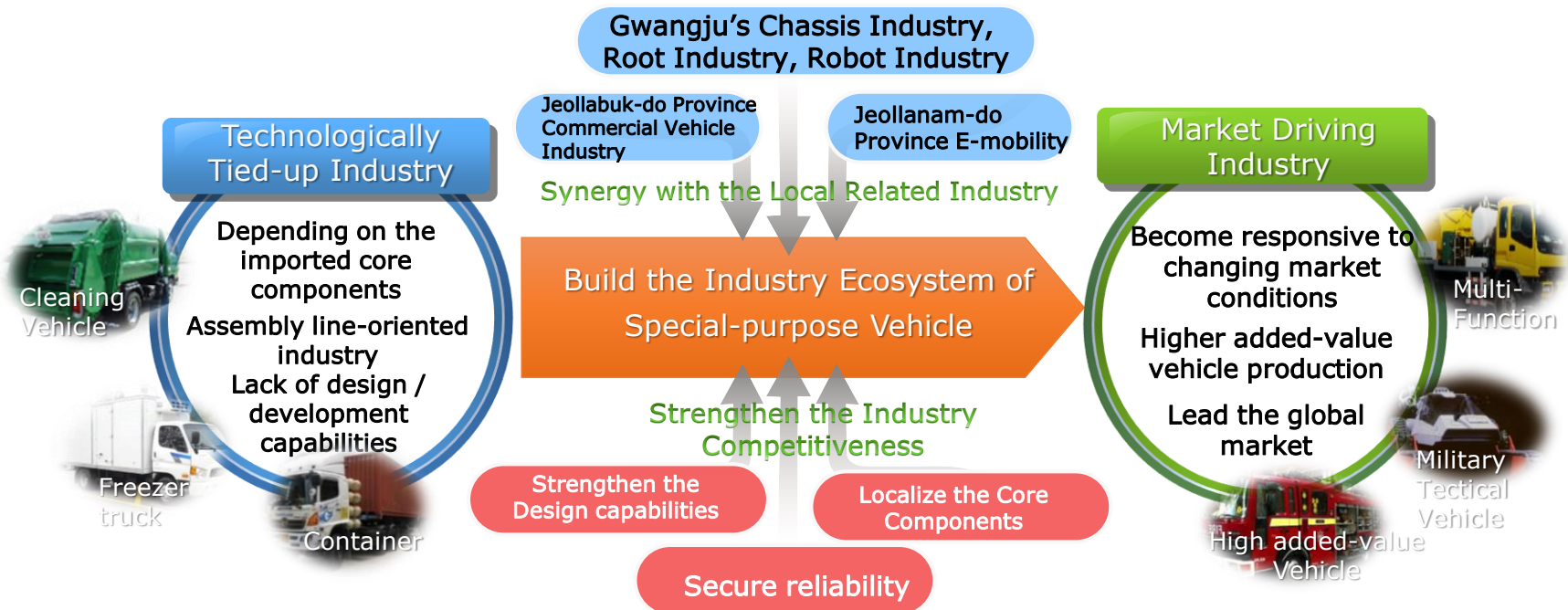
Tuning parts and
remanufacturing – China,
Southeast Asia

4. Going Forward: Gwangju Automotive Industry – Special-purpose Vehicle

Foster Special-Purpose Vehicle Industry – Build Export-oriented Industry Cluster

Special-Purpose Vehicle Industry

- Transform the existing technologically tied-up industry into the higher value-added, market-leading, export-oriented industry.
 - Reinforce the global competitiveness (in-house design capabilities, localization of core components, securing reliability/durability)
 - Leveraging the local related industry (chassis, commercial vehicles, EV, etc..)



4. Going Forward: Gwangju Automotive Industry – Gwangju Automotive Industrial Valley

By building Gwangju Automotive Industrial Valley, we will bring Renaissance of the Automotive Industry in Gwangju!

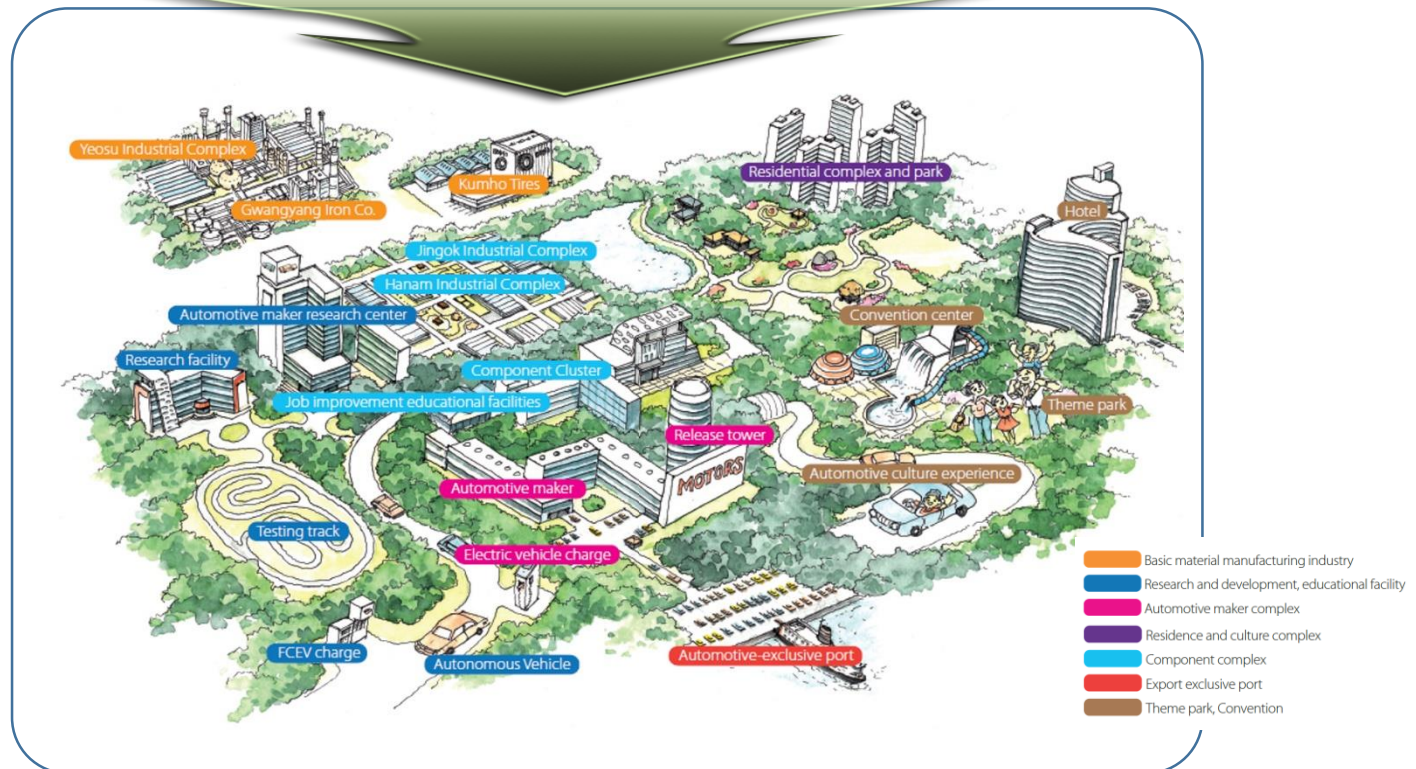
Build Cluster

Automotive-exclusive National Industry Cluster

Technology Support for Eco-Friendly Automotive Component Cluster

Build the base for Eco-Friendly Automotive Component Cluster

Build Automotive Industrial Valley



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Thank you for listening!