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
- No. of units produced: 488,154, 443,394, 479,880, 538,900, 533,483
- Annual Revenue: 8.5 trillion Won, 8 trillion Won, 8.8 trillion Won, 9.5 trillion Won, 9.5 trillion Won

300 companies related to autoparts

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

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<th>Goal</th>
<th>Build Eco-Friendly Automotive Component Cluster</th>
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<tr>
<td>Project Period</td>
<td>2016 ~ 2021 (6 years)</td>
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<td>Project Entities</td>
<td>Ministry of Trade, Industry and Energy, Gwangju City, Gwangju Institute of Green-Car Advancement, Component Manufacturers</td>
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<td>Location</td>
<td>BitGreen National Industrial Complex in Gwangju (4 mil m²)</td>
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<td>Expenditure</td>
<td>303 Billion Won (Central Government 143.1, City 140.5, Private Sector 19.4)</td>
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### Project Contents

- **Build Automotive-Exclusive National Industry Complex**
- **Build the Infrastructure for Capability Reinforcements**
  - Build the Technology Support Center
  - Build the Global Business Center
  - Infrastructure-based Capability Reinforcements
- **Support Technology Development**
  - Technology Support on the 4 Specialized Vehicle Areas
    - HEV/SLV Powertrain
    - Eco-Friendly Vehicle Weight Reduction Parts
    - High performance electric/electronic and optical components
    - Special-purpose vehicles

[Diagram showing 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

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**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..

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**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..

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**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

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 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
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.

  - Build Common EV Chassis Platform
  - Develop EV EE Architecture
  - VCP Standardization
  - Strengthen R&D and Horizontal Collaboration System
  - Validate the EV control logic reliability
  - Horizontal collaboration between component vendor & customer
  - Build the verification system

  - Develop affordable EV model

**Build the basis of EV industry by enabling development of EV SW and HW Platform**
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

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

Replacement Parts – U.S., Tuning parts and remanufacturing – China, Southeast Asia

Industry Coalition
- Combine overseas marketing efforts through after-market industry coalition

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.)
By building Gwangju Automotive Industrial Valley, we will bring Renaissance of the Automotive Industry in Gwangju!
Thank you for listening!