

Expectation Effectiveness



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I Ripple Effect

Economic Effect

Industrial Effect

Technological Effect

✓ Economic Effect



- (Employment Generation effect) Supporting companies through the establishment of a platform to support the development of green hydrogen production parts in Chungnam Province & A total of 51 employments are expected to create jobs over 3 years when local industries are revitalized
- (Production inducement effect & Added value inducement effect) Support for development of green hydrogen production parts in Chungnam Province Activation of Business for related small and medium enterprises through platform construction, A total production inducement effect of KRW 18.1 billion through securing market competitiveness, **Expected value-added inducement effect of KRW 5.3 billion**

✓ Industrial Effect



- Strengthening the competitiveness of the hydrogen industry and promoting consumption by lowering the price of hydrogen fuel cells and automobiles through local production of hydrogen related parts
- Reducing energy costs for small and medium-sized enterprises through local industry consultations and funding systems for large corporations and Securing greenhouse gas reduction performance of large corporations

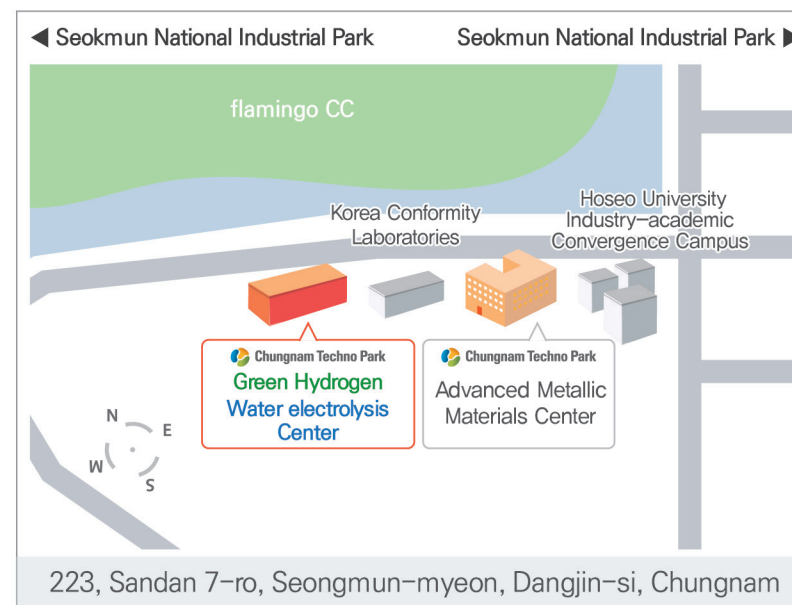
✓ Technological Effect



- Planning mid to long term research and development projects in "hydrogen related fields" through industry conversion of stagnant industries in Chungnam Province, In addition to PEM water electrolysis, a strategy can be prepared to advance Chungnam Province as an outpost for hydrogen production through SOFC, solid oxide water electrolysis technology, and parts development

- **Reorganization of crisis industries(coal-fired power generation and automobile parts industry) through training of hydrogen specialists & Enhancing Competitiveness for industry transition**
- Development of WIN-WIN model of carbon neutral hydrogen city (Dangjin) for balanced development in Chungnam Province & **Securing sustainable growth engines**

I Direction



Green Hydrogen Water electrolysis Center

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The Ministry of Industry Smart Specialization Project

A Platform Construction Project to Support
the Development of Water electrolysis
components for Green Hydrogen Production

Green Hydrogen Water electrolysis Center

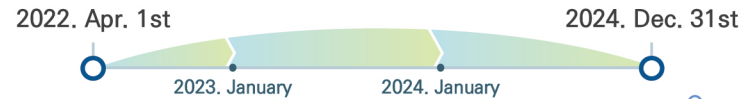


Business Overview

Establishment of a platform

for supporting the development of water electrolysis components for the production of green hydrogen

Project Period 33 months



Project Cost Total KRW 13,114 million



Implementing Agencies

A Leading Agency **CTP**
Participating Agencies **KITECH** **KIST** Korea Institute of Science and Technology **HOSEO UNIVERSITY**

Laying the Groundwork (Green Hydrogen Water Electrolysis Center)

- Constructing equipment & Securing a dedicated space for carrying out the project
Center Construction Location : 2241-4 Sambong-ri, Seokmun-myeon, Dangjin-si, Chungcheongnam-do Securing 6,600㎡ of land and Constructing 825㎡ of building)

Building up equipment & Operating

- Building up of 11 units of 10 types of new equipment (Reflecting the corporate demand surveys)
- Equipment Performance Improvement 3 types 3 units (For prototype production)
- Prototype production based on building up equipment and Operation of reliability evaluation equipment

Technical support & Training of Professional workforce

- Evaluation and failure cause analysis through building up equipment operation
- Transfer of technical know-how, Prototype Consulting
- Commercialization support and Cultivating of on-site customized workforce through operational training of building up equipment

Business Vision & Goal



Vision The beginning of domestication of components for green hydrogen production, **Chungcheongnam-do**



Goal Utilize platform construction & Localization of **PEM parts through corporate support**

Annual Implementation Plan

Category	2022 Step 1	2023 Step 2	2024 Step 3
Establishment of a Base center	<ul style="list-style-type: none"> Building Design and Construction Equipment Selection Review and Construction 	<ul style="list-style-type: none"> Completion of Support Center Construction Providing equipment based corporate support services 	
Equipment Expansion	<ul style="list-style-type: none"> Establishment of an electrochemical component characteristic evaluation system GDL, Establishment of a common evaluation system for separator parts Construction of an educational 2ch water electrolysis test station Powder manufacturing device for GDL, Flow control device for GDL, and Resistant electric furnace module, Improvement of Vacuum and Cooling Modules 	<ul style="list-style-type: none"> Establishment of a 1Kw water electrolysis stack component reliability evaluation system Ultrapure manufacturing and Construction of supply equipment GDL, Construction of a 3D printing machine dedicated to the production of separators Construction of One Unit of Composite (Sulfuric Acid/Hydrochloric Acid) Corrosion Testing Equipment 	<ul style="list-style-type: none"> Establishment of 10Kw water electrolysis stack component reliability evaluation equipment Construction of hot stamping with Environmental Control for PEM water electrolysis Construction of Electron Beam Vacuum Deposition Equipment with multi-targeting
Corporate Support	<ul style="list-style-type: none"> Corporate industry diversification training Corporate Analysis and custom consulting Prototype Production support Evaluation support based on equipment 	<ul style="list-style-type: none"> Prototype Production Support Guidance Consulting Evaluation support based on equipment Expert training for equipment operation 	<ul style="list-style-type: none"> Prototype Production Support Technical guidance and custom consulting Equipment suitability training and Training related to certification/evaluation procedures Analysis/Evaluation Support based on equipment
Network	<ul style="list-style-type: none"> R&D Planning for Industrial school researcher and Strengthening cooperation Seminar, Technology exchange meeting and Working Support Working group operation support 	<ul style="list-style-type: none"> R&D Planning for Industrial school researcher and Strengthening cooperation Seminar, Technology exchange meeting and Working Support Working group operation support 	<ul style="list-style-type: none"> R&D Planning for Industrial school researcher and Strengthening cooperation Seminar, Technology exchange meeting and Working Support Working group operation support

Diversify the industry through the establishment of a platform for supporting the development of water electrolysis components for the production of green hydrogen & **Revitalizing the local economy**

Support for companies to transition from the mechanical parts processing industry such as iron, metal, machinery and automobiles to the **PEM water electrolysis stack parts production industry**