

1st Edition

TEXTBOOK

INVESTMENT 101

HYDROGEN



Written by
Ulsan Free Economic Zone Authority



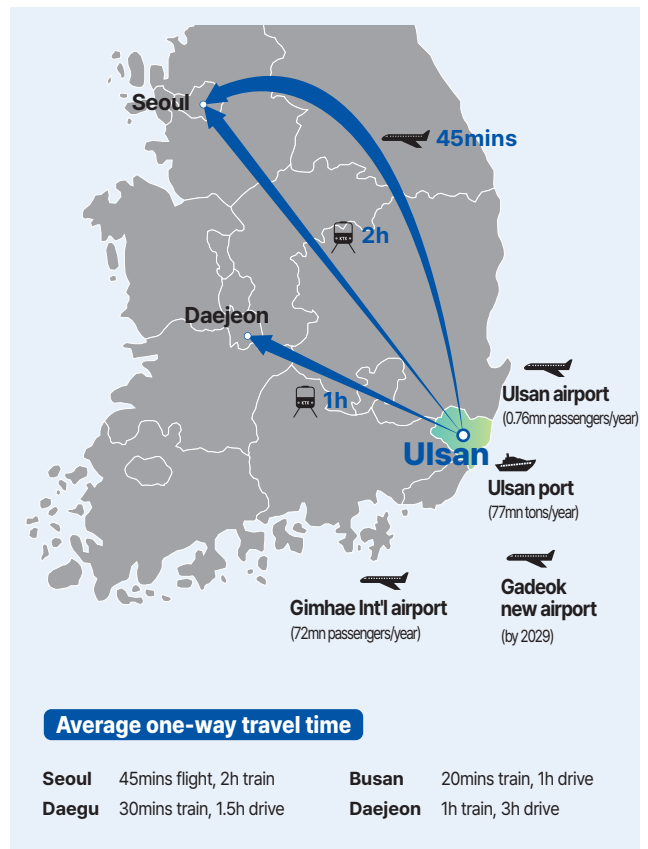
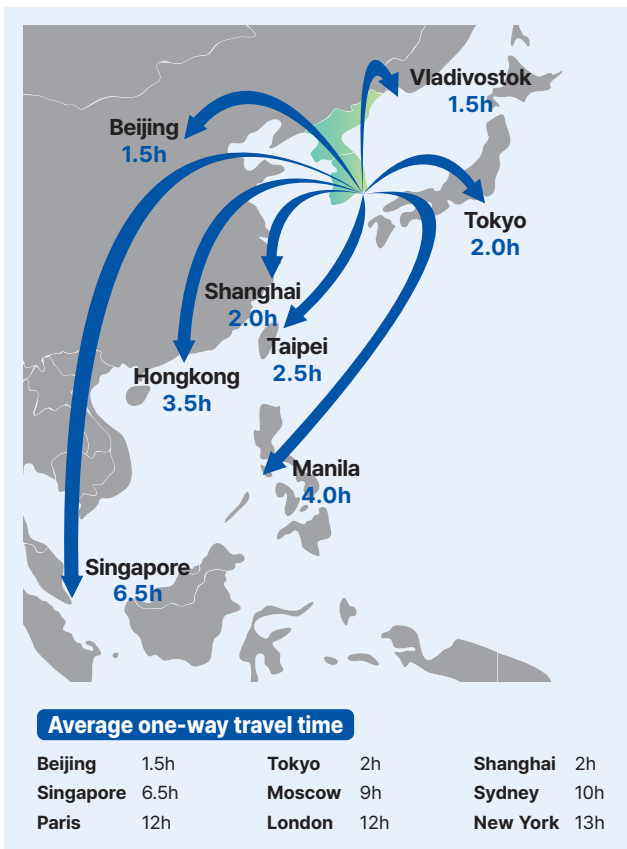
Ulsan Free Economic Zone

The Ulsan Free Economic Zone was launched in 2021 to enhance national competitive power and to revive local economy by improving the business and living environment for domestic and foreign companies.



Ulsan, the industrial gateway connecting South Korea to the world

The city is well-equipped with advanced transport infrastructures, business environment and optimal investment solutions.





Development Status of UFEZ

Hydrogen Industry Base

Area 1.29km²(Techno Industrial Complex)

Target Industries Hydrogen industry

Fostering strategies Building a cluster of hydrogen industry demonstration and R&D center, hydrogen economy oriented city



To create hydrogen industry demonstration facilities
To create hydrogen-oriented city
To lead the hydrogen economy

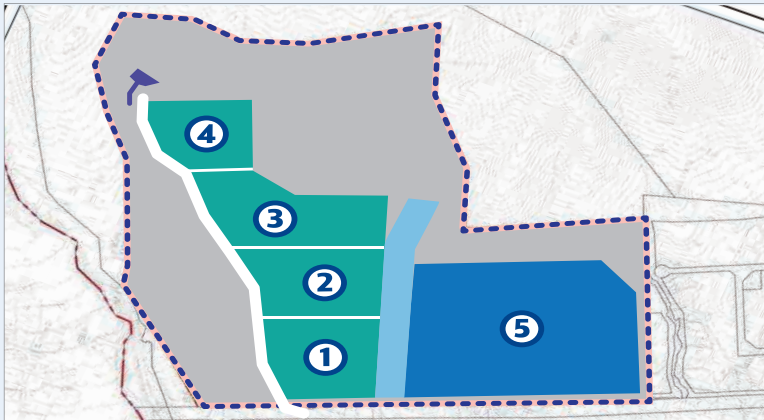
- ① Hydrogen fuel cell demonstration center
- ② Advanced energy technology research center for next generation battery
- ③ Industry-University convergence institute
- ④ Korea marine equipment long span cycle center
- ⑥ Korea marine painting & surface treatment center
- ⑤ ACE technology support center for the fundamental industries
- ⑦ Petrochemical process technology education center
- ⑧ Residential area

Eledrogen Auto Valley

Area 0.69km²(Ehwa Industrial Complex)

Target Industries Hydrogen industry(automobile parts)

Fostering strategies Producing hydrogen-powered vehicle parts, installing clusters of environment-friendly vehicle's parts



To Secure facilities for the production
To Stabilize parts manufacturing
To Install clusters of vehicle's parts

- ① Hyundai Mobis hydrogen fuel cell system plant by 2023
- ② Vacant area(29,586m²)
- ③ Vacant area(57,363m²)
- ④ Hydrogen electric vehicle safety inspection, safety certificate center
- ⑤ Hyundai Mobis electric vehicle battery plant

R&D Business Valley

Area 2.72km²(HTV, UNIST, KTX station)

Target Industries Hydrogen fuel cell

Fostering strategies Developing R&D technology clusters, fostering business support for the industry, building mid-and long-term residential environment



① R&D business district(High Tech Valley)

· An optimal industrial district as a mecca of hydrogen industry

② Business district

· Adjacent to the express train station and convention center

③ R&D district

· UNIST joining the efforts of the city to lead the hydrogen industry



Investment Strength in Ulsan!

Global partner and industrial capital of South Korea

South Korea's major companies



[Hyundai Motors] Ranked 5th in the global car sales('20)
[Hyundai Heavy Industries]
 Ranked 1st in the world shipbuilding orders('20)
[Hyundai Mipo Dockyard]
 Ranked 1st in the world's mid-sized shipbuilding orders('20)
[SK Energy]
 Crude oil processing capacity of 840,000 barrels/day
[Sangsunng SDI]
 Ranked 5th in the global market share of EV battery packs('20)

The optimal business environment



[Young city] Average age of 40.2 years('20)
[Universities] 54 universities and 83,000 graduates('20)
[Conglomerates] 8,245 companies('20)
[Total exports] USD 4.715 billion('20)
[GRDP] USD 54,000 ranked 1st in Korea('20)

The best R&D area



[UNIST] Ranked 6th in the THE world's university('21)
[Subsidiary research center of companies and public research institutes]

The leading industry at the 4th industrial revolution



- Floating wind power plant('25)
- Northeast Asia's oil and plant('25)
- Hydrogen economy oriented city
- Dismantling nuclear power plants('30)
- 3D printing industry combined with manufacturing
- Biochemical Industry for genome biology

Industrial complex and infrastructures



[The country's best industrial complex]

- 2 national industrial districts
- 15 general industrial districts and 4 agricultural districts
- 11 districts to be completed

[The country's best industrial infrastructure]

- Industrial gas distribution rate ranked 1st in Korea('18)
- Thermal and nuclear powered electricity supply rate ranked 4th in Korea('18)
- 6.2km high-pressure steam highway to complete(100ton/h)

Pleasant residential environment



- 1 day traveling throughout the country with high-speed trains
- Innovative city equipped with public institutes
- Green infrastructures with urban parks
- Cultural environment with museums and art center
- Natural and cultural heritage sites



Investment Strength in UFEZ!

Optimal investment area for hydrogen vehicles and low-carbon energies

Hydrogen economy roadmap in 2030

[Production] Annual production of 820,000tons →
 "plus" annual production of 84,000 tons from floating wind power plants
[Transport] Hydrogen transporting underground pipelines of 120km →
 200km to be extended
[Storage] 10 refuelling stations → 60 stations to be completed
[Application]

- 500,000 hydrogen electric vehicles(production)
- 67,000 hydrogen electric vehicles(utilization)
- 250MW hydrogen fuel cells(production)
- 200 hydrogen related companies

Policy support for hydrogen industry

[Hydrogen model city]
 Citywide hydrogen pipeline grid for supplying power to manufacturing plants and residential buildings
[Hydrogen mobility regulation-free zone designation]
 Regulation support for hydrogen forklifts, autonomous vehicles, portable hydrogen refueling stations, ships
[Hydrogen tram demonstration business]
 Hydrogen trams with fuel efficiency of 2,500km

Future vehicle and secondary battery industries

[Future vehicles] EV parts manufacturing plant('19) and hydrogen electric vehicle system plant from Hyundai Mobis('21)
[Secondary battery] Secondary battery anode plants by SMLAB('21)
[4th industry] Drone software development and 3D printing companies

Special Zone

[Research development special zone]
 Create an innovative ecosystem centered around the UNIST and High Tech Valley
[Genome service industry and regulation free zone]
 UNIST's genome database with 10,000 citizens



Incentives

Foreign investing companies

01. Tax Cuts

National Tax	Custom Duties	Exempted for imported capital goods for 5 years	
Local Tax	Acquisition Tax	100% exempted for 15 years	<ul style="list-style-type: none"> · Manufacturing/tourism industry with more than USD 10 million · Logistics/medical industry with more than USD 5 million · New growth engine industry based R&D with more than USD 1 million
	Property Tax	100% exempted for 3-15 years	

02. Cash Grants

Amount	More than 5% of total foreign direct investment
Criteria	More than 30% of FDI ratio - New growth engine, original source technology, high-tech parts&materials, equipments - Job creations, research personnel with more than 5 regular employees
Contents	Support for land acquisition, rent cost, construction cost, cost for capital goods, employment and education and training cost

03. Deregulation

Exclusion of Mandatory Employment	Employment of national merits, the disabled, the aged
Unpaid Leaves	Unpaid leaves allowed
Dispatched Employees	Exempted from the regulations for dispatching period and tasks
Foreign Exchange Transaction	Foreign exchange transaction less than USD 100,000 exempted from reporting



* Please inquire for details to the Investment Promotion Division at UFEZ authority.
 (✉ E-mail: yvna@korea.kr)



UFEZ Districts

VISION

Northeast Asian Energy Hub with Hydrogen

MISSION

Fostering largest energy oriented city in Northeast Asia through hydrogen industry hub

Production Inducement Effect	USD 11.31 billion
Value Added Inducement Effect	USD 4.46 billion
Employment Creation Effect	76,712 persons

Total Area : 3 districts **4.70**km²



Hydrogen production plant for refueling



Ranked 3rd in hydrogen sales in Korea



The first high-pressure hydrogen refueling station



R&D Business Valley

The center of hydrogen fuel cell businesses within and around the KTX station and R&D district

Ulsan high-speed train station



Annual liquid hydrogen production of 300,000 tons by 2023
Blue hydrogen production from LNG of 250,000 tons by 2025
A cluster of hydrogen production facilities by 2025



*Hydrogen alliance+ SAMSUNG SAMSUNG C&T

Green hydrogen production in Saudi Arabia
→ To be transported in forms of ammonia



Electrodrogen Auto Valley

The key district for hydrogen vehicle resources and parts



Fuel cell system plant by 2030
700,000 units of hydrogen fuel cell systems by 2030



70% of global hydrogen electric vehicle sales in 2020
Apply hydrogen system to all commercial models by 2028
Annual sales goal of 500,000 hydrogen electric vehicles by 2030



Ulsan airport

Mipo port



Green ammonia marine transportation & bunkering consortium in 2021
Produce 440,000 tons of green hydrogen from ammonia by 2030



Taehwagang train station



Green hydrogen with water electrolysis



Ulsan main port



Ranked 1st in hydrogen production in South Korea accounting for 50%



Ulsan new port

Onsan port

Hydrogen Industry Base

The cluster of hydrogen research facilities and leading the hydrogen economy



New liquid hydrogen plant to produce 13,000 tons of hydrogen by 2023



Northeast Asian Energy Hub with Hydrogen

Ulsan Free Economic Zone Authority (UFEZ)

Ulsan Free Economic Zone Authority



With UFEZ
Your dream will come true

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What is a 'Free Economic Zone'?

A Free Economic Zone is a specially designated district created to enhance national competitiveness and to revive the local economy by improving the business and living environment for foreign investing companies.

Ulsan Free Economic Zone

UFEZ was launched in 2021 to encourage hydrogen-based energy industries in Ulsan. It has 3 districts (total area of 4.7km²), which are mainly located in the industrial complex, UNIST and Ulsan KTX station area. UFEZ provides the best business environment for the green energy industries such as hydrogen industry.

