

# Company Introduction



Value in Valve

# VIV International

We solve our customer's valve concerns immediately

[www.vivenc.com](http://www.vivenc.com) T. +82-70-4062-7961 [info@vivenc.com](mailto:info@vivenc.com)

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Business Model

# 01

## CHAPTER

# Company Overview

- 1) General Status
- 2) Company History
- 3) Management Philosophy
- 4) Organization Chart
- 5) Supply Reference

# 1) General Status



**Date of Establishment** 2003.2.24

**Tel :** 070-4062-7961

**E-MAIL** [info@vivenc.com](mailto:info@vivenc.com)

**Address** 303-47, Dongdaei-gil, Chilwon-eup, Haman-gun, Gyung-sangnam-do, South Korea

**Key Product** Severe Service Control Valve for High Temp & High Delta Press.  
Cryogenic Control Valve

**Home Page** [www.vivenc.com](http://www.vivenc.com)

# 2) Company History

**2003-2015**

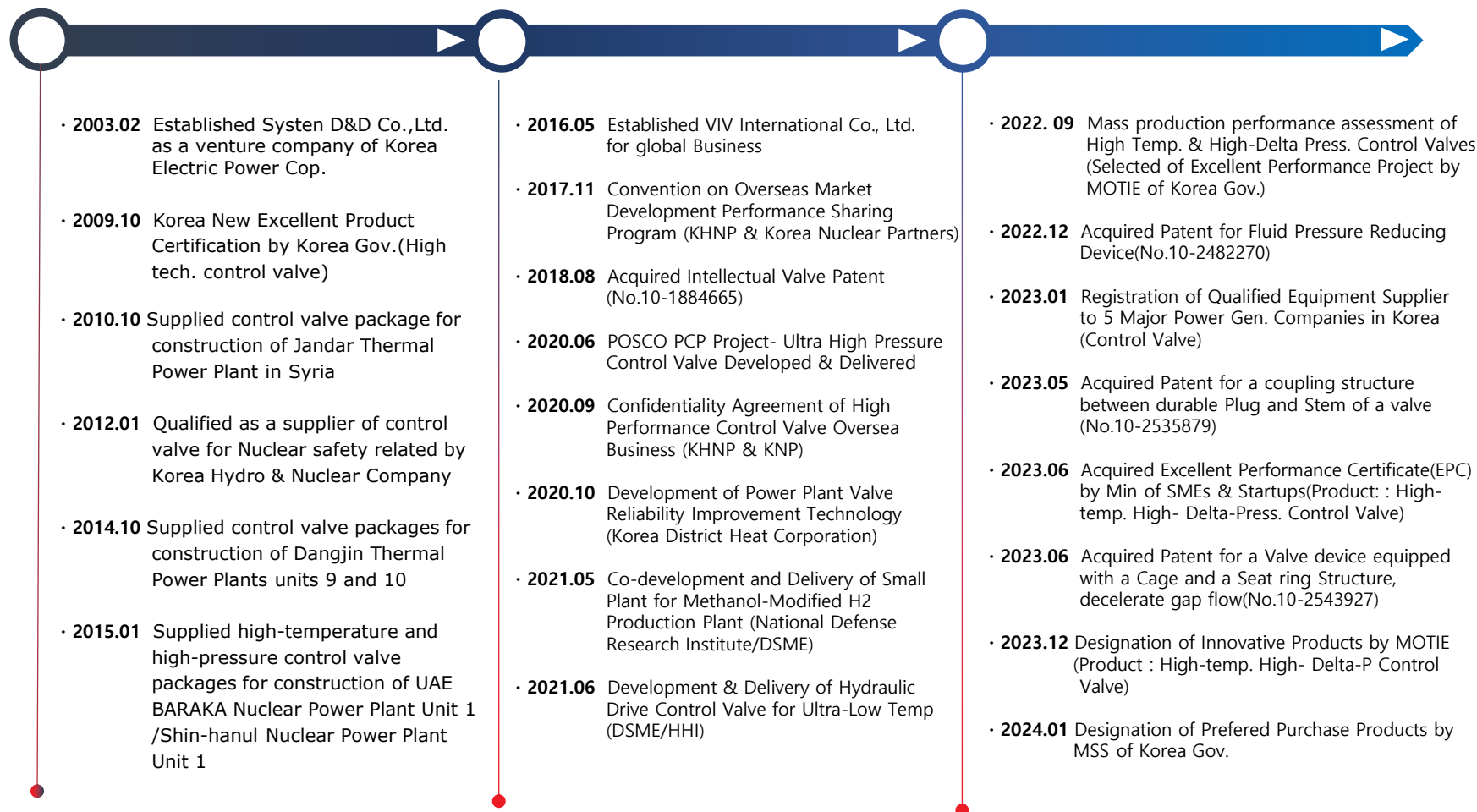
Stepping stone for Growth

**2016-2021**

Securing Technology Competitiveness

**2022-Present**

Growth and Leap





# 3) Management Philosophy

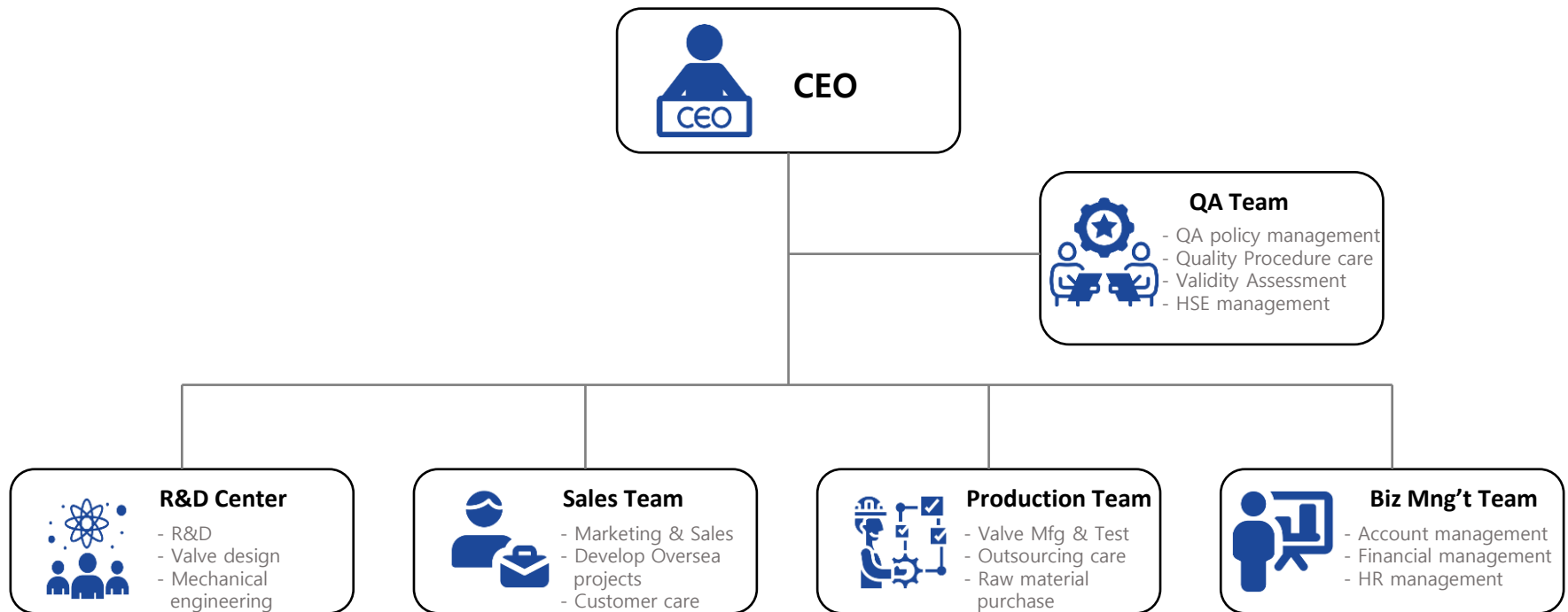


## Smarter & Better

**"Smarter"** means to lead the market with technology, and **"Better"** means better quality. In other words, it contains VIV International's will to realize customer impressions by pursuing high quality based on advanced technology.

# 4) Organization Chart

VIV International Organization divided into 1 R&D center and 4 teams where R&D center supports each team technically.



# 5) Supply Reference

## Control Valves for Severe Service

Region	Field	Clients	Function	Q'ty
Domestic (Korea)	Nuclear Power Plants	Kori, Yeonggwang, Ulchin, Wolsong, Shinhanul	Feed water heater control valve, etc.	263
	Thermal Power Plants	Seoincheon, Boryeong, Yeongheung, Pyeongtaek etc.	Boiler feed water control valve, etc.	391
	Refinery Chemical Plants	LG Chem, AERO PHE, etc.	Flow control valve, etc.	55
	Shipbuilding and others	KAERI, HHI, etc.	High pressure flow control valve, etc.	64
Overseas	Thermal Power Plants	Jandar Power Plant in Syria	High pressure feed water control valve, etc.	28
	Nuclear Power Plants	Baraka NPP in UAE	Control valve for feed water heater, etc.	62
Total				863



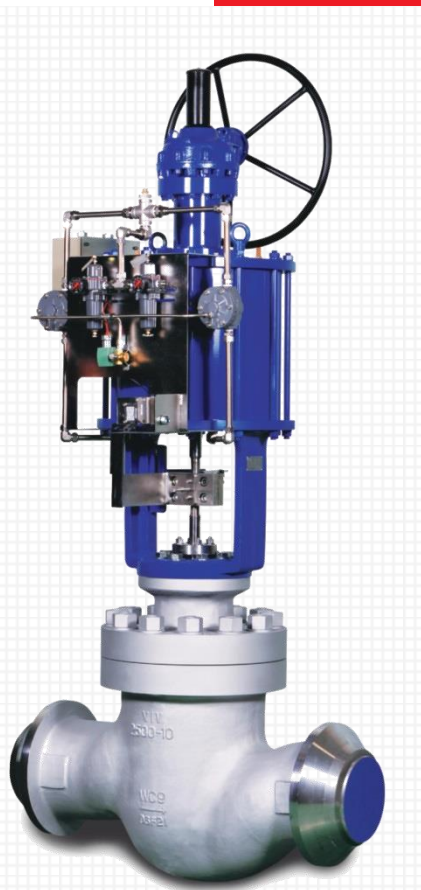
# 02

## CHAPTER

# Key Products

- 1) Severe Service Control Valve
- 2) Cryogenic Control Valve
- 3) Mechanical Engineering

# 1) Severe Service Control Valve



## 001 >> Product Use

Precise control of fluids subject to high temp & high delta-P in Power plant and plant facilities (Boiler feed water control, pump min flow control, steam & gas pressure control, flow control, etc)

## 002 >> Core Value

- Korean Gov't certified "Innovative Product", "Excellent Product Certificate", "Excellent Inventions", "Preferred Purchase Certificate" → Proven Performance
- All types of control valves in power plants are certified
- World-class original technology
- Successful & proven localization of chronic foreign-dependent product
- Superior performance, quality, and competitive price compared to competitor's

## 003 >> Major Customers w/References

- 5 Power Gen companies in Korea(KOMIPO, KOWEPO, EWP, KOEN, KOSPO)
- KHNP (Korea Hydro & Nuclear Power Co., Ltd)
- KHDC(Korea District Heat Company)
- UAE Nawah Energy(Barakah Nuclear Power Plant)

### Strong Points

- Prevention of internal leakage, anti-cavitation, low noise & low vibration, and corrosion resistance technologies
- 3D flow path trim, effective for high delta-P precise control (Patent No.10-2482270, No.10-2493448)
- Fluid-induced vibration stress distribution plug with improved durability (Patent No.10-2535879)
- Gap flow reducing seat-ring, preventing seat-ring corrosion (Patent No.10-2543927)
- "Excellent Invention" by Korean Intellectual Property Office (No.2023-3967)
- "Excellent Product Certificate" by Min. of SMEs & Startups (No.23-AAN0273)
- "Innovative Product" by MOTIE (No.2023-180)

### Key Spec

Pressure Drop	2~50 Stage
Size	¼"~48"
Pressure	ANSI Class #150~#4500
Temperature	-196~650°C

Body Type	Globe, Angle, 3-way
Leakage	ANSI Class IV, V, VI
Connection	RF, BW, SW
Material	Carbon Steel, Stainless Steel

# 2) Cryogenic Control Valve

## 001 >> Product Use

Precise control of fluids in LNG Carrier and cryogenic tankers

## 002 >> Core Value

- Cryogenic operability
- Excellent closure sealing performance
- Superior quality, performance, and competitive price

## 003 >> Major Customers w/references

- Hanwha Ocean
- HHI
- Samsung Heavy Industries

### Strong Points

- Closure sealing (No Leakage)
- Boiling flow characteristics for precision control
- Optimized design for enhanced durability

### Key Spec

Pressure Drop	1~3 Stage
Size	¼"~20"
Pressure	ANSI Class #150~#2500
Temperature	-196 ~ 60°C

Body Type	Globe, Angle, 3-way
Leakage	ANSI Class V, no leak
Connection	RF, BW
Material	Stainless Steel



# 3) Mechanical Engineering

## 001 >> Business Scope



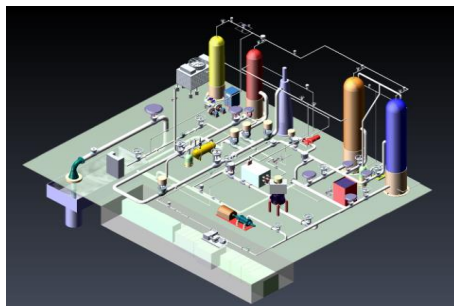
- Special facility and plant design & manufacturing using high-tech valves and technologies
- Design & Manufacture of compact Methanol-modified H<sub>2</sub> production plant (for submarine, special purpose)
- **High Performance Control Valve and Technology incorporated**

## 002 >> Core Values



- 4<sup>th</sup> Industrial Revolution Hydrogen field
  - Technology development & market expansion
- Engineering capability for large scale plant
- Application of design and retention technology for high- temp & high - pressure fluid facilities
  - Temp : 400°C, Pressure : 200 bar
  - Design of various fluid facilities (tank, Heat Exchanger, Pump, Valve, etc)

## 003 >> Major Customers w/references



- Plant & facility operators (Power Plants, Large factories, etc)
- Shipbuilders (Hanwha Ocean, HHI, etc)
- Defense Industry (National Defense & Science Institutes, Hanwha Aerospace, etc)





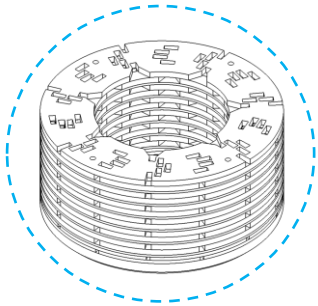
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## CHAPTER

# Retention Technologies

- 1) Technological Competitiveness
- 2) Technology Development Record
- 3) Related Patents
- 4) Retention Certificates

# 1) Technological Competitiveness



## HIGH TECH CONTROL VALVE

01

### World Top-Class High-temp & High-Delta P Control Valve manufacturing capability

- 17 global patents
- World's top-level valve manufacturing capability (Excellent Performance Product, Innovative Product, Excellent Invention) (ANSI Class 4500 / Korea's Only & World top-class)

03

### Technical capability with public trust (replaceable expensive foreign valves)

- 3D flow path trim technology
- Various certificates from Korean Gov't
- Product Certificate from KOWEPO & KIMA
- Reference with KHNP and UAE Nawah energy

02

### No-leakage Control valve (Steam & Gas Plant) technology

- Surpassing limits up to 650°C, max. delta-P 300 kg/cm<sup>2</sup>
- Supply of control valves for power plant with reduced noise and energy loss (Valve performance improvement project by KDHC)

04

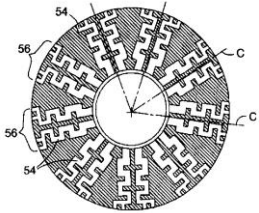
### Intelligent control valve with enhanced self-diagnosis and safety features(Patents)

- Intelligent control valve with AI and IoT technologies applied  
→ Technology for Future market
- Patent No.10-1884665



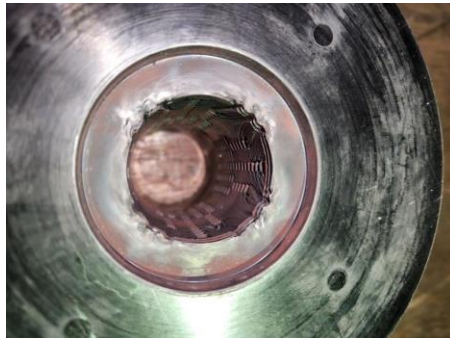
# Comparison of core internal parts durability(KDHC Dongtan CHP)

## Competitor parts



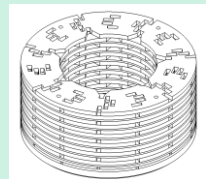
## Trim

- Valve size 4" and ANSI class #2500
- Condition - delta P: 180 bar , Temp : 315 °C



- Used period : 18 months('20.10 ~ '22.4)
- Damaged by corrosion, lost flow controllability

## VIV parts



- Used period : 18 months ('22.4 ~ '23.10)
- Excellent(No damage)

# Comparison of core internal parts durability(KDHC Dongtan CHP)

## Competitor parts



Plug

- Valve size 4" and ANSI class #2500  
- Condition - delta P: 180 bar , Temp : 315 °C



Seat

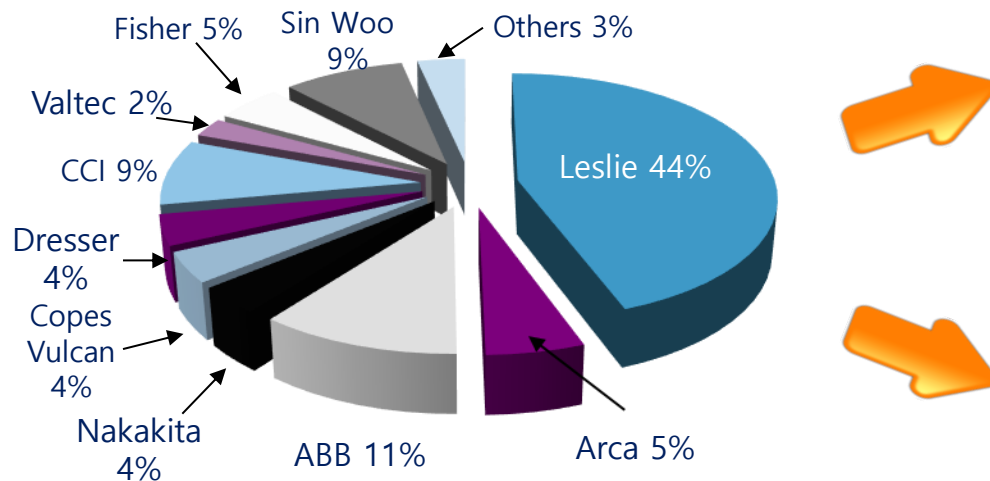
- Inspection date : 2022. 4. 17
- **Damaged by heavy corrosion, large energy loss due to passing**

## VIV parts

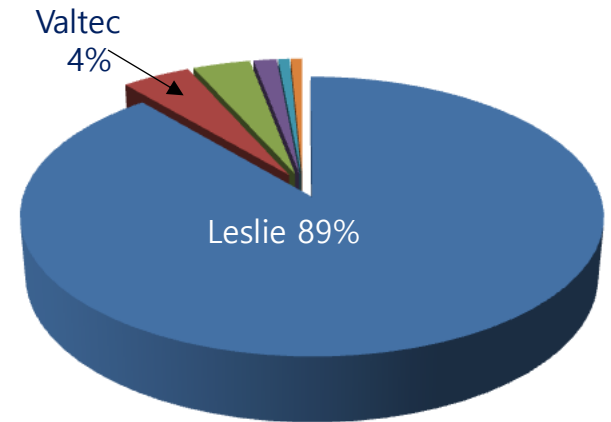


- Used period : 18 months ('22.4 ~ '23.10)
- **Excellent condition(No damage)**

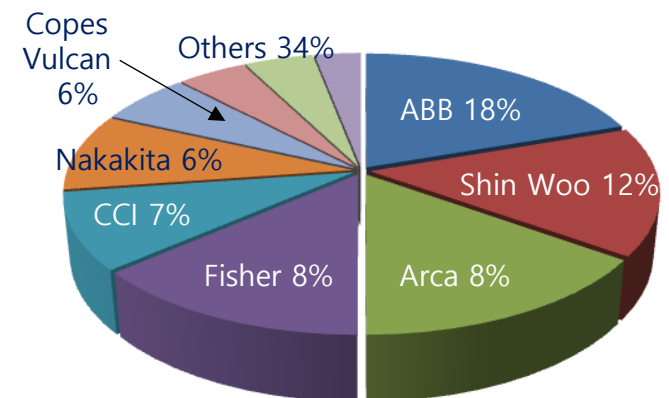
# Replacement record with foreign control valves



Leslie	234	Arca	28	ABB-Kent	57
Nakakita	19	Copes Vulcan	21	Dresser	21
CCI	45	Valtec	13	Fisher	25
Key Valve	8	Hopkinson	5	Shin Woo	46
Framatome	2	Blakeborough	3	<b>Total Q'ty : 527 set</b>	



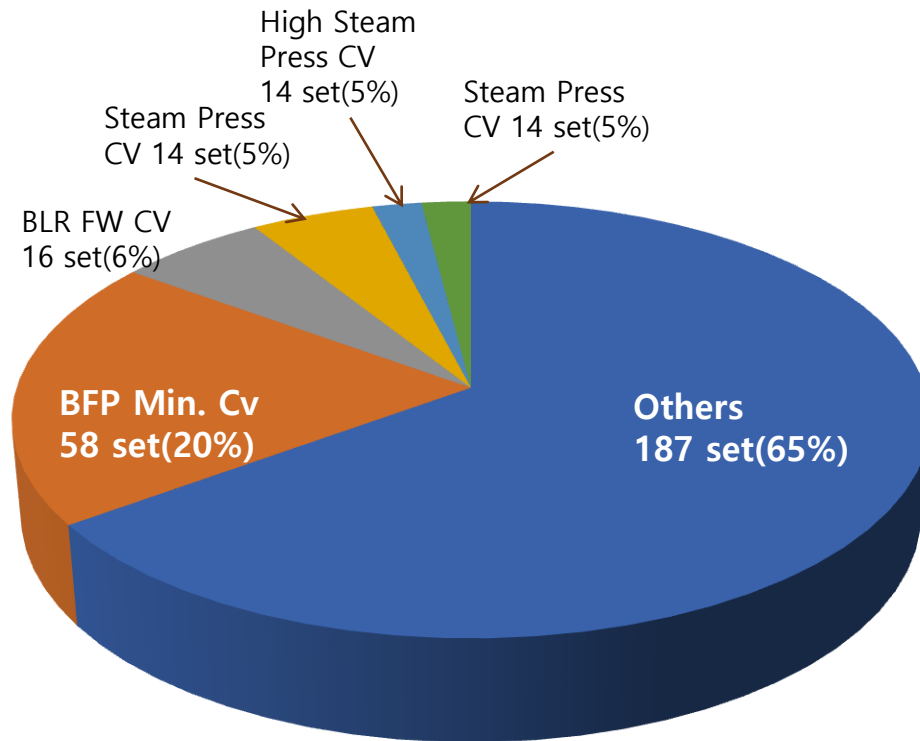
Nuclear Power plant :  
240 set



Thermal Power plant :  
287 set

# Replacement record with foreign control valves

Replacement record of core control valves in Thermal power plant by function



Total 287 set

Function	Q'ty
Boiler Feed Pump Min. Recirculation CV	58
Boiler High Pressure Feed Water Control Valve	16
High Steam Pressure Control Valve	14
High Pressure Turbine Bypass Control Valve	7
Deareaator Level Control Valve	5
Others	187
Total	287

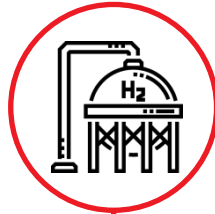
## 2) Technology Development Record



01

### Multi-Stage Trim Severe Service Control Valve

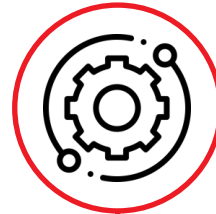
Hosted by : POSCO  
Development period: 2019.08~2020.07  
Tech Development Performance :  
- Installed in POSCO Gwangyang plant  
- Commercialization of high-temp & high-pressure control valve (ANSI 1500급)  
- Development of core parts



02

### Hydrogen production plant using methanol reforming

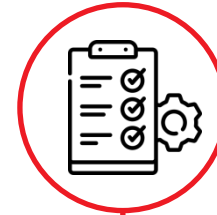
Hosted by : National Defense Science Institutes/DSME  
Development Period: 2019.06~2021.05  
Tech Development Performance :  
- Project to enter the hydrogen field of the 4<sup>th</sup> industrial revolution  
- Securing hydrogen production technology from methanol  
- Miniaturization of hydrogen production plant for submarine



03

### Valve reliability improvement study for CHP

Hosted by : KDHC  
Development period : 2020.10~2022.09  
Tech Development Performance :  
- Identification of cause of valve damages  
- Development of damage reduction technology under high-delta P condition  
- Installation and performance evaluation of 2 developed valves  
- Durability assessment after 18 month operation → Excellent



04

### Localization and mass production performance assessment of severe service control valve

Hosted by : MOTIE/KOWEPO  
Development period: 2021.10~2022.09  
Tech Development Performance :  
- Development of large high value-added control valve  
- Installation and operation evaluation at Pyeongtaek CCPP  
- Selection of Outstanding performance and tasks by MOTIE  
- Gained "EPC", "Innovative product", "Preferred Purchase" by Gov't



05

### Large Feed water control valve development for Nuclear plant steam generator

Hosted by : Min. of SMEs & Startups  
Development period: 2022.11~2024.10  
Significance of technology development :  
- Localization of basic material, parts and equipment for Nuclear plant  
- Advanced capability of large control valve design and manufacturing







# 4) Retention Certification

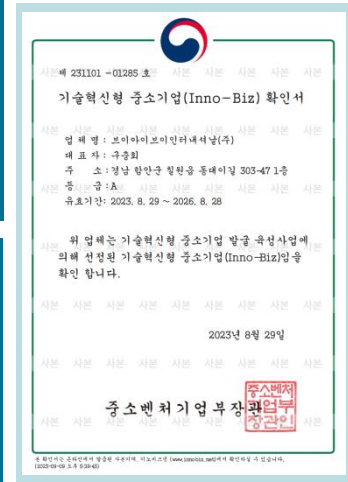
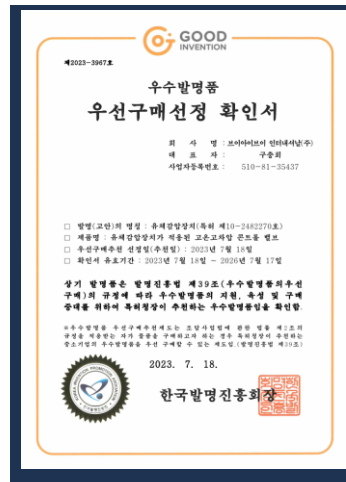
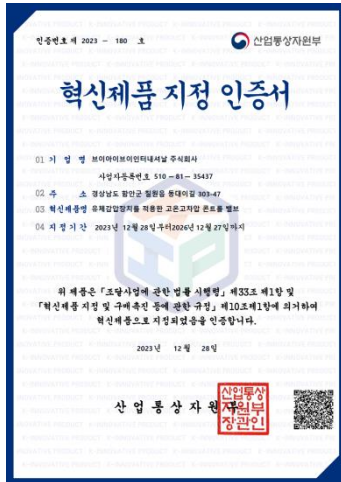
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Innovative Product    Excellent Product Certificate    Excellent Invention

Inno-Biz Certificate

MOTIE of Korea

Min. of SMEs & Startups of Korea

Korean Invention Promotion Agency

Min. of SMEs & Startups of Korea

**Innovative Product, Excellent Invention,  
Excellent Product Certificate**

- Product : High performance severe service control valve with fluid pressure reducing device
- Model : VIV-CV-150-1 & 78 species (Applicable to almost of control valves in power plant)

Certified Equipment Supplier

**5 Power Gen Companies**  
(KOMIPO, KOWEPO, EWP, KOSPO, KOEN)  
and  
**Korea Hydro and Nuclear Power Company**

# 4) Retention Certification

006



ISO 9001

Korea Productivity Center

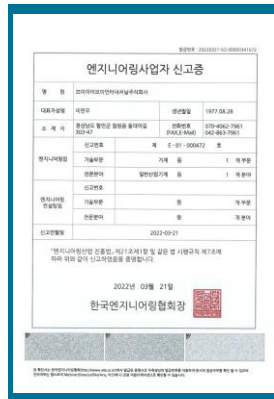
007



Product Certificate

Korea Association of Machinery Industry  
Korea Western Power Company

008



Engineering Company

Korea Engineering Association

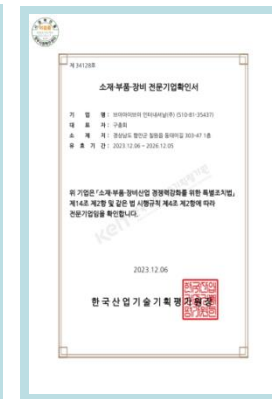
009



Company Research  
Institute Certificate

Korea Industrial Technology Association

010



Material, Components,  
Equipment Company Certificate

Korea Planning & Evaluation  
Institute of Industrial Technology

011



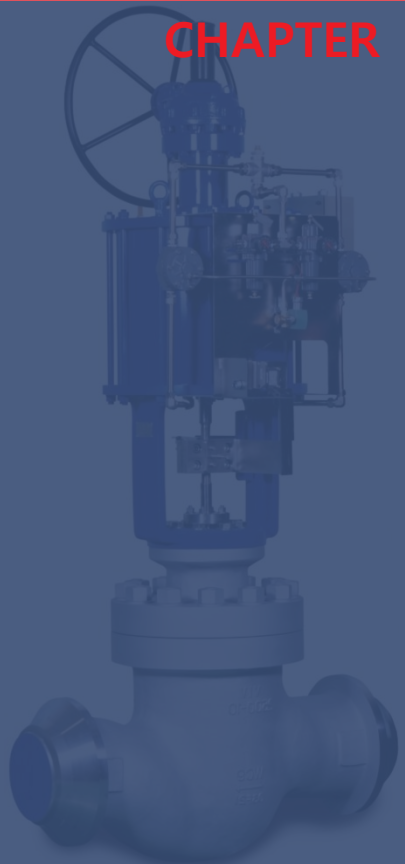
Venture Company Certificate

Korea SMEs and Startups Agency

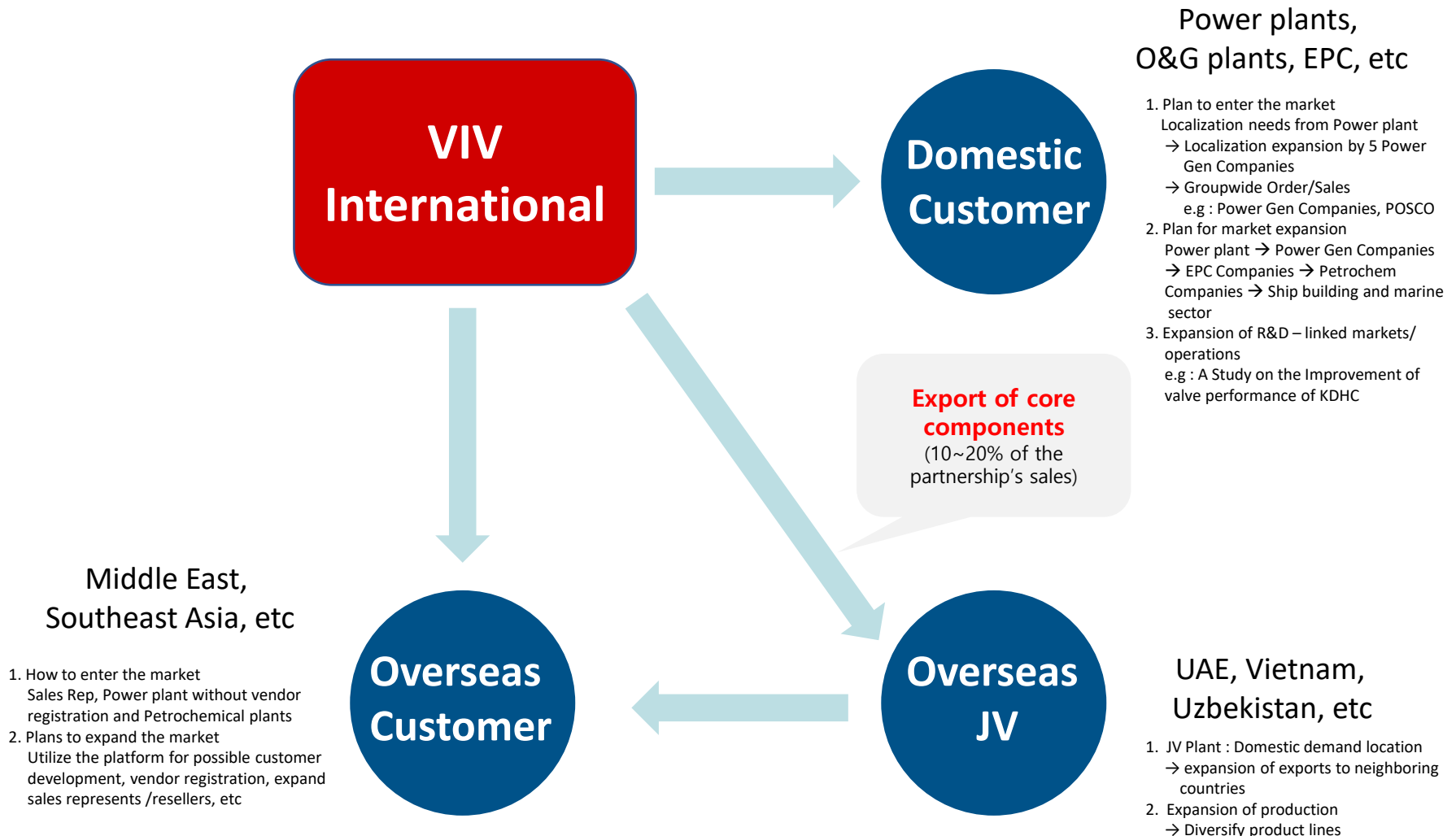
# 04

## CHAPTER

# Business Model



# 1) Business Model



The background of the slide is a collage of industrial images, including large pipes, valves, and a worker in a hard hat and safety glasses. The entire image is overlaid with a semi-transparent blue filter. The text "Thank you!" is centered in a large, white, sans-serif font.

# Thank you!

**VIV INTERNATIONAL WILL BE RECOGNIZED IN THE WORLD**

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