
Energyen Company Introduction

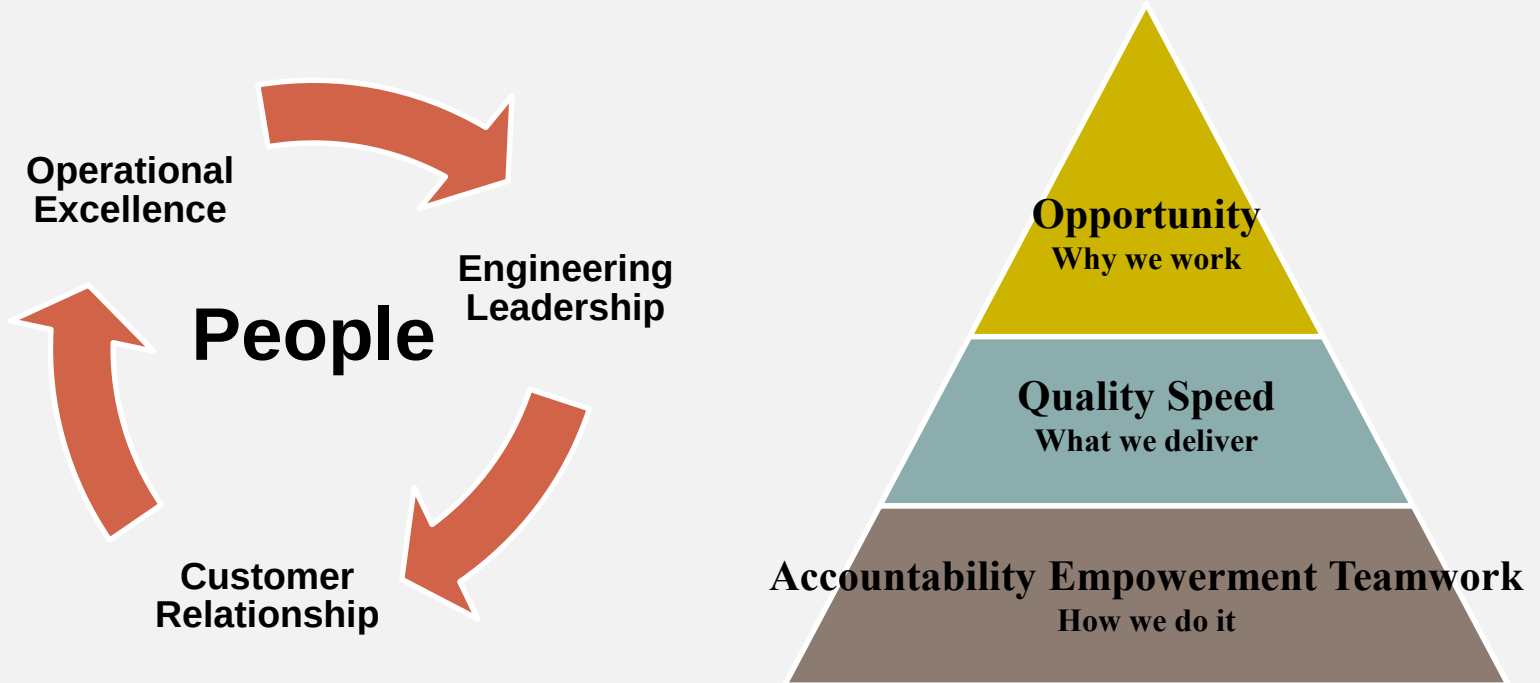
Your Reliable Partner



www.energyen.co.kr

Mission Statement and Operating Strategy

- **Ensure our customers' success by providing enabling engineering services and product that deliver the best performance at economic value**
- **Achieve and maintain engineering leadership in our business**
- **Maintain stable financial results through the business cycle to generate values for stakeholders**



Factory Profile

WELCOME!

On behalf of the dedicated, skillful, and competent workforce of Energyen Corporation, I welcome you all with great pleasure to our company.

Modesty aside, our consistently good performance coupled with sophisticated technology and optimum quality control has earned us a good reputation in the industry for the manufacture of pressure equipment and components of power plant.

We are your reliable partner!

Jong Ku-Jeong

President

Type of company: Private

Number of factories: 2

Gunsan Factory : 72,138 m²

Gimje Factory: 12,830 m²

Total site area: 84,968 m²

Gunsan Factory: 21,000 m²

Gimje Factory: 6,260 m²

Total floor area: 27,260 m²

Production capacity: 24,000 tons/ year

Turbine Condenser - 1,450 tons / 1 unit

MSR - 640 tons / 1 unit (2 sets)

Gunsan Factory

Site area: 72,138 m² Floor area: 23,400 m²



Shop C

Length: 140 m Width: 50 m
Floor area: 7,000(2 Bays) m²
Lifting Height: 16m

Over Head Crane

80 tons(2EA), 50 tons(2EA), 25tons(4EA)

- Fabrication & Machining



Shop B

Length: 100 m Width: 56 m
Floor area: 5,600(2 Bays) m²
Lifting Height: 10m

Over Head Crane

35 tons(6EA)

- Fabrication



Shop A

Length: 150 m Width: 56 m
Floor area: 8,400(2 Bays) m²
Lifting Height: 8m

- Fabrication
- Fin mill
- Brazing
- Bundle Assembly



Gimje Factory

Site area: 12,830 m² Floor area: 6,260 m²

Shop A

- Fabrication & Machining



Shop B

- Assembly

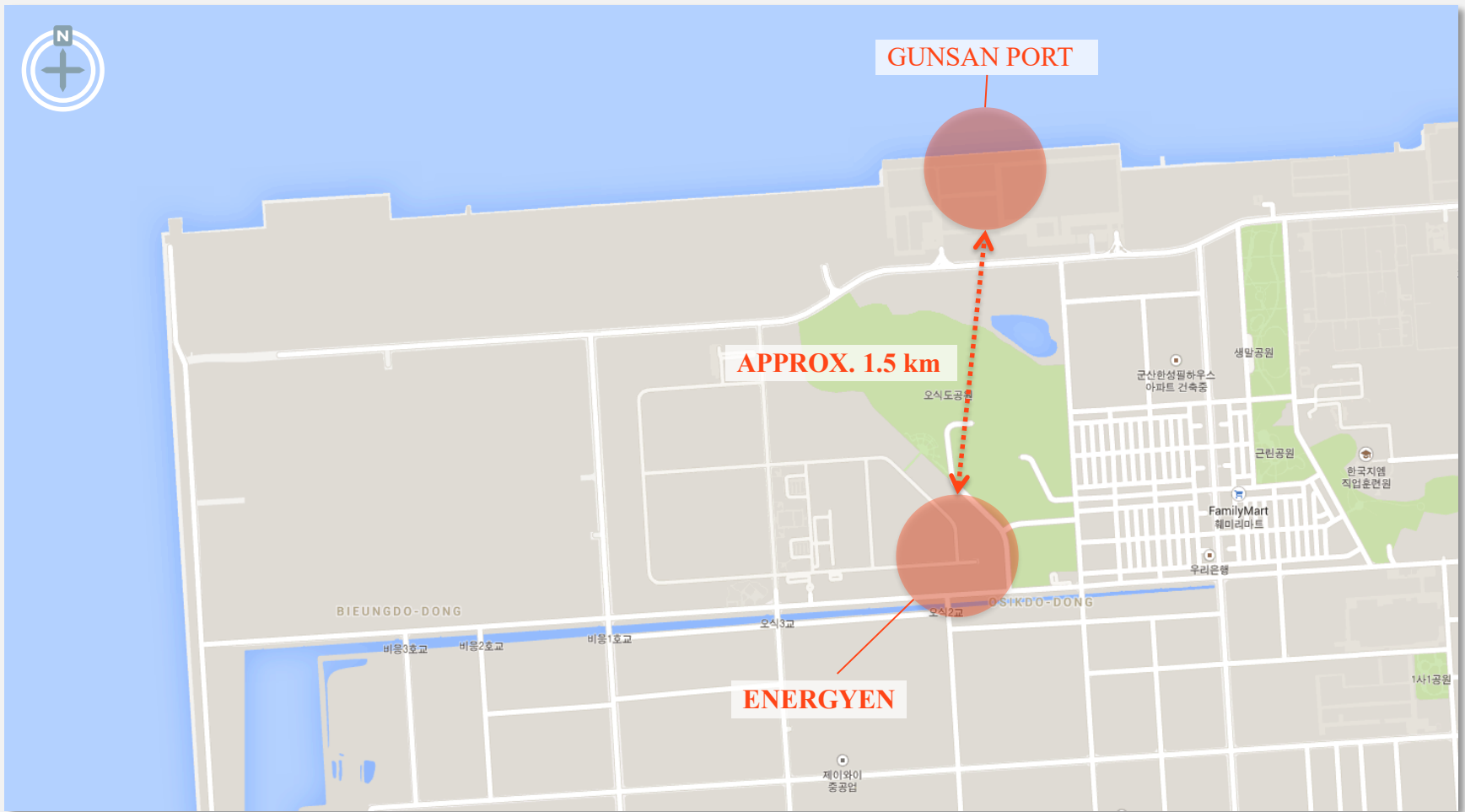


Shop C

- Machining

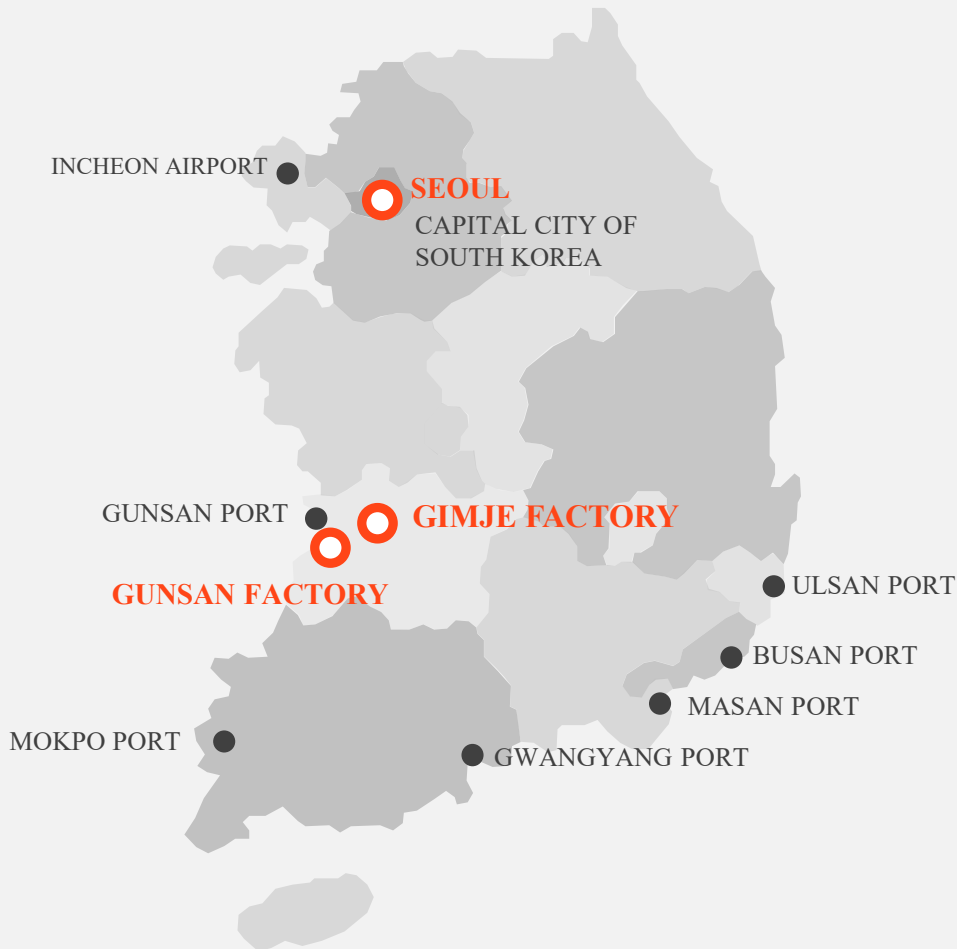


Gunsan Free Trade Zone



We can transport any product size regardless of weight, width or height.

Transportation and Handling Capacity



Seoul to Gunsan: 230 km (143 miles)

Shipping ports

Gunsan Port: 1.5 km (0.9 miles)

Mokpo Port: 150 km (93 miles)

Masan Port: 220 km (137 miles)

Busan Port: 270 km (168 miles)

Airport

Gunsan Airport: 16km (10 miles) from Gunsan

Maximum handling capacity per equipment

Weight: 400 Tons (881,849 lbs)

Thickness: 300 mm (11.82 inch)

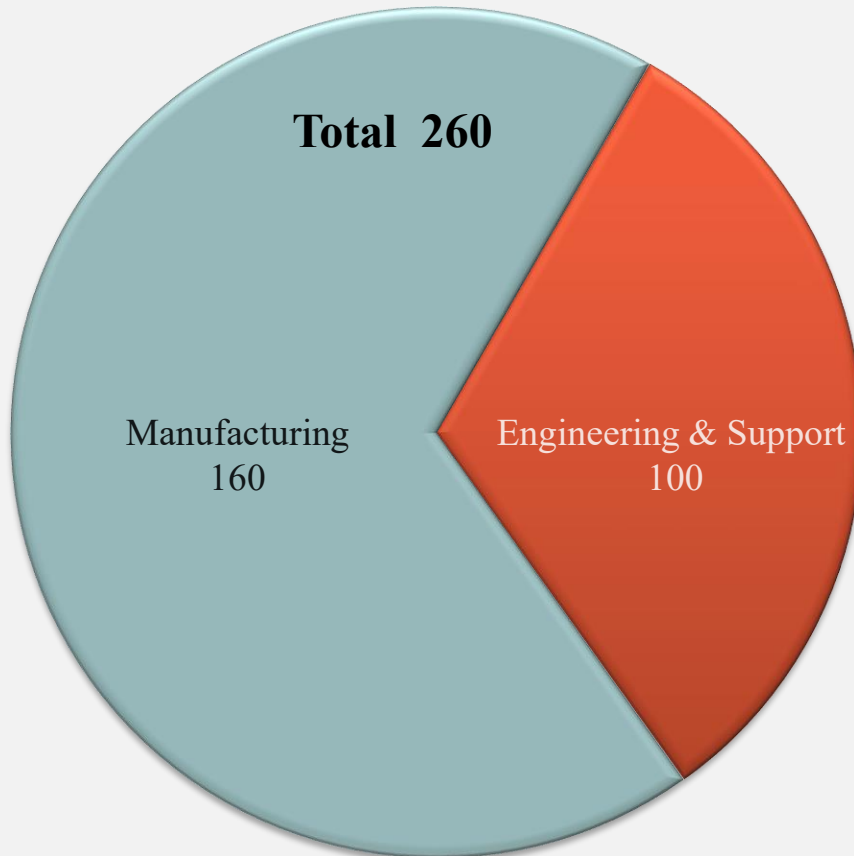
Length: 100 m (328 ft)

Diameter: 10 m (393.7 inch)

History of Energyen

1995 October	Established under the name of Seoul Precision & Industry Co., Ltd.
2000 May	Approved by GE Power as a supplier for Turbine and Generator components by qualification of End Shields
2001 September	Registered in KEPCO (Korea Electric Power Corporation) as a manufacturer and for maintenance of power plant equipment
2001 October	Supplied our heat exchangers to Japanese Power Plant in accordance with METI Regulation
2009 April	Changed the name of company to Energyen Corporation
2012 October	Expanded Gunsan factory for large steel fabrication and full automated ACC bundle facility
2014 November	Delivered high pressure Feedwater Heater for 1,000MW Ultra Super Critical Coal Fired Power Plant
2016 July	Launched ERP and e-Shop system for shop flow control system to manage execution progress
2018 October	Awarded GE Overall Partnership Trophy
2018 November	Acquired ASME N3, NPT for Nuclear Power Plant
2020 June	Awarded BOP Equipment Contract for Nuclear Power Plant for Turkey from ROSATOM
2020 July	Partnership of KHNP'S shared growth company
2021 August	Awarded HP Feed Water Heater for Shin-Kori Nuclear Power Plant Unit#1
2021 November	Acquired ASME N for Nuclear Power Plant
2023 July	Appreciation Award from GE Vernova

Organization



Management, 9

Design & Engineering, 35

Quality Assurance / Control, 15

Manufacturing, 160

Manufacture Engineering, 4

Sales and Marketing, 9

Project Management, 7

Procurement, 12

Finance and Administration, 9

*Note : Temporary manpower of 50~100 persons are not included and they can be added promptly, when needed.

Business Fields

Heat Exchangers and Process Equipment

Steam Surface Condenser

Deaerator & FWST

HP & LP Feed Water Heater

Moisture Separator Re-heater (MSR)

CCW Heat Exchanger

Evaporator

Gas Gas Heater

Steam Drum

Components of Turbine & Generator

LP Outer Casing

Steam Pipelines & Expansion Joint

Turbine Acoustic Enclosure

Stator Frame

End Shields (Bearing Brackets)

Hydrogen & Air Cooler

Combustor Casing

Gas Gas Heater

Air Cooled Condenser

Gland Steam Condenser

Fuel Gas Performance Heater System for GT

Intercooler

Lube Oil Cooler

Skid Module

Shell & Tube Heat Exchanger

Oil & Gas(Drilling)

Tension Ring

Diverter Components

Packer Housing

Spacer & Drilling Spool

Mandrel

Our List of Customers

Our **OVERSEAS** Customers

80%

GE Vernova
State Atomic Energy Corporation ROSATOM
Siemens Power
MH Power Systems
Fuji Electric
Toshiba Corporation
Kobe Steel., Ltd
Kiewit
SUEZ Water Technology
John Cockerill
Nooter Eriksen
Chiyoda Corporation
JGC Corporation
KBR, Inc.
Toyo Engineering
JFE Engineering

Our **DOMESTIC** Customers

20%

Korea Electric Power Corporation (KEPCO, KHNP)
Korea District Heating Corporation (KDHC)
Hyundai Engineering & Construction Co., Ltd.
Hyundai Engineering Co., Ltd.
Hyundai Heavy Industries Co., Ltd.
Samsung Engineering Co., Ltd .
Samsung Engineering & Construction
Daewoo Engineering & Construction Co., Ltd.
Doosan Heavy Industries & Const. Co., Ltd.
GS Engineering & Construction Corporation
GS-Caltex Oil Corporation
SK Engineering & Construction Co., Ltd.
LOTTE Engineering & Construction Co., Ltd.

Experience of Materials

Material

Specification

Carbon Steel

P235GH, P265GH, P280GH, P295GH, P305GH, P355GH
S235J0, S275J0, S355J2, S275J0M S235JR

Low Alloy Steel

A387 Gr.5, A387 Gr.11/ 22, Class 1/2, A203 Gr.E etc.

Stainless Steel & Special Material

X2CrNi18-9, X2CrNi18-10, X6CrNiTi18-10
X6CrNi18-10, X6CrNiTi18-10, X2CrNi19-11, X2CrNi18-9
Duplex (2205, S31803), Super Duplex Stainless (SAF2507, 329J4L, S32750)
25Cr-1Mo-0.25V, Inconel, Hastelloy, UOP High, Flux,

Clad Steel

13CrMo4-5 + P355GH, P295GH, P295GH + Titanium Gr.1

Nonferrous

Copper-Nickel, Titanium

Tube

B338-2, P265GH, X2CrNi19-11

Major Raw Material Suppliers

Carbon & Low Alloy Steel Plate

POSCO	Korea
Hyundai Steel	Korea
Dongkuk Steel	Korea
JFE Steel	Japan
Kobe Steel Co., Ltd.	Japan
Sumitomo Metal Ltd.	Japan
Dillinger Steel	Germany
INDUSTEEL	Belgium
Ilseburger	Germany

Clad Plate

Nobel Clad	USA
JFE Steel	Japan
Asahi Chemical Co., Ltd.	Japan
Japan Steel Works	Japan
Xian Tianli	China
Creusot-Loire Industries(CLI)	France

Stainless Steel Plate

POSCO	Korea
DKC	Korea
NSSC	Japan
NKK Co., Ltd	Japan
Nippon Metal Industry Co., Ltd.	Japan
NCS	Japan
Aperam Stainless	France
OUTOKUMPU	Sweden

Copper & Titanium Plate

MKM	Germany
Revere Copper Products, Inc	USA
Carl Schreiber	Germany
Hussey Copper Ltd	USA
Korea Trading & Industries	Korea
ATI	USA

Major Raw Material Suppliers

Flange & Forging

Taewoong Co., Ltd.	Korea
Korea Flange Co., Ltd.	Korea
Daeheong Industry Co., Ltd.	Korea
Dong-O Flange Co., Ltd.	Korea
Seah Besteel	Korea
DHF. CO.,LTD	Korea
F&F	Korea

Tube & Pipes

Shinhan Metal	Korea
SeAH Changwon Specialty Steel Co., Ltd.	Korea
POONGSAN NEOTIS	Korea
YCP	Korea
RMK	Korea
Il Jin Steel	Korea
JFE Steel	Japan
NSSMC	Japan
Kobe Steel Ltd.	Japan
AB Sandvik Steel	Sweden
Benteler AG	Germany
Vallourec & Mannesmann Tubes	Germany
PRODUCTOS TUBULAR, S.A	Spain
Tubacex Tubos Inoxidables S.A	Spain

Applicable Codes and Standards

ASME Section I, Section III, Section V, Section VIII. Div. 1&2., Section IX

GOST GOST-R Certification

EN European Standards

TEMA Class “R”, “C” & “B”

HEI Heat Exchange Institute

ASTM American Society for Testing and Materials

API American Petroleum Institute

ANSI American National Standards Institute

METI Ministry of Economy, Trade and Industry

JIS Japanese Industrial Standard

PED Pressure Equipment Directive

IBR Indian Boiler Regulation

ISO International Organization Standardization

Country Specific : (Türkiye (NDK), Egypt (to apply as called))



Software and Programs

Pressure Vessel

COMPRESS (Codeware)

Heat Exchanger

ASPEN and HTRI Shell & Tube Heat Exchanger for Thermal Design

COMPRESS for Mechanical Design

Air Cooled Heat Exchanger

HTRI Air Cooled Heat Exchanger for Thermal Design

Piping Stress Analysis

PIPE PLUS

Structure Analysis

MIDAS GENw

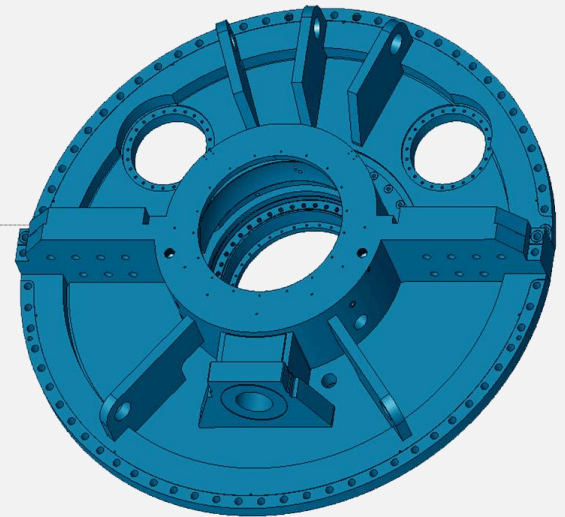
In addition to the above items, ENERGYEN has several self-developed design programs.

Computer Aided Design System

AutoCad System

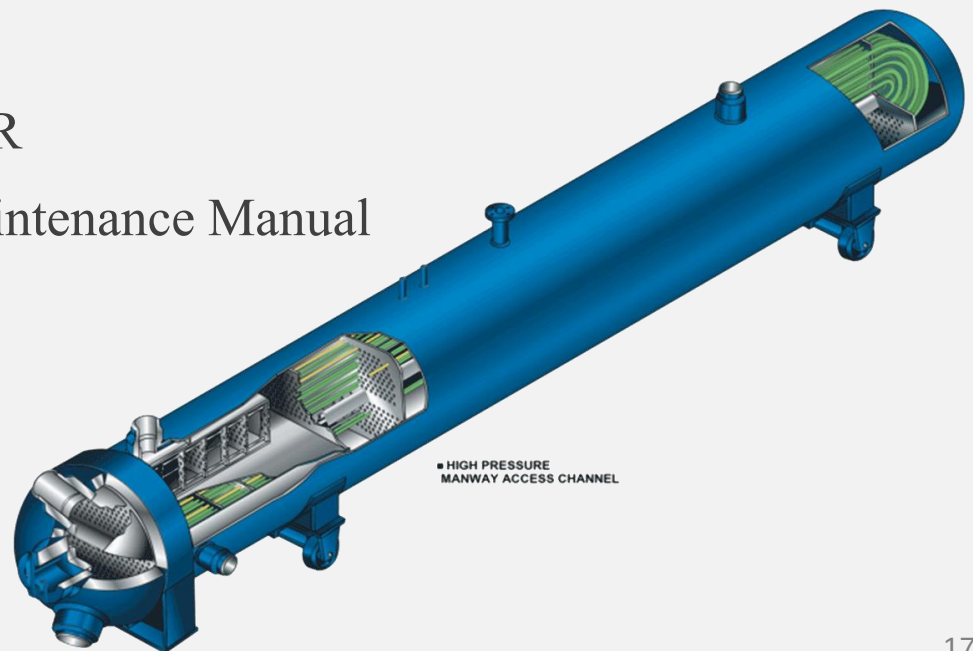
Inventor for 3 Dimensional Design

Tekla Structure for 3 Dimensional Design

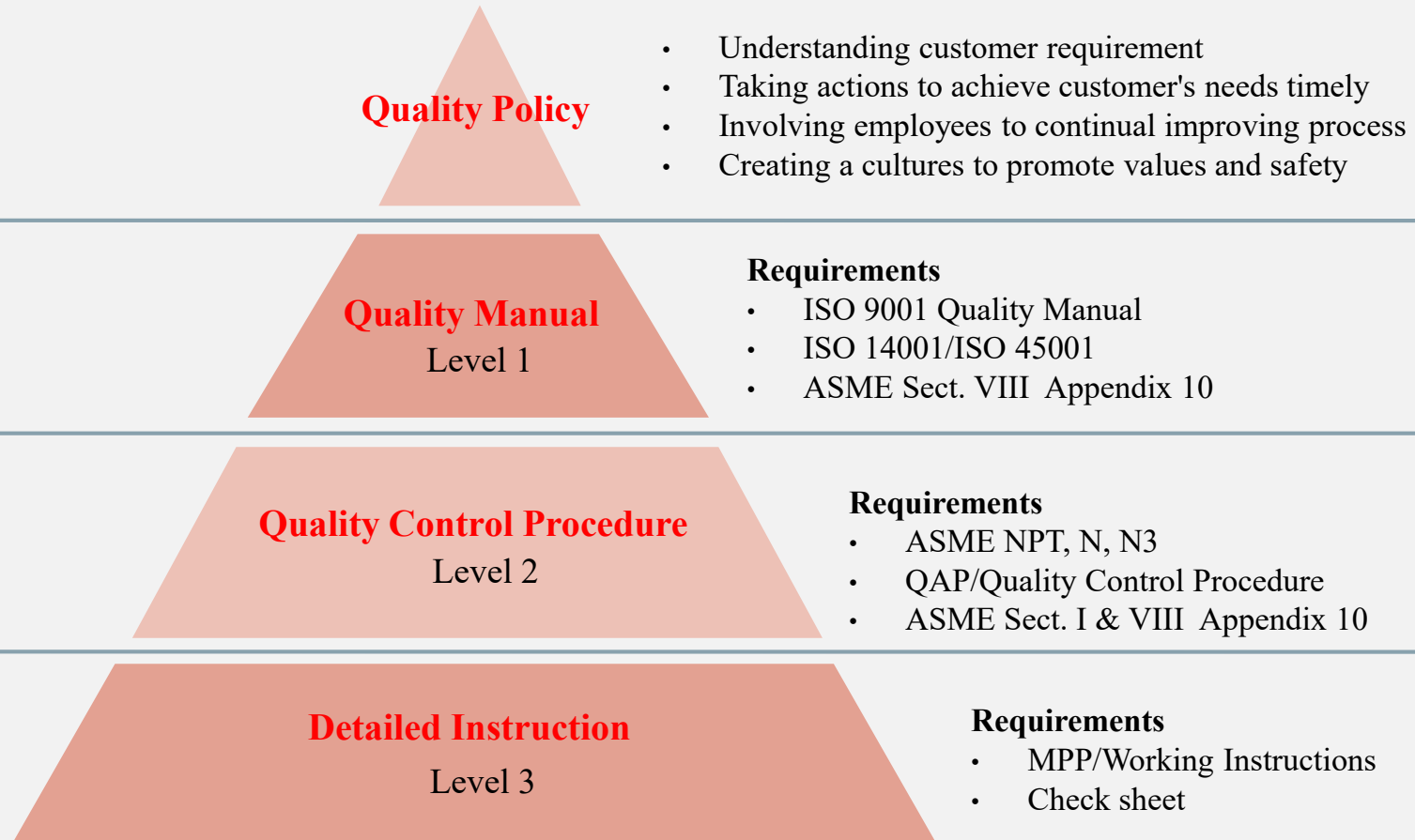


Documentation and Working Procedure

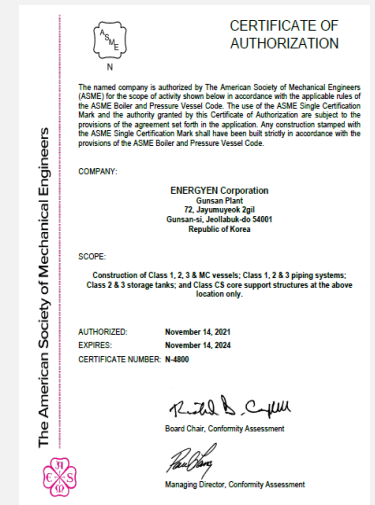
- Design / Engineering and Documentation
- Basic Design and documentation, Bill of Material
- Strength Calculation including Stress and Fatigue Analysis
- Foundation / Loading data, etc.
- Detailed Fabrication Drawings (Workshop Design Drawings)
- MPP and Working Procedures
- QAP and QP
- Inspection Report and EoMR
- Erection, Operating and Maintenance Manual



Quality, Safety and Environmental Management System



Company Certificates

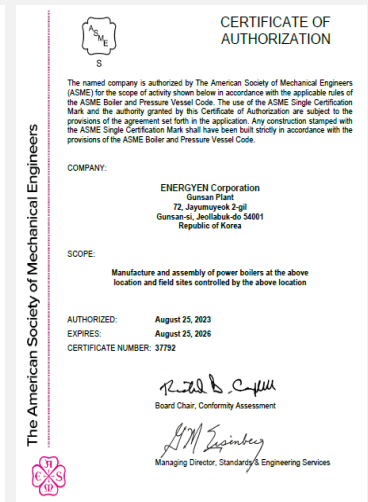
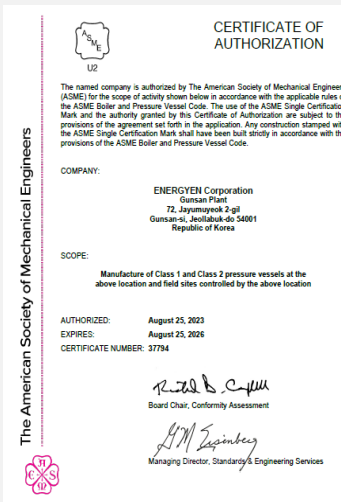
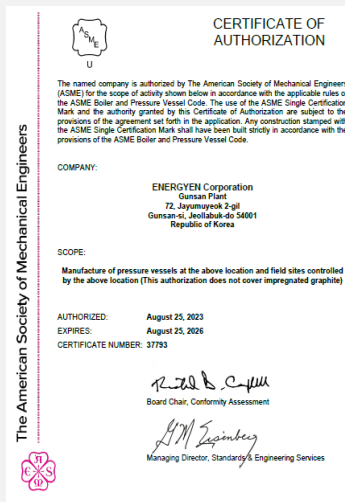
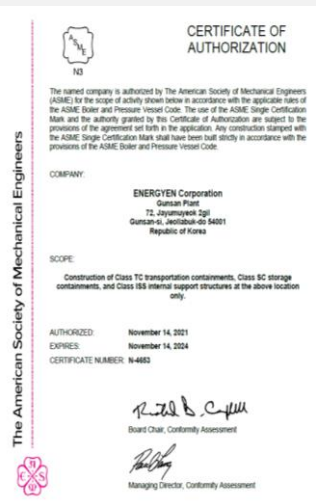
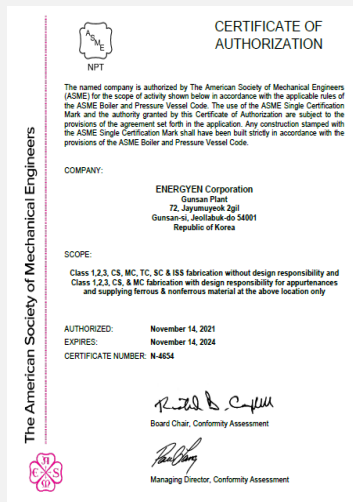


ISO 9001:2015 with 3834

ISO 14001:2015

ISO 45001:2018

ASME 'N'



ASME 'NPT'

ASME 'N3'

ASME 'U'

ASME 'U2'

ASME 'S'

Machining Facilities

The background of the slide features a series of overlapping triangles in various shades of orange and yellow, creating a dynamic, abstract geometric pattern. The triangles are arranged in a way that they seem to radiate from a central point, with some pointing towards the top and others towards the bottom. The colors range from a pale yellow to a deep, rich orange.

Horizontal Boring Machine

X-Axis: 18,000 mm Y-Axis: 6,000 mm Z-Axis: 2,500 mm Ram 800

Rotary Table Size: W4,000 x L4,000

Application: Tubesheet hole drilling, flange surface and other large steel machining



Horizontal Boring Machine (Outsourced)

X-Axis: 15,000 mm Y-Axis: 6,000 mm Z-Axis: 2,500 mm Ram 900

Rotary Table Size: W4,000 x L4,000

Application: Water box and support plate machining for Turbine Condenser



CNC Planer Milling Machine

X-Axis : 4,200 mm Y-Axis: 3,850 mm Z-Axis: 2,750 mm

Table Size: W2,000 x L4,000

Max. Size for Machining: L6,000 x W2,700 x H3,500

Application: Large steel surface machining



Drill Master

X-Axis: 6,900 mm Y-Axis: 5,500 mm Z-Axis: 1,200 mm

Cutting Capacity: $\phi 16 \sim \phi 60$ End Milling : $\phi 30 \times DP10$ Face Milling: $\phi 150 \times DP3$



CNC Deep Hole BTA Drilling Machine

Max. Drill Dia.: OD 3,000 mm Hole Dia. Range: $\phi 5 \sim 55$ mm

Max. Drill Th'k: 1,000 mm

Application: Tubesheet machining for Feedwater Heater



CNC Vertical Turning Lathe

Max. Cutting Dia. : OD 4,300 mm

Max. Height : 3,000 mm



Key Product List that Energyyen Supplied



H.P. Feed Water Heater



L.P. Feed Water Heater



Surface Condenser for Akkuyu NPP



Deaerator & FWST for Akkuyu NPP



ACC



LP Outer Casing for Akkuyu NPP



CCW Heat Exchanger for Akkuyu NPP



Steam Pipelines for Akkuyu NPP



Intercooler (Similar to MSR)



Lube Oil Cooler



Fuel Gas Heater



H2 Cooler (Vertical)



H2 Cooler (Horizontal)



Stator Frame



End shield/ Bearing bracket



Exhaust Casing

Surface Condenser (Stainless Steel Tube)

Client : GE Power

Project : Bhikki & Balloki Power Plant (1,000MW & 1,200MW)



Manufactured based on GE design

Surface Condenser (Titanium Tube Type)

Client : JSC ZiO Podolsk

Project : Akkuyu Nuclear Power Plant (1,200MW) Unit 2 – Delivered on Feb. 2022



LP Outer Casing

Client : AAEM LLC

Project : Akkuyu Nuclear Power Plant (1,200MW) Unit 1 – Delivered on Feb. 2022



CCW Heat Exchanger

Client : AAEM LLC

Project : Akkuyu Nuclear Power Plant (1,200MW) Unit 2 – Delivered on Dec. 2023



Steam Pipelines

Client : JSC ATM

Project : Akkuyu Nuclear Power Plant (1,200MW) Unit 1 – Delivered on Apr. 2023



H.P. Feedwater Heater

Client: Korea Midland Power Co., Ltd.

Project: 1,000MW Shinboryung Thermal Power Plant

Size: OD1,790 x 15,600L **Weight :** 88,000 kg



Client: Fuji Electric

Project: Ishinomaki Hibarino, Japan

Size: OD1,225 x 9,098L **Weight :** 25,800 kg



L.P. Feedwater Heater

Client : Saudi Electric Company

Project : 660MW Shuqaiq Steam Power for 4 units

Size : ID1,676 x 16,800L Empty Weight: 41,100 kg



Horizontal Deaerator

Client : Korea East-West Power Co., Ltd.

Project : 1,000MW Dangjin Thermal Power Plant Unit 9

Capacity: 2,952 Ton/Hr Empty Weight: 168,400 kg



CCW Heat Exchanger

Client : Korea East-West Power Co., Ltd.

Project : 1,000MW Dangjin Thermal Power Plant Unit 9

Capacity: 6,791 Ton/Hr Empty Weight: 61,720 kg



Surface Condenser (Titanium Tube)

Client : POSCO Engineering & Construction

Project : 300MW Masinloc CFPP



Evaporator

Client : SUEZ

Project : Uzbekistan (UZGTL)

Size : 10T x ID4,570 x 18,919L

Weight : 107,000 kg



Air Cooled Condenser

Client : Siemens

Project : 300MW Santo Domingo Combined Conversion

Delivery : December 2016



ACC Tube Bundles

Client : Siemens

Project : 300MW Santo Domingo Combined Conversion

Delivery : December 2016



Air Cooled Heat Exchanger (Fin Fan Cooler)

Client : Fuji Electric
Project : Y-Binary Project in Japan
Delivery : January 2017



Steam Drums

Client : Nooter Eriksen

Project : Turakurgan

Size : 114T x ID1,879 x 13,411L

Weight : 114,000 kg



Shell & Tube Heat Exchanger for Oil & Gas

Client : JGC Corporation
Project : Titan No.2 Cracker, Malaysia
Size : L7200 x W1200 x H2000



Shell & Tube Heat Exchanger for Oil & Gas

Client : SK E&C
Project : Clean Fuels Project, Kuwait
Size : L9500 x W1800 x H2400



Shell & Tube Heat Exchanger for Oil & Gas

Client : Tecnicas Reunidas
Project : Gas Train 5 Project, Kuwait
Size : L11200 x W2400 x H3100



Components of Generator

Stator Frame/Keybar



Components of Generator

End Shields / Bearing Brackets



Oil & Gas(Drilling)

Tension Ring



Components of Power Plant

Intercooler



Components of Power Plant

Lube Oil Cooler



Components of Generator

H2 Cooler: GE, Siemens, MH Power Systems, Toshiba Corp.



Vertical (Single)



Horizontal (Duplex)

Stator Cooling Water Unit

Client : Toshiba Corporation

Project : Talin 1, 2 Power Plant Renewal Project



Thank you.

