ENEOS Corporation
Kawasaki Refinery



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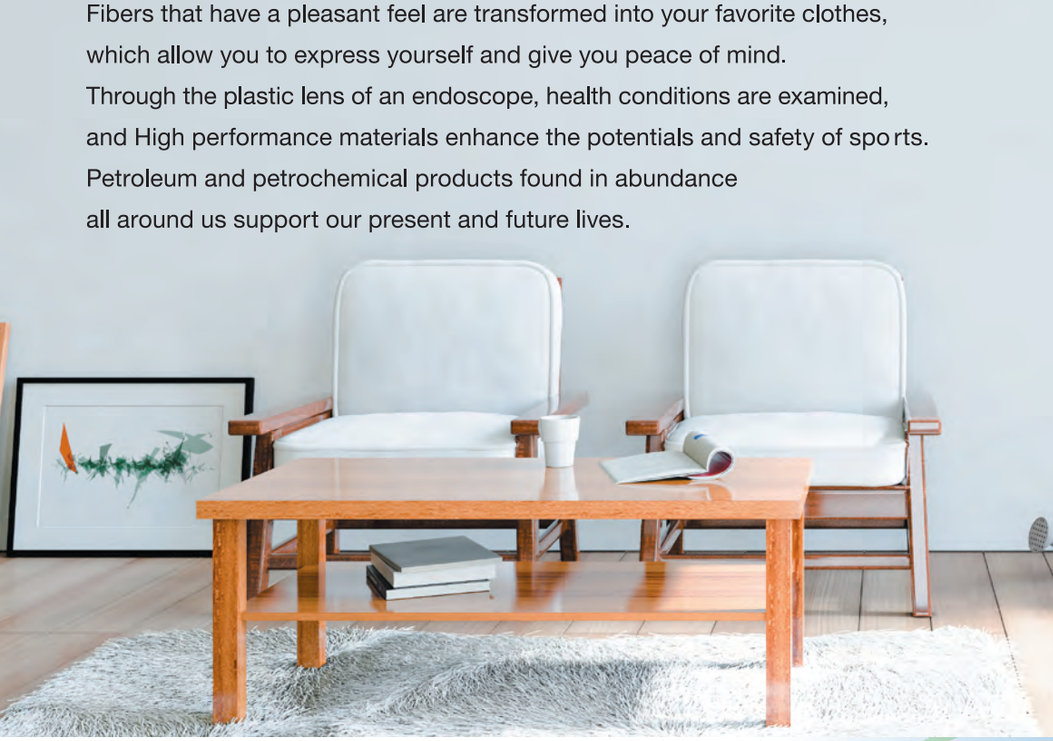
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2026.8

For comfort and a sense of relief

Energy for Comfort

Just like sunlight streaming through a window abundantly nurtures the mind and body,
people maintain their lives with the help of various forms of energy.
To ensure people promptly reach their destinations in comfort, or to safely deliver foods and goods to those
who need them without fail, cars, buses, trucks, and airplanes are operated.
Fibers that have a pleasant feel are transformed into your favorite clothes,
which allow you to express yourself and give you peace of mind.
Through the plastic lens of an endoscope, health conditions are examined,
and High performance materials enhance the potentials and safety of sports.
Petroleum and petrochemical products found in abundance
all around us support our present and future lives.



Oil transport route leading to your life. With its global network, ENEOS is contributing to a stable supply of oil.



Japan depends on imports for more than 99% of its crude oil. Most of this crude oil is transported from the oil-producing countries around the Persian Gulf via a 12,000-km sea route. The imported crude oil is then transferred to ENEOS refineries and stockpiling bases across Japan and stored in crude oil tanks. Afterward, it is transformed into a wide variety of products and services to support your lives. Efficient energy resources are delivered from the world to Japan, and from our refineries and plants to your everyday life.
It is important for the future to create a rich and beautiful global environment where “people,” “nature,” and “oil usage” are in harmony. To serve as a bridge to achieve such vision, ENEOS is constantly contributing to a stable supply of petroleum products in tune with the needs of the time.



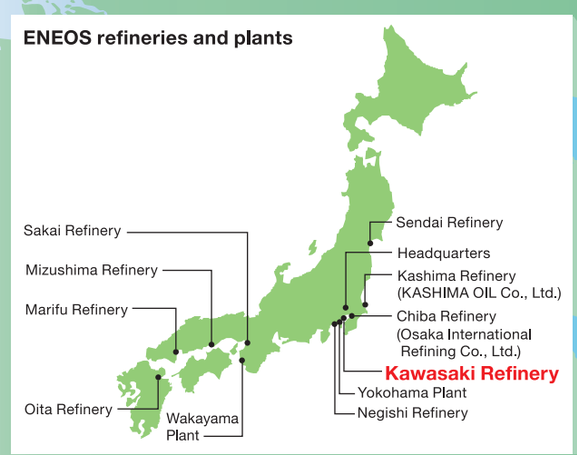
Exploration & Development



Refining & Production



Sales





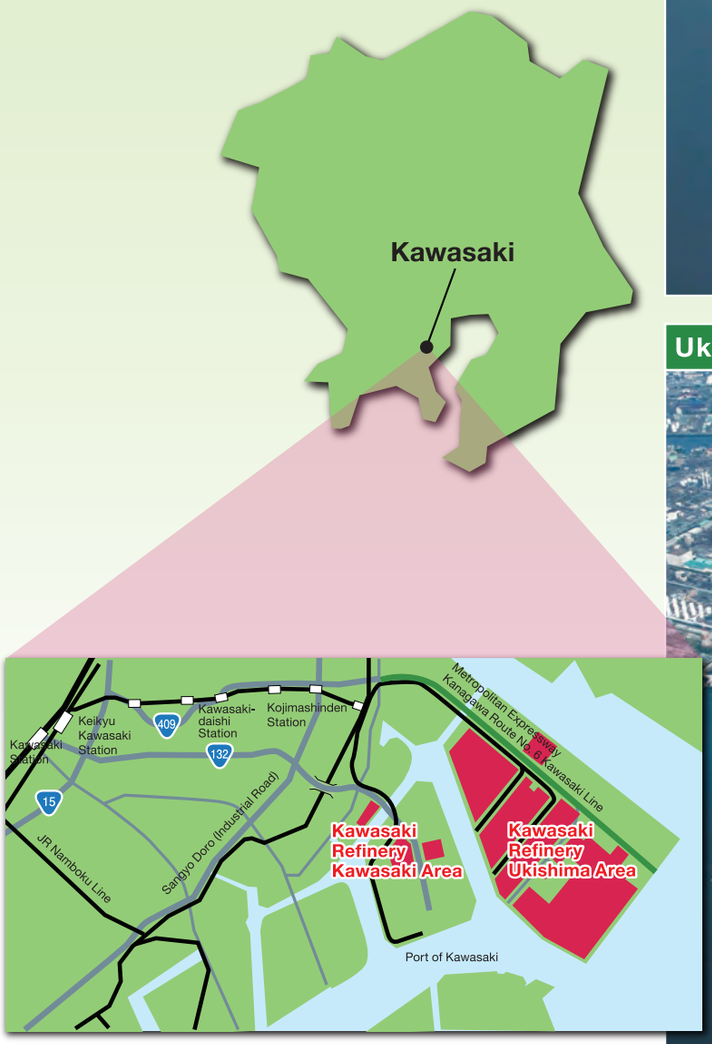
Japan's largest Integrated petroleum refinery and Chemical plant complex

ENEOS Kawasaki Refinery

The Kawasaki refinery is located on the Keihin oceanfront, a convenient area for both land and marine transport adjacent to the Tokyo metropolitan area, Japan's largest consumer market.

The Kawasaki refinery is the largest refinery in the ENEOS Group, with one of the highest refining capacities in the country. It also has Japan's largest fluid catalytic cracking unit (FCC) and the nation's only resid hydroconversion unit (H-Oil).

The proximity of the petroleum refinery and the petrochemical plant facilitates mutual product supply, the sharing of facilities, and organization integration. This results in a highly efficient production system.

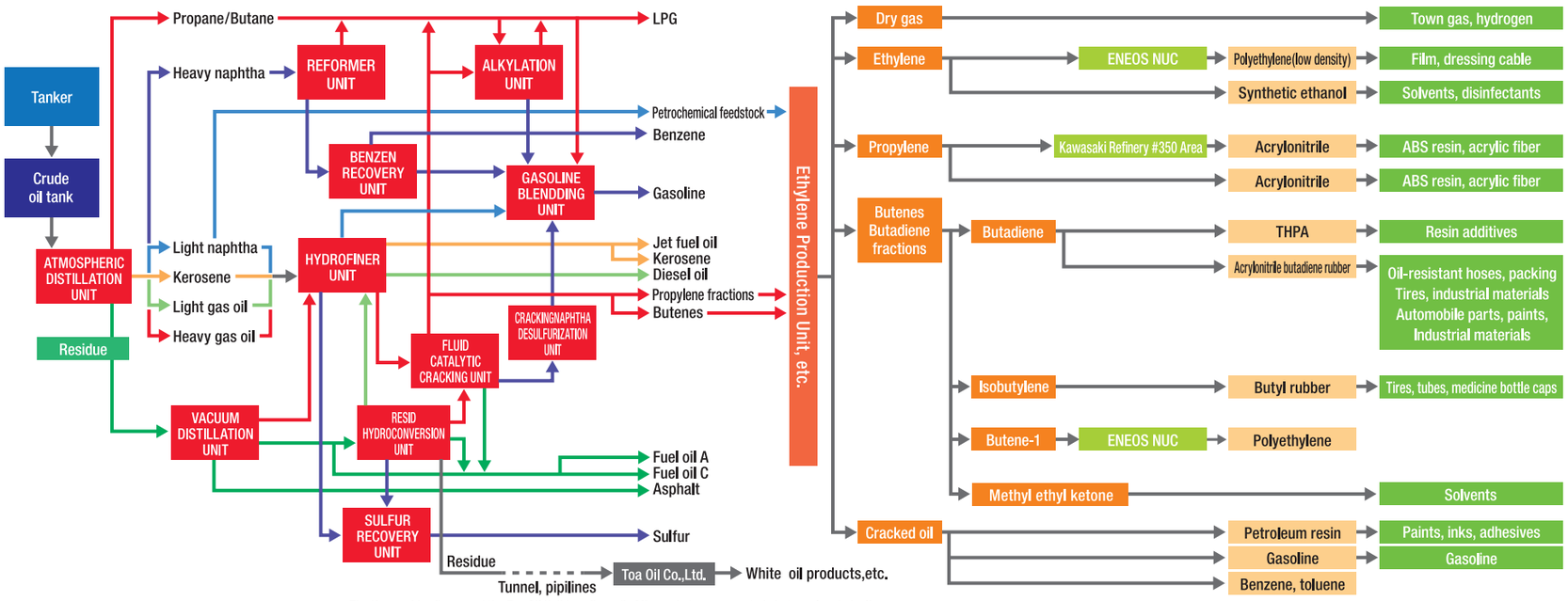






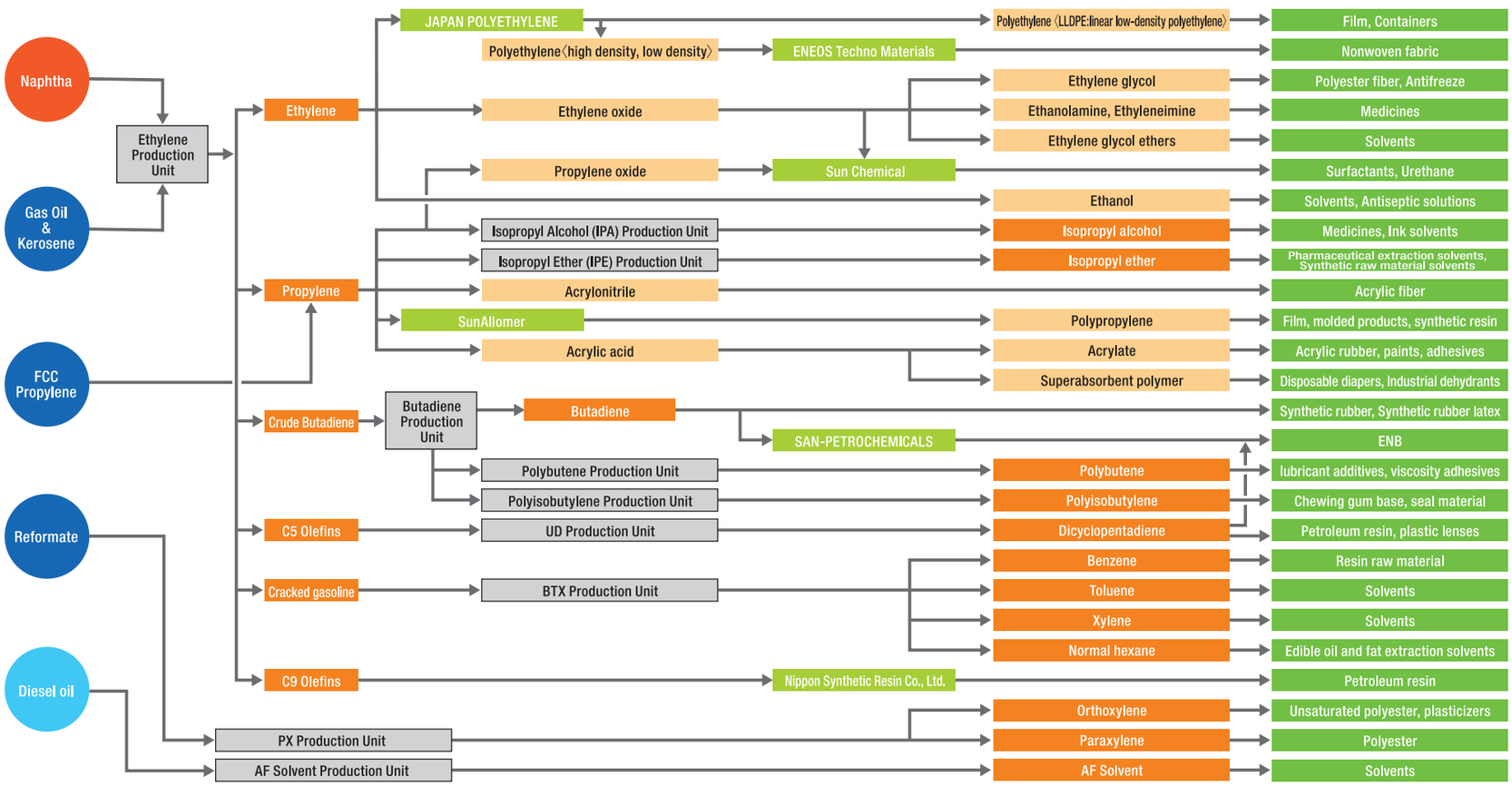
How petroleum and petrochemical products are manufactured (manufacturing processes at Kawasaki Refinery)

Ukishima North Area



The Kawasaki refinery and the Toa Oil Keihin refinery(in Mizue-cho)are connected via tunnel and pipelines.
The integrated operation of the different manufacture of high-value-added petroleum products.

Ukishima South/Kawasaki Area



With advanced technologies , a wide array of units, and reliable quality, we meet various demands for petroleum and petrochemical products.



ATMOSPHERIC DISTILLATION UNIT

Crude oil is first sent to the atmospheric distillation unit, which has a daily processing capacity of 247,000 barrels. In this unit, crude oil is fractionated into petroleum gas, naphtha, kerosene, gas oil, and residue by utilizing the difference in the boiling points of each fraction.



REFORMER UNIT

Naphtha is sent to the reformer unit for conversion into base stock for high-octane gasoline.



RESID HYDROCONVERSION UNIT

The vacuum residue (heavy oil) from the vacuum distillation unit is cracked into lighter products such as kerosene and diesel oil in a catalytic reaction under very high pressure and temperature conditions in a hydrogen atmosphere. This is the only unit of its kind in Japan, with ebullated-bed reactors.



FLUID CATALYTIC CRACKING UNIT

The vacuum gas oil obtained from the vacuum distillation unit is fed to the fluid catalytic cracking unit and converted into base stock high-octane gasoline.



CRACKING NAPHTHA DESULFURIZATION UNIT

The sulfur components in the cracked naphtha from the FCC are removed under high pressure and temperature conditions in a catalytic reaction. The latest technology used in this unit removes sulfur components with lower octane loss.



ALKYLATION UNIT

Part of the LPG fraction obtained from the fluid catalytic cracking unit and the reformer unit is sent to the alkylation unit and converted into the base stock for high-octane gasoline.



Ethylene production unit

The ethylene production unit is the starting point of petrochemistry, in which fractions of naphtha, kerosene, and diesel oil are thermally cracked at high temperatures with the use of steam. The unit is connected through pipes to derivative production units that utilize the produced ethylene and propylene as basic raw materials, forming a petrochemical complex.



PX production unit

In this unit, the xylene fractions obtained from the reformer unit for oil refining are used as raw material to produce and recover paraxylene and ortho-xylene. High-quality paraxylene is a raw material for polyester fiber, plastic bottles, and other products.



Polybutene/polyisobutylene production unit

Using the extraction residues from the butadiene production unit as raw material, this unit produces polybutene and polyisobutylene through the cationic polymerization of isobutylene fractions. The colorless, transparent, and semi-solid products are mainly utilized in the production of adhesives and gum base.



BTX production unit

After the hydrodesulfurization of the cracked gasoline from the ethylene production unit, aroma and non-aroma components are separated in the extraction process. The aroma component is distilled to produce benzene, toluene, and xylene, and the non-aroma component is used to produce a variety of solvents.



An advanced management system ensuring the efficient and stable production and supply of high-quality products



Control room

Each unit's operation is managed with computers under a centralized management and control system. By using a distributed control system, it is possible to safely shut down each unit in an emergency just by pressing one button.



Land shipping facilities

A broad range of petroleum products, chemicals, lubricating oil, LPG, etc. are delivered from the tanker shipping facilities across the whole of the Kanto region. In terms of the shipment of petroleum products, the facilities are strengthened so that 50% of shipping capacity is ensured within 24 hours in the event of a major earthquake.



Quality control

The Quality Control Department conducts a host of analyses for the basic raw materials of petrochemicals produced at Kawasaki Refinery, in every stage from the process to the finished products. High-quality products ensured by thorough analyses are stably provided to our customers.



Marine shipping facilities

At the receipt/shipment piers, we receive a variety of raw materials and also ship products. We have an offshore pier capable of berthing a 300,000-ton class crude oil tanker, accepting crude oil transported from various parts of the world. Other piers are used to receive raw material naphtha from inside and outside Japan and imported LPG, and ship petroleum products, chemicals, and lubricating oil domestically and internationally.

Through the disaster prevention facilities, thorough emergency drills, and cooperation with neighboring companies, a secure crisis management system is in place.

Emergency drills



All employees undergo periodic emergency training so that they can react quickly in the event of a disaster. In addition, the company plays a leading role in cooperative emergency training activities with other companies in the area.

Oumi No.2

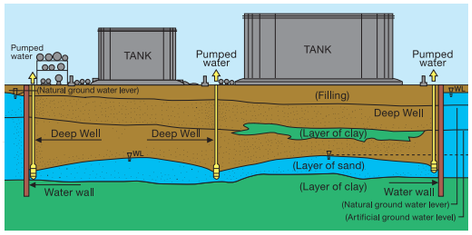


We operate one of Tokyo Bay's largest capacity privately-owned fireboats, capable of dealing with a blaze on a large oil tanker. It can respond quickly to a call for backup in the event of a disaster in the bay.

Our proprietary major earthquake countermeasures go well beyond those required by law.

Groundwater drawdown method (slurry wall method)

Available since the 1970s to prevent liquefaction during a major earthquake, this method combines a slurry wall, using clay as a water barrier, with a pumping well to keep the groundwater level low and prevent ground liquefaction.





Major seawall reinforcement initiative

Acting on the lessons learned from the Great Hanshin-Awaji Earthquake, in the late 1990s we moved to protect the environment and enhance safety by means of major seawall reinforcement centered on the areas around large tanks in order to prevent seawall failure, which could lead to facility damage or oil spills.

Smart LDAR infrared cameras

Specialized infrared cameras that can visualize the emission of volatile organic compounds (VOC) from ductwork, valves and storage tanks were installed for the first time in Japan at the Kawasaki complex. Using these cameras for periodic inspections, we are working to curb VOC emissions.





From product development, production, and sales to disposal, we carry out production activities in consideration of their environmental impact.

As the refinery playing a central role in the Kawasaki complex, it goes without saying that we implement air pollution countermeasures. We also address environmental conservation measures in consideration of the surrounding local communities in each stage from product development, production, and usage to disposal and in all of our business activities.



Measures against air pollution

Flue-gas treatment facilities

- To address the issue of sulfur oxides (SOx), in soot-and-smoke emitting facilities,such as heating furnaces and boilers,traditional fuels are replaced with ones containing no or low levels of sulfur to reduce air pollutant emissions.
- To reduce emissions of nitrogen oxides (NOx), a flue gas denitration unit (nitrogen oxide removal unit) is installed and an ultralow NOx burner that lowers NOx emissions is also introduced.
- The flue gas denitration unit in the gas turbine exhaust heat boiler decomposes nitrogen oxides into nitrogen and water by blowing ammonia into the flue gas containing nitrogen oxides and passing it through a catalyst layer.

Exhaust gas monitoring telemeter system



An exhaust gas desulfurizer and other pollution prevention devices are incorporated into each facility to remove sulfur oxides, nitrogen oxides, soot and dust, which cause air pollution. The state of the exhaust gas is monitored by a telemeter system and this information is sent to monitoring centers in Kawasaki City.

Hydrocarbon emission control unit



Hydrocarbons are considered as a causative substance of photochemical oxidants, and to reduce the emissions from the storage tank, a hydrocarbon removal unit is installed. To increase the removal rate of hydrocarbons, an adsorption-regeneration type recovery unit has been introduced, and currently, more than 90% of the hydrocarbon emissions from the storage tank are removed.

The Kawasaki refinery values communication with the local community and is actively involved in a wide range of regional volunteer work.

ENEOS Children's Festival

We offer historical event such as "ENEOS Children's Festival" has continued over 45 years. The festival is composed of a variety of attractions (mobile aquarium, fishing contest, fire engine display, etc.) ,which is the largest community event.
Especially for "mobile aquarium" attraction, in corporation with an NPO engaging in Tama River environment protection, offering an opportunity to learn the value of life by interacting with creatures.







Social contribution activity: Sidewalk Cleanup

We join together with Kawasaki City and neighboring companies to clean local sidewalks on a regular basis, contributing to the creation of "no litter " city.

Conservation activity: ENEOS Mirai no Mori (Future Forest)

We volunteer employees conduct forest conservation work (ex. tree planning, thinning, pruning) at "the ENEOS Future Forest", a part of the nationwide ENEOS forest initiative. The activity is carried out at ENEOS Group's refinery sites.
For Kawasaki refinery, our activity area is located in Kanagawa Prefecture.



ENEOS Basketball Clinic



Aiming at deepening communication with local people through basketball and contributing to the community sports promotion, we provide "Basketball Clinic".
"Basketball Clinic" is held for local elementary/junior high school students where they are taught by players and coaches from the ENEOS Sunflowers basketball team.

MUZA Kawasaki Night concert

We include support for music in Kawasaki through cosponsorship of concerts at the city's world-class Muza Kawasaki Symphony Hall.



[History of Ukishima North Area]

1960	General Sekiyu Kawasaki Refinery, Nichimo Sekiyu Seisei start operation
1962	Toa Nenryo Kogyo/Tonen Sekiyu Kagaku Kawasaki complex starts operation (atmospheric distillation unit/steam cracking unit)
1968-70	C4 plant starts operation (butadiene, isobutylene, MEK) Petroleum resin manufacturing plant starts operation
1970-71	Expansion of Site No. 300 (atmospheric distillation unit, vacuum distillation unit, FCC (fluid catalytic cracking unit), hydro-desulfurizing unit)
1971	No. 3 steam cracking unit starts operation
1987	Introduction of new plant alkylation
1990	Continuously regenerating reformer
1993	Diesel fuel depth desulfurization apparatus
1997	Resid hydroconversion unit
1999	Benzene recovery unit Operational merger of Tonen and Kygnus Sekiyu Seisei K.K.
2000	Birth of TonenGeneral Sekiyu Kawasaki refinery
2007	Cracked naphtha desulfurization unit (SCANfiner)
2012	Birth of the new TonenGeneral Group
2016	Start-up of "disaster resilient" truck terminal
2017	Inauguration of JXTG Nippon Oil & Energy Corporation Kawasaki Refinery and Tonen Chemical Kawasaki Plant
2020	Company name changed to “ENEOS Corporation”

[History of Ukishima South/Kawasaki Area]

1955	Nippon Petrochemicals Co., Ltd. founded as a 100% subsidiary of Nippon Oil Corporation
1957	No. 1 IPA/Acetone production unit completed in the Shiohama area
1959	No 1. Ethylene production unit completed in the Chidori area No. 1 butadiene production unit completed (start of product supply to the companies in the complex)
1969	Ukishima refinery established through the separation of the Ukishima branch refinery from the Kawasaki refinery
1970	No. 1 ethylene unit completed in the Ukishima area (JV project with Mitsui Sekiyu Kagaku Kogyo)
1991	CPX production unit completed in the Ukishima area
2001	Start of the independent operation of the ethylene unit (end of the JV product with Mitsui Chemicals)
2002	Company name changed to “Nippon Petrochemicals”
2008	Company name changed to “Nippon Petroleum Refining Co., Ltd.”
2010	Company name changed to “JX Nippon Oil & Energy Corporation”
2016	Japanese company name changed, but English company name remained “JX Nippon Oil & Energy Corporation”
2017	Company name changed to “JXTG Nippon Oil & Energy Corporation”
2019	Organizational merger to “JXTG Nippon Oil & Energy Corporation Kawasaki Refinery”
2020	Company name changed to “ENEOS Corporation”