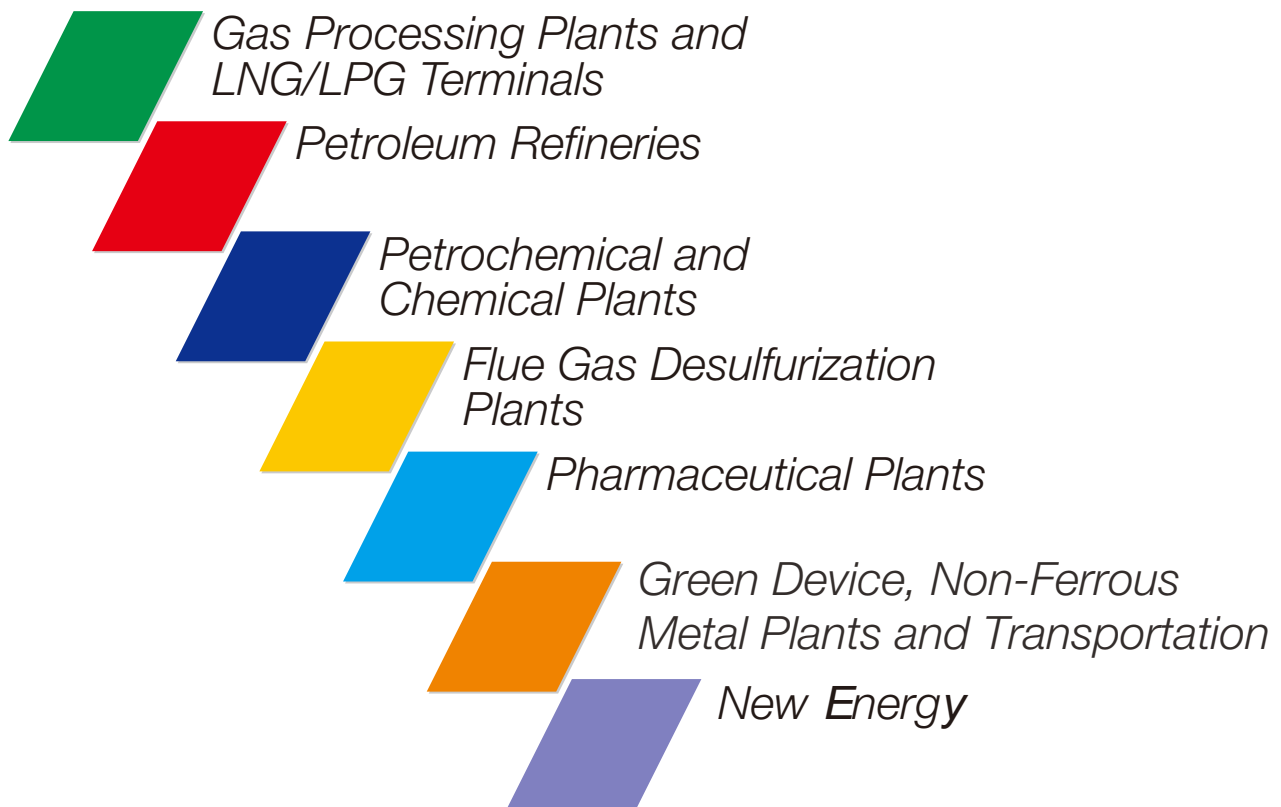


MAJOR PROJECTS

on



MAJOR PROJECTS

as of December 2022

| | Page |
|---|------|
| 1. Gas Processing Plants and LNG/LPG Terminals | |
| 1. Scope of Work | 3 |
| 1-1. Gas Processing Plants | 4 |
| 1-2. LNG Plants (FEED/PS) | 5 |
| 1-3. LNG Plants (EPC) | 6 |
| 1-4. Floating Unit (FLNG/FPU/FSRPU) | 7 |
| 1-5. Helium Recovery Unit | 8 |
| 1-6. Acid Gas Removal | 9 |
| 1-7. Sulfur Recovery Units | 11 |
| 1-8. LNG Terminals | 12 |
| 1-9. LPG Terminals | 14 |
| 1-10. CCS (Carbon Capture & Storage) | 15 |
| 2. Petroleum Refineries | |
| 2. Scope of Work | 16 |
| 2-1. Crude Distillation Units | 17 |
| 2-2. Vacuum Flasher/Vacuum Distillation Units | 19 |
| 2-3. Catalytic Reforming Units | 20 |
| 2-4. Gasoline Selective Desulfurization Units | 22 |
| 2-5. Naphtha and Middle Distillate Hydrodesulfurization Units | 23 |
| 2-6. Vacuum Gas Oil Hydrodesulfurization Units | 26 |
| 2-7. Hydrocracking Units | 27 |
| 2-8. Fluid Catalytic Cracking Units | 28 |
| 2-9. Residuum Hydrodesulfurization Units | 29 |
| 2-10. Visbreaking Units | 30 |
| 2-11. Thermal Cracking Units | 31 |
| 2-12. Solvent Deasphalting Units | 32 |
| 2-13. Sweetening Units | 33 |
| 2-14. Alkylation Units | 35 |
| 2-15. Isomerization Units | 36 |
| 2-16. Distillate Dewaxing Units | 37 |
| 2-17. Hydrogen Manufacturing Units | 38 |
| 2-18. Sulfur Recovery Units | 39 |
| 2-19. Claus Tail Gas Treating Units | 40 |
| 2-20. H ₂ S Removal Units with Amine | 41 |
| 2-21. Sour Water Stripping Units | 43 |
| 2-22. Blown Asphalt (Bitumen) Units | 45 |
| 2-23. Condensate Splitter Units | 46 |
| 2-24. Lubricating Oil Refining Units | 47 |

3. Petrochemical and Chemical Plants

| | | |
|-------|--|----|
| 3. | Scope of Work | 49 |
| 3-1. | Ethylene and Its Derivatives | 50 |
| 3-2. | Propylene and Its Derivatives | 53 |
| 3-3. | C ₄ /C ₅ Fractions and Derivatives | 55 |
| 3-4. | Aromatics | 57 |
| 3-5. | Paraffin/Methane/Acetylene Derivatives/Oleo Chemicals | 62 |
| 3-6. | Engineering Plastics | 63 |
| 3-7. | Synthesis Gas/Fertilizers | 64 |
| 3-8. | Coal Chemicals | 66 |
| 3-9. | Inorganic Chemicals | 67 |
| 3-10. | Others | 69 |

4. Flue Gas Desulfurization Plants

| | | |
|------|-------------------|----|
| 4. | Scope of Work | 70 |
| 4-1. | CT-121 FGD Plants | 71 |

5. Pharmaceutical Plants

| | | |
|------|----------------|----|
| 5. | Scope of Work | 73 |
| 5-1. | Pharmaceutical | 74 |

6. Green Device, Non-Ferrous Metal Plants and Transportation

| | | |
|------|--------------------------|----|
| 6. | Scope of Work | 76 |
| 6-1. | Green Device | 77 |
| 6-2. | Non-Ferrous Metal Plants | 78 |
| 6-3. | Transportation Project | 79 |

7. New Energy

| | | |
|------|---|----|
| 7. | Scope of Work | 80 |
| 7-1. | Photovoltaic Power Plants | 81 |
| 7-2. | Biomass Firing Power Plant | 82 |
| 7-3. | Battery and Decentralized Energy System | 83 |
| 7-4. | Biofuel Plant | 84 |
| 7-5. | Power to Liquid | 85 |

1. Gas Processing Plants and LNG/LPG Terminals

Scope of Work

FEED: Front End Engineering Design

PS: Project Specification

FS: Feasibility Study

B: Basic Design

E: Engineering

P: Procurement

C: Construction

CS: Construction Supervision

M: Start-up and Commissioning

T: Training

1-1. Gas Processing Plants

(for Hydrogen Manufacturing Units please see page [2-17. Hydrogen Manufacturing Units],
for Synthesis Gas / Fertilizers please see page [3-7. Synthesis Gas/Fertilizers])

| Client | Type of Plant | Type | Capacity (T/Y) | Location | Scope of Work | Year of Completion |
|---|---|-------------------------------------|---|----------------------------------|-------------------------|--------------------|
| Kharg Chemical Co., Ltd. | LPG/Sulfur Plant | LPG Sulfur NGL | 200,000 200,000 20,000 | Kharg Is., Iran | E.P.C. | 1969 |
| Abu Dhabi Gas Liquefaction Co., Ltd. (ADGAS) | LNG/LPG Plant Train 1 & 2 | LNG LPG NGL | 1,100,000 x 2 544,000 x 2 110,000 x 2 | Das Is., U.A.E. | B.E.P.C. | 1976 |
| State Organization for Oil Projects (SCOP) | Dew Point Control Plant | Sales Gas NGL | 194MM SCFD 180,000 | North Rumalia & Nassiriyah, Iraq | E.P.C. | 1977 |
| Qatar General Petroleum Corp. (QGPC) | LPG/NGL Recovery Plant | LPG NGL | 660,000 300,000 | Umm Said, Qatar | E.P.C.M. | 1980 |
| China National Technical Import Corp. (CNTIC) | Natural Gas Treating Plant | | 4,000,000M ³ /D | Chongqing, China | B.E.P.CS.M.T. | 1981 |
| State Organization for Oil Projects (SCOP) | NGL Recovery Plant | Sales Gas NGL (C ₃ +) | 495MM SCFD 1,950,000 | North Rumaila, Iraq | B.E.P.C.M.T. | 1983 |
| Mobil Research and Development Corp. | C ₃ & C ₄ Extraction Plant | | 664MM SCFD | Indonesia | Bid Package Preparation | 1983 |
| Teikoku Oil Co., Ltd. | Natural Gas Purification Plant | Sales Gas NGL | 55 MM SCFD 60,000 | Niigata, Japan | B.E.P.C.M. | 1984 |
| PERTAMINA | LPG Extraction Plant | | 450,000 | Bontang, Indonesia | B.E.P.C.M. | 1988 |
| PERTAMINA | LNG/LPG Plant (Train E) | LNG | 2,300,000 | Bontang, Indonesia | E.P.C.M. | 1989 |
| Abu Dhabi Gas Liquefaction Co., Ltd. (ADGAS) | LNG/LPG Plant (Train 3) | LNG | 2,500,000 | Das Is., U.A.E. | FEED | 1991 |
| PERTAMINA | LNG/LPG Plant (Train F) | LNG | 2,300,000 | Bontang, Indonesia | E.P.C.M. | 1993 |
| Abu Dhabi Gas Liquefaction Co., Ltd. (ADGAS) | LNG/LPG Plant (Train 3) | LNG LPG | 2,500,000 460,000 | Das Is., U.A.E. | E.P.C.M. | 1994 |
| Ras Laffan Liquefied Natural Gas Co., Ltd. (RasGas) | Offshore Facilities | | 1,000MM SCFD | Offshore Ras Laffan, Qatar | E.P.C.M. | 1999 |
| Abu Dhabi Gas Liquefaction Co., Ltd. (ADGAS) | BOG Recovery & LPG Capture Maximization | | — | Das Is., U.A.E. | FEED | 2000 |
| PERTAMINA | LNG/LPG Plant (Train I) | LNG LPG | 2,950,000 83,000 | Bontang, Indonesia | FEED | 2001 |
| Abu Dhabi Gas Liquefaction Co., Ltd. (ADGAS) | LPG Plant | | 1,400,000 | Das Is., U.A.E. | FEED | 2002 |
| PT. Badak Natural Gas Liquefaction | Modernization of Control system | | — | Bontang, Indonesia | B.E.P.C.M. | 2002 |
| Ras Laffan Liquefied Natural Gas Co., Ltd. (RasGas) | NGL Plant | | 740 x 2 MM SCFD | | FEED | 2002 |
| PetroChina International Jabung Ltd. | Gas Processing Plant | Sales Gas LPG Condensate | 100 MMSCFD 15,200BPSD 9,930BPSD | Jambi, Indonesia | E.P.C. | 2005 |
| ExxonMobil Middle East Gas Marketing Ltd. | Gas Pre-treating Plant NGL Recovery Plant Fractionation Plant | | 750 MM SCFD 750 MM SCFD C ₂ 180T/H C ₃ 99T/H C ₄ 54T/H | Ras Laffan, Qatar | E.P.C.M.T. | 2005 |
| ExxonMobil Barzan Limited | Gas Processing Plant | | 850MM SCFD x 2 | Ras Laffan, Qatar | FEED | 2009 |
| ExxonMobil Middle East Gas Marketing Ltd. | Gas Pre-treating Plant | | 1,500 MM SCFD | Ras Laffan, Qatar | E.P.C. | 2010 |
| ExxonMobil Barzan Limited | Gas Processing Plant | | 950 MM SCFD x 2 | Ras Laffan, Qatar | FEED | 2010 |
| Basrah Gas Company | NGL Plant Train 1 | Sales Gas, NGL | 530 MM SCFD | Ar Ratawi, Iraq | B. | 2014 |
| 【GTL/DME】 | | | | | | |
| JFE Holdings, Inc. | DME Plant | | — | | FEED | 2003 |
| Qatar Shell GTL Limited | Feed Gas Preparation | | 800 MM SCFD x 2 (equivalent to 8MMTPA of LNG) | Ras Laffan, Qatar | E.P.C. | 2011 |
| 【Gas Related Infrastructure】 | | | | | | |
| Qatar Petroleum | Common Cooling Water System | | 300,000M ³ /h | Ras Laffan, Qatar | E.P.C.M. | 2003 |
| 【Flow Assurance】 | | | | | | |
| RasGas Company Limited | Onshore Storage, Pumping and Loading Facilities | | — | Ras Laffan, Qatar | E.P.C. | 2015 |

1-2.LNG Plants (FEED/PS)

| Client | Capacity (MMTY) | Project | Location | Scope of Work | Year of Completion |
|---|-----------------|---|---------------------------------------|----------------|--------------------|
| Abu Dhabi Gas Liquefaction Co., Ltd. (ADGAS) | 2.5 | Train 3 | Das Is., Abu Dhabi, U.A.E. | FEED | 1991 |
| Nigeria LNG Ltd. | 2.65 x 2 | Train 1 & 2 | Bonny Is., Nigeria | PS (Rewriting) | 1994 |
| Ras Laffan Liquefied Natural Gas Co., Ltd. (RasGas) | 2.5 x 2 | Train 1 & 2 | Ras Laffan, Qatar | FEED | 1994 |
| Amoco Trinidad LNG Co. | 3.0 | Train 1 | La Brea, Trinidad and Tobago | FEED | 1995 |
| Ras Laffan Liquefied Natural Gas Co., Ltd. (RasGas) | 4.4 x 2 | Train 3 & 4 | Ras Laffan, Qatar | FEED | 2000 |
| Abu Dhabi Gas Liquefaction Co., Ltd. (ADGAS) | — | BOG Recovery & LPG Capture Maximization | Das Is., Abu Dhabi, U.A.E. | FEED | 2000 |
| Abu Dhabi Gas Liquefaction Co., Ltd. (ADGAS) | — | Sulfur Recovery Upgrade | Das Is., Abu Dhabi, U.A.E. | FEED | 2001 |
| PERTAMINA | 2.95 | Train-1 | Bontang, Indonesia | FEED | 2001 |
| PERTAMINA / BP Berau, Ltd. | 3.3 x 2 | Train 1 & 2 | Tangguh, Indonesia | FEED | 2001 |
| Shell Global Solutions International B.V. | 4.8 x 2 | Train 1 & 2 | Prigorodnoye, Sakhalin Is., Russia | PS | 2001 |
| Shell Global Solutions International B.V. | 3.3 | Train 3 | Qalhat, Oman | FEED | 2001 |
| Union Fenosa Gas S.A. | 4.85 x 2 | Train 1 & 2 | Damietta, Egypt | FEED | 2001 |
| Qatar Liquefied Gas Co., Ltd. (II) (QATARGAS II) | 7.8 | Train 4 | Ras Laffan, Qatar | FEED | 2004 |
| Qatar Liquefied Gas Co., Ltd. (II) (QATARGAS II) | 7.8 | Train 5 | Ras Laffan, Qatar | FEED | 2004 |
| Ras Laffan Liquefied Natural Gas Co., Ltd. (II) (RasGas II) | 4.7 | Train 5 | Ras Laffan, Qatar | FEED | 2004 |
| Ras Laffan Liquefied Natural Gas Co., Ltd. (3) (RasGas 3) | 7.8 | | Ras Laffan, Qatar | FEED | 2004 |
| Ras Laffan Liquefied Natural Gas Co., Ltd. (3) (RasGas 3) | 7.8 | Train 7 | Ras Laffan, Qatar | FEED | 2004 |
| Qatar Petroleum & Conocophillips Qatar Ltd. | 7.8 | Train 6 & 7 | Ras Laffan, Qatar | FEED | 2005 |
| Nigeria LNG Ltd. | 8.5 | Train 7+ | Bonny Is., Nigeria | PS | 2006 |
| ExxonMobil | 3.15 x 2 | PNG LNG (APCI) | Port Moresby, Papua New Guinea | FEED | 2009 |
| Inpex Browse Ltd. | 4.2 x 2 | Ichthys Gas Field Development Onshore Facilities | Darwin, Northern Territory, Australia | FEED | 2011 |
| Arrow Energy Pty Ltd. (Operator) | 4.0 x 2 | LNG | Curtis Island, Australia | FEED | 2012 |
| Woodside Energy Ltd. | 4.0 x 3 | Browse LNG | James Price Point, Australia | FEED | 2012 |
| JSC Yamal LNG | 5.5 x 3 | Train 1-3 | Yamal Peninsula, Russia | FEED | 2013 |
| PETRONAS | 3.6 | Train 9 | Bintulu, Sarawak, Malaysia | FEED | 2013 |
| Anadarko Mozambique Area 1, Limitada | 6.0 x 4 | Train 1 & 2 | Cabo Delgado, Mozambique | FEED | 2014 |
| Golden Pass LNG | 5.2 x 3 | Golden Pass LNG Export Project | Sabine Pass, Texas, U.S.A. | FEED | 2015 |
| BP Berau Ltd. | 3.8 | Train 3 | West Papua, Indonesia | FEED | 2016 |
| Sakhalin Energy Investment Co., Ltd. | 4.8 | Train 3 | Sakhalin Island | FEED | 2016 |
| Freeport LNG Expansion, L.P. | 4.64 | Train 4 | Freeport, Texas, U.S.A. | FEED | 2018 |
| LNG Canada Development Inc. | 6.0 x 2 | LNG Canada Project | Kitimat, BC, Canada | FEED | 2018 |
| Qatargas Operating Company Limited | 7.8 x 4 | North Field Expansion Onshore Facilities Train 8-11 | Ras Laffan, Qatar | FEED | |
| Nigeria LNG Ltd. | 4.3 4.0 | Train 7 | Bonny Island, Nigeria | FEED | 2020 |

1-3.LNG Plants (EPC)

| Client | Capacity (MMTY) | Project | Location | Scope of Work | Year of Completion |
|--|------------------|---|--------------------------------|---------------|--------------------|
| Abu Dhabi Gas Liquefaction Co., Ltd. (ADGAS) | 1.1 x 2 | Train 1 & 2 | Das Is., Abu Dhabi, U.A.E. | B.E.P.C. | 1976 |
| Perusahaan Pertambangan Minyak Dan Gas Bumi Negara (PERTAMINA) | 1.75 x 2 | Train C & D | Bontang, Indonesia | CS. | 1983 |
| Perusahaan Pertambangan Minyak Dan Gas Bumi Negara (PERTAMINA) | 1.75 x 2 | Train 4 & 5 | Arun, Indonesia | B.E.P.C.M. | 1984 |
| Perusahaan Pertambangan Minyak Dan Gas Bumi Negara (PERTAMINA) | 2.3 | Train E | Bontang, Indonesia | E.P.C.M. | 1989 |
| Perusahaan Pertambangan Minyak Dan Gas Bumi Negara (PERTAMINA) | 2.3 | Train F | Bontang, Indonesia | E.P.C.M. | 1993 |
| Abu Dhabi Gas Liquefaction Co., Ltd. (ADGAS) | 2.5 | Train 3 | Das Is., Abu Dhabi, U.A.E. | E.P.C.M. | 1994 |
| Qatar Liquefied Gas Co., Ltd. (QATARGAS) | 2.0 x 2 | Train 1 & 2 | Ras Laffan, Qatar | E.P.C.M. | 1996 |
| Perusahaan Pertambangan Minyak Dan Gas Bumi Negara (PERTAMINA) | 2.3 | Train G | Bontang, Indonesia | E.P.C.M. | 1997 |
| Qatar Liquefied Gas Co., Ltd. (QATARGAS) | 2.0 | Train 3 | Ras Laffan, Qatar | E.P.C.M. | 1998 |
| Perusahaan Pertambangan Minyak Dan Gas Bumi Negara (PERTAMINA) | | No.3 Loading Dock | Bontang, Indonesia | E.P.C. | 1999 |
| Oman LNG L.L.C. | 3.3 x 2 | Train 1 & 2 | Qalhat, Oman | E.P.C.M. | 2000 |
| PT. Badak Natural Gas Liquefaction | | DCS Retrofit & Instrumentation Upgrade | Bontang, Indonesia | E.P.C.M. | 2002 |
| Ras Laffan Liquefied Natural Gas Co., Ltd. (II) (RasGas II) | 4.7 | Train 3 | Ras Laffan, Qatar | E.P.C.M. | 2003 |
| Qalhat LNG S.A.O.C. | 3.3 | Qalhat Train | Qalhat, Oman | E.P.C.M. | 2005 |
| Qatar Liquefied Gas Co., Ltd. (QATARGAS) | 3.0 | Train 1, 2 & 3, Debottlenecking | Ras Laffan, Qatar | E.P.C. | 2005 |
| Ras Laffan Liquefied Natural Gas Co., Ltd. (II) (RasGas II) | 4.7 | | Ras Laffan, Qatar | E.P.C. | 2005 |
| Ras Laffan Liquefied Natural Gas Co., Ltd. (II) (RasGas II) | 4.7 | Train 5 | Ras Laffan, Qatar | E.P.C. | 2006 |
| Sakhalin Energy Investment Co., Ltd. | 4.8 x 2 | Train 1 & 2 | Sakhalin Island, Russia | E.P.C.M. | 2008 |
| Qatar Liquefied Gas Co., Ltd. (II) (QATARGAS II) | 7.8 | Train 4 | Ras Laffan, Qatar | E.P.C. | 2008 |
| Qatar Liquefied Gas Co., Ltd. (II) (QATARGAS II) | 7.8 | Train 5 | Ras Laffan, Qatar | E.P.C. | 2009 |
| Ras Laffan Liquefied Natural Gas Co., Ltd. (3) (RasGas 3) | 7.8 | Train 6 | Ras Laffan, Qatar | E.P.C. | 2009 |
| Ras Laffan Liquefied Natural Gas Co., Ltd. (3) (RasGas 3) | 7.8 | Train 7 | Ras Laffan, Qatar | E.P.C. | 2009 |
| Qatar Liquefied Gas Co., Ltd. (3) (QATARGAS 3) | 7.8 | Train 6 | Ras Laffan, Qatar | E.P.C. | 2010 |
| Qatar Liquefied Gas Co., Ltd. (4) (QATARGAS 4) | 7.8 | Train 7 | Ras Laffan, Qatar | E.P.C. | 2010 |
| ExxonMobil PNG Limited | 3.45 | Train 1 | Port Moresby, Papua New Guinea | E.P.C. | 2013 |
| ExxonMobil PNG Limited | 3.45 | Train 2 | Port Moresby, Papua New Guinea | E.P.C. | 2014 |
| Sonatrach | 4.7 | GNL-3Z | Arzew, Algeria | E.P.C.M. | 2015 |
| JSC Yamal LNG | 5.5 x 3 | Yamal LNG Project | Sabetta, Yamal-Nenets, Russia | E.P.C. | 2019 |
| Cameron LNG, LLC | 4.5 x 3 | Cameron Liquefaction Project | Hackberry, Louisiana, U.S.A. | E.P.C. | 2020 |
| FLNG Liquefaction 3, LLC | Nominal 4.64 x 1 | Freeport LNG Export Project Train 3 | Freeport, Texas, U.S.A. | E.P.C. | 2020 |
| FLNG Liquefaction, LLC /FLNG Liquefaction 2, LLC (Operator) | Nominal 4.64 x 2 | Freeport LNG Export Project | Freeport, Texas, U.S.A. | E.P.C. | 2020 |
| Sakhalin Energy Investment Co., Ltd. | 4.8 x 2 | Train 1, 2 | Sakhalin Island, Russia | E. | |
| Golden Pass LNG | 5.2 x 3 | Train 1, 2, 3 | Sabine Pass, Texas, U.S.A. | E.P.C. | (2024) |
| Nigeria LNG Ltd. | 8.0 | Train 7 | Bonny Is., Nigeria | E.P. | (2025) |
| BP Berau Ltd. | 3.8 | Train 3 | West Papua, Indonesia | E.P.C. | (Undisclosable) |
| Qatar Petroleum | 8.0 x 4 | North Field East (NFE) Project Onshore LNG Facilities | Ras Laffan, Qatar | E.P.C. | (Undisclosable) |
| Total E&P Mozambique Area 1 Ltd. | 6.44 x 2 | Train 1 & 2 | Cabo Delgado, Mozambique | E. | (Undisclosable) |
| INPEX Operations Australia Pty Ltd. | 4.45 x 2 | Ichthys Onshore LNG Facilities Project | Darwin, Australia | E.P.C. | Undisclosable |

1-4.Floating Unit (FLNG/FPU/FSRPU)

| Client | Capacity(MMTY) | Project | Location | Scope of Service | Year of Completion |
|---|---|---------|--|-------------------------------------|--------------------|
| 【Floating Liquefaction Natural Gas (FLNG)】 | | | | | |
| Petrobras Netherlands B.V. | 2.7 | FLNG | Santos Basin, Brazil | FEED | 2010 |
| Petrobras Netherlands B.V. | 2.7 | FLNG | Santos Basin, Brazil | Pre- EPC | 2011 |
| ExxonMobil Affiliate | > 6.0 | FLNG | Offshore Western, Australia | Pre- FEED | 2013 |
| INPEX Masela Ltd. | 2.5 | FLNG | Abadi Gas Field, Indonesia | FEED | 2014 |
| ExxonMobil Affiliate | > 6.0 | FLNG | Offshore Western, Australia | Optimization Study | 2015 |
| Eni East Africa S.p.A. | 2.5 | FLNG | Offshore Mozambique Area 4, Mozambique | FEED | 2015 |
| ExxonMobil Affiliate | 3.0 – 5.0 | FLNG | Offshore Western, Australia | Pre- FEED | 2016, 2017 |
| 【Floating Production Unit (FPU)】 | | | | | |
| ENI Muara Bakau B.V. | 150 x 3 MMSCFD | FPU | Jangkrik Gas Field, Indonesia | FEED | 2013 |
| ENI Muara Bakau B.V. | 150 x 3 MMSCFD | FPU | Jangkrik Gas Field, Indonesia | E.P.C.I. | 2017 |
| 【Floating Storage Regasification Power Unit (FSRPU)】 | | | | | |
| Kumul Petroleum Holdings Limited | 140,000m3 LNG storage, 75MW Power Generation | FSRPU | Lae, Papua New Guinea | Design, Development and Engineering | (Undisclosable) |

1-5. Helium Recovery Unit

| Client | Capacity(MMTY) | Project | Location | Scope of Service | Year of Completion |
|---------------------------------|----------------|---------|-------------------|------------------|--------------------|
| RasGas Company Ltd. | — | Helium2 | Ras Laffan, Qatar | E.P.C. | 2013 |
| Qatargas Operating Company Ltd. | — | Helium2 | Ras Laffan, Qatar | E.P.C. | 2013 |
| Qatargas Operating Company Ltd. | — | Helium3 | Ras Laffan, Qatar | E.P.C. | 2019 |
| Qatar Petroleum | — | Helium4 | Ras Laffan, Qatar | E.P.C. | (Undisclosable) |

1-6.Acid Gas Removal

| Client | Process | Location | Scope of Work | Year of Completion |
|---|------------------|------------------------------|----------------|--------------------|
| Kharg Chemical Co., Ltd. | DEA | Kharg Is., Iran | E.P.C. | 1969 |
| Abu Dhabi Gas Liquefaction Co., Ltd. (ADGAS) (Train 1 & 2) | Benfield Hi-Pure | Das Is., Abu Dhabi | B.E.P.C. | 1976 |
| Qatar General Petroleum Corp. | ADIP | Umm Said, Qatar | E.P.C. | 1980 |
| China National Technical Import Corp. (CNTIC) | Sulfinol | Chongqing, China | B.E.P.C.S.M.T. | 1981 |
| Pertamina (Train 4 & 5) | Benfield Hi-Pure | Arun, Indonesia | E.P.C.M. | 1983 |
| Pertamina (Train E) | aMDEA | Bontang, Indonesia | E.P.C.M. | 1989 |
| Oil & Natural Gas Commission | Sulfinol | Uran, India | B.E. | 1990 |
| Pertamina (Train F) | aMDEA | Bontang, Indonesia | E.P.C.M. | 1993 |
| Abu Dhabi Gas Liquefaction Co., Ltd. (ADGAS) (Train 3) | Benfield Hi-Pure | Das Is., Abu Dhabi | E.P.C.M. | 1994 |
| Nigeria LNG Ltd. | | Bonny Is., Nigeria | PS | 1994 |
| Ras Laffan Liquefied Natural Gas Co., Ltd. (RasGas) (Train 1 & 2) | Sulfinol | Ras Laffan, Qatar | FEED | 1994 |
| Amoco Trinidad LNG Co., Ltd. | | La Brea, Trinidad and Tobago | FEED | 1995 |
| Qatar Liquefied Gas Co., Ltd. (QATARGAS) (Train 1 & 2) | Sulfinol | Ras Laffan, Qatar | E.P.C.M. | 1996 |
| Pertamina (Train G) | aMDEA | Bontang, Indonesia | E.P.C.M. | 1997 |
| Qatar Liquefied Gas Co., Ltd. (QATARGAS) (Train 3) | Sulfinol | Ras Laffan, Qatar | E.P.C.M. | 1998 |
| Oman LNG LLC (Train 1 & 2) | Sulfinol | | E.P.C.M. | 2000 |
| Pertamina (Train I) | aMDEA | Bontang, Indonesia | FEED | 2001 |
| Pertamina/BP Berau Ltd. | aMDEA | Irian Jaya, Indonesia | FEED | 2001 |
| Union Fenosa Gas S.A. | aMDEA | Damietta, Egypt | FEED | 2001 |
| Ras Laffan Liquefied Natural Gas Co., Ltd. (RasGas) (Train 3) | Ucarsol | Ras Laffan, Qatar | E.P.C.M. | 2003 |
| Qatar Liquefied Gas Co., Ltd. (II) (QATARGAS II) (Train 4) | Ucarsol | Ras Laffan, Qatar | FEED | 2004 |
| Qatar Liquefied Gas Co., Ltd. (II) (QATARGAS II) (Train 5) | Ucarsol | Ras Laffan, Qatar | FEED | 2004 |
| Ras Laffan Liquefied Natural Gas Co., Ltd. (II) (RasGas II) (Train 5) | Ucarsol | Ras Laffan, Qatar | FEED | 2004 |
| Ras Laffan Liquefied Natural Gas Co., Ltd. (3) (RasGas 3) (Train 6) | Ucarsol | Ras Laffan, Qatar | FEED | 2004 |
| Ras Laffan Liquefied Natural Gas Co., Ltd. (3) (RasGas 3) (Train 7) | Ucarsol | Ras Laffan, Qatar | FEED | 2004 |
| ExxonMobil Middle East Gas Marketing Ltd. | Ucarsol | Ras Laffan, Qatar | E.P.C. | 2005 |
| PetroChina International Jabung Ltd. | aMDEA | Jambi, Indonesia | E.P.C. | 2005 |
| Qalhat LNG S.A.O.C. | Sulfinol | Qalhat, Oman | E.P.C. | 2005 |
| Qatar Liquefied Gas Co., Ltd. (QATARGAS) (Train 1, 2 & 3 Debottlenecking) | Sulfinol | Ras Laffan, Qatar | E.P.C. | 2005 |
| Qatar Petroleum & Conocophillips Qatar Ltd. (Train 6 & 7) | aMDEA | Ras Laffan, Qatar | FEED | 2005 |
| Ras Laffan Liquefied Natural Gas Co., Ltd. (II) (RasGas II) (Train 4) | Ucarsol | Ras Laffan, Qatar | E.P.C. | 2005 |
| Ras Laffan Liquefied Natural Gas Co., Ltd. (II) (RasGas II) (Train 5) | Ucarsol | Ras Laffan, Qatar | E.P.C. | 2006 |
| Qatar Liquefied Gas Co., Ltd. (II) (QATARGAS II) | Prosernat | Ras Laffan, Qatar | FEED | 2007 |
| Sakhalin Energy Investment Co., Ltd. (Train 1 & 2) | Sulfinol | Sakhalin Island, Russia | E.P.C. | 2008 |
| Qatar Liquefied Gas Co., Ltd. (QATARGAS) (Train 4) | aMDEA | Ras Laffan, Qatar | E.P.C. | 2008 |
| Qatar Liquefied Gas Co., Ltd. (II) (QATARGAS II) (Train 5) | aMDEA | Ras Laffan, Qatar | E.P.C. | 2009 |
| Ras Laffan Liquefied Natural Gas Co., Ltd. (3) (RasGas 3) (Train 6) | Ucarsol | Ras Laffan, Qatar | E.P.C. | 2009 |
| Ras Laffan Liquefied Natural Gas Co., Ltd. (3) (RasGas 3) (Train 7) | Ucarsol | Ras Laffan, Qatar | E.P.C. | 2009 |
| ExxonMobil Barzan Limited | Ucarsol | Ras Laffan, Qatar | FEED | 2009 |
| ExxonMobil Barzan Limited | Ucarsol | Ras Laffan, Qatar | FEED | 2010 |
| ExxonMobil Middle East Gas Marketing Ltd. | Ucarsol | Ras Laffan, Qatar | E.P.C. | 2010 |
| Qatar Liquefied Gas Co., Ltd. (3) (QATARGAS 3) (Train 6) | aMDEA | Ras Laffan, Qatar | E.P.C. | 2010 |
| Qatar Liquefied Gas Co., Ltd. (4) (QATARGAS 4) (Train 7) | aMDEA | Ras Laffan, Qatar | E.P.C. | 2010 |
| Qatar Shell GTL Limited | Sulfinol | Ras Laffan, Qatar | E.P.C. | 2011 |
| Arrow Energy Pty Ltd. | ADIP | Curtis Island, Australia | FEED | 2012 |
| JSC Yamal LNG | aMDEA | Yamal Peninsula, Russia | FEED | 2013 |
| Woodside Energy Ltd. | BASF | James Price Point, Australia | FEED | 2013 |
| Anadarko Mozambique Area 1, Limitada | aMDEA | Cabo Delgado, Mozambique | FEED | 2014 |

| | | | | |
|---|-----------|--------------------------------|----------|-----------------|
| ExxonMobil PNG Limited | Ucarsol | Port Moresby, Papua New Guinea | E.P.C. | 2014 |
| Qatar Liquefied Gas Co., Ltd. (QATARGAS 1) (Train 1,2 & 3) | Prosernat | Ras Laffan, Qatar | E.P.C. | 2014 |
| Golden Pass LNG | Ucarsol | Sabine Pass, Texas, U.S.A. | FEED | 2015 |
| Sonatrach | aMDEA | Arzew, Algeria | E.P.C.M. | 2015 |
| Freeport LNG Expansion, L.P. | aMDEA | Freeport, Texas, U.S.A. | FEED | 2018 |
| Cameron LNG, LLC | Ucarsol | Hackberry, Louisiana, U.S.A. | E.P.C. | 2020 |
| FLNG Liquefaction 3, LLC | aMDEA | Freeport, Texas, U.S.A. | E.P.C. | 2020 |
| FLNG Liquefaction, LLC / FLNG Liquefaction 2, LLC (Operator) | aMDEA | Freeport, Texas, U.S.A. | E.P.C. | 2020 |
| Golden Pass LNG | Ucarsol | Sabine Pass, Texas, U.S.A. | E.P.C. | (2024) |
| Nigeria LNG Ltd. | | Bonny Is., Nigeria | E.P. | (2025) |
| Qatar Petroleum | aMDEA | Ras Laffan, Qatar | E.P.C. | (Undisclosable) |
| QatarEnergy-North Field East (NFE) Project Onshore LNG Facilities | BASF | Ras Laffan, Qatar | E.P.C. | (Undisclosable) |

1-7.Sulfur Recovery Units

| Client | Capacity (Tons/Day) | Location | Scope of Work | Year of Completion |
|--|---------------------|-------------------|---------------|--------------------|
| Kharg Chemical Co., Ltd. | 20,000 T/Y | Kharg Is., Iran | E.P.C. | 1969 |
| Abu Dhabi Gas Liquefaction Co., Ltd. (ADGAS) | 375 x 2 | Das Is., U.A.E. | E.P.C. | 1976 |
| China National Technical Import Corp. (CNTIC) | 90,000 T/Y | Chongqing, China | B.E.P.CS.M.T. | 1981 |
| Abu Dhabi Gas Liquefaction Co., Ltd. (ADGAS) | 490 | Das Is., U.A.E. | E.P.C. | 1994 |
| Qatar Liquefied Gas Co., Ltd. (QATARGAS) | 134 x 3 | Ras Laffan, Qatar | E.P.C.M. | 1998 |
| Ras Laffan Liquefied Natural Gas Co., Ltd. (II) (RasGas II) | 244 | Ras Laffan, Qatar | E.P.C.M. | 2003 |
| Ras Laffan Liquefied Natural Gas Co., Ltd. (3) (RasGas 3) (Train 6) | 670 | Ras Laffan, Qatar | FEED | 2004 |
| Ras Laffan Liquefied Natural Gas Co., Ltd. (3) (RasGas 3) (Train 7) | 670 | Ras Laffan, Qatar | FEED | 2004 |
| Qatar Liquefied Gas Co., Ltd. (II) (QATARGAS II) (Train 4) (Train 5) | 600 | Ras Laffan, Qatar | FEED | 2004 |
| Qatar Petroleum & Conocophillips Qatar Ltd. (Train 6 & 7) | 590 | Ras Laffan, Qatar | FEED | 2005 |
| Qatar Liquefied Gas Co., Ltd. (QATARGAS) | 480 x 2 | Ras Laffan, Qatar | FEED | 2007 |
| Qatar Liquefied Gas Co., Ltd. (II) (QATARGAS II) (Train 4) | 600 | Ras Laffan, Qatar | E.P.C. | 2008 |
| Qatar Liquefied Gas Co., Ltd. (II) (QATARGAS II) (Train 5) | 600 | Ras Laffan, Qatar | E.P.C. | 2009 |
| Ras Laffan Liquefied Natural Gas Co., Ltd. (3) (RasGas 3) (Train 6) | 670 | Ras Laffan, Qatar | E.P.C. | 2009 |
| Ras Laffan Liquefied Natural Gas Co., Ltd. (3) (RasGas 3) (Train 7) | 670 | Ras Laffan, Qatar | E.P.C. | 2009 |
| ExxonMobil Barzan Limited | 370 x 2 | | FEED | 2009 |
| ExxonMobil Barzan Limited | 1,940 x 2 | Ras Laffan, Qatar | FEED | 2010 |
| ExxonMobil Middle East Gas Marketing Ltd. | 670 | Ras Laffan, Qatar | E.P.C. | 2010 |
| Qatar Liquefied Gas Co., Ltd. (3) (QATARGAS 3) (Train 6) | 590 | Ras Laffan, Qatar | E.P.C. | 2010 |
| Qatar Liquefied Gas Co., Ltd. (4) (QATARGAS 4) (Train 7) | 590 | Ras Laffan, Qatar | E.P.C. | 2010 |
| Qatar Liquefied Gas Co., Ltd. (QATARGAS 1) (Train 1,2 & 3) | 880 | Ras Laffan, Qatar | E.P.C. | 2014 |
| Qatar Petroleum | 700 | Ras Laffan, Qatar | E.P.C. | (Undisclosable) |

1-8.LNG Terminals

| Client | Storage Capacity (kl) | Project | Location | Scope of Work | Year of Completion |
|--|--------------------------|-------------------------------------|--------------------------|---------------|--------------------|
| Tokyo Gas Co., Ltd. | 25,000 x 1 45,000 x 3 | Receiving Terminal | Negishi, Japan | B.E.P.C. | 1969 |
| Tokyo Gas Co., Ltd. | 10,000 x 1 | Expansion | Negishi, Japan | B.E.P.C. | 1971 |
| Tokyo Gas Co., Ltd. | 35,000 x 2 | Expansion | Negishi, Japan | B.E.P.C. | 1971 |
| Tokyo Gas Co., Ltd. | 60,000 x 1 | Expansion | Negishi, Japan | B.E.P.C. | 1972 |
| Tokyo Gas Co., Ltd. | 45,000 x 2 | Receiving Terminal | Sodegaura, Japan | B.E.P.C. | 1973 |
| Tokyo Electric Power Co., Inc. | 45,000 x 2 | Receiving Terminal (Piping Work) | Sodegaura, Japan | B.E.P.C. | 1973 |
| Tokyo Gas Co., Ltd. | 60,000 x 3 | Expansion | Sodegaura, Japan | B.E.P.C. | 1974 |
| Tokyo Gas Co., Ltd. | 60,000 x 5 | Expansion | Sodegaura, Japan | B.E.P.C. | 1976 |
| Tokyo Electric Power Co., Inc. | 60,000 x 5 | Expansion (Piping Work) | Sodegaura, Japan | B.E.P.C. | 1976 |
| Tokyo Gas Co., Ltd. | 95,000 x 1 | Expansion | Negishi, Japan | B.E.P.C. | 1977 |
| Tokyo Gas Co., Ltd. | 60,000 x 2 | Expansion | Sodegaura, Japan | B.E.P.C. | 1977 |
| Abu Dhabi Gas Liquefaction Co., Ltd. (ADGAS) | — | Storage & Loading Facilities | Das Is., U.A.E. | E.P.C. | 1977 |
| Tokyo Gas Co., Ltd. | 95,000 x 1 | Expansion | Negishi, Japan | B.E.P.C. | 1978 |
| Tokyo Gas Co., Ltd. | 60,000 x 2 | Expansion | Sodegaura, Japan | B.E.P.C. | 1979 |
| Tokyo Gas Co., Ltd. | 95,000 x 1 | Expansion | Negishi, Japan | B.E.P.C. | 1980 |
| Tokyo Gas Co., Ltd. | 95,000 x 1 | Expansion | Negishi, Japan | B.E.P.C. | 1982 |
| Tokyo Gas Co., Ltd. | 130,000 x 2 | Expansion | Sodegaura, Japan | B.E.P.C. | 1983 |
| Nihonkai LNG Co., Ltd. | 80,000 x 4 | Receiving Terminal | Niigata, Japan | B.E.P.C. | 1983 |
| Tokyo Gas Co., Ltd. | 130,000 x 1 | Expansion | Sodegaura, Japan | B.E.P.C. | 1984 |
| Tokyo Electric Power Co., Inc. | 60,000 x 7 | Receiving Terminal | Higashi Ohgishima, Japan | B.E.P.C. | 1984 |
| PERTAMINA | — | Storage & 2nd Loading Facilities | Arun, Indonesia | E.P.C. | 1984 |
| Tokyo Electric Power Co., Inc. | 90,000 x 4 | Receiving Terminal | Futtsu, Japan | B.E.P.C. | 1985 |
| Tokyo Gas Co., Ltd. | 30,000 Ton | LPG Facility for Calorie Adjustment | Sodegaura, Japan | B.E.P.C. | 1986 |
| Tokyo Electric Power Co., Inc. | — | Training Simulator | Shinagawa, Japan | B.E.P.C. | 1987 |
| Tokyo Electric Power Co., Inc. | 60,000 x 2 | Expansion | Higashi Ohgishima, Japan | B.E.P.C. | 1987 |
| PERTAMINA | — | Storage & 2nd Loading Facilities | Bontang, Indonesia | E.P.C. | 1988 |
| Oita Liquefied Natural Gas Co., Inc. | 80,000 x 3 | Receiving Terminal | Ohita, Japan | B.E.P.C. | 1990 |
| Chugoku Electric Power Co., Inc. | 80,000 x 3 | Receiving Terminal | Yanai, Japan | B.E.P.C. | 1990 |
| Chugoku Electric Power Co., Inc. | 80,000 x 1 | Tank & Vaporization (expansion) | Yanai, Japan | P.C. | 1991 |
| Tokyo Gas Co., Ltd. | for 130,000 kl Ship | Unloading Facility (expansion) | Negishi, Japan | B.E.P.C. | 1991 |
| Tokyo Electric Power Co., Inc. | 180T/H | Vaporizer (expansion) | Higashi Ohgishima, Japan | B.E.P.C. | 1991 |
| Tokyo Electric Power Co., Inc. | 125,000 x 2 | Tank (expansion) | Futtsu, Japan | B.E.P.C. | |
| Tokyo Electric Power Co., Inc. | 720T/H | Gas Blower for Conduit Pipe | Futtsu, Japan | B.E.P.C. | 1993 |
| Tokyo Gas Co., Ltd. | — | Expansion | Sodegaura, Japan | B.E.P.C. | 1993 |
| Tokyo Gas Co., Ltd. | 85,000 x 2 | Expansion | Negishi, Japan | B.E.P.C. | 1994 |
| Oita Liquefied Natural Gas Co., Inc. | 80,000 x 1 | Tank (expansion) | Ohita, Japan | B.E.P.C. | 1994 |
| Nihonkai LNG Co., Ltd. | — | Vaporization Facility (expansion) | Niigata, Japan | E.P.C. | 1995 |
| Tokyo Electric Power Co., Inc. | — | Control System (replacement) | Higashi Ohgishima, Japan | B.E.P.C. | 1995 |
| Tokyo Electric Power Co., Inc. | 540T/H | Gas Blower for Conduit Pipe | Futtsu, Japan | B.E.P.C. | 1996 |
| Chugoku Electric Power Co., Inc. | 80,000 x 2 | Tank/Vaporizer (expansion) | Yanai, Japan | P.C. | 1996 |
| Nippon Gas Co., Ltd. | 36,000 x 1 | Receiving Terminal | Kagoshima, Japan | E.P.C. | 1996 |
| Qatar Liquefied Gas Co., Ltd. (QATARGAS) | — | Storage & Loading Facilities | Ras Laffan, Qatar | E.P.C. | 1996 |
| Tokyo Gas Co., Ltd. | 200,000 x 1 | Tank (expansion) | Negishi, Japan | B.E.P.C. | 1996 |
| Sendai City Gas Bureau | 80,000 x 1 | Receiving Terminal | Sendai, Japan | B.E.P.C. | 1997 |
| Tokyo Electric Power Co., Inc. | 810 T/H | Vaporizer (expansion) | Higashi Ohgishima, Japan | B.E.P.C. | 1997 |
| BG plc. | — | Receiving Terminal | Pipavav, Gujarat, India | FEED | 1998 |

| | | | | | |
|---|---|--|--------------------------|----------|--------|
| Nihonkai LNG Co., Ltd. | 200,000 x 1 | Tank (expansion) | Niigata, Japan | P.C. | 1998 |
| PERTAMINA | — | Storage & 3rd Loading Facilities | Bontang, Indonesia | E.P.C. | 1998 |
| Qatar Liquefied Gas Co., Ltd. (QATARGAS) | — | Storage Facilities | Ras Laffan, Qatar | E.P.C. | 1998 |
| Tokyo Gas Co., Ltd. | 200,000 x 1 | Unloading Facility | Ohgishima, Japan | B.E.P.C. | 1998 |
| Oita Liquefied Natural Gas Co., Inc. | 140,000 x 1 | Tank/Vaporizer (expansion) | Ohita, Japan | B.E.P.C. | 1999 |
| Tokyo Electric Power Co., Inc. | — | Control System (modification) | Futtsu, Japan | E.P.C. | 1999 |
| Oman LNG L.L.C. | — | Storage & Loading Facilities | Qalhat, Oman | E.P.C. | 2000 |
| Tokyo Gas Co., Ltd. | 200,000 x 1 | Expansion | Ohgishima, Japan | B.E.P.C. | 2000 |
| Tokyo Electric Power Co., Inc. | — | Control System (Replacement for CRT Operation) | Futtsu, Japan | B.E.P.C. | 2000 |
| Tokyo Electric Power Co., Inc. | 540 T/H | Vaporizer (expansion) | Futtsu, Japan | E.P.C. | 2001 |
| Tokyo Electric Power Co., Inc. | — | Training Simulator (replacement) | Shinagawa, Japan | B.E.P.C. | 2001 |
| Toho Gas Co., Ltd. | 200,000 x 1 | Receiving Terminal | Midirihama, Japan | B.E.P.C. | 2001 |
| Tung Ting Gas Corp. | 140,000 x 3 | Receiving Terminal | Tao-Yuan, Taiwan | B. | 2001 |
| Tokyo Electric Power Co., Inc. | — | Control System (Modification) | Futtsu, Japan | B.E.P.C. | 2002 |
| Tokyo Electric Power Co., Inc. | 405 T/H | Vaporizer (expansion) | Higashi Ohgishima, Japan | B.E.P.C. | 2003 |
| Ras Laffan Liquefied Natural Gas Co., Ltd. (II) (RasGas II) | — | Storage & Loading Facilities | Ras Laffan, Qatar | E.P.C. | 2004 |
| Mizushima LNG Co., Ltd. | 160,000 x 1 | Grass-roots Receiving Terminal | Mizushima, Japan | B.E.P.C. | 2005 |
| Tokyo Electric Power Co., Inc. | — | Vaporization Facility (expansion) | Higashi Ohgishima, Japan | E.P.C. | 2005 |
| Tokyo Electric Power Co., Inc. | — | Control System (Replacement) | Futtsu, Japan | E.P.C. | 2005 |
| Tokyo Electric Power Co., Inc. | — | Control System (Replacement) | Futtsu, Japan | E.P.C. | 2007 |
| Sakhalin Energy Investment Co., Ltd. | 100,000 x 2 | Storage & Loading Facilities | Sakhalin Is., Russia | E.P.C. | 2008 |
| Tokyo Electric Power Co., Inc. | — | Control System (Modification) | Higashi Ohgishima, Japan | E.P.C. | 2009 |
| Mizushima LNG Co., Ltd. | 160,000 | Expansion | Mizushima, Japan | E.P.C. | 2011 |
| Tokyo Gas Co., Ltd. | — | Expansion (Piping Work) | Sodegaura, Japan | E.P.C. | 2012 |
| Chubu Electric Power Co., Inc. | — | Receiving Terminal | Niigata, Japan | E.P.C. | 2013 |
| INPEX CORPORATION | — | Receiving Terminal | Niigata, Japan | E.P.C. | 2013 |
| Hibiki LNG Co., Ltd. | — | Receiving Terminal | Fukuoka, Japan | E.P.C. | 2014 |
| Tokyo Gas Co., Ltd. | — | Expansion (Piping Work) | Negishi, Japan | E.P.C. | 2015 |
| Tokyo Gas Co., Ltd. | — | Receiving Terminal | Hitachi, Japan | E.P.C. | 2016 |
| Mizushima LNG Co., Ltd. | 10t/h | Re-liquefaction Facility | Mizushima, Japan | E.P.C. | 2020 |
| Nigeria LNG Ltd. | — | New Jetty for Train7 | Bonny Is., Nigeria | E.P. | (2025) |
| 【LNG Related Plant at Terminal】 | | 85 | | | |
| Tokyo Gas Co., Ltd. | 100 T/H (4,000kw) | Power Generation Plant by LNG Cold Potential | Negishi, Japan | B.E.P.C. | 1985 |
| Tokyo Gas Co., Ltd. | 100kg- ¹³ CH ₄ /Y | ¹³ C Methane Plant | Negishi, Japan | B.E.P.C. | 1999 |

1-9.LPG Terminals

| Client | Storage Capacity (Tons) | Project | Location | Scope of Work | Year of Completion |
|--|-------------------------|--|--------------------|---------------|--------------------|
| Nippon Mining Co., Ltd. | 79,000 | Receiving Terminal | Mizushima, Japan | B.E.P.C. | 1965 |
| Kyodo Oil Co., Ltd. | 40,000 | Receiving Terminal | Kawasaki, Japan | B.E.P.C. | 1966 |
| Maruzen Oil Co., Ltd. | 80,000 | Receiving Terminal | Sakai, Japan | B.E.P.C. | 1966 |
| Mitsubishi Corporation | 60,000 | Receiving Terminal | Kobe, Japan | B.E.P.C. | 1966 |
| Mitsubishi Liquefied Petroleum Gas Co., Ltd. | 330 | Storage & Shipping Facilities | Shizuoka, Japan | E.P.C. | 1966 |
| General Gas Co., Ltd. | 80,000 | Receiving Terminal | Sakai, Japan | P.C. | 1969 |
| Idemitsu Kosan Co., Ltd. | 60,000 | Receiving Terminal | Aichi, Japan | B.E.P.C. | 1969 |
| Kharg Chemical Co., Ltd. | — | Storage & Loading Facilities | Kharg Is., Iran | E.P.C. | 1969 |
| Toa Nenryo Kogyo K.K. | 20,000 | Receiving Terminal | Kawasaki, Japan | E.P.C. | 1969 |
| Toa Nenryo Kogyo K.K. | 7,000 | Receiving Terminal | Kawasaki, Japan | E.P.C. | 1970 |
| Idemitsu Kosan Co., Ltd. | 20,000 | Expansion | Aichi, Japan | B.E.P.C. | 1971 |
| Idemitsu Kosan Co., Ltd. | 100,000 | Expansion | Aichi, Japan | B.E.P.C. | 1972 |
| Kashima Oil Co., Ltd. | 107,000 | Receiving Terminal | Kashima, Japan | B.E.P.C. | 1972 |
| Nippon Mining Co., Ltd. | 34,000 | Expansion | Mizushima, Japan | B.E.P.C. | 1972 |
| Tohoku Oil Co., Ltd. | 105,000 | Receiving Terminal | Sendai, Japan | B.E.P.C. | 1972 |
| Kobe Steel, Ltd. | 60,000 | | Kakogawa, Japan | B.E.P.C. | 1973 |
| Sumitomo Metal Industries, Ltd. | 48,000 | Receiving Terminal | Wakayama, Japan | B.E.P.C. | 1974 |
| Tokyo Electric Power Co., Inc. | 121,000 260T/H | Receiving Terminal & Vaporization Plant | Anegasaki, Japan | B.E.P.C. | 1975 |
| Sumitomo Metal Industries, Ltd. | 40T/H | Vaporization Plant (expansion) | Wakayama, Japan | E.P.C. | 1976 |
| Abu Dhabi Gas Liquefaction Co., Ltd. (ADGAS) | — | Storage & Loading Facilities | Das Is., U.A.E. | E.P.C. | 1977 |
| Iwatani & Co., Ltd. | 80,000 | Receiving Terminal | Sakai, Japan | B.E.P.C. | 1980 |
| Qatar General Petroleum Corp. (QGPC) | — | Storage & Loading Facilities | Umm Said, Qatar | E.P.C. | 1980 |
| Tokyo Electric Power Co., Inc. | 102,000 | Expansion | Anegasaki, Japan | B.E.P.C. | 1980 |
| Kyokuto Petroleum Industries, Ltd. | 180,000 | Receiving Terminal | Chiba, Japan | B. | 1981 |
| Maruzen Oil Co., Ltd. | 320,000 | Receiving Terminal | Nagasaki, Japan | E.P.C. | 1981 |
| Chugoku Electric Power Co., Inc. | 10,000 | Vaporization Plant | Iwakuni, Japan | E.P.C. | 1982 |
| Tohoku Electric Power Co., Inc. | 80T/H | Vaporization Plant | Sendai, Japan | B.E.P.C. | 1982 |
| Namikata Terminal Co., Ltd. | 180,000 | Receiving Terminal (Incl. Chemicals) | Ehime, Japan | B.E.P.C. | 1983 |
| Tohoku Oil Co., Ltd. | 90,000 | Expansion | Sendai, Japan | B.E.P.C. | 1983 |
| Zen-nho Fuel Terminal Corp. | 130,000 | Receiving Terminal | Sakaide, Japan | B.P.C. | 1983 |
| Tokyo Gas Co., Ltd. | 35,000 | Receiving Terminal | Sodegaura, Japan | E.P.C. | 1986 |
| Oita LPG Joint Stockpiling Co., Ltd. | 215,000 | Storage Terminal | Ohita, Japan | P.C. | |
| Chubu Electric Power Co., Inc. | 48T/H | Vaporization Facility | Yokkaichi, Japan | E.P.C. | 1988 |
| PERTAMINA | — | Storage & 2nd Loading Facilities | Bontang, Indonesia | E.P.C. | 1988 |
| Japan National Oil Corp. | 400 kl | Water Sealed Mined Cavern Storage (pilot) | Kurashiki, Japan | E.P.C. | 1992 |
| Continental Grain Co./Shanghai Petrochemical Co., Ltd. | 100,000 | Receiving Terminal | Shanghai, China | FEED | 1994 |
| Kashima LPG Joint Stockpiling Co., Ltd. | 225,000 | Storage Terminal | Kashima, Japan | B.E.P.C. | 1994 |
| Tokai Co., Ltd. | 940 | Storage & Shipping Facilities | Shizuoka, Japan | E.P.C. | 1995 |
| MC Terminal Co., Ltd. | — | Restoration | Kobe, Japan | E.P.C. | 1996 |
| Malaysian Refining Co., Sdn. Bhd. | — | Storage Facilities | Melaka, Malaysia | E.P.C. | 1998 |
| PERTAMINA | — | Storage & 3rd Loading Facilities | Bontang, Indonesia | E.P.C. | 1998 |
| Tokyo Gas Co., Ltd. | 35,000 | Receiving Terminal | Ohgishima, Japan | E.P.C. | 1998 |
| BP Ningbo Huadong LPG Co., Ltd. | — | Receiving Terminal (Water Sealed Mined Cavern Storage) | Ningbo, China | E.P.C. | 2002 |
| ExxonMobil Middle East Gas Marketing Ltd. | — | Storage & Loading Facilities | Ras Laffan, Qatar | E.P.C. | 2005 |
| Japan Oil, Gas and Metals National Corporation | 200,000 | Storage Terminal | Nagasaki, Japan | E.P.C. | 2005 |
| Japan Oil, Gas and Metals National Corporation | 200,000 | Storage Terminal | Kamisu, Japan | E.P.C. | 2005 |
| Japan Oil, Gas and Metals National Corporation | 400,000 | Storage Terminal (Water Sealed Mined Cavern Storage) | Kurashiki, Japan | E.P.C. | 2012 |
| Japan Oil, Gas and Metals National Corporation | 450,000 | Storage Terminal (Water Sealed Mined Cavern Storage) | Namikata, Japan | E.P.C. | 2013 |
| Japan Oil, Gas and Metals National Corporation | — | Storage Terminal (Water Sealed Mined Cavern Storage) | Namikata, Japan | E.P.C. | 2015 |

1-10.CCS (Carbon Capture & Storage)

| Client | Type of Plant | Capacity | Location | Scope of Work | Year of Completion |
|--|---|-------------------------|-------------------------|-------------------|--------------------|
| Electric Power Development Co, Ltd. (J-Power) | CO ₂ Separation and Recovery Plant for Coal Gasification Process | 1,000m ³ N/h | Fukuoka, Japan | E.P.C. | 2012 |
| Toshiba Energy Systems & Solutions Corporation | Large-Scale Carbon Capture Facility | 500t/d | Fukuoka, Japan | E.P.C. | 2021 |
| PT PERTAMINA (Persero) | CO ₂ Transportation & Storage | Undisclosable | Tanjung Enim, Indonesia | Feasibility Study | (2023) |
| Qatar Petroleum | Large Scale Carbon Capture Facility | Undisclosable | Ras Laffan, Qatar | E.P.C. | (Undisclosable) |

2. Petroleum Refineries

Scope of Work

B: Basic Design/FEED

E: Engineering

P: Procurement

PS: Procurement Service

C: Construction

CS: Construction Supervision

M: Start-up and Commissioning

T: Training

Remarks

Re: Revamping

Ex: Expansion

2-1.Crude Distillation Units

| Client | Capacity (BPSD) | Location | Scope of Work | Year of Completion |
|---|-----------------|-----------------------------------|---------------|--------------------|
| Koa Oil Co., Ltd. | 9,000 | Marifu, Japan | C. | 1950 |
| Mitsubishi Oil Co., Ltd. | 1,000 | Kawasaki, Japan | C. | 1951 |
| Showa Sekiyu K.K. | 4,000 | Niigata, Japan | C. | 1951 |
| Showa Sekiyu K.K. | 4,000 | Kawasaki, Japan | C. | 1951 |
| Mitsubishi Oil Co., Ltd. | 7,200 | Kawasaki, Japan | B.E.P.C. | 1952 |
| Mitsubishi Oil Co., Ltd. | 12,000 | Kawasaki, Japan | B.E.P.C. | 1954 |
| Mitsubishi Oil Co., Ltd. | 50,000 | Kawasaki, Japan | B.E.P.C. | 1957 |
| Maruzen Oil Co., Ltd. | 25,000 | Matsuyama, Japan | B.E.P.C. | 1957 |
| Asia Oil Co., Ltd. | 10,000 | Yokohama, Japan | B.E.P.C. | 1957 |
| Asia Oil Co., Ltd. | 50,000 | Yokohama, Japan | B.E.P.C. | 1961 |
| Mitsubishi Oil Co., Ltd. | 22,500 | Mizushima, Japan | B.E.P.C. | 1961 |
| Mitsubishi Oil Co., Ltd. | 3,500 | Kawasaki, Japan | B.E.P.C. | 1962 |
| Maruzen Oil Co., Ltd. | 50,000 | Chiba, Japan | B.E.P.C. | 1962 |
| Showa Sekiyu K.K. | 40,000 | Niigata, Japan | E.P.C. | 1963 |
| Nippon Petroleum Refining Co., Ltd. | 110,000 | Negishi, Japan | B.E.P.C. | 1964 |
| Toho Oil Co., Ltd. | 40,000 | | B.E.P.C.M. | 1964 |
| General Sekiyu Seisei K.K. | 60,000 | Sakai, Japan | E.P.C. | 1965 |
| Mobil Refining Co. (Malaysia) Ltd. / Fluor Corp. | 25,000 | Jurong, Singapore | B.E.P. | 1965 |
| Showa Yokkaichi Sekiyu Co., Ltd. | 105,000 | Yokkaichi, Japan | B.E.P.C. | 1965 |
| Mitsubishi Oil Co., Ltd. | 80,000 | Mizushima, Japan | B.E.P.C. | 1966 |
| Showa Sekiyu K.K. | 40,000 | Niigata, Japan | B.E.P.C. | 1966 |
| General Petroleum & Mineral Organization (PETROMIN) | 12,000 | Jeddah, Saudi Arabia | E.P.C. | 1967 |
| Fuji Oil Co., Ltd. | 70,000 | Sodegaura, Japan | B.E.P.C. | 1968 |
| Summit Industrial Corp. | 20,000 | Bangchack, Thailand | B.E.P.CS. | 1968 |
| Taiyo Oil Co., Ltd. | 50,000 | Kikuma, Japan | B.E.P.C.M. | 1968 |
| Toa Oil Co., Ltd. | 65,000 | Kawasaki, Japan | B.E.P.C. | 1968 |
| Nippon Mining Co., Ltd. | 70,000 | Mizushima, Japan | B. | 1969 |
| Nippon Petroleum Refining Co., Ltd. | 55,000 x 2 | Negishi, Japan | B.E.P.C. | 1969 |
| Showa Sekiyu K.K. | 100,000 | Kawasaki, Japan | B.E.P.C. | 1969 |
| Esso Singapore Private Ltd. | 80,000 | Pulau Ayer, Chawan Is., Singapore | E.P.C. | 1970 |
| Esso Standard Okinawa K.K. | 78,000 | Nishibaru, Japan | E.P.C. | 1970 |
| Fuji Oil Co., Ltd. | 70,000 | Sodegaura, Japan | B.E.P.C. | 1970 |
| General Sekiyu K.K. | 60,000 | Sakai, Japan | E.P.C. | 1970 |
| Jordan Petroleum Refinery Co., Ltd. | 8,000 | Zarqa, Jordan | E.P.C.M. | 1970 |
| Seibu Oil Co., Ltd. | 50,000 | Yamaguchi, Japan | B.E.P.C. | 1970 |
| Chinese Petroleum Corp. | 100,000 | Kaohsiung, Taiwan | B.E.P.M. | 1971 |
| Kashima Oil Co., Ltd. | 120,000 | Kashima, Japan | B.E.P.C. | 1971 |
| Mitsubishi Oil Co., Ltd. | 75,000 | Kawasaki, Japan | B.E.P.C. | 1971 |
| Taiyo Oil Co., Ltd. | 20,000 | Kikuma, Japan | B.E.P.C. | 1971 |
| Tohoku Oil Co., Ltd. | 40,000 | Sendai, Japan | B.E.P.C. | 1971 |
| Fuji Kosan Co., Ltd. | 50,000 | Kainan, Japan | B.E.P.C.M. | 1972 |
| Okinawa Sekiyu Seisei Co., Ltd. | 100,000 | Okinawa, Japan | B.E.P.C. | 1972 |
| Showa Yokkaichi Sekiyu Co., Ltd. | 150,000 | Yokkaichi, Japan | B.E.P.C. | 1972 |
| Mobil Oil Singapore Pte. Ltd. | 157,000 | Jurong, Singapore | E.P.C. | 1973 |
| Mobil Refining Co., Southern Africa (Pty) Ltd. | 50,000 | Durban, South Africa | B.E.P.C. | 1974 |
| General Petroleum & Mineral Organization (PETROMIN) | 33,000 | Jeddah, Saudi Arabia | E.P.C. | 1974 |
| General Petroleum & Mineral Organization (PETROMIN) | 15,000 | Riyadh, Saudi Arabia | E.P.C. | 1974 |
| Corporación Estatal Petrolera Ecuatoriana | 55,000 | Esmeraldas, Ecuador | E.P.C. | 1976 |
| Fuji Oil Co., Ltd. | 40,000 | Sodegaura, Japan | B.E.P.C. | 1976 |

| | | | | |
|---|--|--------------------------|---------------|------|
| Seibu Oil Co., Ltd. | 100,000 | Yamaguchi, Japan | B.E.P.C. | 1976 |
| Taiyo Oil Co., Ltd. | 8,200 | Kikuma, Japan | E.P.C. | 1978 |
| Toa Oil Co., Ltd. | 65,000 | Kawasaki, Japan | B.E.P.C. | 1979 |
| Nigerian National Petroleum Corp. (NNPC) | 50,000 x 2 | Kaduna, Nigeria | B.E.P.C.M.T. | 1980 |
| General Petroleum & Mineral Organization (PETROMIN) | 100,000 | Riyadh, Saudi Arabia | E.P.C. | 1981 |
| Kuwait Oil Co. (KSC) | 29,000 x 2 | Mina Al-Ahmadi, Kuwait | B.E.P.C.M. | 1982 |
| Mobil Oil Singapore Pte. Ltd. | Re. 45,000 (from 25,000) | Jurong, Singapore | B.E.P.C. | 1982 |
| General Petroleum & Mineral Organization (PETROMIN) | 170,000 | Yanbu, Saudi Arabia | E.P.C. | 1983 |
| State Organization for Oil Projects (SCOP) | 150,000 | Baiji, Iraq | B.E.P.C.M.T. | 1983 |
| Petromin-Mobil Yanbu Refinery Co., Ltd. | 263,000 | Yanbu, Saudi Arabia | E.P.C. | 1984 |
| Petromin Shell Refinery Co. | 136,000 x 2 | Al-Jubail, Saudi Arabia | E.P.C.M.T. | 1985 |
| Arabian American Oil Co. (Aramco) | 250,000 | Ras Tanura, Saudi Arabia | E.P.C. | 1986 |
| Nigerian National Petroleum Corp. (NNPC) | Re. 60,000 (from 50,000) | Kaduna, Nigeria | B.E.P.C. | 1986 |
| The New Zealand Refining Co., Ltd. | 38,000 Re. 56,000 (from 78,000) | Whangarei, New Zealand | B.E.P.C.CS.M. | 1986 |
| Corporación Estatal Petrolera Ecuatoriana | 45,000 | Esmeraldas, Ecuador | E.P.C. | 1987 |
| Thai Oil Co., Ltd. | Re. 43,000 (from 30,000) | Sriracha, Thailand | E.P.C.M. | 1989 |
| Kyung In Energy Co., Ltd. | 150,000 | Inchon, Korea | B.E.PS.CS.M. | 1991 |
| Shell Eastern Petroleum Pte. Ltd. (SEPL) | Re. — | Bukom, Singapore | E.P.C. | 1993 |
| Thai Oil Co., Ltd. | 100,000 | Sriracha, Thailand | E.P.C.M. | 1993 |
| The Bangchak Petroleum Co., Ltd. | 40,000 | Bangkok, Thailand | E.P.C. | 1993 |
| Yukong Ltd. | 200,000 | Ulsan, Korea | E.P.C. | 1996 |
| Malaysian Refining Co., Sdn. Bhd. (MRC) | 100,000 | Melaka, Malaysia | E.P.C.M. | 1998 |
| Taiyo Oil Co., Ltd. | Re. 86,000 (from 70,000) (splitter 30,000) | Kikuma, Japan | B.E.P.C. | 2004 |
| Japan Energy Corporation | Re. 95,200 (renewal) | Mizushima, Japan | B.E.P.C. | 2009 |
| Seibu Oil Co., Ltd. | Re. 120,000 *(Partial renewal) *Partially Renovating Shell Plates of Tower by C-Phoenix Method | Yamaguchi, Japan | B.E.P.C. | 2012 |
| Fuji Oil Co., Ltd. | Re. 143,000 (Partial renewal) | Sodegaura, Japan | E.P.C. | 2013 |

2-2.Vacuum Flasher/Vacuum Distillation Units

| Client | Capacity (BPSD) | Location | Scope of Work | Year of Completion |
|---|------------------------------------|--------------------------|---------------|--------------------|
| Mitsubishi Oil Co., Ltd. | 800 | Kawasaki, Japan | C. | 1951 |
| Mitsubishi Oil Co., Ltd. | 1,600 | Kawasaki, Japan | B.E.P.C. | 1952 |
| Mitsubishi Oil Co., Ltd. | *3,500 | Kawasaki, Japan | B.E.P.C. | 1957 |
| Asia Oil Co., Ltd. | 1,000 | Yokohama, Japan | B.E.P.C. | 1958 |
| Mitsubishi Oil Co., Ltd. | 20,000 | Mizushima, Japan | B.E.P.C. | 1961 |
| Mitsubishi Oil Co., Ltd. | *3,500 | Kawasaki, Japan | B.E.P.C. | 1962 |
| Nippon Petroleum Refining Co., Ltd. | 15,000 | Yokohama, Japan | C. | 1962 |
| General Petroleum & Mineral Organization (PETROMIN) | 4,200 | Jeddah, Saudi Arabia | E.P.C. | 1967 |
| Mitsubishi Oil Co., Ltd. | *17,000 | Mizushima, Japan | B.E.P.C. | 1967 |
| Fuji Oil Co., Ltd. | 33,500 | Sodegaura, Japan | B.E.P.C.M. | 1968 |
| Nippon Petroleum Refining Co., Ltd. | 30,000 | Negishi, Japan | B.E.P.C. | 1968 |
| Nippon Petroleum Refining Co., Ltd. | 33,000 | Negishi, Japan | B.E.P.C. | 1969 |
| Nippon Petroleum Refining Co., Ltd. | 45,000 | Negishi, Japan | B.E.P.C. | 1969 |
| Mitsubishi Oil Co., Ltd. | 50,000 | Mizushima, Japan | B.E.P.C. | 1969 |
| Showa Sekiyu K.K. | 30,000 | Kawasaki, Japan | B.E.P.C. | 1969 |
| General Sekiyu K.K. | 53,000 | | E.P.C. | 1970 |
| Seibu Oil Co., Ltd. | 10,000 | Yamaguchi, Japan | B.E.P.C. | 1970 |
| Kashima Oil Co., Ltd. | 25,000 | Kashima, Japan | B.E.P.C. | 1971 |
| Fuji Kosan Co., Ltd. | *14,000 | Kainan, Japan | B.E.P.C. | 1972 |
| Showa Yokkaichi Sekiyu Co., Ltd. | 60,000 | Yokkaichi, Japan | B.E.P.C. | 1972 |
| Nippon Mining Co., Ltd. | *27,000 | Mizushima, Japan | B.E.P.C. | 1973 |
| Nippon Petroleum Refining Co., Ltd. | 35,000 | Negishi, Japan | B.E.P.C. | 1973 |
| Tohoku Oil Co., Ltd. | 60,000 | Sendai, Japan | B.E.P.C. | 1973 |
| General Petroleum & Mineral Organization (PETROMIN) | 6,500 | Riyadh, Saudi Arabia | E.P.C. | 1974 |
| General Petroleum & Mineral Organization (PETROMIN) | 16,000 | Jeddah, Saudi Arabia | E.P.C. | 1974 |
| Corporación Estatal Petrolera Ecuatoriana | 26,600 | Esmeraldas, Ecuador | E.P.C. | 1976 |
| Fuji Oil Co., Ltd. | 50,000 | Sodegaura, Japan | B.E.P.C. | 1976 |
| Toa Oil Co., Ltd. | 52,700 | Kawasaki, Japan | E.P.C. | 1976 |
| Petromin Lubricating Oil Refining Co. | *21,600 | Jeddah, Saudi Arabia | C. | 1977 |
| Nigerian National Petroleum Corp. (NNPC) | *23,000 | Kaduna, Nigeria | B.E.P.C.M.T. | 1980 |
| Nigerian National Petroleum Corp. (NNPC) | 15,200 | Kaduna, Nigeria | B.E.P.C.M.T. | 1980 |
| General Petroleum & Mineral Organization (PETROMIN) | 40,000 | Riyadh, Saudi Arabia | E.P.C. | 1981 |
| Alexandria Petroleum Co. | *23,200 | Alexandria, Egypt | E.P.C. | 1982 |
| Mobil Oil Singapore Pte. Ltd. | 75,000 | Jurong, Singapore | B.E.P.C. | 1982 |
| State Organization for Oil Projects (SCOP) | 65,000 | Baiji, Iraq | B.E.P.C.M.T. | 1983 |
| Petromin-Mobil Yanbu Refinery Co., Ltd. | 117,000 | Yanbu, Saudi Arabia | E.P.C. | 1984 |
| Petromin Shell Refinery Co. | 69,000 | Al-Jubail, Saudi Arabia | E.P.C.M.T. | 1985 |
| Arabian American Oil Co. (Aramco) | 155,000 | Ras Tunura, Saudi Arabia | E.P.C. | 1986 |
| Seibu Oil Co., Ltd. | 40,000 | Yamaguchi, Japan | B.E.P.C. | 1986 |
| The New Zealand Refining Co., Ltd. | 37,000 Re. 7,100 (from 2,600) | Whangarei, New Zealand | B.E.P.C.CS.M. | 1986 |
| Corporación Estatal Petrolera Ecuatoriana | 14,500 Re. 28,500 (from 26,600) | Esmeraldas, Ecuador | E.P.C. | 1987 |
| Taiyo Oil Co., Ltd. | 20,000 | Kikuma, Japan | B.E.P.C. | 1988 |
| Nihonkai Oil Co., Ltd. | 10,000 | Toyama, Japan | B.E.P.C. | 1989 |
| Thai Oil Co., Ltd. | 33,200 | Sriracha, Thailand | E.P.C.M. | 1989 |
| Kyung In Energy Co., Ltd. | 20,000 | Inchon, Korea | B.E.PS.CS.M. | 1991 |
| Yukong Ltd. | 63,000 | Ulsan, Korea | B.E.PS.CS.M. | 1992 |
| Saudi Aramco Lubricating Oil Refining Co. (LUBEREF) | *25,300 | Yanbu, Saudi Arabia | E.P.C. | 1997 |
| Thai Oil Co., Ltd. | 35,700 | Sriracha, Thailand | E.P.C.M. | 1997 |
| Malaysian Refining Co., Sdn. Bhd. (MRC) | 62,000 | Melaka, Malaysia | E.P.C.M. | 1998 |
| Kashima Oil Co., Ltd. | Re. 50,000 (from 42,000) | Kashima, Japan | E.P.C. | 2014 |

*Vacuum Distillation for Lubricating Oil

2-3.Catalytic Reforming Units

(for Aromatics please see page [3-4.Aromatics])

| Client | Capacity (BPSD) | Location | Scope of Work | Year of Completion |
|--|--------------------------|----------------------------|---------------|--------------------|
| 【Platforming】 | | | | |
| Mitsubishi Oil Co., Ltd. | 3,600 | Mizushima, Japan | E.P.C. | 1961 |
| Showa Sekiyu K.K. | 4,800 | Niigata, Japan | E.P.C. | 1963 |
| Showa Yokkaichi Sekiyu Co., Ltd. | 22,800 | Yokkaichi, Japan | E.P.C. | 1965 |
| Mobil Refining Co., (Malaysia) Ltd./ Fluor Corp. | 2,400 | Jurong, Singapore | E.P. | 1965 |
| Showa Sekiyu K.K. | 4,800 | Niigata, Japan | E.P.C. | 1966 |
| General Petroleum & Mineral Organization (PETROMIN) | 3,700 | Jeddah, Saudi Arabia | E.P.C. | 1967 |
| Fuji Oil Co., Ltd. | 6,500 | Sodegaura, Japan | E.P.C.M. | 1968 |
| Showa Sekiyu K.K. | 14,000 | Kawasaki, Japan | E.P.C. | 1969 |
| Seibu Oil Co., Ltd. | 6,000 | Yamaguchi, Japan | E.P.C. | 1970 |
| Kashima Oil Co., Ltd. | 6,000 | Kashima, Japan | E.P.C. | 1971 |
| Showa Yokkaichi Sekiyu Co., Ltd. | 20,000 | Yokkaichi, Japan | E.P.C. | 1972 |
| General Petroleum & Mineral Organization (PETROMIN) | 2,800 | Jeddah, Saudi Arabia | E.P.C. | 1974 |
| General Petroleum & Mineral Organization (PETROMIN) | 5,600 | Riyadh, Saudi Arabia | E.P.C. | 1974 |
| Seibu Oil Co., Ltd. | 11,000 | | E.P.C. | 1976 |
| Corporación Estatal Petrolera Ecuatoriana | 2,800 | Esmeraldas, Ecuador | E.P.C. | 1976 |
| General Petroleum & Mineral Organization (PETROMIN) | 30,000 | Riyadh, Saudi Arabia | E.P.C. | 1981 |
| General Petroleum & Mineral Organization (PETROMIN) | 35,000 | Yanbu, Saudi Arabia | E.P.C.M. | 1983 |
| State Organization for Oil Projects (SCOP) | *22,000 | Bajji, Iraq | B.E.P.C.M.T. | 1983 |
| Petromin-Mobil Yanbu Refinery Co., Ltd. | *32,000 | Yanbu, Saudi Arabia | E.P.C. | 1984 |
| Petromin Shell Refinery Co. | *16,000 | Al-Jubail, Saudi Arabia | E.P.C. | 1985 |
| Mitsubishi Oil Co., Ltd. | *18,500 | Mizushima, Japan | B.E.P.C. | 1985 |
| The New Zealand Refining Co., Ltd. | Re. 23,000 (from 25,000) | Whangarei, New Zealand | B.E.P.C.CS.M. | 1986 |
| Nippon Petroleum Refining Co., Ltd. | *26,000 | Negishi, Japan | B.E.P.C. | 1986 |
| Toa Nenryo Kogyo Co., Ltd. | *24,000 | Kawasaki, Japan | E.P.C. | 1990 |
| Nippon Mining Co., Ltd. | *24,000 | Mizushima, Japan | E.P.C. | 1990 |
| Taiyo Oil Co., Ltd. | *23,000 | Kikuma, Japan | E.P.C. | 1991 |
| Okinawa Sekiyu Seisei Co., Ltd. | *17,000 | Okinawa, Japan | B.E.P.C.M. | 1992 |
| Thai Oil Co., Ltd. | *23,900 | Sriracha, Thailand | E.P.C.M. | 1993 |
| Shell Eastern Petroleum Pte. Ltd. (SEPL) | *17,000 | Pulau Ular, Singapore | B.E.P.C. | 1994 |
| Tripetrol Oil Trading Inc., S.A. (TOTISA) | *18,000 | Khabarovsk, Russia | E. | 1995 |
| Koa Oil Co., Ltd. | Re. 14,000 (from 11,000) | Osaka, Japan | E.P.C.M. | 1996 |
| Taiyo Oil Co., Ltd. | Re. 30,000 (from 23,000) | Kikuma, Japan | E.P.C. | 1996 |
| National Iranian Oil Co. (NIOC) | *36,000 | Bandar Abbas, Iran | B.E.P.CS.M. | 1997 |
| Malaysian Refining Co., Sdn. Bhd. (MRC) | *26,000 | Melaka, Malaysia | E.P.C.M. | 1998 |
| The Ministry of Oil and Gas Industry and Mineral Resources of Turkmenistan | *19,200 | Turkmenbashi, Turkmenistan | E.P.C. | 2000 |
| PERTAMINA | *20,000 (Restoration) | Balikpapan, Indonesia | E.P.C. | 2001 |
| Petróleos de Venezuela S.A. (PDVSA) | *35,000 | Puerto La Cruz, Venezuela | E.P.C.M. | 2004 |
| Taiyo Oil Co., Ltd. | Re. 37,000 (from 30,000) | Kikuma, Japan | E.P.C. | 2006 |
| Seibu Oil Co., Ltd. | *25,000 | Yamaguchi, Japan | E.P.C. | 2009 |
| JXTG Nippon Oil & Energy Corporation | 30,000 | Negishi, Japan | E.P.C. | 2017 |
| 【Rheniforming】 | | | | |
| Tohoku Oil Co., Ltd. | 6,000 | Sendai, Japan | B.E.P.C. | 1971 |
| Taiyo Oil Co., Ltd. | 5,000 | Kikuma, Japan | B.E.P.C. | 1971 |
| Nippon Petroleum Refining Co., Ltd. | 18,000 | Muroran, Japan | B.E.P.C. | 1973 |
| Fuji Oil Co., Ltd. | 6,500 | Sodegaura, Japan | B.E.P.C. | 1976 |
| Mitsubishi Oil Co., Ltd. | 8,500 | Kawasaki, Japan | B.E.P.C. | 1979 |
| Kuwait Oil Co. (KOC) | 18,000 x 2 | Mina Al-Ahmadi, Kuwait | B.E.P.C.M. | 1982 |

| 【Powerforming】 | | | | |
|--|--------------------------|-------------------------------------|--------------|------|
| General Sekiyu K.K. | 12,000 | Sakai, Japan | E.P.C. | 1965 |
| General Sekiyu K.K. | Re. 25,000 (from 12,000) | Sakai, Japan | E.P.C. | 1970 |
| Esso Singapore Private Ltd. | 4,900 | Pulau Ayer Chawan Is., Singapore | E.P.C. | 1970 |
| Esso Standard Okinawa K.K. | 9,600 | Nishibaru, Japan | E.P.C. | 1970 |
| Guam Oil Refining Co. | 3,500 | Guam, U.S.A. | B. | 1979 |
| 【Other Reforming】 | | | | |
| Summit Industrial Corp. | 5,000 | Bangchak, Thailand | B.E.P.CS. | 1968 |
| Mobil Refining Co., Southern Africa (Pty) Ltd. | 10,000 | Durban, South Africa | B.E.P.C. | 1974 |
| Mobil Oil Singapore Pte. Ltd. | 10,000 | Jurong, Singapore | E.P.C. | 1978 |
| Nigerian National Petroleum Corp. (NNPC) | 17,500 | Kaduna, Nigeria | B.E.P.C.M.T. | 1980 |
| The Bangchak Petroleum Co., Ltd. | 5,500 5,000 | Bangkok, Thailand | Consulting | 1989 |
| PETRONAS Penapisan (Terengganu) Sdn. Bhd. | 6,500 | Kerteh, Malaysia | E.P.C. | 1990 |
| Kyung In Energy Co., Ltd. | 25,000 | Inchon, Korea | B.E.PS.CS.M. | 1991 |
| The Bangchak Petroleum Co., Ltd. | 7,000 | Bangkok, Thailand | E.P.C. | 1993 |
| Arabian Industrial Fibers Co. (Ibn Rushd) | 220,000 T/Y | Yanbu, Saudi Arabia | E.P.C.M. | 1998 |
| Qatar Fuel Additives Co., Ltd. (QAFAC) | 390,000 T/Y | Umm Said, Qatar | E.P.C.M. | 1999 |

*CCR: Continuous Catalyst Regeneration

2-4. Gasoline Selective Desulfurization Units

| Client | Capacity (BPSD) | Location | Scope of Work | Year of Completion |
|-------------------------------------|--------------------------|------------------|---------------|--------------------|
| Fuji Oil Co., Ltd. | 13,000 | Sodegaura, Japan | E.P.C. | 2003 |
| Showa Yokkaichi Sekiyu Co., Ltd. | 21,000 | Yokkaichi, Japan | E.P.C. | 2004 |
| Seibu Oil Co., Ltd. | 13,000 | Yamaguchi, Japan | E.P.C. | 2004 |
| Nippon Petroleum Refining Co., Ltd. | 30,000 | Mizushima, Japan | B.E.P.C. | 2004 |
| Idemitsu Kosan Co., Ltd. | 15,000 | Tomakomai, Japan | E.P.C. | 2004 |
| Idemitsu Kosan Co., Ltd. | 16,500 | Chiba, Japan | B.E.P.C.* | 2005 |
| Fuji Oil Co., Ltd. | Re. 21,000 (from 13,000) | Sodegaura, Japan | E.P.C. | 2008 |

*EPC : Chiyoda Kosho Co., Ltd.

2-5.Naphtha and Middle Distillate Hydrodesulfurization Units

| Client | Capacity (BPSD) | Location | Scope of Work | Year of Completion |
|--|-------------------------------------|-----------------------------------|---------------|--------------------|
| 【Naphtha】 | | | | |
| Mobil Refining Co., (Malaysia) Ltd./ Fluor Corp. | 12,000 | Jurong, Singapore | E.P. | 1965 |
| General Sekiyu K.K. | 18,000 | Sakai, Japan | E.P.C. | 1965 |
| Showa Yokkaichi Sekiyu Co., Ltd. | 35,000 | Yokkaichi, Japan | B.E.P.C. | 1965 |
| General Petroleum & Mineral Organization (PETROMIN) | 3,700 | Jeddah, Saudi Arabia | E.P.C. | 1967 |
| Fuji Oil Co., Ltd. | 7,100 | Sodegaura, Japan | E.P.C.M. | 1968 |
| General Sekiyu K.K. | Re. 40,000 (from 18,000) | Sakai, Japan | E.P.C. | 1970 |
| Esso Singapore Private Ltd. | 25,000 | Pulau Ayer, Chawan Is., Singapore | B.E.P.C. | 1970 |
| Nansei Sekiyu Seisei Co., Ltd. | 19,500 | Okinawa, Japan | E.P.C. | 1970 |
| Kashima Oil Co., Ltd. | 8,000 | Kashima, Japan | E.P.C. | 1971 |
| Taiyo Oil Co., Ltd. | 7,000 | Kikuma, Japan | B.E.P.C. | 1971 |
| Okinawa Sekiyu Seisei Co., Ltd. | 20,000 | Okinawa, Japan | B.E.P.C. | 1972 |
| Showa Yokkaichi Sekiyu Co., Ltd. | 27,000 | Yokkaichi, Japan | B.E.P.C. | 1972 |
| Mobil Oil Singapore Pte. Ltd. | 20,000 | Jurong, Singapore | E.P.C. | 1973 |
| Nippon Petroleum Refining Co., Ltd. | 32,000 | Muroran, Japan | B.E.P.C. | 1973 |
| Fuji Oil Co., Ltd. | 18,000 | | B.E.P.C. | 1974 |
| Corporación Estatal Petrolera Ecuatoriana | 2,780 | Esmeraldas, Ecuador | E.P.C. | 1976 |
| Seibu Oil Co., Ltd. | 26,000 | Yamaguchi, Japan | B.E.P.C. | 1976 |
| Toa Oil Co., Ltd. | 3,500 | Kawasaki, Japan | E.P.C. | 1976 |
| Mobil Oil Singapore Pte. Ltd. | 13,000 | Jurong, Singapore | E.P.C. | 1978 |
| Mitsubishi Oil Co., Ltd. | 8,500 | Kawasaki, Japan | B.E.P.C. | 1979 |
| Nigerian National Petroleum Corp. (NNPC) | 24,000 | Kaduna, Nigeria | B.E.P.C.M.T. | 1980 |
| General Petroleum & Mineral Organization (PETROMIN) | 27,000 | Riyadh, Saudi Arabia | E.P.C. | 1981 |
| Kuwait Oil Co. (KSC) | 18,000 x 2 | Mina Al-Ahmadi, Kuwait | B.E.P.C.M. | 1982 |
| General Petroleum & Mineral Organization (PETROMIN) | 35,000 | Yanbu, Saudi Arabia | E.P.C.M. | 1983 |
| State Organization for Oil Projects (SCOP) | 41,000 | Baiji, Iraq | B.E.P.C.M.T. | 1983 |
| Petromin-Mobil Yanbu Refinery Co., Ltd. | 83,000 | Yanbu, Saudi Arabia | E.P.C. | 1984 |
| Petromin Shell Refinery Co. | 63,000 | Al-Jubail, Saudi Arabia | E.P.C. | 1985 |
| The New Zealand Refining Co., Ltd. | Re. 36,000 (from 40,000) | Whangarei, New Zealand | B.E.P.C.CS.M. | 1986 |
| Nippon Petroleum Refining Co., Ltd. | 35,000 | Negishi, Japan | B.E.P.C. | 1986 |
| PETRONAS Penapisan (Terengganu) Sdn. Bhd. | 6,500 | Kerteh, Malaysia | E.P.C. | 1990 |
| Kyung In Energy Co., Ltd. | 25,000 | Inchon, Korea | E.PS.CS.M. | 1991 |
| Taiyo Oil Co., Ltd. | 31,000 | Kikuma, Japan | E.P.C. | 1991 |
| Okinawa Sekiyu Seisei Co., Ltd. | 20,000 | Okinawa, Japan | B.E.P.C.M. | 1992 |
| Thai Oil Co., Ltd. | 32,900 | Sriracha, Thailand | E.P.C.M. | 1993 |
| The Bangchak Petroleum Co., Ltd. | 13,800 | Bangkok, Thailand | E.P.C. | 1993 |
| Taiyo Oil Co., Ltd. | Re. 37,000 (from 31,000) | Kikuma, Japan | B.E.P.C. | 1996 |
| National Iranian Oil Co. (NIOC) | 36,000 | Bandar Abbas, Iran | B.E.P.CS.M. | 1997 |
| Malaysian Refining Co., Sdn. Bhd. (MRC) | 35,000 | Melaka, Malaysia | E.P.C.M. | 1998 |
| The Ministry of Oil and Gas Industry and Mineral Resources of Turkmenistan | 19,200 | Turkmenbashi, Turkmenistan | E.P.C. | 2000 |
| Petróleos de Venezuela S.A. (PDVSA) | 35,000 25,100 (Naphtha Splitter) | Puetro la Cruz, Venezuela | E.P.C.M. | 2004 |
| Taiyo Oil Co., Ltd. | Re.43,000 (from 37,000) | Kikuma, Japan | B.E.P.C. | 2006 |
| North Refineries Company (NRC) (Furnace Replacement) | 41,000 | Baiji, Iraq | E.P. | 2015 |
| Laffan Refinery Company Limited 2 | 71,000 | Ras Laffan, Qatar | E.P.C. | 2016 |

| 【Kerosene】 | | | | |
|--|--|-----------------------------------|---------------|------|
| General Sekiyu K.K. | 10,000 | Sakai, Japan | E.P.C. | 1965 |
| Summit Industrial Corp. | 18,000 | Bangchak, Thailand | E.P.CS. | 1968 |
| Showa Sekiyu K.K. | 17,000 | Kawasaki, Japan | B.E.P.C. | 1969 |
| Seibu Oil Co., Ltd. | 19,800 | Yamaguchi, Japan | B.E.P.C. | 1970 |
| General Sekiyu K.K. | Re. 15,600 (from 10,000) | Sakai, Japan | B.E.P.C. | 1970 |
| Jordan Petroleum Refinery Co., Ltd. | 2,000 | Zerqa, Jordan | E.P.C.M. | 1970 |
| Esso Singapore Private Ltd. | 12,000 | Pulau Ayer, Chawan Is., Singapore | E.P.C. | 1970 |
| Esso Standard Okinawa K.K. | 12,000 | Nishibaru, Japan | E.P.C. | 1970 |
| Kashima Oil Co., Ltd. | 14,000 | Kashima, Japan | B.E.P.C. | 1971 |
| Idemitsu Kosan Co., Ltd. | 40,000 | Chiba, Japan | B.E.P.C. | 1972 |
| Showa Yokkaichi Sekiyu Co., Ltd. | 20,000 | Yokkaichi, Japan | B.E.P.C. | 1972 |
| Nippon Petroleum Refining Co., Ltd. | 24,000 | Muroran, Japan | B.E.P.C. | 1973 |
| Mobil Refining Co., Southern Africa (Pty) Ltd. | 10,000 | Durban, South Africa | B.E.P.C. | 1974 |
| Seibu Oil Co., Ltd. | 12,500 | Yamaguchi, Japan | B.E.P.C. | 1976 |
| Nigerian National Petroleum Corp. (NNPC) | 18,000 | Kaduna, Nigeria | B.E.P.C.M.T. | 1980 |
| General Petroleum & Mineral Organization (PETROMIN) | 15,000 | Riyadh, Saudi Arabia | E.P.C. | 1981 |
| General Petroleum & Mineral Organization (PETROMIN) | 15,000 | Yanbu, Saudi Arabia | E.P.C.M. | 1983 |
| State Organization for Oil Projects (SCOP) | 28,000 | Baiji, Iraq | B.E.P.C.M.T. | 1983 |
| Petromin Shell Refinery Co. | 48,000 | Al-Jubail, Saudi Arabia | E.P.C.M.T. | 1985 |
| The New Zealand Refining Co., Ltd. | 11,000 | Whangarei, New Zealand | B.E.P.C.CS.M. | 1986 |
| National Iranian Oil Co. (NIOC) | 25,000 | Bandar Abbas, Iran | B.E.P.CS.M. | 1997 |
| North Refineries Company (NRC) (Furnace Replacement) | 28,000 | Baiji, Iraq | E.P. | 2014 |
| Laffan Refinery Company Limited 2 | 60,800 | Ras Laffan, Qatar | E.P.C. | 2016 |
| 【Gas Oil】 | | | | |
| Showa Sekiyu K.K. | 4,000 | Niigata, Japan | B.E.P.C. | 1963 |
| Showa Yokkaichi Sekiyu Co., Ltd. | 13,500 14,000 | Yokkaichi, Japan | B.E.P.C. | 1965 |
| General Sekiyu K.K. | 4,000 12,000 | Sakai, Japan | E.P.C. | 1965 |
| Showa Sekiyu K.K. | 2,000 | Niigata, Japan | B.E.P.C. | 1966 |
| Seibu Oil Co., Ltd. | 4,500 | Yamaguchi, Japan | B.E.P.C. | 1970 |
| General Sekiyu K.K. | Re. 5,000 (from 4,000) Re. 19,000 (from 12,000) | Sakai, Japan | E.P.C. | 1970 |
| Esso Singapore Private Ltd. | 9,000 | Pulau Ayer, Chawan Is., Singapore | E.P.C. | 1970 |
| Esso Singapore Private Ltd. | 9,000 | Pulau Ayer, Chawan Is., Singapore | E.P.C. | 1970 |
| Kashima Oil Co., Ltd. | 11,000 | 85 | B.E.P.C. | 1971 |
| Okinawa Sekiyu Seisei Co., Ltd. | 15,000 | Okinawa, Japan | B.E.P.C. | 1972 |
| Showa Yokkaichi Sekiyu Co., Ltd. | 20,000 | Yokkaichi, Japan | B.E.P.C. | 1972 |
| Idemitsu Kosan Co., Ltd. | 30,000 | Chiba, Japan | B.E.P.C. | 1972 |
| Nippon Petroleum Refining Co., Ltd. | 15,000 | Muroran, Japan | B.E.P.C. | 1973 |
| Fuji Oil Co., Ltd. | 30,000 | Sodegaura, Japan | B.E.P.C. | 1976 |
| Toa Oil Co., Ltd. | 46,000 | Kawasaki, Japan | E.P.C. | 1976 |
| Seibu Oil Co., Ltd. | 18,000 | Yamaguchi, Japan | B.E.P.C. | 1976 |
| Mitsubishi Oil Co., Ltd. | 17,000 | Kawasaki, Japan | E.P.C. | 1979 |
| China National Technical Import Corp. (CNTIC) | 17,000 | Qilu, China | B.E.P.CS.M.T. | 1982 |
| State Organization for Oil Projects (SCOP) | 31,000 | Baiji, Iraq | B.E.P.C.M.T. | 1983 |
| Petromin Shell Refinery Co. | 43,000 | Al-Jubail, Saudi Arabia | E.P.C.M.T. | 1985 |
| The New Zealand Refining Co., Ltd. | Re. 6,600 (from 5,900) | Whangarei, New Zealand | B.E.P.C.CS.M. | 1986 |
| JX Nippon Oil & Energy Corporation | 13000 (from 11,000) | Mizushima, Japan | E.P.C. | 2013 |

| 【Deep Desulfurization Units (Gas Oil)】 | | | | | |
|--|--------------------------|---------------------------|-----------|------|--|
| Mitsubishi Oil Co., Ltd. | 16,000 | Kawasaki, Japan | B.E.P.C. | 1991 | |
| Idemitsu Kosan Co., Ltd. | 25,000 | Hyogo, Japan | B.E.P.C. | 1992 | |
| Nihonkai Oil Co., Ltd. | 13,000 | Toyama, Japan | E.P.C. | 1993 | |
| Shell Eastern Petroleum Pte. Ltd. (SEPL) | 45,000 | Pulau Ular, Singapore | B.E.P.C. | 1994 | |
| Showa Shell Sekiyu K.K. | 27,000 | Kawasaki, Japan | B.E.P.C. | 1995 | |
| Toa Oil Co., Ltd. | 20,000 | Kawasaki, Japan | E.P.C.M. | 1996 | |
| Koa Oil Co., Ltd. | 20,000 | Osaka, Japan | E.P.C.M. | 1996 | |
| Japan Energy Corporation | 35,000 | Mizushima, Japan | B.E.P.C.M | 1996 | |
| Seibu Oil Co., Ltd. | 30,000 | Yamaguchi, Japan | E.P.C.M. | 1996 | |
| Mitsubishi Oil Co., Ltd. | Re. 20,000 (from 16,000) | Kawasaki, Japan | B.E.P.C.M | 1996 | |
| Idemitsu Kosan Co., Ltd. | 20,000 | Tokuyama, Japan | E.P.C. | 1996 | |
| Cosmo Oil Co., Ltd. | 25,000 | Sakai, Japan | E.P.C. | 1996 | |
| Showa Yokkaichi Sekiyu Co., Ltd. | 28,000 | Yokkaichi, Japan | E.P.C. | 1996 | |
| Yukong Ltd. | 60,000 | Ulsan, Korea | E.P.C. | 1996 | |
| Thai Oil Co., Ltd. | 37,000 x 2 | Sriracha, Thailand | E.P.C. | 1998 | |
| Malaysian Refining Co., Sdn. Bhd. (MRC) | 35,000 | Melaka, Malaysia | E.P.C.M. | 1998 | |
| Petróleos de Venezuela S.A. (PDVSA) | 38,000 | Puerto La Cruz, Venezuela | E.P.C.M. | 2004 | |
| 【Ultra Deep Desulfurization Units (Gas Oil)】 | | | | | |
| Nippon Petroleum Refining Co., Ltd. (Former Koa Oil Co., Ltd.) | Re. 21,000 (from 18,000) | Marifu, Japan | B.E.P.C. | 2002 | |
| Taiyo Oil Co., Ltd. | 30,000 | Kikuma, Japan | B.E.P.C. | 2002 | |
| Kashima Oil Co., Ltd. | 27,000 | Kashima, Japan | B.E.P. | 2007 | |
| Shell Eastern Petroleum Ltd. (SEPL) | 60,000 | Bukom Island, Singapore | E.P.C.M. | 2012 | |
| Seibu Oil Co., Ltd. | 5,000 | Yamaguchi, Japan | B.E.P.C. | 2013 | |
| 【Naphtha/Kerosene - Gas Oil】 | | | | | |
| Mitsubishi Oil Co., Ltd. | 12,000 | Mizushima, Japan | B.E.P.C. | 1961 | |
| Showa Sekiyu K.K. | 12,000 | Niigata, Japan | B.E.P.C. | 1963 | |
| Showa Sekiyu K.K. | 13,000 | Niigata, Japan | B.E.P.C. | 1966 | |
| General Petroleum & Mineral Organization (PETROMIN) | 3,700 | Jeddah, Saudi Arabia | E.P.C. | 1967 | |
| Taiyo Oil Co., Ltd. | 12,000 | Kikuma, Japan | B.E.P.C. | 1971 | |
| Okinawa Sekiyu Seisei Co., Ltd. | 20,000 | Okinawa, Japan | B.E.P.C. | 1972 | |
| Mobil Oil Singapore Pte. Ltd. | 20,000 | Jurong, Singapore | E.P.C. | 1973 | |
| Shell Eastern Petroleum Pte. Ltd. (SEPL) | 6,000 | Pulau Ular, Singapore | B.E.P.C. | 1990 | |

2-6.Vacuum Gas Oil Hydrodesulfurization Units

| Client | Capacity (BPSD) | Location | Scope of Work | Year of Completion |
|--|-----------------|----------------------|---------------|--------------------|
| Nippon Petroleum Refining Co., Ltd. | 3,500 | Kudamatsu, Japan | B.E.P.C. | 1964 |
| Nippon Oil Co., Ltd. | 3,500 | Niigata, Japan | B.E.P.C. | 1965 |
| Fuji Oil Co., Ltd. | 23,000 | Sodegaura, Japan | B.E.P.C.M | 1968 |
| Maruzen Oil Co., Ltd. | 35,000 | Chiba, Japan | B.E.P.C. | 1969 |
| Showa Sekiyu K.K. | 14,000 | Kawasaki, Japan | B.E.P.C. | 1969 |
| General Sekiyu K.K. | 31,000 | Sakai, Japan | E.P.C. | 1970 |
| Seibu Oil Co., Ltd. | 4,000 | Yamaguchi, Japan | B.E.P.C. | 1970 |
| Koa Oil Co., Ltd. | 8,000 | Marifu, Japan | E.P.C. | 1970 |
| Koa Oil Co., Ltd. | 12,000 | Osaka, Japan | B.E.P.C. | 1971 |
| Kansai Oil Co., Ltd. | 20,000 | Sakai, Japan | E.P.C. | 1971 |
| Asia Oil Co., Ltd. | 17,200 | Sakaide, Japan | B.E.P.C. | 1972 |
| Showa Yokkaichi Sekiyu Co., Ltd. | 40,000 | Yokkaichi, Japan | B.E.P.C. | 1972 |
| Tohoku Oil Co., Ltd. | 35,000 | Sendai, Japan | B.E.P.C. | 1973 |
| General Petroleum & Mineral Organization (PETROMIN) | 6,600 | Riyadh, Saudi Arabia | B.E.P.C. | 1974 |
| Fuji Oil Co., Ltd. | 35,000 | Sodegaura, Japan | B.E.P.C. | 1976 |
| Toa Oil Co., Ltd. | 46,000 | | E.P.C. | 1976 |
| China National Technical Import Corp. (CNTIC)/ China Petrochemical Co. (SINOPEC) | 17,000 | Qilu, China | B.E.P.CS.M.T. | 1982 |
| China National Technical Import and Export Corp. (CNTIC) | 15,500 | Nanjing, China | B.E.P.CS.M.T. | 1988 |
| Kyung In Energy Co., Ltd. | 30,000 | Inchon, Korea | B.E.PS.CS.M. | 1991 |
| Koa Oil Co., Ltd. | 25,000 | Marifu, Japan | B.E.P.C. | 1993 |
| Nihonkai Oil Co., Ltd. | *13,000 | Toyama, Japan | E.P.C. | 1993 |
| Slovnaft a.s. | 22,000 | Bratislava, Slovakia | E.P.C. | 1999 |
| Nippon Petroleum Refining Co., Ltd. | 21,000 | Osaka, Japan | E.P.C. | 2004 |

Note:*VGO and Gas Oil Deep Desulfurization Unit

2-7.Hydrocracking Units

| Client | Capacity (BPSD) | Location | Scope of Work | Year of Completion |
|---|----------------------|---------------------------|---------------|--------------------|
| General Petroleum & Mineral Organization (PETROMIN) | 6,300 | Riyadh, Saudi Arabia | E.P.C. | 1974 |
| General Petroleum & Mineral Organization (PETROMIN) | 27,500 | Riyadh, Saudi Arabia | E.P.C. | 1981 |
| State Organization for Oil Projects (SCOP) | 38,000 | Baiji, Iraq | B.E.P.C.M.T. | 1983 |
| Idemitsu Kosan Co., Ltd. | 15,000 | Tomakomai, Japan | B.E.P.C. | 1984 |
| Petromin Shell Refinery Co. | 40,900 | Al-Jubail, Saudi Arabia | E.P.C.M.T. | 1985 |
| The New Zealand Refining Co., Ltd. | 22,400 | Whangarei, New Zealand | B.E.P.C.CS.M. | 1986 |
| Thai Oil Co., Ltd. | 17,000 | Sriracha, Thailand | E.P.C.M. | 1989 |
| Mobil Oil Singapore Pte. Ltd. | 23,000 | Jurong, Singapore | E.P.C. | 1990 |
| Yukong Ltd. | 30,000 | Ulsan, Korea | B.E.PS.CS.M. | 1992 |
| Thai Oil Co., Ltd. | 22,300 | Sriracha, Thailand | E.P.C.M. | 1997 |
| Malaysian Refining Co., Sdn. Bhd. (MRC) | 28,500 | Melaka, Malaysia | E.P.C.M. | 1998 |
| JX Nippon Oil & Energy Corporation | 13,000 (from 11,000) | Mizushima, Japan | E.P.C. | 2013 |
| PDVSA Petroleo, S.A. | 100,000 | Puerto La Cruz, Venezuela | E.PS.CS. | (-) |

2-8.Fluid Catalytic Cracking Units

| Client | Capacity (BPSD) | Location | Scope of Work | Year of Completion |
|--|---|------------------------|---------------|--------------------|
| Daikyo Oil Co. | 20,000 (for VGO) | Yokkaichi, Japan | B.E.P.C. | 1972 |
| General Petroleum & Mineral Organization (PETROMIN) | 8,700 (for VGO) | Jeddah, Saudi Arabia | E.P.C. | 1974 |
| Corporación Estatal Petrolera Ecuatoriana | 12,600 (for VGO) | Esmeraldas, Ecuador | E.P.C. | 1976 |
| Nigerian National Petroleum Corp. (NNPC) | 21,000 (for VGO) | Kaduna, Nigeria | B.E.P.C.M.T. | 1980 |
| Petromin-Mobil Yanbu Refinery Co., Ltd. | 66,000 (for VGO) | Yanbu, Saudi Arabia | E.P.C. | 1984 |
| Daikyo Oil Co.Re. | 24,000 (from 20,000) (for VGO+Residue Oil) | Yokkaichi, Japan | B.E.P.C. | 1985 |
| Showa Yokkaichi Sekiyu Co., Ltd. | Re. 25,000 (from 17,200) (for VGO) | Yokkaichi, Japan | B.E.P.C. | 1985 |
| Seibu Oil Co., Ltd. | 20,000 (for VGO) | Yamaguchi, Japan | B.E.P.C. | 1986 |
| Corporación Estatal Petrolera Ecuatoriana | Re. 16,000 (from 12,000) (for VGO) | Esmeraldas, Ecuador | E.P.C. | 1987 |
| Nigerian National Petroleum Corp. (NNPC) | 26,000 (for VGO) | Warri, Nigeria | E.P.C.T | 1987 |
| Toa Oil Co., Ltd. | 30,000 (for VGO) | Kawasaki, Japan | E.P.C.T. | 1987 |
| Shell Eastern Petroleum Pte. Ltd. (SEPL) | 28,200 (for Residue Oil) | Pulau Bukom, Singapore | B.E.P.C. | 1990 |
| Chinese Petroleum Corp. | 25,000 (for Residue Oil) | Kaohsiung, Taiwan | B.E.P.C.CS. | 1991 |
| Tohoku Oil Co., Ltd. | 25,000 (for Residue Oil) | Sendai, Japan | E.P.C. | 1992 |
| Shell Eastern Petroleum Pte. Ltd. (SEPL) | Re. — | Pulau Bukom, Singapore | E.P.C. | 1992 |
| Shell Eastern Petroleum Pte. Ltd. (SEPL) | Re. 34,300 (from 28,200) (for Residue Oil) | | E.P.C. | 1996 |
| NEDO/SINOPEC/Qilu Petrochemical Corp. (Model Project of FCC Power Recovery Unit) | 126,000 Nm ³ /h | Qilu, China | B.E.P.CS.M. | 1996 |
| Showa Yokkaichi Sekiyu Co., Ltd. | 55,000 (for Residue Oil) | Yokkaichi, Japan | B.E.P.C. | 1996 |
| Cosmo Oil Co., Ltd. | Re. 28,000 (from 24,000) (for VGO + Resid.) | Yokkaichi, Japan | E.P.C. | 2004 |
| Toa Oil Co., Ltd. | Re. 42,000 (from 33,000) (for VGO) | Kawasaki, Japan | E.P.C. | 2005 |
| Shell Eastern Petroleum Pte. Ltd. (SEPL) | 37,400 (from 34,300) (for Residue Oil) | Pulau Bukom, Singapore | B.E.P.CS. | 2010 |
| Taiyo Oil Co., Ltd. | 25,000 (for Residue Oil) | Kikuma, Japan | E.P.C. | 2010 |
| JX Nippon Oil & Energy Corporation | 3,000 *(for Residue Oil) | Mizushima, Japan | E.P.C. | 2011 |
| Taiyo Oil Co., Ltd. | Re. 29,000 (from 25,000) | Kikuma, Japan | E.P.C. | 2014 |
| Showa Yokkaichi Sekiyu Co., Ltd. | 61,000 (Partial Renewal) | Yokkaichi, Japan | E.P.C. | 2017 |
| PRPC Refinery and Cracker Sdn. Bhd. | 70,000 x 2 (for Residue Oil) | Johor, Malaysia | E.P.C.C. | 2018 |
| Idemitsu Kosan Co., Ltd. | 45,000 (Partial Renewal) | Chiba, Japan | E.P.C. | 2021 |

2-9.Residuum Hydrodesulfurization Units

| Client | Capacity (BPSD) | Location | Scope of Work | Year of Completion |
|---|-------------------|-------------------|---------------|--------------------|
| Nippon Mining Co., Ltd. | 27,800 | Mizushima, Japan | E.P.C. | 1970 |
| Okinawa Sekiyu Seisei Co., Ltd. | 38,000 | Okinawa, Japan | B.E.P.C. | 1972 |
| Mitsubishi Oil Co., Ltd. | 45,000 | Mizushima, Japan | B.E.P.C. | 1972 |
| Idemitsu Kosan Co., Ltd. | 40,000 | Hyogo, Japan | B.E.P.C. | 1972 |
| Idemitsu Kosan Co., Ltd. | 50,000 | Chita, Japan | B.E.P.C.M. | 1975 |
| Seibu Oil Co., Ltd. | 45,000 | Yamaguchi, Japan | B.E.P.C. | 1976 |
| Maruzen Oil Co., Ltd. | 30,000 x 2 | Chiba, Japan | B.E.P.C. | 1977 |
| Asia Oil Co., Ltd. | 28,000 | Sakaide, Japan | B.E.P.C. | 1980 |
| Nippon Petroleum Refining Co., Ltd. | 25,000 | Muroran, Japan | B.E.P.C.M. | 1982 |
| Chinese Petroleum Corp. | 30,000 | Toa-Yuan, Taiwan | E.P.C.CS.M.T. | 1985 |
| Chinese Petroleum Corp. | 15,000 | Toa-Yuan, Taiwan | E.P.C.CS.M.T. | 1989 |
| Chinese Petroleum Corp. | 30,000 | Kaohsiung, Taiwan | E.P.C.CS.M. | 1992 |
| Idemitsu Kosan Co., Ltd. | 50,000 | Chita, Japan | B.E.P.C.M. | 1992 |
| Yukong Ltd. | 30,000 | Ulsan, Korea | B.E.PS.CS.M. | 1992 |
| Nippon Petroleum Refining Co., Ltd. | 30,000 | Negishi, Japan | B.E.P.C. | 1993 |
| Nghi Son Refinery Petrochemical Ltd. | 105,000 | | E.P.C. | 2017 |
| Idemitsu Kosan Co., Ltd. | 35,000 | Tomakomai, Japan | B.E.P.C. | 1994 |
| Mitsubishi Oil Co., Ltd. | 45,000 (Retrofit) | Mizushima, Japan | B.E.P.C.M. | 1995 |
| Tohoku Oil Co., Ltd. | 45,000 | Sendai, Japan | B.E.P.C.M. | 1996 |
| Tonen Corp. | 25,000 | Kawasaki, Japan | E.P.C. | 1997 |
| Seibu Oil Co., Ltd. | 5,000 (Revamp) | Yamaguchi, Japan | B.E.P.C. | 2014 |
| Seibu Oil Co., Ltd. | 50,000 (Retrofit) | Yamaguchi, Japan | B.E.P.C. | 2016 |
| 【OCR-Onstream Catalyst Replacement*】 | | | | |
| Idemitsu Kosan Co., Ltd. | 50,000 | Chita, Japan | B.E.P.C.M. | 1992 |
| Idemitsu Kosan Co., Ltd. | 35,000 | Tomakomai, Japan | B.E.P.C. | 1994 |
| Mitsubishi Oil Co., Ltd. | 45,000 | Mizushima, Japan | B.E.P.C.M. | 1995 |

*Note:Remove metals from Resid. HDS feed by adding and removing demetalation catalyst while remaining onstream.

2-10.Visbreaking Units

| Client | Capacity (BPSD) | Location | Scope of Work | Year of Completion |
|---|-----------------|-------------------------|---------------|--------------------|
| General Petroleum & Mineral Organization (PETROMIN) | 3,200 | Jeddah, Saudi Arabia | E.P.C. | 1974 |
| General Petroleum & Mineral Organization (PETROMIN) | 2,800 | Riyadh, Saudi Arabia | E.P.C. | 1974 |
| Corporación Estatal Petrolera Ecuatoriana | 12,600 | Esmeraldas, Ecuador | E.P.C. | 1976 |
| Mobil Oil Singapore Pte. Ltd. | 50,000 | Jurong, Singapore | B.E.P.C. | 1982 |
| Nippon Petroleum Refining Co., Ltd. | 20,000 | Negishi, Japan | B.E.P.C. | 1983 |
| Petromin-Mobil Yanbu Refinery Co., Ltd. | 40,000 | Yanbu, Saudi Arabia | E.P.C. | 1984 |
| Potromin Shell Refinery Co. | 30,000 | Al-Jubail, Saudi Arabia | E.P.C.M.T. | 1985 |
| Corporación Estatal Petrolera Ecuatoriana | 12,600 | Esmeraldas, Ecuador | E.P.C. | 1987 |

2-11. Thermal Cracking Units

| Client | Capacity (BPSD) | Location | Scope of Work | Year of Completion |
|--|--------------------------|-------------------------|---------------|--------------------|
| Summit Industrial Corp. | 10,000 | Bangchak, Thailand | E.P.C.S. | 1968 |
| Eureka Chemical Industry Co., Ltd. | 21,000 | Sodegaura, Japan | B.E.P.C. | 1974 |
| China National Technical Import and Export Corp. (CNTIC) | 20,000 | Nanjing, China | B.E.P.C.S.M. | 1988 |
| Thai Oil Co., Ltd. | Re. 18,800 (from 12,000) | Sriracha, Thailand | E.P.C.M. | 1989 |
| Fuji Oil Co., Ltd. | Re. 24,000 (from 21,000) | Sodegaura, Japan | E.P.C. | 1994 |
| Malaysian Refining Co., Sdn. Bhd. (MRC) | 21,000 | Melaka, Malaysia | E.P.C.M. | 1998 |
| Fuji Oil Co., Ltd. | Re. 30,000 (from 24,000) | Sodegaura, Japan | E.P.C. | 2009 |
| Saudi Aramco Total Refining and Petrochemical Co. | 103,000 | Al-Jubail, Saudi Arabia | E.P.C. | 2013 |

2-12.Solvent Deasphalting Units

(Propane Deasphalting is excluded)

| Client | Capacity (BPSD) | Location | Scope of Work | Year of Completion |
|---|-------------------------|------------------------|---------------|--------------------|
| General Petroleum & Mineral Organization (PETROMIN) | 10,000 | Riyadh, Saudi Arabia | E.P.C. | 1981 |
| The New Zealand Refining Co., Ltd. | 16,000 | Whangarei, New Zealand | B.E.P.C.CS.M. | 1986 |
| Nippon Petroleum Refining Co., Ltd. | 20,000 | Mizushima, Japan | E.P.C. | 2009 |
| JXTG Nippon Oil & Energy Corporation | Re. 10,000 (from 6,000) | Oita, Japan | E.P.C. | 2019 |

2-13.Sweetening Units (Caustic Treating)

| Client | Capacity (BPSD) | Location | Scope of Work | Year of Completion |
|---|-------------------------|-------------------------|---------------|--------------------|
| 【LPG】 | | | | |
| General Petroleum & Mineral Organization (PETROMIN) | 1,400 | Riyadh, Saudi Arabia | E.P.C. | 1974 |
| General Petroleum & Mineral Organization (PETROMIN) | 2,900 | Jeddah, Saudi Arabia | E.P.C. | 1974 |
| Corporación Estatal Petrolera Ecuatoriana | 2,200 | Esmeraldas, Ecuador | E.P.C. | 1976 |
| General Petroleum & Mineral Organization (PETROMIN) | 6,700 | Riyadh, Saudi Arabia | E.P.C. | 1981 |
| General Petroleum & Mineral Organization (PETROMIN) | 3,500 | Yanbu, Saudi Arabia | E.P.C.M. | 1983 |
| Showa Yokkaichi Sekiyu Co., Ltd. | 11,600 | Yokkaichi, Japan | B.E.P.C. | 1985 |
| Seibu Oil Co., Ltd. | 6,160 | Yamaguchi, Japan | E.P.C. | 1986 |
| Toa Oil Co., Ltd. | 7,200 | Kawasaki, Japan | B.E.P.C. | 1987 |
| Shell Eastern Petroleum Pte. Ltd. (SEPL) | 9,000 10,000 | Pulau Ular, Singapore | B.E.P.C. | 1990 |
| Chinese Petroleum Corp. | 7,200 | Kaohsiung, Taiwan | E.P.C.CS.M. | 1990 |
| Nigeria National Petroleum Corp. (NNPC) | 6,300 | Kaduna, Nigeria | E.P.C. | 1991 |
| Kyung In Energy Co., Ltd. | 10,000 | Inchon, Korea | B.E.PS.CS.M. | 1991 |
| Tohoku Oil Co., Ltd. | 6,600 | Sendai, Japan | E.P.C. | 1992 |
| Yukong Ltd. | 3,850 | Ulsan, Korea | B.E.PS.CS.M. | 1992 |
| The Banchak Petroleum Co., Ltd. | 3,000 | | E.P.C. | 1993 |
| Showa Yokkaichi Sekiyu Co., Ltd. | 11,100 7,400 | Yokkaichi, Japan | B.E.P.C. | 1996 |
| Yukong Ltd. | 10,000 | Ulsan, Korea | B.E.P.C.M. | 1996 |
| National Iranian Oil Co. (NIOC) | 4,800 x 2 | Bandar Abbas, Iran | B.E.P.CS.M. | 1997 |
| Malaysian Refining Co., Sdn. Bhd. (MRC) | 8,500 | Melaka, Malaysia | E.P.C.M. | 1998 |
| Taiyo Oil Co., Ltd. | Undisclosed | Kikuma, Japan | E.P.C. | 2010 |
| Saudi Aramco Total Refining and Petrochemical Co. | 8,353 | Al-Jubail, Saudi Arabia | E.P.C. | 2013 |
| 【Naphtha/Gasoline】 | | | | |
| Kashima Oil Co., Ltd. | 5,000 | Kashima, Japan | E.P.C. | 1968 |
| Tohoku Oil Co., Ltd. | 5,000 | Sendai, Japan | E.P.C. | 1971 |
| Mitsubishi Oil Co., Ltd. | 10,000 | Kawasaki, Japan | E.P.C. | 1971 |
| Daikyo Oil Co. | 13,000 | Yokkaichi, Japan | E.P.C. | 1972 |
| General Petroleum & Mineral Organization (PETROMIN) | 6,000 | Riyadh, Saudi Arabia | E.P.C. | 1974 |
| General Petroleum & Mineral Organization (PETROMIN) | 6,000 | Jeddah, Saudi Arabia | E.P.C. | 1974 |
| General Petroleum & Mineral Organization (PETROMIN) | 13,100 | Jeddah, Saudi Arabia | E.P.C. | 1974 |
| Corporación Estatal Petrolera Ecuatoriana | 9,400 | Esmeraldas, Ecuador | E.P.C. | 1976 |
| Nigerian National Petroleum Corp. (NNPC) | 12,700 | Kaduna, Nigeria | B.E.P.C.M.T. | 1980 |
| General Petroleum & Mineral Organization (PETROMIN) | 4,000 | Riyadh, Saudi Arabia | E.P.C. | 1981 |
| General Petroleum & Mineral Organization (PETROMIN) | 12,000 | Yanbu, Saudi Arabia | E.P.C.M. | 1983 |
| Seibu Oil Co., Ltd. | 9,000 5,500 | Yamaguchi, Japan | B.E.P.C. | 1986 |
| National Iranian Oil Co. (NIOC) | 6,000 | Lavan Is., Iran | E.P.C. | 1986 |
| Toa Oil Co., Ltd. | 12,000 8,000 | Kawasaki, Japan | E.P.C. | 1987 |
| Corporación Estatal Petrolera Ecuatoriana | Re. 10,600 (from 9,400) | Esmeraldas, Ecuador | E.P.C. | 1987 |
| Chinese Petroleum Corp. | 16,200 | Kaohsiung, Taiwan | E.P.C.CS.M. | 1990 |
| Shell Eastern Petroleum Pte. Ltd. (SEPL) | 7,000 | Pulau Ular, Singapore | B.E.P.C. | 1990 |
| Tohoku Oil Co., Ltd. | 15,100 | Sendai, Japan | E.P.C. | 1992 |
| Showa Yokkaichi Sekiyu Co., Ltd. | 20,400 13,200 | Yokkaichi, Japan | B.E.P.C. | 1996 |
| National Iranian Oil Co. (NIOC) | 3,000 36,000 | Bandar Abbas, Iran | B.E.P.CS.M. | 1997 |
| Malaysian Refining Co., Sdn. Bhd. (MRC) | 15,200 | Melaka, Malaysia | E.P.C.M. | 1998 |

【Kerosene】

| | | | | |
|---|--------|---------------------|----------------|------|
| Mobil Oil Singapore Pte. Ltd. | 17,000 | Jurong, Singapore | B.E.P.C. | 1982 |
| General Petroleum & Mineral Organization (PETROMIN) | 7,000 | Yanbu, Saudi Arabia | E.P.C.M. | 1983 |
| Petromin-Mobil Yanbu Refinery Co., Ltd. | 40,000 | Yanbu, Saudi Arabia | E.P.C. | 1984 |
| Mobil Oil Singapore Pte. Ltd. | 10,000 | Jurong, Singapore | E.P.C. | 1987 |
| Kyung In Energy Co., Ltd. | 5,500 | Inchon, Korea | B.E.P.S.C.S.M. | 1991 |
| Thai Oil Co., Ltd. | 19,000 | Sriracha, Thailand | E.P.C.M. | 1993 |
| Malaysian Refining Co., Sdn. Bhd. (MRC) | 13,800 | Melaka, Malaysia | E.P.C.M. | 1998 |

【Jet Fuel】

| | | | | |
|---|--------|----------------------|--------|------|
| General Petroleum & Mineral Organization (PETROMIN) | 6,000 | Riyadh, Saudi Arabia | E.P.C. | 1974 |
| Corporación Estatal Petrolera Ecuatoriana | 1,520 | Esmeraldas, Ecuador | E.P.C. | 1976 |
| Corporación Estatal Petrolera Ecuatoriana | 14,400 | Esmeraldas, Ecuador | E.P.C. | 1987 |

2-14. Alkylation Units

| Client | Capacity (BPSD) | Location | Scope of Work | Year of Completion |
|--|-----------------|-----------------------|---------------|--------------------|
| Petromin-Mobil Yanbu Refinery Co., Ltd. | 12,500 | Yanbu, Saudi Arabia | E.P.C. | 1984 |
| Shell Eastern Petroleum Pte. Ltd. (SEPL) | 3,800 | Pulau Ular, Singapore | E.P.C. | 1990 |
| Pemex-Refinacion | 7,677 | Tula, Mexico | E.P.C. | 1997 |
| Pemex-Refinacion | 14,145 | Salina Cruz, Mexico | E.P.C. | 1997 |
| Fuji Oil Co., Ltd. | 4,000 | Sodegaura, Japan | E.P.C. | 1997 |

2-15.Isomerization Units

| Client | Capacity (BPSD) | Location | Scope of Work | Year of Completion |
|---|----------------------|--------------------|---------------|--------------------|
| Toa Oil Co., Ltd. | 2,500 | Kawasaki, Japan | E.P.C. | 1971 |
| Fuji Oil Co., Ltd. | 1,900 | Sodegaura, Japan | E.P.C. | 1971 |
| Showa Sekiyu K.K. | 6,000 | Kawasaki, Japan | E.P.C. | 1975 |
| Showa Yokkaichi Sekiyu Co., Ltd. | 5,500 ^{*1} | Yokkaichi, Japan | E.P.C. | 1984 |
| Seibu Oil Co., Ltd. | 5,100 ^{*2} | Yamaguchi, Japan | E.P.C. | 1990 |
| Showa Yokkaichi Sekiyu Co., Ltd. | 10,000 ^{*3} | Yokkaichi, Japan | E.P.C. | 1990 |
| Chinese Petroleum Corp. | 6,000 | Tao-yuan, Taiwan | E.P. | 1991 |
| Thai Oil Co., Ltd. | 2,250 T/D | Sriracha, Thailand | E.P.C. | 1995 |
| Malaysian Refining Co., Sdn. Bhd. (MRC) | 9,000 | Melaka, Malaysia | E.P.C.M. | 1998 |

Note *1: Revamping Kerosene smoke point improver.

Note *2: Modification of Platformer to Hysomer.

Note *3: Revamping Hysomer by adding Isosiv.

2-16. Distillate Dewaxing Units

| Client | Capacity (BPSD) | Location | Scope of Work | Year of Completion |
|---|-----------------------|-------------------|---------------|--------------------|
| China National Technical Import Corp. (CNTIC) | 4,500 | Qilu, China | B.E.P.CS.M.T. | 1982 |
| Mobil Oil Singapore Pte. Ltd. | 12,000 (Modification) | Jurong, Singapore | E.P.C. | 1990 |
| Seibu Oil Co., Ltd. | 3,000 | Yamaguchi, Japan | E.P.C. | 1994 |

2-17. Hydrogen Manufacturing Units

| Client | Capacity (Nm ³ /Hr) | Location | Scope of Work | Year of Completion |
|---|---------------------------------------|-----------------------------------|---------------|--------------------|
| Mitsubishi Oil Co., Ltd. | 19,500 | Mizushima, Japan | B.E.P.C.M. | 1966 |
| Mitsubishi Petrochemical Co., Ltd. | 14,000 | Yokkaichi, Japan | B.E.P.C.M. | 1967 |
| Fuji Oil Co., Ltd. | 13,800 | Sodegaura, Japan | B.E.P.C.M. | 1968 |
| Summit Industrial Corp. | 5,250 | Bangchak, Thailand | B.E.P.CS.M. | 1968 |
| Toa Nenryo Kogyo K.K. | 18,700 | Wakayama, Japan | B.E.P.C.M. | 1968 |
| Maruzen Oil Co., Ltd. | 25,000 | Chiba, Japan | B.E.P.C.M. | 1969 |
| Esso Singapore Private Ltd. | 3,800 | Pulau Ayer, Chawan Is., Singapore | E.P.C. | 1970 |
| Koa Oil Co., Ltd. | 7,400 | Marifu, Japan | B.E.P.C.M. | 1970 |
| Nippon Mining Co., Ltd. | 31,200 | Mizushima, Japan | B.E.P.C.M. | 1970 |
| Kansai Oil Co., Ltd. | 12,500 | Sakai, Japan | B.E.P.C.M. | 1971 |
| Toa Nenryo Kogyo K.K. | 22,900 x 2 | Kawasaki, Japan | B.E.P.C.M. | 1971 |
| Asia Oil Co., Ltd. | 12,500 | Sakaide, Japan | B.E.P.C.M. | 1972 |
| Idemitsu Kosan Co., Ltd. | 39,600 | Hyogo, Japan | B.E.P.C.M. | 1972 |
| Kyushu Oil Co., Ltd. | 16,700 | Ohita, Japan | B.E.P.C.M. | 1972 |
| Mitsubishi Oil Co., Ltd. | 43,300 | Mizushima, Japan | B.E.P.C.M. | 1972 |
| Okinawa Sekiyu Seisei Co., Ltd. | 50,000 | | B.E.P.C.M. | 1972 |
| Mobil Oil Singapore Pte. Ltd. | 2,700 | Jurong, Singapore | E.P.C. | 1973 |
| Nippon Mining Co., Ltd. / Maruzen Oil Co., Ltd. | 34,000 | Mizushima, Japan | B.E.P.C.M. | 1973 |
| General Petroleum & Mineral Organization (PETROMIN) | 7,440 | Jeddah, Saudi Arabia | E.P.C.M. | 1974 |
| General Petroleum & Mineral Organization (PETROMIN) | 18,470 | Riyadh, Saudi Arabia | E.P.C. | 1974 |
| Idemitsu Kosan Co., Ltd. | 68,750 | Chita, Japan | B.E.P.C.M. | 1975 |
| Fuji Oil Co., Ltd. | 22,500 | Sodegaura, Japan | B.E.P.C.M. | 1976 |
| Seibu Oil Co., Ltd. | 50,000 | Yamaguchi, Japan | E.P.C. | 1976 |
| Toa Oil Co., Ltd. | 38,800 | Kawasaki, Japan | B.E.P.C.M. | 1976 |
| Maruzen Oil Co., Ltd. | 36,700 x 2 | Chiba, Japan | E.P.C. | 1977 |
| Asia Oil Co., Ltd. | 25,000 | Sakaide, Japan | B.E.P.C.M. | 1980 |
| General Petroleum & Mineral Organization (PETROMIN) | 83,300 | Riyadh, Saudi Arabia | E.P.C. | 1981 |
| Nippon Peroxide Co. | *2,000 | Kohriyama, Japan | B.E.P.C.M. | 1981 |
| Nippon Petroleum Refining Co., Ltd. | 44,700 | Muroran, Japan | B.E.P.C.M. | 1982 |
| Alexandria Petroleum Co. | *1,210 | Alexandria, Egypt | B.E.P.C.M. | 1982 |
| State Organization for Oil Projects (SCOP) | 74,000 | Baiji, Iraq | B.E.P.C.M.T | 1983 |
| Chinese Petroleum Corp. | *39,000 | Tao-Yuan, Taiwan | E.P.CS. | 1985 |
| Perwaja Trengganu Sdn. Bhd. | 80,000 | Trengganu, Malaysia | B.E.P.CS.M.T. | 1985 |
| Petromin Shell Refinery Co. | 122,790 | Al-Jubail, Saudi Arabia | B.E.P.C.M.T. | 1985 |
| The New Zealand Refining Co., Ltd. | 65,000 | Whangarei, New Zealand | B.E.P.C.CS.M. | 1986 |
| Taiyo Oil Co., Ltd. | *17,000 | Kikuma, Japan | E.P.C. | 1988 |
| Chinese Petroleum Corp. | *19,000 | Tao-Yuan, Taiwan | E.P.C. | 1989 |
| Thai Oil Co., Ltd. | *36,100 | Sriracha, Thailand | E.P.C.M. | 1989 |
| Mobil Oil Singapore Pte. Ltd. | *27,900 | Jurong, Singapore | E.P.C. | 1990 |
| Yukong Ltd. | *76,000 | Ulsan, Korea | B.E.PS.CS.M. | 1992 |
| Idemitsu Kosan Co., Ltd. | *62,500 | Tomakomai, Japan | E.P.C. | 1994 |
| Tohoku Oil Co., Ltd. | *67,000 | Sendai, Japan | B.E.P.C.M. | 1996 |
| Yukong Ltd. | *84,100 | Ulsan, Korea | E.P.C. | 1996 |
| Tonen Corp. | Re. 29,624 (from 22,900) | Kawasaki, Japan | E.P.C. | 1997 |
| Malaysian Refining Co., Sdn. Bhd. (MRC) | *13,400 | Melaka, Malaysia | E.P.C.M. | 1998 |
| Thai Oil Co., Ltd. | 38,960 | Sriracha, Thailand | E.P.C. | 1998 |
| Slovnaft a.s. | *38,219 | Bratislava, Slovakia | B.E.P.C. | 1999 |
| NEDO (HiCOT PJ) | Demo. Plan 625 | Tsurumi, Japan | E.P.C.M. | 2001 |
| Koa Oil Co., Ltd. | *20,000 | Osaka, Japan | E.P.C. | 2002 |
| Cosmo Oil Co., Ltd. | 36,700 (Replacing reformers tubes) | Chiba, Japan | E.P.C. | 2014 |
| Laffan Refinery Company Limited 2 | 15,500 | Ras Laffan, Qatar | E.P.C. | 2016 |

*PSA: Pressure Swing Adsorp

2-18.Sulfur Recovery Units

| Client | Capacity (Tons/Day) | Location | Scope of Work | Year of Completion |
|--|---------------------|-----------------------------------|---------------|--------------------|
| Kharg Chemical Co., Ltd. | 585 | Kharg Is., Iran | E.P.C. | 1969 |
| Showa Sekiyu K.K. | 100 | Kawasaki, Japan | E.P.C. | 1969 |
| Esso Singapore Private Ltd. | 20 | Pulau Ayer, Chawan Is., Singapore | E.P.C. | 1970 |
| Nippon Mining Co., Ltd. | 150 | Mizushima, Japan | B.E.P.C. | 1970 |
| Seibu Oil Co., Ltd. | 30 | Yamaguchi, Japan | E.P.C. | 1970 |
| Fuji Kosan Co., Ltd. | 20 | Kainan, Japan | B.E.P.C. | 1972 |
| Idemitsu Kosan Co., Ltd. | 30 | Tomakomai, Japan | B.E.P.C. | 1972 |
| Mitsubishi Oil Co., Ltd. | 150 x 2 | Mizushima, Japan | E.P.C. | 1972 |
| Okinawa Sekiyu Seisei Co., Ltd. | 150 x 2 | Okinawa, Japan | B.E.P.C. | 1972 |
| Shell Eastern Petroleum Pte. Ltd. (SEPL) | 34 | Bukom, Singapore | E.P.C. | 1972 |
| Mobil Oil Singapore Pte. Ltd. | 20 | Jurong, Singapore | E.P.C. | 1973 |
| Nippon Mining Co., Ltd./Maruzen Oil Co., Ltd. | 70 | Mizushima, Japan | B.E.P.C. | 1973 |
| Tohoku Oil Co., Ltd. | 90 | Sendai, Japan | E.P.C. | 1973 |
| Koa Oil Co., Ltd. | 35 | Marifu, Japan | B.E.P.C. | 1974 |
| Fuji Oil Co., Ltd. | 150 | Sodegaura, Japan | B.E.P.C. | 1976 |
| Seibu Oil Co., Ltd. | 155 x 2 | | B.E.P.C. | 1976 |
| Maruzen Oil Co., Ltd. | 150 | Chiba, Japan | E.P.C. | 1977 |
| Nigerian National Petroleum Corp. (NNPC) | 20 | Kaduna, Nigeria | B.E.P.C.M.T. | 1980 |
| China National Technical Import Corp. (CNTIC) /China Petroleum Co. (SINOPEC) | 262 | Qilu, China | B.E.P.CS.M.T. | 1982 |
| Mobil Oil Singapore Pte. Ltd. | 55 x 2 | Jurong, Singapore | E.P.C. | 1982 |
| State Organization for Oil Projects (SCOP) | 227 | Baiji, Iraq | B.E.P.C.M.T. | 1983 |
| Idemitsu Kosan Co., Ltd. | 20 | Tomakomai, Japan | B.E.P.C. | 1984 |
| Petromin-Mobil Yanbu Refinery Co., Ltd. | 150 x 2 | Yanbu, Saudi Arabia | E.P.C. | 1984 |
| Petromin Shell Refinery Co. | 90 x 3 | Al-Jubail, Saudi Arabia | E.P.C.M | 1985 |
| The New Zealand Refining Co., Ltd. | 53.4 x 3 | Whangarei, New Zealand | B.E.P.C.CS.M. | 1986 |
| Chinese Petroleum Corp. | 94.7 | Tao-Yuan, Taiwan | E.P.C.CS | 1989 |
| Thai Oil Co., Ltd. | 57.5 x 2 | Sriracha, Thailand | E.P.C.M | 1989 |
| Kyung In Energy Co., Ltd. | 35 | Inchon, Korea | B.E.PS.CS.M. | 1991 |
| Chinese Petroleum Corp. | 100 x 2 | Kaohsiung, Taiwan | E.P.C. | 1992 |
| Yukong Ltd. | 200 x 2 | Ulsan, Korea | B.E.PS.CS.M. | 1992 |
| Koa Oil Co., Ltd. | 140 | Marifu, Japan | B.E.P.C.M | 1993 |
| Tohoku Oil Co., Ltd. | 200 x 2 | Sendai, Japan | B.E.P.C.M | 1996 |
| Yukong Ltd. | 100 | Ulsan, Korea | E.P.C. | 1996 |
| National Iranian Oil Co. (NIOC) | 130 | Bandar Abbas, Iran | B.E.P.CS.M. | 1997 |
| Thai Oil Co., Ltd. | 140 x 2 | Sriracha, Thailand | E.P.C.M | 1997 |
| Malaysian Refining Co., Sdn. Bhd. (MRC) | 100 x 2 | Melaka, Malaysia | E.P.C.M | 1998 |
| Koa Oil Co., Ltd. | 180 | Osaka, Japan | E.P.C. | 2002 |
| Petróleos de Venezuela S.A. (PDVSA) | 50 x 2 | Puerto la Cruz, Venezuela | E.P.C.M | 2004 |
| Taiyo Oil Co., Ltd. | Undisclosed | Kikuma, Japan | E.P.C. | 2010 |
| Seibu Oil Co., Ltd. | Re. 340 | Yamaguchi, Japan | B.E.P.C. | 2012 |
| Shell Eastern Petroleum Ltd. (SEPL) | 180 | Bukom Island, Singapore | E.P.C.M | 2012 |

2-19.Claus Tail Gas Treating Units

| Client | Capacity (Tons/Day) | Location | Scope of Work | Year of Completion |
|--|---------------------|---------------------------|----------------|--------------------|
| Fuji Kosan Co., Ltd. | 20 | Kainan, Japan | B.E.P.C. | 1972 |
| Mitsubishi Oil Co., Ltd. | 300 | Mizushima, Japan | B.E.P.C. | 1972 |
| Nippon Mining Co., Ltd./Maruzen Oil Co., Ltd. | 150 | Mizushima, Japan | B.E.P.C. | 1973 |
| Tohoku Oil Co., Ltd. | 90 | Sendai, Japan | B.E.P.C. | 1973 |
| Seibu Oil Co., Ltd. | 310 | Yamaguchi, Japan | B.E.P.C. | 1976 |
| China National Technical Import Corp. (CNTIC)/ China Petrochemical Co. (SINOPEC) | 262 | Qilu, China | B.E.P.C.S.M.T. | 1982 |
| Nippon Mining Co., Ltd. | 150 | Mizushima, Japan | B.E.P.C. | 1984 |
| Chinese Petroleum Corp. | 95 | Tao-Yuan, Taiwan | B.E.P.C. | 1989 |
| Tohoku Oil Co., Ltd. | 75 | Sendai, Japan | B.E.P.C. | 1989 |
| Kyung In Energy Co., Ltd. | 35 | Inchon, Korea | B.E.P.S.C.S.M. | 1991 |
| Chinese Petroleum Corp. | 100 | Kaohsiung, Taiwan | E.P.C. | 1992 |
| Yukong Ltd. | 400 | Ulsan, Korea | B.E.P.S.C.S.M. | 1992 |
| Koa Oil Co., Ltd. | 140 | Marifu, Japan | B.E.P.C.M | 1993 |
| Nihonkai Oil Co., Ltd. | 40 | Toyama, Japan | B.E.P.C. | 1993 |
| Nippon Petroleum Refining Co., Ltd. | 170 | Negishi, Japan | B.E.P.C. | 1993 |
| Showa Shell Sekiyu K.K. | 16 | | B.E.P.C. | 1995 |
| Tohoku Oil Co., Ltd. | 400 | Sendai, Japan | B.E.P.C.M | 1996 |
| Yukong Ltd. | 100 | Ulsan, Korea | B.E.P.C. | 1996 |
| Petróleos de Venezuela S.A. (PDVSA) | 100 | Puerto la Cruz, Venezuela | E.P.C.M. | 2004 |
| Shell Eastern Petroleum Ltd. (SEPL) | 480 | Bukom Island, Singapore | E.P.C.M. | 2012 |

2-20.H₂S Removal Units with Amine

| Client | Capacity (Nm ³ /Day) | Location | Scope of Work | Year of Completion | |
|---|---------------------------------|-----------------------------------|-----------------------|--------------------|------|
| Asia Oil Co., Ltd. | 11,500 | Yokohama, Japan | E.P.C. | 1962 | |
| Showa Sekiyu K.K. | 229,000 | Kawasaki, Japan | E.P.C. | 1964 | |
| Showa Yokkaichi Sekiyu Co., Ltd. | 400,000 | Yokkaichi, Japan | E.P.C. | 1965 | |
| General Sekiyu Seisei K.K. | 118,000 | Sakai, Japan | E.P.C. | 1965 | |
| Mitsubishi Oil Co., Ltd. | 29,000 | Mizushima, Japan | E.P.C. | 1966 | |
| Fuji Oil Co., Ltd. | 145,000 | Sodegaura, Japan | E.P.C. | 1968 | |
| Seibu Oil Co., Ltd. | 125,000 | Yamaguchi, Japan | E.P.C. | 1968 | |
| Toa Oil Co., Ltd. | 326,400 | Kawasaki, Japan | E.P.C. | 1968 | |
| Maruzen Oil Co., Ltd. | 190,300 | Chiba, Japan | E.P.C. | 1969 | |
| Nippon Mining Co., Ltd. | 584,800 | Mizushima, Japan | E.P.C. | 1969 | |
| Showa Sekiyu K.K. | 123,100 | Kawasaki, Japan | E.P.C. | 1969 | |
| Esso Singapore Private Ltd. | 120,000 | Pulau Ayer, Chawan Is., Singapore | E.P.C. | 1970 | |
| Esso Standard Okinawa K.K. | — | Nishibaru, Japan | E.P.C. | 1970 | |
| General Sekiyu Seisei K.K. | 117,900 | Sakai, Japan | E.P.C. | 1970 | |
| Idemitsu Kosan Co., Ltd. | 6,899,000 | Hyogo, Japan | E.P.C. | 1970 | |
| Nippon Mining Co., Ltd. | | Mizushima, Japan | E.P.C. | 1970 | |
| Kansai Oil Co., Ltd. | 755,000 | Sakai, Japan | E.P.C. | 1971 | |
| Mitsubishi Oil Co., Ltd. | 170,000 | Kawasaki, Japan | E.P.C. | 1971 | |
| Daikyo Oil Co. | 139,000 | Yokkaichi, Japan | E.P.C. | 1972 | |
| Okinawa Sekiyu Seisei Co., Ltd. | 232,000 | Okinawa, Japan | E.P.C. | 1972 | |
| Abu Dhabi National Oil Co. (ADNOC) | 188,000 | Mubarras Is., Abu Dhabi | E.P.C. | 1973 | |
| Mitsubishi Oil Co., Ltd. | 7,395,000 | Mizushima, Japan | E.P.C. | 1973 | |
| Mobil Oil Singapore Pte. Ltd. | 3,300 | Jurong, Singapore | E.P.C. | 1973 | |
| Tohoku Oil Co., Ltd. | 2,280,000 | Sendai, Japan | E.P.C. | 1973 | |
| General Petroleum & Mineral Organization (PETROMIN) | 128,000 | Jeddah, Saudi Arabia | E.P.C. | 1974 | |
| General Petroleum & Mineral Organization (PETROMIN) | 214,000 | Riyadh, Saudi Arabia | E.P.C. | 1974 | |
| Koa Oil Co., Ltd. | 320,000 | Marifu, Japan | E.P.C. | 1974 | |
| Idemitsu Kosan Co., Ltd. | 13,691,000 | Chiba, Japan | E.P.C. | 1975 | |
| Corporación Estatal Petrolera Ecuatoriana | 250,000 | Esmeraldas, Ecuador | E.P.C. | 1976 | |
| Eureka Chemical Industry Co., Ltd. | 131,000 | Sodegaura, Japan | E.P.C. | 1976 | |
| Fuji Oil Co., Ltd. | 3,148,000 | Sodegaura, Japan | E.P.C. | 1976 | |
| Koa Oil Co., Ltd. | 3,670,000 | Marifu, Japan | E.P.C. | | |
| Seibu Oil Co., Ltd. | 5,717,000 | Yamaguchi, Japan | E.P.C. | 1976 | |
| Maruzen Oil Co., Ltd. | 7,720,000 | Chiba, Japan | E.P.C. | 1977 | |
| Asia Kyoseki Oil Co., Ltd. | 182,000 | Sakaide, Japan | E.P.C. | 1980 | |
| General Petroleum & Mineral Organization (PETROMIN) | GAS LPG | 2,906,800 40,000 T/Y | Riyadh, Saudi Arabia | E.P.C. | 1981 |
| General Petroleum & Mineral Organization (PETROMIN) | GAS LPG | 150,000 12,800 T/Y | Yanbu, Saudi Arabia | E.P.C. | 1983 |
| Nippon Petroleum Refining Co., Ltd. | | 74,900 | Negishi, Japan | E.P.C. | 1983 |
| Fuji Kosan Co., Ltd. | | 26,000 | Kainan, Japan | E.P.C. | 1983 |
| Fuji Oil Co., Ltd. | | 1,312,000 | Sodegaura, Japan | E.P.C. | 1984 |
| Asia Oil Co., Ltd. | | 3,609,336 | Sakaide, Japan | E.P.C. | 1985 |
| Seibu Oil Co., Ltd. | | 130,900 | Yamaguchi, Japan | E.P.C. | 1986 |
| Toa Oil Co., Ltd. | GAS LPG | 164,790 248,000 T/Y | Kawasaki, Japan | E. | 1987 |
| Shell Eastern Petroleum Pte. Ltd. (SEPL) | GAS LPG | 359,000 237,000 T/Y | Pulau Ular, Singapore | E.P.C. | 1989 |
| Thai Oil Co., Ltd. | GAS LPG | 7,013,000 23,000 T/Y | Sriracha, Thailand | E.P.C. | 1989 |
| Chinese Petroleum Corp. | | 3,840,000 | Tao Yuan, Taiwan | E.P.C. | 1989 |
| Chinese Petroleum Corp. | | 2,350,000 | Tao Yuan, Taiwan | E.P.C. | 1989 |
| Chinese Petroleum Corp. | GAS LPG | 249,000 214,000 T/Y | Kaohsiung, Taiwan | E.P. | 1990 |

| | | | | | |
|---|------------|--------------------------|---------------------------|-------------|------|
| Kyung In Energy Co., Ltd. | GAS LPG | 1,230,000 358,000 T/Y | Inchon, Korea | E.P. | 1991 |
| Chinese Petroleum Corp. | | 4,527,200 | Kaohsiung, Taiwan | E.P.C. | 1992 |
| Nippon Mining Co., Ltd. | | 14,145 | Mizushima, Japan | E.P.C. | 1992 |
| Tohoku Oil Co., Ltd. | GAS LPG | 252,800 191,000 T/Y | Sendai, Japan | E.P.C. | 1992 |
| Yukong Ltd. | GAS LPG | 6,680,000 146,000 T/Y | Ulsan, Korea | E.P. | 1992 |
| Koa Oil Co., Ltd. | GAS LPG | 3,281,000 492,000 T/Y | Marifu, Japan | E.P.C. | 1993 |
| Nihonkai Oil Co., Ltd. | | 1,070,600 | Toyama, Japan | E.P.C. | 1993 |
| Nippon Petroleum Refining Co., Ltd. | | 414,000 | Negishi, Japan | E.P.C. | 1993 |
| Thai Oil Co., Ltd. | GAS LPG | 68,000 87,300 T/Y | Sriracha, Thailand | E.P.C. | 1993 |
| Showa Yokkaichi Sekiyu Co., Ltd. | GAS LPG | 655,800 197,000 T/Y | Yokkaichi, Japan | E.P.C.M. | 1996 |
| Tohoku Oil Co., Ltd. | | 9,049,800 | Sendai, Japan | E.P.C.M. | 1996 |
| National Iranian Oil Co. (NIOC) | GAS LPG | 730,000 267,000 T/Y | Bandar Abbas, Iran | B.E.P.CS.M. | 1997 |
| Thai Oil Co., Ltd. | GAS LPG | 416,000 44,000 T/Y | Sriracha, Thailand | E.P.C.M. | 1997 |
| Malaysian Refining Co., Sdn. Bhd. (MRC) | | 225,000 | Melaka, Malaysia | E.P.C.M. | 1998 |
| Petróleos de Venezuela S.A. (PDVSA) | GAS | 388,360 | Puerto la Cruz, Venezuela | E.P.C.M. | 2004 |
| Kashima Oil Co., Ltd. | GAS | 1,996,000 | Kashima, Japan | B.E.P. | 2007 |
| Japan Energy Corporation. | GAS LPG | 1,000,000 410 T/D | Mizushima, Japan | B. | 2009 |
| Taiyo Oil Co., Ltd. | | Undisclosed | Kikuma, Japan | E.P.C. | 2010 |
| Shell Eastern Petroleum Ltd. (SEPL) | GAS | 2,530,000 | Bukom Island, Singapore | E.P.C.M. | 2012 |
| Laffan Refinery Company Limited 2 | GAS LPG | 133,000 312,000 T/Y | Ras Laffan, Qatar | E.P.C. | 2016 |

2-21.Sour Water Stripping Units

| Client | Capacity (Tons/Hr) | Location | Scope of Work | Year of Completion |
|--|--------------------|------------------------|----------------|--------------------|
| General Sekiyu Seisei K.K. | 9.1 | Sakai, Japan | B.E.P.C. | 1967 |
| Fuji Oil Co., Ltd. | 5.2 | Sodegaura, Japan | B.E.P.C. | 1968 |
| Fuji Oil Co., Ltd. | 52.0 | Sodegaura, Japan | B.E.P.C. | 1968 |
| Fuji Oil Co., Ltd. | 38.8 | Sodegaura, Japan | B.E.P.C. | 1968 |
| Nippon Petroleum Refining Co., Ltd. | 81.3 | Negishi, Japan | B.E.P.C. | 1968 |
| Seibu Oil Co., Ltd. | 33.1 | Yamaguchi, Japan | B.E.P.C. | 1968 |
| Toa Oil Co., Ltd. | 35.1 | Kawasaki, Japan | B.E.P.C. | 1968 |
| Maruzen Oil Co., Ltd. | 13.7 | Chiba, Japan | B.E.P.C. | 1969 |
| Mitsubishi Oil Co., Ltd. | 17.8 | Mizushima, Japan | B.E.P.C. | 1969 |
| Showa Sekiyu K.K. | 30.5 | Kawasaki, Japan | B.E.P.C. | 1969 |
| Cosmo Oil Co., Ltd. | 2.4 | Shimizu, Japan | B.E.P.C. | 1970 |
| Kansai Oil Co., Ltd. | 53.4 | Sakai, Japan | B.E.P.C. | 1970 |
| Kansai Oil Co., Ltd. | 11.6 | Sakai, Japan | B.E.P.C. | 1970 |
| Koa Oil Co., Ltd. | 23.7 | Marifu, Japan | B.E.P.C. | 1970 |
| Koa Oil Co., Ltd. | 59.0 | Osaka, Japan | B.E.P.C. | 1971 |
| Chinese Petroleum Corp. | 33.0 | | B.E.P.C. | 1971 |
| Kashima Oil Co., Ltd. | 28.6 | Kashima, Japan | B.E.P.C. | 1971 |
| Mitsubishi Oil Co., Ltd. | 22.0 | Kawasaki, Japan | B.E.P.C. | 1971 |
| Daikyo Oil Co. | 5.9 | Yokkaichi, Japan | B.E.P.C. | 1972 |
| Idemitsu Kosan Co., Ltd. | 33.0 | Tomakomai, Japan | B.E.P.C. | 1972 |
| Kyushu Oil Co., Ltd. | 86.0 | Ohita, Japan | B.E.P.C. | 1972 |
| Okinawa Sekiyu Seisei Co., Ltd. | 11.6 | Okinawa, Japan | B.E.P.C. | 1972 |
| Okinawa Sekiyu Seisei Co., Ltd. | 11.5 | Okinawa, Japan | B.E.P.C. | 1972 |
| Mitsubishi Oil Co., Ltd. | 67.0 | Mizushima, Japan | B.E.P.C. | 1972 |
| Mitsubishi Oil Co., Ltd. | 52.6 | Mizushima, Japan | B.E.P.C. | 1973 |
| Nippon Petroleum Refining Co., Ltd. | 11.0 | Negishi, Japan | B.E.P.C. | 1973 |
| Taiyo Oil Co., Ltd. | 32.0 | Kikuma, Japan | B.E.P.C. | 1973 |
| Tohoku Oil Co., Ltd. | 69.5 | Sendai, Japan | B.E.P.C. | 1973 |
| Tohoku Oil Co., Ltd. | 18.5 | Sendai, Japan | B.E.P.C. | 1973 |
| Asia Kyoseki Oil Co., Ltd. | 10.6 | Sakaide, Japan | B.E.P.C. | 1974 |
| Idemitsu Kosan Co., Ltd. | 25.0 | Hyogo, Japan | B.E.P.C. | 1974 |
| Nihonkai Oil Co., Ltd. | 30.0 | Toyama, Japan | B.E.P.C. | 1974 |
| Idemitsu Kosan Co., Ltd. | 50.0 | Chita, Japan | B.E.P.C. | 1975 |
| Seibu Oil Co., Ltd. | 52.8 | Yamaguchi, Japan | B.E.P.C. | 1975 |
| Fuji Oil Co., Ltd. | 15.9 | Sodegaura, Japan | B.E.P.C. | 1975 |
| Fuji Oil Co., Ltd. | 25.0 | Sodegaura, Japan | B.E.P.C. | 1975 |
| Fuji Kosan Co., Ltd. | 16.0 | Kainan, Japan | B.E.P.C. | 1976 |
| Fuji Kosan Co., Ltd. | 24.0 | Kainan, Japan | B.E.P.C. | 1976 |
| Maruzen Oil Co., Ltd. | 60.0 x 2 | Chiba, Japan | B.E. | 1976 |
| Toa Oil Co., Ltd. | 57.0 | Kawasaki, Japan | B.E.P.C. | 1976 |
| Toa Oil Co., Ltd. | 69.3 | Kawasaki, Japan | B.E.P.C. | 1976 |
| Nigerian National Petroleum Corp. (NNPC) (in FCC Unit) | 16.1 | Kaduna, Nigeria | B.E.P.C. | 1980 |
| Nigerian National Petroleum Corp. (NNPC) (in Refinery w/o FCC Unit) | 55.0 x 2 | Kaduna, Nigeria | B.E.P.C. | 1980 |
| US Oil | 1.9 | Tacoma, U.S.A. | B.E. | 1980 |
| China National Technical Import Corp. (CNTIC)/ China Petrochemical Co. (SINOPEC) | 7.0 | Qilu, China | B.E.P.C.S.M.T. | 1982 |
| State Organization for Oil Projects (SCOP) | 110.0 | Bajji, Iraq | E.P.C. | 1983 |
| Petromin-Mobil Yanbu Refinery Co., Ltd. | 55.5 x 2 | Yanbu, Saudi Arabia | E.P.C. | 1984 |
| Seibu Oil Co., Ltd. | 16.9 | Yamaguchi, Japan | B.E.P.C. | 1986 |
| The New Zealand Refining Co., Ltd. | 36.9 35.2 | Whangarei, New Zealand | B.E.P.C.C.S.M. | 1986 |
| China National Technical Import and Export Corp. (ECN-Project; EUREKA) | 70.0 | Nanjing, China | B.E.P.C.S.M.T. | 1988 |

| | | | | |
|--|-----------------------|---------------------------|---------------|------|
| China National Technical Import and Export Corp. (ECN-Project; HT) | 7.0 | Nanjing, China | B.E.P.CS.M.T. | 1988 |
| Thai Oil Co., Ltd. | 45.2 59.5 | Sriracha, Thailand | E.P.C.M. | 1989 |
| Chinese Petroleum Corp. | 15.5 | Kaohsiung, Taiwan | E.P.C. | 1992 |
| Yukong Ltd. | 30.0 x 2 | Ulsan, Korea | B.E.PS.CS.M. | 1992 |
| Idemitsu Kosan Co., Ltd. | 41.0 | Tomakomai, Japan | B.E.P.C. | 1994 |
| Showa Yokkaichi Sekiyu Co., Ltd. | 41.0 | Yokkaichi, Japan | E.P.C.M. | 1996 |
| Tohoku Oil Co., Ltd. | 60.0 | Sendai, Japan | B.E.P.C.M. | 1996 |
| Yukong Ltd. | 50.0 | Ulsan, Korea | E.P.C. | 1996 |
| National Iranian Oil Co. (NIOC) | 75.0 x 2 | Bandar Abbas, Iran | B.E.P.CS.M. | 1997 |
| Thai Oil Co., Ltd. | 45.0 | Sriracha, Thailand | E.P.C.M. | 1997 |
| Thai Oil Co., Ltd. | 21.7 | Sriracha, Thailand | E.P.C. | 1998 |
| Malaysian Refining Co., Sdn. Bhd. (MRC) | 55.8 | Melaka, Malaysia | E.P.C.M. | 1998 |
| Petróleos de Venezuela S.A. (PDVSA) | 59.0 | Puerto la Cruz, Venezuela | E.P.C.M. | 2004 |
| Kyushu Oil Co., Ltd. | Re. 100.0 (from 86.0) | Ohita, Japan | E.P.C. | 2006 |
| Taiyo Oil Co., Ltd. | Undisclosable | Kikuma, Japan | E.P.C. | 2010 |
| Laffan Refinery Company Limited 2 | 20.0 | Ras Laffan, Qatar | E.P.C. | 2016 |

2-22. Blown Asphalt (Bitumen) Units

| Client | Capacity (Tons/Day) | Location | Scope of Work | Year of Completion |
|---|---------------------|-----------------------------------|---------------|--------------------|
| Mitsubishi Oil Co., Ltd. | 48 | Kawasaki, Japan | B.E.P.C. | 1952 |
| Showa Kako Co., Ltd. | 20 | Tokyo, Japan | E.P.C. | 1960 |
| Mitsubishi Oil Co., Ltd. | 154 | Kawasaki, Japan | B.E.P.C. | 1965 |
| Mitsubishi Oil Co., Ltd. | 380 | Mizushima, Japan | E.P.C. | 1966 |
| General Petroleum & Mineral Organization (PETROMIN) | 53 | Jeddah, Saudi Arabia | B.E.P.C. | 1967 |
| Maruzen Oil Co., Ltd. | 80 | Chiba, Japan | B.E.P.C. | 1967 |
| Esso Singapore Private Ltd. | 668 | Pulau Ayer, Chawan Is., Singapore | E.P.C. | 1970 |
| Mitsubishi Oil Co., Ltd. | 200 | Mizushima, Japan | B.E.P.C. | 1973 |
| General Petroleum & Mineral Organization (PETROMIN) | 900 BPSD | Jeddah, Saudi Arabia | E.P.C. | 1974 |
| Jeddah Oil Refinery Co. | 191 | Jeddah, Saudi Arabia | E.P.C. | 1974 |
| Corporación Estatal Petrolera Ecuatoriana | 200 | Esmeraldas, Ecuador | E.P.C. | 1976 |
| Nigerian National Petroleum Corp. (NNPC) | 2,700 | Kaduna, Nigeria | B.E.P.C.M.T. | 1980 |
| Arabian America Oil Co. (Aramco) | 10,000 BPSD | Ras Tanura, Saudi Arabia | E.P.C. | 1986 |

2-23. Condensate Splitter Units

| Client | Capacity (BPSD) | Location | Scope of Work | Year of Completion |
|--|-----------------|------------------------|---------------|--------------------|
| Shell Eastern Petroleum Pte. Ltd./Petrochemical Corporation of Singapore (Pte). Ltd. (PCS) | 70,000 | Pulau Bukom, Singapore | B.E.P.C. | 2000 |
| Laffan Refinery Company Limited 2 | 146,000 | Ras Laffan, Qatar | E.P.C. | 2016 |

2-24.Lubricating Oil Refining Units

| Client | Capacity (BPSD) | Location | Scope of Work | Year of Completion |
|---|-----------------|----------------------|----------------|--------------------|
| 【Vacuum Distillation Unit】 | | | | |
| Mitsubishi Oil Co., Ltd. | 3,500 | Kawasaki, Japan | B.E.P.C. | 1957 |
| Mitsubishi Oil Co., Ltd. | 3,500 | Kawasaki, Japan | B.E.P.C. | 1962 |
| Mitsubishi Oil Co., Ltd. | 17,000 | Mizushima, Japan | B.E.P.C. | 1967 |
| Fuji Kosan Co., Ltd. | 14,000 | Kainan, Japan | B.E.P.C. | 1972 |
| Nippon Mining Co., Ltd./Maruzen Oil Co., Ltd. | 27,000 | Mizushima, Japan | B.E.P.C. | 1973 |
| Petromin Lubricating Oil Refining Co. | 21,600 | Jeddah, Saudi Arabia | C. | 1977 |
| Nigerian National Petroleum Corp. (NNPC) | 23,000 | Kaduna, Nigeria | B.E.P.C.M.T. | 1980 |
| Alexandria Petroleum Co. | 23,200 | Alexandria, Egypt | E.P.C. | 1982 |
| Saudi Aramco Lubricating Oil Refining Co. (LUBEREF) | 25,300 | Yanbu, Saudi Arabia | E.P.C. | 1997 |
| 【Propane Deasphalting Unit】 | | | | |
| Nippon Mining Co., Ltd. / Maruzen Oil Co., Ltd. | 4,300 | Mizushima, Japan | B.E.P.C. | 1973 |
| Petromin Lubricating Oil Refining Co. | 4,550 | Jeddah, Saudi Arabia | C. | 1977 |
| Nigerian National Petroleum Corp. (NNPC) | 11,000 | Kaduna, Nigeria | E.P.C. | 1980 |
| Petromin Lubricating Oil Refining Co. | 27,825 | Riyadh, Saudi Arabia | E.P.C. | 1981 |
| Alexandria Petroleum Co. | 7,810 | | E.P.C. | 1982 |
| Saudi Aramco Lubricating Oil Refining Co. (LUBEREF) | 6,290 | Yanbu, Saudi Arabia | E.P.C. | 1997 |
| 【Solvent Extraction Unit】 | | | | |
| Mitsubishi Oil Co., Ltd. | 430 | Kawasaki, Japan | B.E.P.C. | 1955 |
| Daikyo Oil Co. | 1,100 | Yokkaichi, Japan | B.E.P.C. | 1957 |
| Nippon Petroleum Refining Co., Ltd. | 730 | Yokohama, Japan | B.E.P.C. | 1957 |
| Daikyo Oil Co. | 2,100 | Yokkaichi, Japan | B.E.P.C. | 1962 |
| Nippon Mining Co., Ltd. | 700 | Funakawa, Japan | B.E.P.C. | 1963 |
| Mitsubishi Oil Co., Ltd. | 4,000 | Mizushima, Japan | B.E.P.C. | 1967 |
| Nippon Petroleum Refining Co., Ltd. | 7,200 | Negishi, Japan | B.E.P.C. | 1968 |
| Mitsubishi Oil Co., Ltd. | Re. 7,400 | Mizushima, Japan | B.E.P.C. | 1972 |
| Nippon Mining Co., Ltd. / Maruzen Oil Co., Ltd. | 9,000 | Mizushima, Japan | B.E.P.C. | 1973 |
| Petromin Lubricating Oil Refining Co. | 6,400 | Jeddah, Saudi Arabia | C. | 1977 |
| Nigerian National Petroleum Corp. (NNPC) | 10,500 | Kaduna, Nigeria | E.P.C.M. | 1980 |
| Alexandria Petroleum Co. | 3,690 | Alexandria, Egypt | E.P.C. | 1982 |
| Saudi Aramco Lubricating Oil Refining Co. (LUBEREF) | 13,330 | Yanbu, Saudi Arabia | E.P.C. | 1997 |
| 【Lube/Wax Hydrofinishing and Catalytic Dewaxing Units】 | | | | |
| Mitsubishi Oil Co., Ltd. | 2,800 (Lube) | Mizushima, Japan | B.E.P.C. | 1967 |
| Maruzen Oil Co., Ltd. | 2,300 (Lube) | Shimotsu, Japan | B.E.P.C. | 1970 |
| Fuji Kosan Co., Ltd. | 5,000 (Lube) | Kainan, Japan | B.E.P.C. | 1972 |
| Mitsubishi Oil Co., Ltd. | 4,600 (Lube) | Mizushima, Japan | B.E.P.C. | 1972 |
| Nippon Mining Co., Ltd. / Maruzen Oil Co., Ltd. | 5,000 (Lube) | Mizushima, Japan | B.E.P.C. | 1973 |
| Nigerian National Petroleum Corp. (NNPC) | 75 T/D (Wax) | Kaduna, Nigeria | E.P.C.M. | 1980 |
| Alexandria Petroleum Co. | 33 T/D (Wax) | Alexandria, Egypt | E.P.C. | 1982 |
| Alexandria Petroleum Co. | 2,130 (Lube) | Alexandria, Egypt | E.P.C. | 1982 |
| Qilu Petrochemical Corp. | 4,800 (MLDW) | Qilu, China | B.E.P.C.S.M.T. | 1982 |
| Sankyo Yuka Kogyo K.K. | 1,870 (Lube) | Ichikawa, Japan | E.P.C. | 1995 |
| Saudi Aramco Lubricating Oil Refining Co. (LUBEREF) | 8,490 (MLDW) | Yanbu, Saudi Arabia | E.P.C. | 1997 |

| 【Solvent Dewaxing Unit】 | | | | |
|---|------------------------|----------------------|----------|------|
| Nippon Mining Co., Ltd. | 600 | Funakawa, Japan | B.E.P.C. | 1950 |
| Mitsubishi Oil Co., Ltd. | 80 (Wax) | Kawasaki, Japan | B.E.P.C. | 1953 |
| Mitsubishi Oil Co., Ltd. | 600 | Kawasaki, Japan | B.E.P.C. | 1955 |
| Daikyo Oil Co. | 1,130 | Yokkaichi, Japan | B.E.P.C. | 1963 |
| Daikyo Oil Co. | 1,800 | Yokkaichi, Japan | B.E.P.C. | 1964 |
| Mitsubishi Oil Co., Ltd. | 2,400 | Mizushima, Japan | B.E.P.C. | 1967 |
| Mitsubishi Oil Co., Ltd. | Re. 5,300 | Mizushima, Japan | B.E.P.C. | 1972 |
| Nippon Mining Co., Ltd. / Maruzen Oil Co., Ltd. | 5,000 | Mizushima, Japan | B.E.P.C. | 1973 |
| Petromin Lubricating Oil Refining Co. | 3,855 | Jeddah, Saudi Arabia | C. | 1977 |
| Nigerian National Petroleum Corp. (NNPC) | 7,100 (Dewaxing) | Kaduna, Nigeria | E.P.C.M. | 1980 |
| Nigerian National Petroleum Corp. (NNPC) | 840 (Deoiling) | Kaduna, Nigeria | E.P.C.M. | 1980 |
| Alexandria Petroleum Co. | 2,610 | Alexandria, Egypt | E.P.C. | 1982 |
| 【Lube Oil Blending Unit】 | | | | |
| Mitsubishi Oil Co., Ltd. | 10,500 | Kawasaki, Japan | E.P.C. | 1953 |
| Showa Sekiyu K.K. | 100,000 | Yokohama, Japan | E.P.C. | 1963 |
| Mitsubishi Oil Co., Ltd. | 45,000 | Yokohama, Japan | E.P.C. | 1966 |
| Idemitsu Oil Co., Ltd. | 200,000 | Chiba, Japan | E.P.C. | 1966 |
| Mitsubishi Oil Co., Ltd. | 100,000 | Mizushima, Japan | E.P.C. | 1967 |
| Nippon Mining Co., Ltd. | 60,000 | Sodegaura, Japan | E.P.C. | 1968 |
| Mitsubishi Oil Co., Ltd. | 70,000 | Mizushima, Japan | E.P.C. | 1972 |
| Fuji Kosan Co., Ltd. | 72,000 | Kainan, Japan | E.P.C. | 1972 |
| Idemitsu Kosan Co., Ltd. | 80,000 | Chiba, Japan | E.P.C. | 1985 |
| Mobil Oil Hong Kong Ltd. | 80,000 | Tsing-Yi, Hong Kong | E.P.C. | 1993 |
| Mobil Oil Hong Kong Ltd. | — (Modification) | Tsing-Yi, Hong Kong | B.E.P.C. | 1996 |
| Mobil Petroleum (Tianjin) Co., Ltd. | 48,000 | Tianjin, China | B.E.P.C. | 1997 |
| Esso (Tianjin) Co., Ltd. | 40,000 | Tianjin, China | B.E.P.C. | 1998 |
| Showa Shell Sekiyu K.K. | 133,500 | Yokohama, Japan | B.E.P.C. | 1998 |
| Esso (Zhejiang) Co., Ltd. | 40,000 | Ningbo, China | B.E.P.C. | 1998 |
| Nippon Petroleum Refining Co., Ltd. | — | Kanagawa, Japan | E.P.C. | 2006 |
| 【Grease Plant】 | | | | |
| Showa Sekiyu K.K. | Re. 9,000 (from 6,000) | Tsurumi, Japan | E.P.C. | 1978 |
| Mobil Petroleum (Tianjin) Co., Ltd. | 4,000 | Tianjin, China | B.E.P.C. | 1997 |
| Nippon Petroleum Refining Co., Ltd. | — | Kanagawa, Japan | E.P.C. | 2006 |
| 【Truck Loading】 | | | | |
| TonenGeneral Sekiyu K.K. | — | Kawasaki, Japan | E.P.C. | 2016 |

3. Petrochemical and Chemical Plants

Scope of Work

- F: FEED/FEL (Front End Loading)
- B: Basic Design
- E: Engineering
- P: Procurement
- PS: Procurement Service
- C: Construction and Start-up Assistance
- CM: Construction Management
- CS: Construction Supervision
- S: Field Supervision
- M: Start-up and Commissioning
- T: Training

Remarks

- Re: Revamping
- Ex: Expansion

3-1.Ethylene and Its Derivatives

| Client | Capacity (Tons/Year) | Location | Scope of Work | Year of Completion |
|---|-----------------------|-------------------------|---------------|--------------------|
| 【Ethylene】 | | | | |
| Tonen Petrochemical Co. | 40,000 | Kawasaki, Japan | E.P.C.* | 1962 |
| Kasei Mizushima Petrochemical Co., Ltd. | 45,000 | Mizushima, Japan | E.P.C. | 1964 |
| Kasei Mizushima Petrochemical Co., Ltd. | Ex. 15,000 | Mizushima, Japan | E.P.C.* | 1965 |
| Tonen Petrochemical Co. | Ex. 60,000 | Kawasaki, Japan | E.P.C.* | 1966 |
| Kasei Mizushima Petrochemical Co., Ltd. | Ex. 100,000 | Mizushima, Japan | E.P.C. | 1967 |
| Mitsubishi Petrochemical Co., Ltd. | 200,000 | Yokkaichi, Japan | E.P.C.* | 1968 |
| Maruzen Petrochemical Co., Ltd. | 300,000 (Hot Section) | Goi, Japan | E.P.C. | 1969 |
| Osaka Petrochemical Co., Ltd. | 300,000 | Sakai, Japan | E.P.C.* | 1969 |
| Mizushima Ethylene Co., Ltd. | 300,000 | Mizushima, Japan | E.P.C. | 1970 |
| Mitsubishi Petrochemical Co., Ltd. | 300,000 | Kashima, Japan | E.P.C.* | 1970 |
| Osaka Petrochemical Co., Ltd. | Ex. 100,000 | Sakai, Japan | E.P.C.* | 1971 |
| Shin-Daikyo Petrochemical Co., Ltd. | 300,000 | Yokkaichi, Japan | E.P.C. | 1971 |
| V/O Techmashimport | 450,000 | Nizhnekamsk, U.S.S.R. | E.P.S.* | 1973 |
| Sonatrach | 300,000 | Algeria | E.P.S.* | 1973 |
| Maruzen Petrochemical Co., Ltd. | Ex. 100,000 | | E.P.C.* | 1973 |
| Shin-Daikyo Petrochemical Co., Ltd. | Ex. 60,000 | Yokkaichi, Japan | E.P.C.* | 1974 |
| Mizushima Ethylene Co., Ltd. | Ex. 60,000 | Mizushima, Japan | E.P.C.* | 1975 |
| Union Carbide Corp. | Demo Plant 2,000 | Texas, U.S.A. | B.E.P.S. | 1979 |
| Shin-Daikyo Petrochemical Co., Ltd. | Ex. 60,000 | Yokkaichi, Japan | E.P.C.* | 1980 |
| Arabian Petrochemical Co. (PETROKEMYA) | 500,000 | Al-Jubail, Saudi Arabia | B.E.P.C. | 1985 |
| Maruzen Petrochemical Co., Ltd. | Ex. 40,000 | Chiba, Japan | E.P.C.* | 1989 |
| Tonen Chemical Co., Ltd. | Ex. 85,000 | Kawasaki, Japan | E.P.C.* | 1990 |
| Nigerian National Petroleum Corp. (NNPC) | 300,000 | Port Harcourt, Nigeria | B.E.P.C.M.T. | 1995 |
| Petrochemical Corporation of Singapore (Private) Ltd. | Offsite | Pulau Merbau, Singapore | E.P.C. | 1996 |
| Exxon Chemical Singapore Pte. Ltd. | 800,000 | Jurong, Singapore | E.P.C. | 2000 |
| Thai Olefins Public Co., Ltd. (TOC) | 300,000 | Rayong, Thailand | E.P.C. | 2004 |
| Jubail United Petrochemical Co. | 1,000,000 | Al-Jubail, Saudi Arabia | E.P.C. | 2004 |
| Mitsubishi Chemical Corp. | Ex. 150,000 | Kashima, Japan | E.P.C.* | 2005 |
| Jubail United Petrochemical Co. | Ex. 400,000 | Al-Jubail, Saudi Arabia | E.P.C.* | 2006 |
| Gulf Coast Growth Ventures LLC | 1,800,000 | Gulf of Mexico, U.S.A. | F.E.P.C. | 2021 |
| 【Polyethylene】 | | | | |
| 【Linear Low Density Polyethylene (LLDPE)】 | | | | |
| Eastern Petrochemical Co. (SHARQ) | 130,000 | Al-Jubail, Saudi Arabia | E.P.C. | 1985 |
| Samsung General Chemicals Co., Ltd. | 80,000 | Daesan, Korea | E. | 1993 |
| 【High Density Polyethylene (HDPE)】 | | | | |
| Kasei Mizushima Petrochemical Co., Ltd. | 20,000 | Mizushima, Japan | E.P.C. | 1968 |
| Kasei Mizushima Petrochemical Co., Ltd. | Ex. 10,000 | Mizushima, Japan | E.P.C. | 1970 |
| Kasei Mizushima Petrochemical Co., Ltd. | 60,000 | Mizushima, Japan | E.P.C. | 1973 |
| Hyundai Petrochemical Co., Ltd. | 100,000 | Daesan, Korea | E.P.S.C.S.M. | 1991 |
| 【Ethylene Oxide】 | | | | |
| Mitsubishi Petrochemical Co., Ltd. | 5,000 | Yokkaichi, Japan | E.P.C. | 1960 |
| Nisso Petrochemical Industries Co., Ltd. | 12,000 | Goi, Japan | E.P.C. | 1964 |
| Mitsubishi Petrochemical Co., Ltd. | 12,000 | Yokkaichi, Japan | E. | 1964 |
| Eastern Petrochemical Co. (SHARQ) | 240,000 | Al-Jubail, Saudi Arabia | E.P.C. | 1985 |
| Eastern Petrochemical Co. (SHARQ) | 240,000 | Al-Jubail, Saudi Arabia | E.P.C. | 1993 |
| Eastern Petrochemical Co. (SHARQ) | 360,000 | Al-Jubail, Saudi Arabia | E.P.C. | 2000 |

| 【Ethylene Glycol】 | | | | |
|--|-----------------|-------------------------|-----------|------|
| Mitsubishi Petrochemical Co., Ltd. | 4,000 | Yokkaichi, Japan | E.P.C. | 1960 |
| Nisso Petrochemical Industries Co., Ltd. | 15,000 | Goi, Japan | E.P.C. | 1964 |
| Mitsubishi Petrochemical Co., Ltd. | 9,000 | Yokkaichi, Japan | E. | 1964 |
| Eastern Petrochemical Co. (SHARQ) | 300,000 | Al-Jubail, Saudi Arabia | E.P.C. | 1985 |
| Eastern Petrochemical Co. (SHARQ) | 300,000 | Al-Jubail, Saudi Arabia | E.P.C. | 1993 |
| Eastern Petrochemical Co. (SHARQ) | 450,000 | Al-Jubail, Saudi Arabia | E.P.C. | 2000 |
| China Man-Made Fiber Co. | 400,000 | Kaohsiung, Taiwan | B. | 2005 |
| Rabigh Refining and Petrochemical Company (PETRO Rabigh) | 600,000 | Rabigh, Saudi Arabia | B. | 2005 |
| Eastern Petrochemical Co. (SHARQ) | 525,000 | Al-Jubail, Saudi Arabia | B. | 2011 |
| 【Alkyl Phenyl Ethoxylate (Nonionic Surfactant)】 | | | | |
| Lion Chemical Corp. | 10,000 | Kashima, Japan | E.P.C. | 1994 |
| 【Acetic Acid】 | | | | |
| Mizushima Synthetic Chemical Co., Ltd. | 50,000 | Mizushima, Japan | E.P.C. | 1964 |
| 【Peracetic Acid】 | | | | |
| Oxirane Chemical Co., Ltd. | 2,780 | Mie, Japan | B.E.P.C. | 1969 |
| Oxirane Chemical Co., Ltd. | Pilot Plant 150 | Mie, Japan | B.E.P.C. | 1973 |
| 【Ethyl Acetate】 | | | | |
| The Nippon Synthetic Chemical Industry Co., Ltd. | — | Ohgaki, Japan | B.E.P.C. | 1961 |
| Mizushima Synthetic Chemical Co., Ltd. | 15,000 | Mizushima, Japan | B.E.P.C. | 1964 |
| 【Vinyl Acetate Monomer】 | | | | |
| The Nippon Synthetic Chemical Industry Co., Ltd. | 9,000 | Kumamoto, Japan | E.P.C. | 1963 |
| The Nippon Synthetic Chemical Industry Co., Ltd. | 9,000 | Ohgaki, Japan | E.P.C. | 1963 |
| The Nippon Synthetic Chemical Industry Co., Ltd. | 21,600 | Kumamoto, Japan | E.P.C. | 1963 |
| The Nippon Synthetic Chemical Industry Co., Ltd. | 14,400 | Ohgaki, Japan | E.P.C. | 1964 |
| Mizushima Synthetic Chemical Co., Ltd. | 50,000 | Mizushima, Japan | E.P.C. | 1969 |
| Mizushima Synthetic Chemical Co., Ltd. | Ex. 50,000 | Mizushima, Japan | E.P.C. | 1971 |
| 【Polyvinyl Alcohol (PVA)】 | | | | |
| The Nippon Synthetic Chemical Industry Co., Ltd. | — | Kumamoto, Japan | B.E.P.C. | 1956 |
| Denki Kagaku Kogyo Co., Ltd. | — | Oume, Japan | B.E.P.C. | 1962 |
| Mizushima Synthetic Chemical Co., Ltd. | 12,000 | 85 | B.E.P.C. | 1967 |
| Mizushima Synthetic Chemical Co., Ltd. | Ex. 12,000 | Mizushima, Japan | B.E.P.C. | 1970 |
| The Nippon Synthetic Chemical Industry Co., Ltd. | 12,000 | Mizushima, Japan | E.C. | 1992 |
| 【Ethylene Dichloride (EDC)】 | | | | |
| Kureha Chemical Industry Co., Ltd. | — | Nishiki, Japan | B.E.P.C. | 1963 |
| Mitsubishi Monsanto Chemical Co. | 73,000 | Yokkaichi, Japan | E.P.C. | 1964 |
| British Oxygen Chemicals Ltd. | 51,000 | Maydown, England | B.E. | 1966 |
| Asahi-Penn Chemical Co., Ltd. | 58,500 | Chiba, Japan | E.P.C. | 1967 |
| Kureha Chemical Industry Co., Ltd. | — | Nishiki, Japan | B.E.P.C. | 1970 |
| Asahi-Penn Chemical Co., Ltd. | Ex. 30,000 | Chiba, Japan | E.P.C. | 1972 |
| Plastic Resins & Chemicals Inc. | — | Sahupuram, India | B.E.P.CS. | 1972 |
| V/O Techmashimport | — | Volgograd, U.S.S.R. | B.E.P.CS. | 1973 |
| PT. Asahimas Subentra Chemical (AMSC) | 300,000 | Anyer, Indonesia | B.E.P.C. | 1989 |
| 【Vinyl Chloride Monomer (VCM)】 | | | | |
| Kureha Chemical Industry Co., Ltd. | 30,000 | Nishiki, Japan | B.E.P.C. | 1963 |
| Mitsubishi Monsanto Chemical Co. | 43,000 | Yokkaichi, Japan | E.P.C. | 1964 |
| Norsk Hydro-Electrisk Heroya | 30,000 | Heroya, Norway | B.E. | 1966 |
| Asahi-Penn Chemical Co., Ltd. | 35,000 | Chiba, Japan | E.P.C. | 1967 |
| Kureha Chemical Industry Co., Ltd. | 120,000 | Nishiki, Japan | B.E.P.C. | 1970 |
| Asahi-Penn Chemical Co., Ltd. | Ex. 15,000 | Chiba, Japan | E.P.C. | 1972 |

| | | | | |
|---|------------|---------------------|---------------|------|
| Plastic Resins & Chemicals Inc. | 15,000 | Sahupuram, India | B.E.P.CS. | 1972 |
| V/O Techmashimport | 60,000 | Volgograd, U.S.S.R. | B.E.P.CS. | 1973 |
| PT. Asahimas Subentra Chemical (AMSC) | 150,000 | Anyer, Indonesia | E.P.C. | 1989 |
| 【Polyvinyl Chloride (PVC)】 | | | | |
| Plastic Resins & Chemicals Inc. | 15,000 | Sahupuram, India | B.E.PS. | 1972 |
| V/O Techmashimport | 60,000 | Volgograd, U.S.S.R. | B.E.PS. | 1973 |
| China National Technical Import and Export Corp. (CNTIC) | 15,000 | Fuzhou, China | B.E.P.CS.M.T. | 1988 |
| 【Vinylchloride-Vinylidene Chloride Copolymer (VdCP)】 | | | | |
| Kureha Kasei Co., Ltd. | 5,000 | Nishiki, Japan | B.E.P.C. | 1955 |
| Kureha Chemical Co., Ltd. | Latex — | Nishiki, Japan | E.P.C. | 1996 |
| 【Poly-Vinylidene Chloride (PVDC)】 | | | | |
| Nantong SKT New Material Co., Ltd. | 10,000 | Nantong, China | E.P.C. | 2005 |
| Kureha Corporation | 30,000 | Iwaki, Japan | E.P.C. | 2014 |
| 【Poly-Vinylidene Fluoride (PVDF)】 | | | | |
| Kureha Corporation | 2,000 | Iwaki, Japan | E.P.C. | 2018 |
| 【Methyl Chloroform (MC)】 | | | | |
| Asahi Glass Co., Ltd. | 15,000 | Chiba, Japan | E.P.C. | 1979 |
| 【Trichloroethylene (TCE)】 | | | | |
| Asahi-Penn Chemical Co., Ltd. | 10,000 | Chiba, Japan | E.P.C. | 1967 |
| Asahi-Penn Chemical Co., Ltd. | Ex. 16,000 | Chiba, Japan | E.P.C. | 1972 |
| 【Perchloroethylene (PCE)】 | | | | |
| Kureha Chemical Industry Co., Ltd. | 6,000 | Nishiki, Japan | E.P.C. | 1962 |
| Asahi-Penn Chemical Co., Ltd. | 10,000 | Chiba, Japan | E.P.C. | 1967 |
| Asahi-Penn Chemical Co., Ltd. | Ex. 16,000 | Chiba, Japan | E.P.C. | 1972 |
| 【α-Olefin】 | | | | |
| Idemitsu Petrochemical Co, Ltd. | 50,000 | Chiba, Japan | F. | 1987 |
| 【α-Olefin Oligomer】 | | | | |
| Lion Fat & Oil Co., Ltd. | 180 | Kawasaki, Japan | E.P.C. | 1973 |
| Lion Fat & Oil Co., Ltd. | 400 | Kawasaki, Japan | E.P.C. | 1976 |

* Cracker Design and Fabrication

3-2.Propylene and Its Derivatives

| Client | | Capacity (Tons/Year) | Location | Scope of Work | Year of Completion |
|--|------|-------------------------|-------------------------|---------------|-----------------------|
| 【Propane Dehydrogenation】 | | | | | |
| Tongyang Nylon Co., Ltd. | | 165,000 | Ulsan, Korea | E.P.S.C.S. | 1992 |
| 【Polypropylene】 | | | | | |
| Mitsubishi Petrochemical Co., Ltd. | | 17,000 | Yokkaichi, Japan | E.P.C. | 1962 |
| Mitsubishi Petrochemical Co., Ltd. | | 18,000 | Yokkaichi, Japan | E.P.C. | 1966 |
| Mitsubishi Petrochemical Co., Ltd. | | 22,000 | Yokkaichi, Japan | E.P.C. | 1967 |
| Mitsubishi Petrochemical Co., Ltd. | | 48,000 | Yokkaichi, Japan | E.P.C. | 1968 |
| Mitsubishi Petrochemical Co., Ltd. | | 80,000 | Yokkaichi, Japan | E.P.C. | 1970 |
| NV Nederlandse Staats Mijnen (DSM) | | 50,000 | The Netherlands | B. | 1973 |
| NV Nederlandse Staats Mijnen (DSM) | | 100,000 | The Netherlands | B. | 1976 |
| Mitsubishi Petrochemical Co., Ltd. | | 60,000 | Kashima, Japan | E.P.C. | 1980 |
| HIPOL-Hemijiska Industrija u Osnivanju | | 30,000 | Odzachi, Yugoslavia | E.P.C. | 1983 |
| Petkim Petrokimya A.S. | | 60,000 | Aliaga, Turkey | E.P.C. | 1985 |
| Polialden Petroquimica S.A. | BCP | 50,000 | Brazil | B. | 1990 |
| Polialden Petroquimica S.A. | HP | 50,000 | Brazil | B. | 1990 |
| Mitsubishi Chemical Industries, Ltd. | | | Mizushima, Japan | B.E.P.C. | 1991 |
| Petroquimica Ensenada S.A. (PETROKEN) | | 100,000 | Ensenada, Argentina | E.P.C. | 1991 |
| 【Propylene Oxide】 | | | | | |
| Showa Denko K.K. | | 2,200 | Kawasaki, Japan | E.P.C. | 1960 |
| Showa Denko K.K. | | 4,800 | Kawasaki, Japan | E.P.C. | 1961 |
| Showa Denko K.K. | | 12,000 | Kawasaki, Japan | E.P.C. | 1964 |
| 【Propylene Glycol】 | | | | | |
| Showa Denko K.K. | | 1,800 | Kawasaki, Japan | B.E.P.C. | 1960 |
| Showa Denko K.K. | | 2,200 | Kawasaki, Japan | B.E.P.C. | 1961 |
| Asahi-Denkakogyo K.K. | | 15,000 | Chiba, Japan | B.E.P.C. | 1979 |
| Seraya Chemicals Singapore (Pte.) Ltd. | | 30,000 | Pulau Seraya, Singapore | E.P.C. | 1997 |
| CNOOC and Shell Petrochemicals Co., Ltd. | | 60,000 | Huizhou, China | E.P.C.M | 2005 |
| 【Polyols】 | | | | | |
| Seraya Chemicals Singapore (Pte.) Ltd. | | 78,000 | Pulau Seraya, Singapore | E.P.C. | 1997 |
| CNOOC and Shell Petrochemicals Co., Ltd. | | 135,000 | Huizhou, China | E.P.C.M. | 2005 |
| 【Acrylonitrile】 | | | | | |
| Asahi Chemical Co. | | 30,000 | Kawasaki, Japan | E.P.C. | |
| Asahi Chemical Co. | | Ex. 15,000 | Nobeoka, Japan | E.P.C. | 1965 |
| 【Acrylic Fiber】 | | | | | |
| Ningbo Rayon Acrylic Fibers Co., Ltd. | | — | Ningbo, China | E.P. | 2005 |
| 【Acrylic Acid and Esters】 | | | | | |
| Idemitsu Kosan Co., Ltd. | AA | 30,000 | Chita, Japan | B.E.P.C. | 1991 |
| Idemitsu Kosan Co., Ltd. | BA | 15,000 | Chita, Japan | B.E.P.C. | 1991 |
| Idemitsu Kosan Co., Ltd. | 2EHA | 15,000 | Chita, Japan | B.E.P.C. | 1991 |
| 【Isopropyl Alcohol】 | | | | | |
| Shell Eastern Chemicals (Pte.) Ltd. | | 70,000 | Pulau Ular, Singapore | E.P.C. | 1990 |
| 【Acetone Cyanohydrin】 | | | | | |
| Nitto Chemical Industry Co., Ltd. | | 32,400 | Yokohama, Japan | B.E.P.C. | 1968 |
| Nitto Chemical Industry Co., Ltd. | | 32,400 | Ohtake, Japan | B.E.P.C. | 1971 |

| 【Methyl Methacrylate Monomer (MMA)】 | | | | | |
|---|--------|------------------|----------|------|--|
| Mitsubishi Rayon Co., Ltd. | 6,000 | Ohtake, Japan | B.E.P.C. | 1960 | |
| Mitsubishi Rayon Co., Ltd. | 12,000 | Ohtake, Japan | B.E.P.C. | 1963 | |
| Mitsubishi Rayon Co., Ltd. | 36,000 | Yokohama, Japan | B.E.P.C. | 1969 | |
| Mitsubishi Rayon Co., Ltd. | 60,000 | Osaka, Japan | B.E.P.C. | 1971 | |
| 【Polymethyl Methacrylate (PMMA) Sheet Plant】 | | | | | |
| Mitsubishi Rayon Polymer Nantong Co., Ltd. | — | Nantong, China | E.P.C. | 2005 | |
| Thai MMA Co., Ltd. | 20,000 | Rayong, Thailand | E.P.C.* | 2009 | |
| 【Alkyl Benzene (Hard Type)】 | | | | | |
| Mitsubishi Petrochemical Co., Ltd. | 15,000 | Yokkaichi, Japan | E.P.C. | 1962 | |
| Mitsubishi Petrochemical Co., Ltd. | 20,000 | Yokkaichi, Japan | E.P.C. | 1965 | |
| 【Alkyl Chloride】 | | | | | |
| Kashima Chemical Industry Co., Ltd. | 10,000 | Kashima, Japan | B.E. | 1970 | |
| 【Synthetic Glycerine】 | | | | | |
| Kashima Chemical Industry Co., Ltd. | 10,000 | Kashima, Japan | B.E.P.C. | 1970 | |

* C: Chiyoda (Thailand) Limited.

3-3.C₄/C₅ Fractions and Derivatives

| Client | Capacity (Tons/Year) | Location | Scope of Work | Year of Completion |
|--|--------------------------|-------------------------|---------------|--------------------|
| 【Butane Dehydrogenation】 | | | | |
| Qatar Fuel Additives Co., Ltd. (QAFAC) | 390,000 | Umm Said, Qatar | E.P.C.M. | 1999 |
| 【Butadiene Extraction】 | | | | |
| Japan Synthetic Rubber Co., Ltd. | 45,000 | Yokkaichi, Japan | E.P.C. | 1960 |
| Tonen Petrochemical Co. | 18,700 | Kawasaki, Japan | E.P.C. | 1962 |
| Japan Synthetic Rubber Co., Ltd. | 50,000 | Yokkaichi, Japan | E.P.C. | 1964 |
| Japan Synthetic Rubber Co., Ltd. | 50,000 | Chiba, Japan | E.P.C. | 1966 |
| Japan Synthetic Rubber Co., Ltd. | 80,000 | Chiba, Japan | E.P.C. | 1969 |
| Japan Synthetic Rubber Co., Ltd. | 50,000 | Kashima, Japan | E.P.C. | 1971 |
| Japan Synthetic Rubber Co., Ltd. | 95,000 | Yokkaichi, Japan | E.P.C. | 1976 |
| Samsung General Chemical Corp. / Lummus | 60,000 | Daesan, Korea | B. | 1989 |
| Hyundai Petrochemical Corp. / M.W. Kellogg Ltd. | 60,000 | Daesan, Korea | B. | 1989 |
| Lucky Petrochemical Corp. | 60,000 | Yosu, Korea | B. | 1989 |
| Cain Chemical Inc. | 150,000 | Houston, U.S.A. | B. | 1989 |
| Japan Synthetic Rubber Co., Ltd. | Ex. 120,000 | Kashima, Japan | E.P.C. | 1992 |
| China National Technical Import and Export Corp. (CNTIC)/ Fushun Petrochemical Complex | 17,000 | | B.E.P.CS.M.T. | 1992 |
| PTT Global Chemical Company Limited | Undisclosable | Map Ta Phut, Thailand | E.P.C. | 2013 |
| 【Styrene Butadiene Rubber (SBR)】 | | | | |
| Japan Synthetic Rubber Co., Ltd. | 45,000 (as monomer feed) | Yokkaichi, Japan | E.P.C. | 1960 |
| Dainippon Ink & Chemicals, Inc. | Latex 1,800 | Chiba, Japan | E.P.C. | 1967 |
| Dow S/B Latex (Zhangjiagang) Co., Ltd. | Latex 22,000 | Zhangjiagang, China | E.P.S.C. | 2002 |
| 【MBS Resin】 | | | | |
| Kureha Chemicals Singapore (Pte.) Ltd. | 16,000 | Pulau Merbau, Singapore | E.P.C. | 1990 |
| Kureha Chemicals Singapore (Pte.) Ltd. | 16,000 | Pulau Merbau, Singapore | B.E.P.C.M. | 1996 |
| 【Iso-Butene & Butene-1】 | | | | |
| Dainippon Ink & Chemicals, Inc. | Iso-Butene 6,000 | Chiba, Japan | E.P.C. | 1969 |
| Dainippon Ink & Chemicals, Inc. | Butene-1 7,200 | Chiba, Japan | E.P.C. | 1969 |
| Idemitsu Petrochemical Co., Ltd. | Butene-1 35,000 | Tokuyama, Japan | E.P.C. | 1985 |
| Yukong Ltd. | Butene-1 45,000 | Ulsan, Korea | B. | 1989 |
| China National Technical Import and Export Corp. (CNTIC)/Fushun Petrochemical Complex | Butene-1 10,000 | Fushun, China | B.E.P.CS.M.T. | 1992 |
| 【Methyl Tertiary Butyl Ether (MTBE)】 | | | | |
| Tetra Chemicals (Singapore) Pte. Ltd. | 50,000 | Pulau Merbau, Singapore | E.P.C. | 1987 |
| Qatar Fuel Additives Co., Ltd. (QAFAC) | 610,000 | Umm Said, Qatar | E.P.C.M. | 1999 |
| 【Isobutylene-Isoprene Rubber (IIR)】 | | | | |
| Japan Butyl Co., Ltd. | 30,000 | Kawasaki, Japan | E.P.C. | |
| 【Sec-Butyl Alcohol (SBA)】 | | | | |
| Maruzen Oil Co., Ltd. | 5,000 | Shimozu, Japan | B.E.P.C. | 1958 |
| Maruzen Oil Co., Ltd. | 13,000 | Chiba, Japan | B.E.P.C. | 1968 |
| Maruzen Oil Co., Ltd. | Ex. 34,000 | Chiba, Japan | B.E. | 1978 |
| Idemitsu Petrochemical Co., Ltd. | 35,000 | Tokuyama, Japan | B.E.P.C. | 1985 |
| Idemitsu Petrochemical Co., Ltd. | Ex. 6,000 | Tokuyama, Japan | E. | 1989 |

| 【Methyl Ethyl Ketone (MEK)】 | | | | |
|---|------------|------------------|---------------|------|
| Maruzen Oil Co., Ltd. | 5,000 | Shimozu, Japan | B.E.P.C. | 1958 |
| Maruzen Oil Co., Ltd. | 13,000 | Chiba, Japan | B.E.P.C. | 1968 |
| Maruzen Oil Co., Ltd. | Ex. 34,000 | Chiba, Japan | B.E. | 1978 |
| Idemitsu Engineering Co., Ltd. | 30,000 | Tokuyama, Japan | B.E.P.C. | 1985 |
| Idemitsu Engineering Co., Ltd. | Ex. 6,000 | Tokuyama, Japan | E. | 1986 |
| 【Iso-Octene】 | | | | |
| Idemitsu Petrochemical Co., Ltd. | 11,000 | Tokuyama, Japan | E.P.C. | 1985 |
| China National Technical Import and Export Corp. (CNTIC)/Fushun Petrochemical Complex | 5,000 | Fushun, China | B.E.P.CS.M.T. | 1992 |
| Seibu Oil Co., Ltd. | 22,000 | Yamaguchi, Japan | E.P.C. | 1993 |
| 【Isoprene Extraction】 | | | | |
| Nippon Petrochemical Co., Ltd. | 4,000 | Kawasaki, Japan | B.E.P.C. | 1970 |
| Kashima Isoprene Co., Ltd. | 30,000 | Kashima, Japan | B.E.P.C. | 1972 |
| 【Polyisoprene (Isoprene Rubber)】 | | | | |
| Japan Polyisoprene Co., Ltd. | 30,000 | Kashima, Japan | E.P.C. | 1972 |
| 【Polyisoprene (Isoprene Rubber)】 | | | | |
| Japan Polyisoprene Co., Ltd. | 30,000 | Kashima, Japan | E.P.C. | 1972 |
| 【C5 Resin】 | | | | |
| Tonen Petrochemical Co., Ltd. | 6,000 | Kawasaki, Japan | E.P.C. | 1989 |
| Zeon Chemical (Thailand) Co., Ltd. | 20,000 | Rayong, Thailand | E.P.C. | 1998 |

3-4.Aromatics

| Client | Capacity (Tons/Year) | Location | Scope of Work | Year of Completion |
|--|--|-------------------------|---------------|--------------------|
| 【Cracked Gasoline Hydrogenation】 | | | | |
| Mitsubishi Petrochemical Co., Ltd. | 160,000 | Kashima, Japan | B.E.P.C. | 1970 |
| China National Technical Import Corp. (CNITC)/ China Petrochemical Co. (SINOPEC) | 109,400 | Shanghai, China | B.E.P.CS.M. | 1976 |
| 【Light Naphtha (Paraffins) To Aromatics】 | | | | |
| Mitsubishi Oil Co., Ltd. | Pilot 200 BPSD | Kawasaki, Japan | E.P.C. | 1990 |
| Idemitsu Kosan Co., Ltd. | Undisclosable (as benzene) | Chiba, Japan | E.P.C. | 1992 |
| Arabian Industrial Fibers Co. (Ibn Rushd) | 1,332,000 (as C ₃ /C ₄ Feed) | Yanbu, Saudi Arabia | E.P.C. | 1998 |
| Saudi Chevron Petrochemical Co., Ltd. | 2,261,000 | Al-Jubail, Saudi Arabia | E.P.C. | 1999 |
| 【BTX Extraction】 | | | | |
| Mitsubishi Oil Co., Ltd. | 20,000 | Kawasaki, Japan | E.P.C. | 1958 |
| Petromin Shell Refinery Co. | 370,000 | Al-Jubail, Saudi Arabia | E.P.C. | 1985 |
| Mitsubishi Gas Chemical Co., Inc. | 40,000 | Mizushima, Japan | E.P.C. | 1986 |
| Kyung In Energy Co., Ltd. | 260,000 | Inchon, Korea | E.P.PS.CS. | 1991 |
| Taiyo Oil Co., Ltd. | 240,000 | Kikuma, Japan | E.P.C. | 1991 |
| Showa Yokkaichi Sekiyu Co., Ltd. | 250,000 | Yokkaichi, Japan | E.P.C. | 1992 |
| Idemitsu Kosan Co., Ltd. | | Chiba, Japan | E.P.C. | 1992 |
| Fuji Oil Co., Ltd. | 180,000 | Chiba, Japan | E.P.C. | 1993 |
| Taiyo Oil Co., Ltd. | Ex. to 9,100 BPSD | Kikuma, Japan | E.P.C. | 1996 |
| Adchemco Co. | 130,000 | Sasaoka, Japan | E.P.C.M. | 1994 |
| Seibu Oil Co., Ltd. | 150,000 | Onoda, Japan | E.P.C. | 1998 |
| Showa Yokkaichi Sekiyu Co., Ltd./Shoseki Engineering & Construction Co., Ltd. | 155,000 | Yokkaichi, Japan | E.P.C. | 1998 |
| Tohoku Oil Co., Ltd./Mitsubishi Oil Engineering Co., Ltd. | — | Sendai, Japan | E.P.C. | 1999 |
| Kashima Aromatics Co., Ltd. | 190,000 | Kashima, Japan | E.P.C. | 2007 |
| Toa Oil Co., Ltd. | 120,000 | Kawasaki, Japan | E.P.C. | 2011 |
| 【Benzene (Hydrodealkylation)】 | | | | |
| Mitsubishi Petrochemical Co., Ltd. | 110,000 | Yokkaichi, Japan | B.E.P.C. | 1967 |
| Toray Industries, Inc. | 156,000 | Kawasaki, Japan | E.P.C. | 1969 |
| Mitsubishi Petrochemical Co., Ltd. | 130,000 | Kashima, Japan | B.E.P.CS. | 1970 |
| Union Rheinische Braunkohlen Kraftstoff A.G. | 100,000 | Wesseling, W. Germany | B.E. | 1975 |
| Empresa Nacional Del Petroleo S.A. | 80,000 | Ciudadreal, Spain | B.E. | 1976 |
| V/O Techmashimport | 200,000 | Nizhnekamsk, U.S.S.R. | B.E.CS. | 1976 |
| V/O Techmashimport | 120,000 | Krasnodar, U.S.S.R. | B.E.P.CS. | |
| Petromin Shell Refinery Co. | 220,000 | Al-Jubail, Saudi Arabia | E.P.C. | 1985 |
| Nigerian National Petroleum Corp. (NNPC) | 15,000 | Kaduna, Nigeria | E.P.C. | 1987 |
| Nippon Steel Chemical Co., Ltd. | 177,000 | Ohita, Japan | B.E.P.C. | 1990 |
| Nippon Mining Co., Ltd. | 100,000 | Mizushima, Japan | B.E.P.C. | 1990 |
| Taiyo Oil Co., Ltd. | 383,000 | Kikuma, Japan | B.E.P.C. | 1991 |
| Mitsubishi Petrochemical Co., Ltd. | 130,000 | Kashima, Japan | E.P.C. | 1992 |
| Fuji Oil Co., Ltd. | 95,000 | Chiba, Japan | E.P.C. | 1993 |
| Arabian Industrial Fibers Co. (Ibn Rushd) | 349,000 | Yanbu, Saudi Arabia | E.P.C. | 1998 |
| Saudi Chevron Petrochemical Co., Ltd. | 480,000 | Al-Jubail, Saudi Arabia | E.P.C. | 1999 |
| 【Ethylbenzene (EB)】 | | | | |
| Mitsubishi Petrochemical Co., Ltd. | 19,000 | Yokkaichi, Japan | E.P.C. | 1959 |
| Mitsubishi Petrochemical Co., Ltd. | 38,000 | Yokkaichi, Japan | E.P.C. | 1963 |
| Mitsubishi Petrochemical Co., Ltd. | 45,000 | Yokkaichi, Japan | E.P.C. | 1965 |
| Mitsubishi Petrochemical Co., Ltd. | 70,000 | Yokkaichi, Japan | E.P.C. | 1968 |
| Mitsubishi Petrochemical Co., Ltd. | 100,000 | Kashima, Japan | E.P.C. | 1970 |

| | | | | | |
|--|-------------|-----------------------------|-------------------------|---------------|------|
| Mitsubishi Petrochemical Co., Ltd. | | 200,000 | Kashima, Japan | E.P.C. | 1975 |
| Seraya Chemicals Singapore (Pte.) Ltd. | | Unannounced | Pulau Seraya, Singapore | E.P.C. | 1997 |
| CNOOC and Shell Petrochemicals Co., Ltd. | | Unannounced | Huizhou, China | E.P.C.M. | 2005 |
| 【Styrene Monomer (SM)】 | | | | | |
| Mitsubishi Petrochemical Co., Ltd. | | 15,000 | Yokkaichi, Japan | E.P.C. | 1959 |
| Mitsubishi Petrochemical Co., Ltd. | | 30,000 | Yokkaichi, Japan | E.P.C. | 1963 |
| Mitsubishi Petrochemical Co., Ltd. | | 36,000 | Yokkaichi, Japan | E.P.C. | 1965 |
| Mitsubishi Petrochemical Co., Ltd. | | 54,000 | Yokkaichi, Japan | E.P.C. | 1968 |
| Mitsubishi Petrochemical Co., Ltd. | | 80,000 | Kashima, Japan | E.P.C. | 1970 |
| Mitsubishi Petrochemical Co., Ltd. | | 160,000 | Kashima, Japan | E.P.C. | 1975 |
| Mitsubishi Petrochemical Co., Ltd. | | Ex. 54,000 | Yokkaichi, Japan | E.P.C. | 1980 |
| Mitsubishi Petrochemical Co., Ltd. | | Ex. 96,000 | Yokkaichi, Japan | E.P.C. | 1982 |
| 【Polystyrene】 | | | | | |
| Kokan Kagaku K.K. | GPS/HPS/EPS | 9,000 | Kawasaki, Japan | E.P.C. | 1960 |
| Kokan Kagaku K.K. | GPS/HPS/EPS | 9,000 | Kawasaki, Japan | E.P.C. | 1963 |
| Arabian Petrochemical Co. (PETROKEMYA) | EPS | 30,000 | Al-Jubail, Saudi Arabia | E.P.C. | 1987 |
| Arabian Petrochemical Co. (PETROKEMYA) | GPS | 20,000 | Al-Jubail, Saudi Arabia | E.P.C. | 1987 |
| Arabian Petrochemical Co. (PETROKEMYA) | HPS | 50,000 | Al-Jubail, Saudi Arabia | E.P.C. | 1987 |
| Denki Kagaku Kogyo Co., Ltd. | GPS | 30,000 | Chiba, Japan | B.E.P.C. | 1988 |
| Denki Kagaku Kogyo Co., Ltd. | GPS | 40,000 | Chiba, Japan | B.E.P.C. | 1990 |
| HMT Polystyrene Co., Ltd. | GPS | 60,000 | Rayong, Thailand | E.P.C. | 1998 |
| SAL Petrochemical (Zhangjiagang) Co., Ltd. | GPS/HPS | 120,000 | Zhangjiagang, China | E.P.S.C. | 2002 |
| 【Styrene-Acrylonitrile Copolymer (AS)】 | | | | | |
| Cheil Industries Incorporated | | 30,000 | Yocheon, Korea | B. | 1990 |
| DSM-Kunststoffen B.V. | | 20,000 | Geleen, Netherland | B. | 1990 |
| 【Styrene Monomer and Propylene Oxide (SM/PO)】 | | | | | |
| Seraya Chemicals Singapore (Pte.) Ltd. | | SM 315,000 PO 140,000 | Pulau Seraya, Singapore | E.P.C. | 1997 |
| CNOOC and Shell Petrochemicals Co., Ltd. | | SM 560,000 PO 250,000 | Huizhou, China | E.P.C.M. | 2005 |
| 【Cyclohexane】 | | | | | |
| Mitsubishi Petrochemical Co., Ltd. | | 30,000 | Yokkaichi, Japan | E.P.C. | 1968 |
| Nitrocarbone S.A. | | 85 | Camacari, Brazil | E.P.CS. | 1978 |
| The Fertilisers and Chemicals Travancore Ltd. | | 52,000 | Cochin, India | E.P.CS. | 1989 |
| Saudi Chevron Petrochemical Co., Ltd. | | 220,000 | Al-Jubail, Saudi Arabia | E.P.C. | 1999 |
| 【Caprolactam】 | | | | | |
| Ube Industries. Ltd. | | Cyclohexane Oxime 70,000 | Sakai, Japan | E.P.C. | 1972 |
| Hankook Caprolactam Corp. | | 33,000 | Ulsan, Korea | E.P.CS. | 1974 |
| Nitrocarbone S.A. | | 35,000 | Camacari, Brazil | E.P.CS. | 1978 |
| Hankook Caprolactam Corp. | | Ex. 33,000 | Ulsan, Korea | E.PS. | 1988 |
| The Fertilisers and Chemicals Travancore Ltd. | | 50,000 | Udyogamandar, India | E.P.CS. | 1989 |
| China Petrochemical International (SINOPEC-INTER)/ Yueyang Petrochemical Complex | | 50,000 | Yueyang, China | E.P.CS.M.T. | 1992 |
| China Petrochemical Development Corp. | | 120,000 | Kaohsiung, Taiwan | E.P.CS. | 2000 |
| 【Bisphenol-A (BPA)】 | | | | | |
| Nippon Steel Chemical Co., Ltd. | | 70,000 | Tobata, Japan | B.E.P.C. | 1991 |
| Taiwan Prosperity Chemical Corp. | | 25,000 | Kaohsiung, Taiwan | B.E.P.C. | 1995 |
| Mitsubishi Chemical Corp. | | 70,000 | Kashima, Japan | B.E.P.C. | 1997 |
| Nippon Steel Chemical Co., Ltd. | | Ex. 25,000 | Tobata, Japan | B.E. | 1999 |
| Mitsubishi Chemical Corp. | | Ex. 30,000 | Kashima, Japan | B.E.P.C. | 2000 |
| Mitsubishi Chemical Corp. | | 100,000 | Kurosaki, Japan | B.E.P.C. | 2002 |
| China National Blue Star (Group) Corp./Wuxi Resin Plant of Xingchen Chemical Engineering New Materials Co., Ltd. | | 25,000 | Wuxi, China | B.E.P.CS.M.T. | 2003 |
| Huizhou Haicheng Chemical Co., Ltd. | | 25,000 | Huizhou, China | B.E.P.CS.M.T. | 2006 |

| 【Epoxy Resins】 | | | | | |
|---|-----------------|---------------------|---------------------|------------|------|
| Dainippon Ink & Chemicals, Inc. | | 6,000 | Chiba, Japan | B.E.P.C. | 1970 |
| Asahi Denka Kogyo K.K. | | 6,000 | Chiba, Japan | B.E.P.C. | 1985 |
| Dow Chemicals Co., Ltd. | | 20,000 | Kinuura, Japan | E.P.C. | 1988 |
| The Dow Chemical (Zhangjiagang) Co., Ltd. | | 41,000 | Zhangjiagang, China | E.PS.CS.C. | 2003 |
| 【Alkyl Phenol】 | | | | | |
| Dainippon Ink & Chemicals, Inc. | | 1,200 | Chiba, Japan | B.E.P.C. | 1966 |
| Dainippon Ink & Chemicals, Inc. | | 2,400 | Chiba, Japan | B.E.P.C. | 1969 |
| Dainippon Ink & Chemicals, Inc. | | 4,800 | Chiba, Japan | B.E.P.C. | 1972 |
| Dainippon Ink & Chemicals, Inc. | | 20,000 | Chiba, Japan | B.E.P.C. | 1982 |
| Dainippon Ink & Chemicals, Inc. | | 7,000 | Chiba, Japan | B.E.P.C. | 1990 |
| 【Maleic Anhydride】 | | | | | |
| Yahata Maleic Acid Industries, Ltd. | | — | Tobata, Japan | B.E.P.C. | 1956 |
| Takeda Chemical Industries, Ltd. | | 16,000 | Yamaguchi, Japan | B.E.P.C. | 1959 |
| Takeda Chemical Industries, Ltd. | | 32,000 | Yamaguchi, Japan | B.E.P.C. | 1961 |
| 【Tetrahydrofuran (THF)】 | | | | | |
| Nippon Hydrofuran Co., Ltd. | | 4,000 | Mizushima, Japan | B.E.P.C. | 1971 |
| Imperial Chemical Industries, Ltd. (ICI) | | 3,000 | Sevenston, England | B.E. | 1972 |
| 【γ-Butyrolactone (GBL)】 | | | | | |
| Nippon Hydrofuran Co., Ltd. | | 1,000 | Mizushima, Japan | B.E.P.C. | 1971 |
| Imperial Chemical Industries, Ltd. (ICI) | | 2,000 | Sevenston, England | B.E. | 1972 |
| 【Linear Alkyl Benzene (LAB)】 | | | | | |
| Mitsubishi Petrochemical Co., Ltd. | | Ex. 25,000 | Yokkaichi, Japan | E.P.C. | 1970 |
| 【Synthetic Detergent】 | | | | | |
| Lion Fat & Oil Co., Ltd. | | 40,000 | Kokura, Japan | E.P.C. | 1961 |
| Lion Fat & Oil Co., Ltd. | | 60,000 | Kawasaki, Japan | E.P.C. | 1965 |
| Lion Fat & Oil Co., Ltd. | | 60,000 | Sakai, Japan | E.P.C. | 1967 |
| Lion Fat & Oil Co., Ltd. | | 60,000 | Kawasaki, Japan | E.P.C. | 1969 |
| Lion Fat & Oil Co., Ltd. | | Ex. 60,000 | Sakai, Japan | E.P.C. | 1972 |
| Lion Corp. | | 60,000 | Chiba, Japan | E.P.C. | 1982 |
| 【Methylene Dianiline/Diphenylmethane Diisocyanate (MDA/MDI)】 | | | | | |
| Undisclosable | MDA/MDI | Unannounced | Undisclosable | F. | 2001 |
| Sumika Bayer Urethane Co., Ltd. | MDA/MDI | Ex. 20,000 | Niihama, Japan | E.P.C. | 2002 |
| 【Toluene Diamine/Toluene Diisocyanate (TDA/TDI)】 | | | | | |
| Undisclosable | TDA/TDI | Unannounced | Undisclosable | F. | 2001 |
| 【Phenol】 | | | | | |
| Nippon Steel Chemical Co., Ltd. | | 120,000 | Tobata, Japan | B.E.P.C. | 1991 |
| Undisclosable | | 27,000 | Undisclosable | F. | 1999 |
| 【Benzoate Group】 | | | | | |
| Undisclosable | Benzoic Acid | 4,500 | Undisclosable | F. | 1999 |
| Undisclosable | Sodium Benzoate | 4,500 | Undisclosable | F. | 1999 |
| Undisclosable | Benzoaldehyde | 5,400 | Undisclosable | F. | 1999 |
| 【Xylene Disproportionation】 | | | | | |
| Kyung In Energy Co., Ltd. | | 350,000 (as Feed) | Inchon, Korea | E.P.PS.CS. | 1991 |
| Arabian Industrial Fibers Co. (Ibn Rushd) | | 220,000 (as Xylene) | Yanbu, Saudi Arabia | E.P.C. | 1998 |
| Kashima Aromatics Co., Ltd. | | 15,000 BPSD | Kashima, Japan | E.P.C. | 2007 |
| Taiyo Oil Co., Ltd. | | 10,000 BPSD | Kikuma, Japan | E.P.C. | 2014 |
| 【Ethylbenzene Separation】 | | | | | |
| Mitsubishi Gas Chemical Co., Ltd. | | 55,000 | Mizushima, Japan | B.E.P.C. | 1972 |
| 【Xylene Isomerization】 | | | | | |
| Mitsubishi Gas Chemical Co., Inc. | | 100,000 | Mizushima, Japan | B.E.P.C. | 1968 |

| | | | | | |
|--|-----|---------------------------|---------------------|---------------|------|
| Anic S.P.A. | | 200,000 | Italy | B.E. | 1971 |
| Mitsubishi Gas Chemical Co., Inc. | | 150,000 | Mizushima, Japan | B.E.P.C. | 1972 |
| Amoco Chemicals Corp. | | 200,000 | U.S.A. | B.E. | 1973 |
| Mitsubishi Gas Chemical Co., Inc. | | Ex. 100,000 | Mizushima, Japan | B.E.P.C. | 1978 |
| Mitsubishi Oil Co., Ltd. | | 130,000 (as P-Xylene) | Mizushima, Japan | E.P.C. | 1988 |
| Mitsubishi Oil Co., Ltd. | | 150,000 (as P-Xylene) | Mizushima, Japan | E.P.C. | 1990 |
| Kashima Oil Co., Ltd. | | 100,000 (as P-Xylene) | Kashima, Japan | E.P.C. | 1991 |
| Ohita Paraxylene Co., Ltd. | | 300,000 (as P-Xylene) | Ohita, Japan | E.P.C.M. | 1997 |
| Arabian Industrial Fibers Co. (Ibn Rushd) | | 375,000 (as P-Xylene) | Yanbu, Saudi Arabia | E.P.C. | 1998 |
| Kashima Aromatics Co., Ltd. | | 420,000 (as P-Xylene) | Kashima, Japan | E.P.C. | 2007 |
| 【Para-Xylene Separation】 | | | | | |
| Mitsubishi Gas Chemical Co., Inc. | | 30,000 | Mizushima, Japan | B.E.P.C. | 1968 |
| Toray Industries, Inc. | | 73,000 | Kawasaki, Japan | E.P.C. | 1969 |
| Anic S.P.A. | | 78,000 | Italy | B.E. | 1971 |
| Mitsubishi Gas Chemical Co., Inc. | | 50,000 | Mizushima, Japan | B.E.P.C. | 1972 |
| Toray Industries, Inc. | | 110,000 | Kawasaki, Japan | B.E.P.C. | 1973 |
| China National Technical Import Corp. (CNTIC) | | 17,200 | Shanghai, China | E.P.CS.M. | 1976 |
| Mitsubishi Gas Chemical Co., Inc. | | Ex. 31,000 | Mizushima, Japan | B.E.P.C. | 1978 |
| Mitsubishi Oil Co., Ltd. | | 130,000 | Mizushima, Japan | E.P.C. | 1987 |
| Mitsubishi Oil Co., Ltd. | | 150,000 | Mizushima, Japan | E.P.C. | 1990 |
| Kashima Oil Co., Ltd. | | 100,000 | Kashima, Japan | E.P.C. | 1991 |
| Ohita Paraxylene Co., Ltd. | | 300,000 | Ohita, Japan | E.P.C.M. | 1997 |
| Arabian Industrial Fibers Co. (Ibn Rushd) | | 375,000 | Yanbu, Saudi Arabia | E.P.C. | 1998 |
| Ohita Paraxylene Co., Ltd. | | Re 420,000 (from 300,000) | Ohita, Japan | E.P.C. | 2005 |
| 【Meta-Xylene Separation】 | | | | | |
| Mitsubishi Gas Chemical Co., Inc. | | 70,000 | Mizushima, Japan | E.P.C. | 2009 |
| 【Terephthalic Acid】 | | | | | |
| Kawasaki Chemicals, Ltd. | CTA | — | Kawasaki, Japan | E.P.C. | 1965 |
| Mizushima Aroma Co., Ltd. | PTA | 36,000 | Mizushima, Japan | B.E.P.C. | 1972 |
| Mizushima Aroma Co., Ltd. | CTA | 56,000 | Mizushima, Japan | B.E.P.C. | 1972 |
| Mizushima Aroma Co., Ltd. | CTA | 70,000 | Mizushima, Japan | B.E.P.C. | 1977 |
| China American Petrochemical Co., Ltd. (CAPCO) | PTA | 150,000 | Lin-Yuan, Taiwan | E.P.C. | 1979 |
| China American Petrochemical Co., Ltd. (CAPCO) | CTA | 155,000 | Lin-Yuan, Taiwan | E.P.C. | 1979 |
| China American Petrochemical Co., Ltd. (CAPCO) | PTA | 150,000 | Lin-Yuan, Taiwan | E.P.C. | 1982 |
| China American Petrochemical Co., Ltd. (CAPCO) | CTA | 155,000 | Lin-Yuan, Taiwan | E.P.C. | 1982 |
| Samsung Petrochemical Co., Ltd. | PTA | 200,000 | Ulsan, Korea | E.PS. | 1987 |
| Samsung Petrochemical Co., Ltd. | CTA | 200,000 | Ulsan, Korea | E.PS. | 1987 |
| China American Petrochemical Co., Ltd. (CAPCO) | PTA | 225,000 | Lin-Yuan, Taiwan | E.P.C. | 1989 |
| China American Petrochemical Co., Ltd. (CAPCO) | CTA | 230,000 | Lin-Yuan, Taiwan | E.P.C. | 1989 |
| China American Petrochemical Co., Ltd. (CAPCO) | PTA | 225,000 | Lin-Yuan, Taiwan | E.P.C. | 1990 |
| China American Petrochemical Co., Ltd. (CAPCO) | CTA | 230,000 | Lin-Yuan, Taiwan | E.P.C. | 1990 |
| China American Petrochemical Co., Ltd. (CAPCO) | PTA | 350,000 | Lin-Yuan, Taiwan | E.P.C. | 1995 |
| China American Petrochemical Co., Ltd. (CAPCO) | CTA | 350,000 | Lin-Yuan, Taiwan | E.P.C. | 1995 |
| Samsung Petrochemical Co., Ltd. | PTA | 250,000 | Ulsan, Korea | B.E.P.C.CS.M. | 1995 |
| Samsung Petrochemical Co., Ltd. | CTA | 250,000 | Ulsan, Korea | B.E.P.C.CS.M. | 1995 |
| PT. Amoco Mitsui PTA Indonesia | PTA | 350,000 | Merak, Indonesia | E.P.C. | 1997 |
| PT. Amoco Mitsui PTA Indonesia | CTA | 350,000 | Merak, Indonesia | E.P.C. | 1997 |
| Mizushima Aroma Co., Ltd. | PTA | 250,000 | Mizushima, Japan | B.E.P.C. | 1997 |
| Mizushima Aroma Co., Ltd. | CTA | Ex. 100,000 | Mizushima, Japan | B.E.P.C. | 1997 |
| Amoco-Zhuhai Chemical Co., Ltd. | PTA | 250,000 | Zhuhai, China | B.E.P.C. | 1997 |
| Amoco-Zhuhai Chemical Co., Ltd. | CTA | 250,000 | Zhuhai, China | B.E.P.C. | 1997 |
| SINOPEC-INTER / Luoyang Petrochemical Complex | PTA | 225,000 | Luoyang, China | B.E.P.CS.M.T. | 2000 |
| SINOPEC-INTER / Luoyang Petrochemical Complex | CTA | 225,000 | Luoyang, China | B.E.P.CS.M.T. | 2000 |

| | | | | | |
|--|--------------|--|---------------------|----------|------|
| 【Dimethyl Terephthalate (DMT)】 | | | | | |
| Mitsubishi Chemical Industries, Ltd. | | 6,000 | Kurosaki, Japan | E.P.C. | 1964 |
| Kawasaki Chemicals, Ltd. | | 5,400 | Kawasaki, Japan | B.E.P.C. | 1965 |
| 【Ortho-Xylene Separation】 | | | | | |
| Mitsubishi Gas Chemical Co., Inc. | | 32,000 | Mizushima, Japan | B.E.P.C. | 1968 |
| Anic S.P.A. | | 79,000 | Italy | B.E. | 1971 |
| Mitsubishi Gas Chemical Co., Inc. | | 28,000 | Mizushima, Japan | B.E.P.C. | 1972 |
| Mitsubishi Gas Chemical Co., Inc. | | Ex. 10,000 | Mizushima, Japan | B.E.P.C. | 1978 |
| Arabian Industrial Fibers Co. (Ibn Rushd) | | 45,000 | Yanbu, Saudi Arabia | E.P.C. | 1998 |
| 【Phthalic Anhydride】 | | | | | |
| Kawasaki Chemicals, Ltd. | | 16,000 | Kawasaki, Japan | E.P.C. | 1968 |
| Kawasaki Chemicals, Ltd. | | 13,000 | Kawasaki, Japan | E.P.C. | 1969 |
| Kawasaki Chemicals, Ltd. | | 29,000 | Kawasaki, Japan | E.P.C. | 1971 |
| 【Meta-Xylene】 | | | | | |
| Mitsubishi Gas Chemical Co., Inc. | | 20,000 | Mizushima, Japan | B.E.P.C. | 1968 |
| Anic S.P.A. | | 42,000 | Italy | B.E. | 1971 |
| Mitsubishi Gas Chemical Co., Inc. | | 30,000 | Mizushima, Japan | B.E.P.C. | 1972 |
| Amoco Chemicals Corp. | | 80,000 | U.S.A. | B.E. | 1973 |
| Mitsubishi Gas Chemical Co., Inc. | | Ex. 30,000 | Mizushima, Japan | B.E.P.C. | 1978 |
| 【Mix-Xylene Separation Process】 | | | | | |
| Nippon Petroleum Refining Co., Ltd. | | 297,000 | Negishi, Japan | B.E.P.C. | 1986 |
| Nippon Mining Co., Ltd. | | 177,000 | Mizushima, Japan | B.E.P.C. | 1990 |
| Taiyo Oil Co., Ltd. | | 392,000 | Kikuma, Japan | B.E.P.C. | 1991 |
| Fuji Oil Co., Ltd. | | 245,000 | Sodegaura, Japan | B.E.P.C. | 1993 |
| Nippon Petroleum Refining Co., Ltd. | | Re 20,000 BPSD (from 17,000 BPSD) | Muroran, Japan | B.E.P.C. | 2005 |
| Seibu Oil Co., Ltd. | | 200,000 | Yamaguchi, Japan | B.E.P.C. | 2006 |
| TonenGeneral Sekiyu K.K. | | 230,000 | Chiba, Japan | B.E.P.C. | 2016 |
| Idemitsu Kosan Co., Ltd. | | 170,000 (Production Volume of Mix Xylene) | Aichi, Japan | B.E.P.C. | 2018 |
| 【Isophthalic Acid】 | | | | | |
| A.G. International Chemical Co., Inc. | | 10,000 | Mizushima, Japan | E.P.C. | 1968 |
| A.G. International Chemical Co., Inc. | | 25,000 | Mizushima, Japan | E.P.C. | 1971 |
| 【Meta-Xylylenediamine (MXDA)】 | | | | | |
| Mitsubishi Gas Chemical Co., Inc. | | 4,000 | Niigata, Japan | B.E.P.C. | 1981 |
| Mitsubishi Gas Chemical Co., Inc. | | 15,000 | Niigata, Japan | B.E.P.C. | 1992 |
| Mitsubishi Gas Chemical Co., Inc. | | — | Niigata, Japan | B.E.P.C. | 2000 |
| Mitsubishi Gas Chemical Co., Inc. | | — | Niigata, Japan | B.E.P.C. | 2001 |
| Mitsubishi Gas Chemical Co., Inc. | | — | Niigata, Japan | B.E.P.C. | 2002 |
| Mitsubishi Gas Chemical Co., Inc. | | 20,000 | Mizushima, Japan | B.E.P.C. | 2007 |
| 【Dimethyl-Benzaldehyde (DBAL)】 | | | | | |
| Mitsubishi Gas Chemical Co., Inc. | | 8,000 | Mizushima, Japan | B.E.P.C. | 1985 |
| 【Trimethyl Benzene】 | | | | | |
| Kuraray Yuka Co., Ltd. | Pseudocumene | 1,500 | Yokkaichi, Japan | E.P.C. | 1970 |
| Mitsubishi Gas Chemical Co., Inc. | Mesitylene | 15,000 | Mizushima, Japan | B.E.P.C. | 1971 |
| 【2,6 Diisopropylnahthalane (2.6DIPN)】 | | | | | |
| Nippon Kokan K.K. | | 1,000 | Kasaoka, Japan | B.E.P.C. | 1991 |

CTA: Crude Telephthalic Acid

PTA: Pure Telephthalic Acid

3-5.Paraffin/Methane/Acetylene Derivatives/Oleo Chemicals

| Client | Capacity (Tons/Year) | Location | Scope of Work | Year of Completion | |
|---|--|------------------|------------------|--------------------|------|
| 【Normal Paraffin (Kerosene-LGO)】 | | | | | |
| Nippon Mining Co., Ltd. | 40,000 | Mizushima, Japan | B.E.P.C. | 1967 | |
| Nippon Mining Co., Ltd. | 66,000 | Mizushima, Japan | E.P.C. | 1979 | |
| 【Higher Alcohol】 | | | | | |
| Mitsubishi Petrochemical Co., Ltd. | 20,000 | Kashima, Japan | E.P.C. | 1975 | |
| 【Fatty Nitrile/Amines】 | | | | | |
| Lion Akzo K.K. | Fatty Amines | 12,000 | Yokkaichi, Japan | B.E.P.C. | 1987 |
| Lion Akzo K.K. | Fatty Nitrile | 12,000 | Yokkaichi, Japan | B.E.P.C. | 1987 |
| 【Methyl Ester】 | | | | | |
| Lion Corp. | Coconut Oil Methyl Ester | 30,000 | Sakaide, Japan | E.P.C. | 1990 |
| Lion Corp. | Palm Oil Methyl Ester | 40,000 | Sakaide, Japan | E.P.C. | 1990 |
| 【Carotene】 | | | | | |
| Lion Corp. | | 40 | Sakaide, Japan | E.P.C. | 1990 |
| 【Chloro-Methanes】 | | | | | |
| Kureha Chemical Industry Co., Ltd. | CCl ₄ | Nishiki, Japan | E.P.C. | 1963 | |
| Asahi Glass Co. | CHCl ₃ CH ₃ Cl CH ₂ Cl ₂ CCl ₄ | Chiba, Japan | E.P.C. | 1965 | |
| 【Acetylene】 | | | | | |
| Kureha Chemical Industry Co., Ltd. | 6,000 (as Acetylene) | Nishiki, Japan | B.E.P.C. | 1963 | |
| Kureha Chemical Industry Co., Ltd. | 24,000 (as Acetylene) | Nishiki, Japan | B.E.P.C. | 1970 | |
| 【Chloroprene】 | | | | | |
| Denki Kagaku Kogyo K.K. | 5,000 | Niigata, Japan | B.E.P.C. | 1962 | |
| Denki Kagaku Kogyo K.K. | 8,000 | Niigata, Japan | B.E.P.C. | 1964 | |
| Denki Kagaku Kogyo K.K. | 8,000 | Niigata, Japan | B.E.P.C. | 1966 | |
| Denki Kagaku Kogyo K.K. | 8,000 | Niigata, Japan | B.E.P.C. | 1968 | |
| Denki Kagaku Kogyo K.K. | 12,000 | Niigata, Japan | B.E.P.C. | 1970 | |
| 【Chloroprene Rubber】 | | | | | |
| Denki Kagaku Kogyo K.K. | 5,000 | Niigata, Japan | B.E.P.C. | 1962 | |
| Denki Kagaku Kogyo K.K. | 8,000 | Niigata, Japan | B.E.P.C. | 1964 | |
| Denki Kagaku Kogyo K.K. | 8,000 | Niigata, Japan | B.E.P.C. | 1966 | |
| Denki Kagaku Kogyo K.K. | 8,000 | Niigata, Japan | B.E.P.C. | 1968 | |
| Denki Kagaku Kogyo K.K. | 10,000 | Niigata, Japan | B.E.P.C. | 1970 | |

3-6.Engineering Plastics

| Client | Capacity (Tons/Year) | | Location | Scope of Work | Year of Completion |
|--|-------------------------|------------|----------------------|---------------|-----------------------|
| 【Polyamide】 | | | | | |
| Kurehabo Co, Ltd | Nylon 6 | 10 T/D | Tsuruga, Japan | E.P.C. | 1964 |
| Asahi Chemical Industry Co, Ltd | Nylon 6 | 10 T/D | Nobeoka, Japan | E.P.C. | 1964 |
| Toyobo Co, Ltd | Nylon 6 | 15 T/D | Tsuruga, Japan | E.P.C. | 1966 |
| Toyobo Co, Ltd | Nylon 6 | — T/D | Tsuruga, Japan | E.P.C. | 1968 |
| Toyobo Co, Ltd | Nylon 6 | 15 T/D | Tsuruga, Japan | E.P.C. | 1969 |
| 【Polycarbonate】 | | | | | |
| Teijin Polycarbonate Singapore Pte. Ltd. | | 60,000 | Jurong, Singapore | E.P.C. | 1999 |
| Teijin Polycarbonate Singapore Pte. Ltd. | | Ex. 20,000 | Jurong, Singapore | E.P.C. | 2000 |
| Teijin Polycarbonate Singapore Pte. Ltd. | | 50,000 | Jurong, Singapore | E.P.C. | 2001 |
| Teijin Polycarbonate Singapore Pte. Ltd. | | 50,000 | Jurong, Singapore | E.P.C. | 2002 |
| Teijin Polycarbonate Singapore Pte. Ltd. | | Ex. 20,000 | Jurong, Singapore | E.P.C. | 2004 |
| 【Polyethylene Terephthalate (PET)】 | | | | | |
| Teijin Indonesia Fiber Co. | | — | Tangenang, Indonesia | E.P.C. | 1998 |
| 【Fluoro Carbon Resin】 | | | | | |
| Daikin America Inc. | PTFE, HFP | | Alabama, U.S.A. | E.P.C. | 1993 |
| Daikin America Inc. | FEP | — | Alabama, U.S.A. | E.P.C. | 1995 |
| Kureha Chemical Industry Co, Ltd | PVDF | 5,000 | Nishiki, Japan | E.P.C. | 1996 |
| 【Polyphenylene Sulfide (PPS)】 | | | | | |
| Kureha Chemical Industry Co, Ltd | | 3,600 | Nishiki, Japan | B.E.P.C. | 1987 |
| Kureha Chemical Industry Co, Ltd | | Ex. 1,800 | Nishiki, Japan | E.P.C. | 2000 |
| 【Syndiotactic Polystyrene (SPS)】 | | | | | |
| Idemitsu Petrochemical Co, Ltd | | 5,000 | Chiba, Japan | B.E.P.C. | 1996 |
| 【Ethylene Vinyl Alcohol Copolymer (EVAC)】 | | | | | |
| Noltex L.L.C | EVOH | 10,000 | Texas, U.S.A. | E.P.C. | 1995 |
| Noltex L.L.C | EVOH | 10,000 | Texas, U.S.A. | E.P.C. | 1998 |

3-7.Synthesis Gas/Fertilizers

(for Hydrogen Manufacturing Units please see page [2-17. Hydrogen Manufacturing Units])

| Client | Capacity (Tons/Day) | Location | Scope of Work | Year of Completion |
|--|------------------------|-------------------------|---|--------------------|
| 【Ammonia】 | | | | |
| Tohoku Hiryo K.K. | 130 | Akita, Japan | B.E.P.C.M. (Reforming Section) | 1963 |
| Kyowa Chemicals Co., Ltd. | 260 | Ube, Japan | B.E.P.C.M. (Synthesis Gas Generation Section) | 1965 |
| Delhi Cloth & General Mills Co., Ltd. (Current:Shriram Fertilizer & Chemicals) | 450 | Kota, India | B.E.P.C.M.T. | 1969 |
| Mitsubishi Chemical Industries, Ltd. | 1,000 | Kurosaki, Japan | B.E.P.C.M.T. (Reforming Section) | 1970 |
| Nippon Kasei Chemical Co., Ltd. | 1,000 | Onahama, Japan | B.E.P.C.M.T. (Reforming Section) | 1970 |
| Delhi Cloth & General Mills Co., Ltd. (Current:Shriram Fertilizer & Chemicals) | Ex. to 600 | Kota, India | B.E.P.C.S.M. | 1974 |
| Mitsubishi Gas Chemical Co., Inc. | 800 | Niigata, Japan | B.E.P.C.M.T. (Reforming Section) | 1977 |
| Ruwais Fertilizer Industries | 1,000 | Abu Dhabi, U.A.E. | B.E.P.C.M.T. | 1983 |
| PT. Pupuk Kalimantan Timur (KALTIM)-Kaltim- 3 | 1,000 | Bontang, Indonesia | B.E.P.C.M.T. | 1989 |
| Saudi Arabian Fertilizer Co. (SAFCO) | 1,500 | Al-Jubail, Saudi Arabia | B.E.P.C.M.T. | 1992 |
| Karnaphuli Fertilizer Co., Ltd. (KAFCO) | 1,500 | Chittagong, Bangladesh | B.E.P.C.M.T. | 1995 |
| PT. Pupuk Kalimantan Timur (KALTIM)-Kaltim- 1 | Ex. to 1,800 | Bontang, Indonesia | B.E.M. | 1995 |
| Fudao Chemical Industrial Corp. | 1,000 | Hainan Is., China | B.E.P.C.S.M.T. | 1996 |
| NEDO/Myanmar Petrochemical Enterprise | | Kyaw Zwa, Myanmar | E.P. + S.V. | 2003 |
| 【Urea】 | | | | |
| Delhi Cloth & General Mills Co., Ltd. (Current:Shriram Fertilizer & Chemicals) | 700 | Kota, India | B.E.P.C.M.T. | 1969 |
| Petrochemical Industries Corp. | 700 x 2 | Shuaiba, Kuwait | B.E.P.C.M. | 1970 |
| Mitsubishi Chemical Industries, Ltd. | 800 | Kurosaki, Japan | B.E.P.C.M.T. | 1970 |
| Kashima Ammonia Co., Ltd. | 1,400 | Kashima, Japan | B.E.P.C.M.T. | 1970 |
| Mitsubishi Gas Chemical Co., Inc. | 600 | Niigata, Japan | B.E.P.C.M.T. | 1974 |
| Delhi Cloth & General Mills Co., Ltd. (Current:Shriram Fertilizer & Chemicals) | Ex. to 1,000 | Kota, India | B.E.P.C.S.M. | 1974 |
| Qatar Fertiliser Co., Ltd. | 1,000 | Umm Said, Qatar | B.E.P.C.M. | 1979 |
| Ruwais Fertilizer Industries | 1,500 | Abu Dhabi, U.A.E. | B.E.P.C.M.T. | 1983 |
| Saudi Arabian Fertilizer Co. (SAFCO) | 90 | Damman, Saudi Arabia | B.E.P.C.M.T. | 1985 |
| PT. Pupuk Kalimantan Timur (KALTIM)-Kaltim- 3 | 1,725 | Bontang, Indonesia | B.E.P.C.M.T. | 1989 |
| Saudi Arabian Fertilizer Co. (SAFCO) | 1,800 | Al-Jubail, Saudi Arabia | B.E.P.C.M.T. | 1992 |
| Karnaphuli Fertilizer Co., Ltd. (KAFCO) | 1,750 | Chittagong, Bangladesh | E.P.C.MT | 1995 |
| PT. Pupuk Kalimantan Timur (KALTIM)-Kaltim- 1 | Ex. to 2,125 | Bontang, Indonesia | B.E.M. | 1995 |
| PT. Pupuk Kalimantan Timur (KALTIM)-POPK A | 1,725 | Bontang, Indonesia | B.E.P.C.S.M.T. | 1998 |
| Saudi Arabian Fertilizer Co. (SAFCO) | Ex. to 2,150 | Al-Jubail, Saudi Arabia | B. | |
| NEDO/Myanmar Petrochemical Enterprise | Energy Conservation | Kyaw Zwa, Myanmar | E.P.CS. | 2003 |
| Petrochemical Industries Development Management Co (PIDMCO) | 3,250 | Bandar Assaluyeh, Iran | B.E.P.M.T. | 2005 |
| Petrochemical Industries Development Management Co (PIDMCO) | 3,250 | Bandar Assaluyeh, Iran | B.E.P.M.T. | 2011 |
| 【Melamine】 | | | | |
| Saudi Arabian Fertilizer Co. (SAFCO) | 60 | Damman, Saudi Arabia | B.E.P.C.M.T. | 1985 |

| 【Nitric Acid】 | | | | | |
|--|--------------------|---------------------------|-------------------------|-------------|------|
| Ube Industries, Ltd. | | 218 | Sakai, Japan | E.C. | 1972 |
| Hankook Caprolactam Corp. | | 97 | Ulsan, Korea | E.P.CS. | 1974 |
| Nitro Carbono S.A. | | 109 | Camacari, Brazil | E.P.CS. | 1978 |
| Hankook Caprolactam Corp. | | 97 | Ulsan, Korea | E.P.CS. | 1988 |
| The Fertilizers and Chemicals Travancore, Ltd. | | 152 | Cochin, India | E.P.CS. | 1988 |
| China Petrochemical International (SINOPEC-INTER)/ Yueyang Petrochemical Complex | | 141 | Yueyang, China | E.P.CS.M.T. | 1992 |
| China Petrochemical Development Corp. | | 340 | Kaohsiung, Taiwan | E.P.CS. | 2000 |
| 【Ammonium Sulfate】 | | | | | |
| Hankook Caprolactam Corp. | | 450 | Ulsan, Korea | E.P.CS. | 1974 |
| Nitro Carbono S.A. | | 190 | Camacari, Brazil | E.P.CS. | 1978 |
| Hankook Caprolactam Corp. | | 682 | Ulsan, Korea | E.P.CS. | 1988 |
| The Fertilisers and Chemicals Travancore, Ltd. | | 682 | Cochin, India | E.P.CS. | 1989 |
| 【Compound Fertilizer】 | | | | | |
| Nippon Jordan Fertilizer Co. | NPK | 900 | Aqaba, Jordan | E.P.C.M.T. | 1997 |
| 【Methanol】 | | | | | |
| Sabah Gas Chemical Industries | Utility Only | 2,000 | Sabah, Malaysia | E.P.CS. | 1984 |
| Qatar Fuel Additives Co., Ltd. (QAFAC) | | 2,500 | Umm Said, Qatar | E.P.C.M. | 1999 |
| International Methanol Co. (IMC) | | 2,900 | Al-Jubail, Saudi Arabia | E.P.C.M.T. | 2005 |
| 【Formalin】 | | | | | |
| Toho Rika Kogyo KK | | 80,000 T/Y | Nagoya, Japan | E.P.C.M. | 1972 |
| Nippon Kasei Chemical Co., Ltd. | | 36,000 T/Y | Onahama, Japan | E.P.C.M. | 1973 |
| 【Methyl Amine】 | | | | | |
| Nitto Chemical Co. | | 4,000 T/Y | Yokohama, Japan | E.P.C. | 1954 |
| Mitsubishi Gas Chemical Co., Inc. | | 1,200 T/Y | Niigata, Japan | E.P.C.M. | 1966 |
| Mitsubishi Gas Chemical Co., Inc. | | 9,600 T/Y | Niigata, Japan | E.P.C.M. | 1969 |
| Celanese Mexicana S.A. | | 8,000 T/Y | La Cangrejera, Mexico | E.P. | 1980 |
| 【Dimethylformamide (DMF)】 | | | | | |
| Mitsubishi Gas Chemical Co., Inc. | | 1,000 T/Y | Niigata, Japan | E.P.C.M. | 1967 |
| Mitsubishi Gas Chemical Co., Inc. | | 8,000 T/Y | Niigata, Japan | E.P.C.M. | 1971 |
| Imperial Chemical Industries Ltd. (ICI) | | 15,000 T/Y | England | B.E. | 1975 |
| Celanese Mexicana S.A. | | 6,900 T/Y | La Cangrejera, Mexico | E.P. | 1980 |
| 【DME】 | | | | | |
| JFE Holdings, Inc. | | — | — | FEED | 2003 |
| 【CO/Oxo Gas】 | | | | | |
| Toa Nenryo Kohgyo Co., Ltd. | H ₂ +CO | 26,800 Nm ³ /h | Kawasaki, Japan | B.E.P.C. | 1971 |
| 【Phosgene】 | | | | | |
| Nippon Soda Co., Ltd. | | 3,360 | Takaoka, Japan | B.E.P.C. | 1962 |
| Teijin Polycarbonate Singapore Pte. Ltd. | 2 Trains | — | Jurong, Singapore | E.P.C. | 1999 |
| Teijin Polycarbonate Singapore Pte. Ltd. | | — | Jurong, Singapore | E.P.C. | 2001 |
| Teijin Polycarbonate Singapore Pte. Ltd. | | 85 | Jurong, Singapore | E.P.C. | 2002 |

3-8.Coal Chemicals

| Client | Capacity (Tons/Day) | Location | Scope of Work | Year of Completion |
|----------------------------------|---------------------------|----------------------|---------------|--------------------|
| 【Coal Tar Distillation】 | | | | |
| Fuji Steel Co., Ltd. | 200 | Muroran, Japan | B.E.P.C. | 1956 |
| Nippon Kokan K.K. | 200 | Kawasaki, Japan | B.E.P.C. | 1960 |
| The Minas Gerais Steel Co. | 150 | Minas Gerais, Brazil | B.E.P.S. | 1962 |
| Sumikin Chemical Co., Ltd. | 606 | Kashima, Japan | B.E.P.C. | 1985 |
| Adchemco Corp. | 768 | Kasaoka, Japan | B.E.P.C. | 1988 |
| 【Tar Acid Extraction】 | | | | |
| Fuji Steel Co., Ltd. | — | Muroran, Japan | B.E.P.C. | 1956 |
| Nippon Kokan K.K. | — | Kawasaki, Japan | B.E.P.C. | 1960 |
| Adchemco Corp. | 19 | Kasaoka, Japan | B.E.P.C. | 1988 |
| 【Naphtalene Distillation】 | | | | |
| Fuji Steel Co., Ltd. | 28 | Muroran, Japan | B.E.P.C. | 1956 |
| Nippon Kokan K.K. | 29 | Kawasaki, Japan | B.E.P.C. | 1960 |
| Sumikin Chemical Co., Ltd. | 93 | Kashima, Japan | B.E.P.C. | 1985 |
| Adchemco Corp. | 143 | Kasaoka, Japan | B.E.P.C. | 1988 |
| 【Tar Acid Distillation】 | | | | |
| Mitsubishi Chemical Co., Ltd. | — | Kurosaki, Japan | B.E.P.C. | 1957 |
| Adchemco Corp. | 16 | Kasaoka, Japan | B.E.P.C. | 1988 |
| 【COG Purification】 | | | | |
| Nippon Kokan K.K. | 23,000 Nm ³ /H | Kawasaki, Japan | B.E.P.C. | 1961 |
| Yahata Steel Co., Ltd. | 26,000 Nm ³ /H | Tobata, Japan | B.E.P.C. | 1962 |
| 【COG Light Oil Recovery】 | | | | |
| Nippon Kokan K.K. | 48 | Kawasaki, Japan | B.E.P.C. | 1953 |
| Fuji Steel Co., Ltd. | 50 | Muroran, Japan | B.E.P.C. | 1955 |
| Yahata Chemical Co., Ltd. | 45 | Tobata, Japan | B.E.P.C. | 1959 |
| Nippon Kokan K.K. | 90 | Kawasaki, Japan | B.E.P.C. | 1959 |
| Yahata Chemical Co., Ltd. | 45 | Tobata, Japan | B.E.P.C. | 1960 |
| Sumitomo Metal Industries, Ltd. | 60 | Wakayama, Japan | B.E.P.C. | 1961 |
| The Minas Gerais Steel Co. | 60 | Minas Gerais, Brazil | B.E.P.S. | 1962 |
| Sumitomo Metal Industries, Ltd. | 140 | Kashima, Japan | B.E.P.C. | 1970 |
| Sumitomo Metal Industries, Ltd. | 220 | Kashima, Japan | B.E.P.C. | 1972 |
| 【Benzoil Distillation】 | | | | |
| Nippon Kokan K.K. | 48 | Kawasaki, Japan | B.E.P.C. | 1953 |
| Osaka Gas Co., Ltd. | 65 | Osaka, Japan | B.E.P.C. | 1960 |
| 【Coal Liquefacation】 | | | | |
| Nippon Coal Oil | Pilot 150 | Kashima, Japan | B.E.P.C. | 1996 |

3-9.Inorganic Chemicals

| Client | Capacity | Location | Scope of Work | Year of Completion | |
|---|------------|---------------------------|------------------|--------------------|------|
| 【Caustic Soda】 | | | | | |
| Kanegafuchi Chemical Industry Co., Ltd. | 10,000 T/M | Takasago, Japan | E.P.C.M. | 1974 | |
| Central Chemical Co. | 5,000 T/M | Kawasaki, Japan | E.P.C. | 1974 | |
| Sanyo Kokusaku Pulp Co. | 2,600 T/M | Iwakuni, Japan | E.P.C.M. | 1974 | |
| Kureha Chemical Industry Co., Ltd. | 10,000 T/M | Nishiki, Japan | B.E.P.C. | 1975 | |
| Mitsubishi Chemical Industries, Ltd. | 3,400 T/M | Kurosaki, Japan | E.P.C. | 1975 | |
| Ryonichi Co., Ltd. | 8,000 T/M | Mizusima, Japan | E.P.C. | 1975 | |
| Nippon Carbide Industries Co., Ltd. | 1,400 T/M | Uozu, Japan | B.E.P.C.M. | 1980 | |
| Taiwan Chlorine Industries, Ltd. | 9,300 T/M | Kaohsing, Taiwan | B.E.P.C.M. | 1988 | |
| PT. Asahimas Subentra Chemical (AMS) | 11,100 T/M | Anyer, Indonesia | E.P.C. | 1989 | |
| V/O Techmashimport | 16,700 T/M | Volgograd, Russia | E.P.CS. | 1990 | |
| 【Chlorine】 | | | | | |
| Kanegafuchi Chemical Industry Co., Ltd. | 9,300 T/M | Takasago, Japan | E.P.C.M. | 1974 | |
| Central Chemical Co. | 4,600 T/M | Kawasaki, Japan | E.P.C. | 1974 | |
| Sanyo Kokusaku Pulp Co. | 2,400 T/M | Iwakuni, Japan | E.P.C.M. | 1974 | |
| Kureha Chemical Industry Co., Ltd. | | Iwaki, Japan | B.E.P.C. | 1975 | |
| Mitsubishi Chemical Industries, Ltd. | 3,200 T/M | Kurosaki, Japan | E.P.C. | 1975 | |
| Ryonichi Co., Ltd. | 7,400 T/M | Mizusima, Japan | E.P.C. | 1975 | |
| Nippon Carbide Industries Co., Ltd. | 1,300 T/M | Uozu, Japan | B.E.P.C.M. | 1980 | |
| Taiwan Chlorine Industries Ltd. | 8,600 T/M | Kaohsing, Taiwan | B.E.P.C.M. | 1988 | |
| PT. Asahimas Subentra Chemical (AMS) | 10,300 T/M | Anyer, Indonesia | E.P.C. | 1989 | |
| V/O Techmashimport | 15,500 T/M | Volgograd, Russia | E.P.CS. | 1990 | |
| 【Hydrogen Chloride】 | | | | | |
| Kanegafuchi Chemical Industry Co., Ltd. | 500 T/M | Takasago, Japan | E.P.C.M. | 1974 | |
| Central Chemical Co. | 250 T/M | Kawasaki, Japan | E.P.C. | 1974 | |
| Sanyo Kokusaku Pulp Co. | 130 T/M | Iwakuni, Japan | E.P.C.M. | 1974 | |
| Kureha Chemical Industry Co., Ltd. | 500 T/M | Iwaki, Japan | B.E.P.C. | 1975 | |
| Mitsubishi Chemical Industries Ltd. | 170 T/M | Kurosaki, Japan | E.P.C. | 1975 | |
| Ryonichi Co., Ltd. | 400 T/M | Mizusima, Japan | E.P.C. | 1975 | |
| Nippon Carbide Industries Co., Ltd. | 70 T/M | Uozu, Japan | B.E.P.C.M. | 1980 | |
| Taiwan Chlorine Industries Ltd. | 460 T/M | Kaohsing, Taiwan | B.E.P.C.M. | 1988 | |
| PT. Asahimas Subentra Chemical (AMS) | 550 T/M | Anyer, Indonesia | E.P.C. | | |
| V/O Techmashimport | 830 T/M | Volgograd, Russia | E.P.CS. | 1990 | |
| 【Hydrogen Chloride Recovery】 | | | | | |
| Fuji Steel Co., Ltd. | Feed Acid | 1.9 M ³ /H | Muroran, Japan | E.P.C. | 1966 |
| Yahata Steel Co., Ltd. | Feed Acid | 2.7 M ³ /H | Sakai, Japan | B.E.P.C. | 1967 |
| Kawasaki Steel Co., Ltd. | Feed Acid | 2.0 x 2 M ³ /H | Chiba, Japan | B.E.P.C. | 1967 |
| Nisshin Steel Co., Ltd. | Feed Acid | 2.7 M ³ /H | Kure, Japan | B.E.P.C. | 1968 |
| Kawasaki Steel Co., Ltd. | Feed Acid | 2.0 M ³ /H | Chiba, Japan | B.E.P.C. | 1969 |
| Nippon Steel Co., Ltd./ Tetsugen Corp. | Feed Acid | 5.5 x 2 M ³ /H | Nagoya, Japan | B.E.P.C. | 1971 |
| Kawasaki Steel Co., Ltd. | Feed Acid | 3.0 M ³ /H | Chiba, Japan | B.E.P.C. | 1971 |
| Nippon Steel Co., Ltd./ Tetsugen Corp. | Feed Acid | 4.0 x 2 M ³ /H | Tobata, Japan | B.E.P.C. | 1972 |
| Kawasaki Steel Co., Ltd. | Feed Acid | 4.0 M ³ /H | Mizushima, Japan | B.E.P.C. | 1973 |
| Nakayama Steel Co., Ltd. | Feed Acid | 0.8 M ³ /H | Osaka, Japan | B.E.P.C. | 1974 |
| Nippon Steel Co., Ltd./ Tetsugen Corp. | Feed Acid | 5.5 M ³ /H | Nagoya, Japan | B.E.P.C. | 1976 |
| TDK Corp. | Feed Acid | 1.0 M ³ /H | Narita, Japan | B.E.P.C. | 1980 |
| Nippon Steel Co., Ltd. | Feed Acid | 5.0 M ³ /H | Sakai, Japan | B.E.P.C. | 1984 |
| TDK Corp. | Feed Acid | 1.5 M ³ /H | Narita, Japan | B.E.P.C. | 1984 |

| | | | | | |
|---|--------------------|-----------------------|-------------------------|----------|------|
| Pohang Iron & Steel Co., Ltd./Mitsubishi Heavy Industries, Ltd. | Feed Acid | 5.7 M ³ /H | Cheonnam, Korea | B.E.P.C. | 1989 |
| Pohang Iron & Steel Co., Ltd./Mitsubishi Heavy Industries, Ltd. | Feed Acid | 3.0 M ³ /H | Cheonnam, Korea | B.E.P.C. | 1990 |
| Pohang Iron & Steel Co., Ltd./Mitsubishi Heavy Industries, Ltd. | Feed Acid | 6.4 M ³ /H | Cheonnam, Korea | B.E.P.C. | 1990 |
| Tokyo Steel MFG Co., Ltd. | Feed Acid | 3.6 M ³ /H | Mizushima, Japan | B.E.P.C. | 1995 |
| The Siam United Steel Co., Ltd./Hitachi, Ltd | Feed Acid | 4.8 M ³ /H | Rayong, Thailand | B.E.P.C. | 1999 |
| Nisshin Steel Co., Ltd. | Feed Acid | 2.0 M ³ /H | Toyo, Japan | B.E.P.C. | 1999 |
| Nippon Chemi-Con Corp. | Feed Acid | 1.8 M ³ /H | Niigata, Japan | B.E.P.C. | 2000 |
| 【Hydrogen Peroxide】 | | | | | |
| Nippon Peroxide Co., Ltd. | | — | Kohriyama, Japan | E.P.C. | 1966 |
| Nippon Peroxide Co., Ltd. | Ex. | — | Kohriyama, Japan | E.P.C. | 1968 |
| Nippon Peroxide Co., Ltd. | Ex. | — | Kohriyama, Japan | E.P.C. | 1977 |
| 【Hydrazine】 | | | | | |
| Mitsubishi Gas Chemical Co. Inc. | | 9,000 T/Y | Yokkaichi, Japan | B.E.P.C. | 1989 |
| 【Polysulfide】 | | | | | |
| Hokuetsu Paper Mills, Ltd. | | 600 M ³ /H | Shirakawa, Japan | E.P. | 1987 |
| Hokuetsu Paper Mills, Ltd. | | 200 M ³ /H | Hachinohe, Japan | E.P. | 1990 |
| Hokuetsu Paper Mills, Ltd. | | 181 M ³ /H | Niigata, Japan | E.P.C. | 1993 |
| Nippon Paper Industries Co., Ltd. | | 200 M ³ /H | Ishinomaki, Japan | E.P.C. | 1994 |
| 【Catalyst】 | | | | | |
| Undisclosable | | — | Kanagawa, Japan | E.P.C. | 1993 |
| Undisclosable | | — | Toyama, Japan | E.P.C. | 1998 |
| Toho Titanium Co., Ltd. | | — | Kanagawa, Japan | E.P.C. | 2022 |
| 【Silicon/Silane】 | | | | | |
| Undisclosable | Poly-Silicon | 1,000 T/Y | Oregon, U.S.A. | F. | 1986 |
| Undisclosable | Poly-Silicon Pilot | — | Arizona, U.S.A. | B.E.P.C. | 1987 |
| Undisclosable | Silane | 20 T/Y | Japan | E.P.C. | 1989 |
| Undisclosable | Poly-Silicon | 1,500 T/Y | Japan | F. | 1996 |
| Undisclosable | Poly-Silicon | 3,000 T/Y | Sarawak, Malaysia | F. | 2009 |
| Undisclosable | Poly-Silicon | 6,000 T/Y | Sarawak, Malaysia | E.P.C.* | 2013 |
| Undisclosable | Poly-Silicon | 85 | Sarawak, Malaysia | E.P.C. | 2014 |
| 【Sulfur Trioxide/Sulfonic Acid】 | | | | | |
| Chevron Chemical (Far East) Co. | Sulfonic Acid | 4,500 T/Y | Pulau Sakura, Singapore | E.P.C. | 1998 |
| Chevron Chemical (Far East) Co. | Sulfur Trioxide | 800 T/Y | Pulau Sakura, Singapore | E.P.C. | 1998 |
| 【Sulfuric Acid】 | | | | | |
| Hankook Caprolactum Corp. | | 136 T/D | Ulsan, Korea BEPS | B.E.P.S. | 1988 |

* C: Chiyoda Sarawak Sdn. Bhd.

3-10.Others

| Client | Capacity (Tons/Year) | Location | Scope of Work | Year of Completion | |
|---|----------------------|----------------------------------|----------------|--------------------|------|
| 【Lubricant Aditives】 | | | | | |
| Oronite Japan Ltd | — | Omaezaki, Japan | E.P.C. | 1989 | |
| Oronite Japan Ltd | — | Omaezaki, Japan | E.P.C. | 1995 | |
| Chevron Chemical (Far East) Co. | 100,000 | Pulau Sakura, Singapore | E.P.C. | 1998 | |
| 【Carbon Black】 | | | | | |
| Korea Continental Carbon Co., Ltd | 7,500 | Inchon, Korea | E.P.CS. | 1969 | |
| 【Toner】 | | | | | |
| Sekisui Chemical Co., Ltd | — | Shiga, Japan | E. | 1990 | |
| Mita South Carolina, Inc. | — | S. Carolina, U.S.A. | E.P.C. | 1991 | |
| Nihon Zeon Co., Ltd | 1,000 | Tokuyama, Japan | E.P.C. | 1995 | |
| 【Photoresist】 | | | | | |
| JSR Corp. | — | California, U.S.A. | E.P.C. | 1996 | |
| Undisclosable | — | Undisclosable | E.P.C. | 2001 | |
| 【Epoxy Soybean Oil】 | | | | | |
| Oxirane Chemical Co., Ltd | 10,400 | Mie, Japan | E.P.C. | 1969 | |
| 【Corn Starch】 | | | | | |
| Japan Maize Products Co., Ltd | 500 T/D | Fuji, Japan | E.P.C. | 1965 | |
| 【Corn Syrup】 | | | | | |
| Fuji Toka Co., Ltd | — | Fuji, Japan | E.P.C. | 1966 | |
| 【Sorbitol】 | | | | | |
| Towa Chemical Industry Co., Ltd | 12,000 | Fuji, Japan | E.P.C. | 1966 | |
| Towa Chemical Industry Co., Ltd | 18,000 | Fuji, Japan | E.P.C. | 1969 | |
| Towa Chemical Industry Co., Ltd | 12,000 | Fuji, Japan | E.P.C. | 1970 | |
| Towa Chemical Industry Co., Ltd | Powder | 2,400 | Fuji, Japan | E.P.C. | 1970 |
| Towa Chemical Industry Co., Ltd | Powder | 4,800 | Fuji, Japan | E.P.C. | 1971 |
| PT. Sorini Towa Berlian Co. | 7,000 | Surabaya, Indonesia | E.P.C. | 1996 | |
| 【Sugar Ester】 | | | | | |
| Dainippon Sugar Manufacturing Co., Ltd | 1,200 | Yokohama, Japan | E.P.C. | 1967 | |
| Ryoto Co., Ltd | 1,200 | Yokkaichi, Japan | E.P.C. | 1974 | |
| 【Aspartame】 | | | | | |
| Holland Sweetener Co vof. | — | Gleen, Netherlands | E.P.C. | 1988 | |
| 【Sodium Glutamate】 | | | | | |
| Ajinomoto Co., Ltd | 3,600 | Yokohama, Japan | B.E.P.C. | 1962 | |
| Ajinomoto Co., Ltd | 7,200 | Yokkaichi, Japan | B.E.P.C. | 1966 | |
| 【Amino Caprolactam】 | | | | | |
| Toray Industries, Inc. | 5,000 | Nagoya, Japan | B.E.P.C. | 1988 | |
| 【Pigment】 | | | | | |
| Dainippon Ink & Chemicals, Inc. | Cyanine | 3,720 | Kashima, Japan | B.E.P.C. | 1972 |
| Dainippon Ink & Chemicals, Inc. | Azo | 3,600 | Kashima, Japan | B.E.P.C. | 1972 |
| 【Plastisizer】 | | | | | |
| Dainippon Ink & Chemicals, Inc. | 20,000 | Chiba, Japan | E.P.C. | 1982 | |
| 【Plastic Waste Oil Recovery】 | | | | | |
| Rekisei Koyu K.K./Plastic Waste Management Institute | 6,000 | Niigata, Japan | B.E.P.C. | 1997 | |
| 【Solvent Recovery】 | | | | | |
| Rasa Industries, Ltd. | Undisclosable | Isezaki, Japan | E.P.C. | 1996 | |
| 【PCB Detoxification】 | | | | | |
| Undisclosable | 2.0 Ton/day | Undisclosable | B. | 2006 | |
| 【Refrigerated Gaseous Tanks Facility for Ethylene and Propylene】 | | | | | |
| Dialog Plant Services Sdn. Bhd. | — | Pengerang, Johor State, Malaysia | E.P.C.C | 2019 | |

4. Flue Gas Desulfurization Plants

Scope of Work

E: Engineering

P: Procurement

C: Construction

L: License

4-1.CT-121 FGD Plants

| Client | Flue Gas Source | Capacity: More than 300MWe | | Location | Scope of Work | Year of Completion |
|--|------------------------|----------------------------|---------|---------------------------|---------------|--------------------|
| | | (Nm ³ /h) | (MWe) | | | |
| Hokuriku Electric Power Company | Boiler, Oil | 1,051,000 | 350 | Fukui, Japan | E.P.C. | 1990 |
| Chubu Electric Power Co., Inc. | Boiler, Coal | 1,153,000 x 2 | 350 x 2 | Hekinan, Japan | E.P.C. | 1993 |
| Hokuriku Electric Power Company | Boiler, Coal | 1,539,000 | 500 | Nanao-ohta, Japan | E.P.C. | 1995 |
| Suncor Inc. | Boiler, Petroleum Coke | 1,172,000 | 350 | Alberta, Canada | E.P.C. | 1996 |
| Hokuriku Electric Power Company | Boiler, Coal | 2,186,000 | 700 | Nanaohta, Japan | E.P.C. | 1998 |
| Tohoku Electric Power Co., Inc. | Boiler, Coal | 3,003,000 | 1,000 | Haranomachi, Japan | E.P.C. | 1998 |
| Korea Electric Power Corporation | Boiler, Oil | 1,114,000 | 400 | Ulsan, Korea | E.L. | 1999 |
| Korea Electric Power Corporation | Boiler, Oil | 1,114,000 | 400 | Ulsan, Korea | E.L. | 1999 |
| Korea Electric Power Corporation | Boiler, Oil | 1,114,000 | 400 | Ulsan, Korea | E.L. | 1999 |
| Kobe Steel Ltd. | Boiler, Coal | 2,270,000 | 700 | ShinkoKobe, Japan | E.P.C. | 2002 |
| Kobe Steel Ltd. | Boiler, Coal | 2,270,000 | 700 | ShinkoKobe, Japan | E.P.C. | 2004 |
| Kansai Electric Power Co., Inc. | Boiler, Coal | 2,700,000 | 900 | Maizuru, Japan | E.P.C. | 2004 |
| Guohua Electric Power Corporation | Boiler, Coal | 2,131,000 | 600 | Taishan, Guangdong, China | L. | 2005 |
| Guohua Electric Power Corporation | Boiler, Coal | 2,131,000 | 600 | Taishan, Guangdong, China | L. | 2005 |
| Huaneng Power International, Inc. | Boiler, Coal | | 330 | Huaiyin, Jiangsu, China | L. | 2005 |
| Huaneng Power International, Inc. | Boiler, Coal | 1,108,080 | 330 | Huaiyin, Jiangsu, China | L. | 2005 |
| Huaneng Power International, Inc. | Boiler, Coal | 1,108,080 | 330 | Huaiyin, Jiangsu, China | L. | 2006 |
| Huaneng Power International, Inc. | Boiler, Coal | 1,108,080 | 330 | Huaiyin, Jiangsu, China | L. | 2006 |
| Shanxi Hexin Power Development Co., Ltd. | Boiler, Coal | 2,221,000 | 600 | Wuxiang, Shanxi, China | L. | 2006 |
| Guohua Electric Power Corporation | Boiler, Coal | 2,131,000 | 600 | Taishan, Guangdong, China | L. | 2006 |
| Guohua Electric Power Corporation | Boiler, Coal | 2,131,000 | 600 | Taishan, Guangdong, China | L. | 2006 |
| Guohua Electric Power Corporation | Boiler, Coal | 2,131,000 | 600 | Taishan, Guangdong, China | L. | 2006 |
| Beijing Deyuan Investment Co., Ltd. | Boiler, Coal | 2,160,000 | 600 | Diandong, Yunnan, China | L. | 2006 |
| Beijing Deyuan Investment Co., Ltd. | Boiler, Coal | 2,160,000 | 600 | Diandong, Yunnan, China | L. | 2007 |
| Beijing Deyuan Investment Co., Ltd. | Boiler, Coal | 2,160,000 | 600 | Diandong, Yunnan, China | L. | 2007 |
| Beijing Deyuan Investment Co., Ltd. | Boiler, Coal | 2,160,000 | 600 | Diandong, Yunnan, China | L. | 2007 |
| Shanxi Hexin Power Development Co., Ltd. | Boiler, Coal | 2,221,000 | 600 | Wuxiang, Shanxi, China | L. | 2007 |
| Dayton Power & Light Co. | Boiler, Coal | 2,758,000 | 635 | Killen, OH, USA | E.L. | 2007 |
| Dayton Power & Light Co. | Boiler, Coal | 2,661,000 | 610 | JM Stuart, OH, USA | E.L. | 2008 |
| Dayton Power & Light Co. | Boiler, Coal | 2,661,000 | 610 | JM Stuart, OH, USA | E.L. | 2008 |
| Dayton Power & Light Co. | Boiler, Coal | 2,661,000 | 610 | JM Stuart, OH, USA | | 2008 |
| Dayton Power & Light Co. | Boiler, Coal | 2,661,000 | 610 | JM Stuart, OH, USA | E.L. | 2008 |
| Georgia Power Co. | Boiler, Coal | 4,067,000 | 950 | Bowen, GA, USA | E.L. | 2008 |
| Georgia Power Co. | Boiler, Coal | 4,067,000 | 950 | Bowen, GA, USA | E.L. | 2008 |
| Georgia Power Co. | Boiler, Coal | 4,067,000 | 950 | Wansley, GA, USA | E.L. | 2008 |
| PowerSouth Energy Cooperative | Boiler, Coal | 1,314,000 | 340 | Lowman, AL, USA | E.L. | 2008 |
| American Electric Power Co. | Boiler, Coal | 2,362,000 | 620 | Cardinal, OH, USA | E.L. | 2008 |
| American Electric Power Co. | Boiler, Coal | 2,362,000 | 620 | Cardinal, OH, USA | E.L. | 2008 |
| American Electric Power Co. | Boiler, Coal | 3,084,000 | 850 | Consessville, OH, USA | E.L. | 2009 |
| Beijing Deyuan Investment Co., Ltd. | Boiler, Coal | 1,980,000 | 600 | Diandong, Yunnan, China | L | 2009 |
| Gulf Power Co. | Boiler, Coal | 4,348,000 | 984 | Crist, FL, USA | E.L. | 2009 |
| Georgia Power Co. | Boiler, Coal | 4,067,000 | 950 | Wansley, GA, USA | E.L. | 2009 |
| Georgia Power Co. | Boiler, Coal | 3,267,000 | 756 | Bowen, GA, USA | E.L. | 2009 |
| Georgia Power Co. | Boiler, Coal | 3,267,000 | 756 | Bowen, GA, USA | E.L. | 2010 |
| Alabama Power Co. | Boiler, Coal | 4,067,000 | 950 | Gaston, AL, USA | E.L. | 2010 |
| Alabama Power Co. | Boiler, Coal | 3,267,000 | 773 | Barry, AL, USA | E.L. | 2010 |
| American Electric Power Co. | Boiler, Coal | 2,854,000 | 665 | Cardinal, OH, USA | E.L. | 2010 |
| Dong Energy | Boiler, Coal | 1,054,000 | 400 | Asnaes, Denmark | E.L. | 2010 |

| | | | | | | |
|----------------------------------|--------------|-----------|---------|-----------------------|--------|--------|
| Kansai Electric Power Co., Inc. | Boiler, Coal | 2,700,000 | 900 | Maizuru, Japan | E.P.C. | 2010 |
| American Electric Power Co. | Boiler, Coal | 1,900,000 | 450 | Kyger Creek, OH, USA | E.L. | 2012 |
| American Electric Power Co. | Boiler, Coal | 2,850,000 | 675 | Kyger Creek, OH, USA | E.L. | 2012 |
| American Electric Power Co. | Boiler, Coal | 2,895,000 | 675 | Clifty Creek, OH, USA | E.L. | 2013 |
| American Electric Power Co. | Boiler, Coal | 2,895,000 | 675 | Clifty Creek, OH, USA | E.L. | 2013 |
| Hokuriku Electric Power Company | Boiler, Coal | 1,539,000 | 500 | Nanaohta, Japan | E.P.C. | 2021 |
| Kobe Steel Ltd. | Boiler, Coal | 2,066,000 | 650 | ShinkoKobe, Japan | E.P.C. | 2021 |
| Kobe Steel Ltd. | Boiler, Coal | 2,066,000 | 650 | ShinkoKobe, Japan | E.P.C. | 2022 |
| Damodar Valley Corporation | Boiler, Coal | 2,445,900 | 500 | Durgapur, India | E.L. | (2023) |
| Damodar Valley Corporation | Boiler, Coal | 2,445,900 | 500 | Durgapur, India | E.L. | (2023) |
| Damodar Valley Corporation | Boiler, Coal | 2,354,000 | 500 | Mejia, India | E.L. | (2023) |
| Damodar Valley Corporation | Boiler, Coal | 2,354,000 | 500 | Mejia, India | E.L. | (2023) |
| Damodar Valley Corporation | Boiler, Coal | 2,903,800 | 600 | Raghunathpur, India | E.L. | (2023) |
| Damodar Valley Corporation | Boiler, Coal | 2,903,800 | 600 | Raghunathpur, India | E.L. | (2023) |
| NPL Ltd. | Boiler, Coal | 2,677,000 | 700 | Rajpura, India | E.L. | (2023) |
| NPL Ltd. | Boiler, Coal | 2,677,000 | 700 | Rajpura, India | E.L. | (2023) |
| NTPC Ltd. | Boiler, Coal | 2,620,800 | 660 | Khargone, India | E.L. | (2023) |
| NTPC Ltd. | Boiler, Coal | 2,620,800 | 660 | Khargone, India | E.L. | (2023) |
| NTPC Ltd. | Boiler, Coal | 2,217,600 | 500 | Vindhyachal, India | E.L. | (2023) |
| NTPC Ltd. | Boiler, Coal | 2,217,600 | 500 | Vindhyachal, India | E.L. | (2023) |
| NTPC Ltd. | Boiler, Coal | 2,217,600 | 500 | Vindhyachal, India | E.L. | (2023) |
| NTPC Ltd. | Boiler, Coal | 2,217,600 | 500 | Vindhyachal, India | E.L. | (2023) |
| NTPC Ltd. | Boiler, Coal | 2,217,600 | 500 | Vindhyachal, India | E.L. | (2023) |
| NTPC Ltd. | Boiler, Coal | 2,217,600 | 500 | Vindhyachal, India | E.L. | (2023) |
| NTPC Ltd. | Boiler, Coal | 3,218,400 | 210 x 3 | Vindhyachal, India | E.L. | (2023) |
| NTPC Ltd. | Boiler, Coal | 3,218,400 | 210 x 3 | Vindhyachal, India | E.L. | (2023) |
| NTPC Ltd. | Boiler, Coal | 3,304,800 | 800 | Lara, India | E.L. | (2023) |
| NTPC Ltd. | Boiler, Coal | 3,304,800 | 800 | Lara, India | E.L. | (2023) |
| NTPC Ltd. | Boiler, Coal | 85 | 800 | Darlipalli, India | E.L. | (2023) |
| NTPC Ltd. | Boiler, Coal | 3,304,800 | 800 | Darlipalli, India | E.L. | (2023) |
| NLC India Ltd. | Boiler, Coal | 2,491,200 | 500 | Neyveli New, India | E.L. | (2024) |
| NLC India Ltd. | Boiler, Coal | 2,491,200 | 500 | Neyveli New, India | E.L. | (2024) |
| SJVN Ltd. | Boiler, Coal | 2,377,600 | 660 | Buxar, India | E.L. | (2025) |
| SJVN Ltd. | Boiler, Coal | 2,377,600 | 660 | Buxar, India | E.L. | (2025) |
| Neyveli Uttar Pradesh Power Ltd. | Boiler, Coal | 2,314,800 | 660 | Ghatampur, India | E.L. | (2025) |
| Neyveli Uttar Pradesh Power Ltd. | Boiler, Coal | 2,314,800 | 660 | Ghatampur, India | E.L. | (2025) |
| Neyveli Uttar Pradesh Power Ltd. | Boiler, Coal | 2,314,800 | 660 | Ghatampur, India | E.L. | (2026) |

5. Pharmaceutical Plants

Scope of Work

E: Engineering

P: Procurement

C: Construction

V: Validation

5-1.Pharmaceutical

| Client | Type | Location | Scope of Work | Year of Completion |
|--|-------------------------------------|------------------|---------------|--------------------|
| Eiken Chemical Co., Ltd. | Aseptic, Commercial | Tochigi, Japan | E.P.C.V. | 1995 |
| Nippon Boehringer Ingelheim Co., Ltd. | Finishing, Commercial | Shiga, Japan | E. | 1995 |
| Seikagaku Corporation | API, Clinical | Tokyo, Japan | E.P.C.V. | 1995 |
| Shimizu Pharma | Aseptic, Commercial | Shizuoka, Japan | E. | 1995 |
| Toyobo Co., Ltd. | Bio | Shiga, Japan | E.P.C. | 1995 |
| Fukuzyu Pharmaceuticals Co., Ltd. | API, Commercial | Toyama, Japan | E.P.C.V. | 1996 |
| Kyowa Hakko Co., Ltd. | Bio, Clinical | Yamaguchi, Japan | E. | 1996 |
| Eisai Chemical Co., Ltd. | API, Clinical | Ibaraki, Japan | E.P.C.V. | 1997 |
| Kanebo Ltd. | API, Clinical | Saitama, Japan | E.P.C.V. | 1997 |
| Pharmacia & Upjohn | Finishing, Commercial | Ibaraki, Japan | E.P.C.V. | 1997 |
| Kuraray Co., Ltd. | API, Commercial | Niigata, Japan | E.P.C.V. | 1998 |
| Japan Tissue Engineering Co., Ltd. | API, Commercial | Aichi, Japan | E.P.C. | 1999 |
| JATRON Laboratories Inc. | Finishing, Commercial | Chiba, Japan | E.P.C.V. | 1999 |
| Sumica fine Chem Co., Ltd. | API, Commercial | Okayama, Japan | E.P.C.V. | 1999 |
| Teijin Ltd. | Finishing, Commercial | Tokyo, Japan | E. | 1999 |
| Nissan Chemical Industries, Ltd. | API, Commercial | | E.P.C.V. | 2000 |
| Sumitomo Pharmaceuticals | Finishing, Clinical | Osaka, Japan | E.P.C.V. | 2000 |
| Banyu Pharmaceutical Co., Ltd. | Highly Potent API, Clinical | Aichi, Japan | E.Cm.V. | 2001 |
| Fujisawa Pharmaceuticals Co., Ltd. | Aseptic, Commercial | Toyama, Japan | E.P.C.V. | 2001 |
| Ajinomoto Pharmaceuticals Co., Ltd. | Finishing, Commercial | Fukushima, Japan | E.P.C.V. | 2002 |
| Bayer Yakuhin, Ltd. | Bio, Clinical | Shiga, Japan | E. | 2002 |
| Daiichi Yakuhin Kogyo Co., Ltd. | Finishing, Commercial | Toyama, Japan | E.P.C. | 2002 |
| FUJIFILM Finechemicals Co., Ltd. | API, Clinical | Fukushima, Japan | E.P.C.V. | 2002 |
| Pharmacia | Finishing, Commercial | Korea | E.Cm.V. | 2002 |
| Sumitomo Chemical Co., Ltd. | Highly Potent API, Commercial | Oita, Japan | E. | 2002 |
| Kirin Brewery Company, Limited/ Kirin Engineering Company, Limited | Bio, Commercial | Gunma, Japan | E.P.C.V. | 2003 |
| Mikuni Pharmaceutical Industrial Co., Ltd. | API, Commercial | Osaka, Japan | E.P.C.V.* | 2003 |
| Taiho Pharmaceutical Co., Ltd. | Highly Potent API, Commercial | Saitama, Japan | E.P.C.V. | 2003 |
| Menicon Co., Ltd. | Finishing, Commercial | Aichi, Japan | E.P.C.V.* | 2004 |
| Tokyo Metropolitan School Personnel In Service Training Center | API, Commercial | Tokyo, Japan | E. | 2004 |
| Air Water Inc. | API, Commercial | Ibaraki, Japan | E.P.C.V.* | 2005 |
| Mitsubishi Tanabe Pharma Factory Ltd. | Bio, Clinical | Kanagawa, Japan | E.P.C.V.* | 2005 |
| Asahi Kasei Pharma Corporation | Finishing, Commercial | Aichi, Japan | E.P.C.V.* | 2006 |
| Astellas Pharma Inc. | Finishing, Commercial | Ireland | E. | 2006 |
| Dainippon Sumitomo Pharma Co., Ltd. | Finishing, Clinical, Commercial | Osaka, Japan | E.P.C.V. | 2006 |
| Fujirebio Inc. | Finishing, Commercial | Yamaguchi, Japan | E.* | 2006 |
| Juzen Chemical Corporation | API, Commercial | Toyama, Japan | E.P.C.V.* | 2006 |
| Becton, Dickinson and Company | Finishing, Commercial | Fukushima, Japan | E.* | 2007 |
| Janssen Pharmaceutical K.K. | | Shizuoka, Japan | E.P.C.V.* | 2007 |
| Kongo Chemical Co., Ltd. | API, Commercial | Toyama, Japan | E.P.C.V.* | 2007 |
| Kongo Chemical Co., Ltd. | API, Commercial | Toyama, Japan | E.P.C.V.* | 2007 |
| Shionogi & Co., Ltd. | API, Clinical | Hyogo, Japan | E.P.C.V. | 2007 |
| Eisai Co., Ltd. | API, Finishing Clinical, Commercial | India | E. | 2007 |
| Eisai Co., Ltd. | API, Clinical | Ibaraki, Japan | E.P.C.V. | 2007 |
| Eisai Co., Ltd. | API, Commercial | Ibaraki, Japan | E.P.C.V. | 2008 |
| Ajinomoto Pharmaceuticals Co., Ltd. | Finishing, Commercial | Shizuoka, Japan | E.P.C. | 2008 |
| Central Glass Co., Ltd. | API, Commercial | Yamaguchi, Japan | E.P.C.V. | 2008 |
| Fresenius Medical Care Japan K.K. | Aseptic, Commercial | Fukuoka, Japan | E.P.C.V. | 2008 |
| Kokando, Co., Ltd. | Finishing, Commercial | Toyama, Japan | E.P.C.* | 2008 |
| Maruho Co., Ltd. | Finishing, Commercial | Shiga, Japan | E.P.C.V.* | 2008 |

| | | | | |
|--|--|------------------|-----------|------|
| Nichi-Iko Pharmaceutical Co., Ltd. | Finishing, Commercial | Toyama, Japan | E.P.C.V.* | 2008 |
| Nichi-Iko Pharmaceutical Co., Ltd. | Finishing, Commercial | Aichi, Japan | E.P.C.V.* | 2008 |
| Nippon Shinyaku Co., Ltd. | Finishing, Commercial | Kanagawa, Japan | E.P.C.V. | 2008 |
| Wakamoto Pharmaceutical Co., Ltd. | Bio, API, Commercial | Kanagawa, Japan | E.P.C.V. | 2008 |
| Eisai Co., Ltd. | API, Commercial | Ibaraki, Japan | E.P.C.V. | 2009 |
| Eisai Co., Ltd. | Finishing, Commercial | Saitama, Japan | V. | 2009 |
| Maruho Co., Ltd. | Finishing, Commercial | Shiga, Japan | E.P.C.V.* | 2009 |
| Nihon Generic Co., Ltd. | Finishing, Commercial | Ibaraki, Japan | E.P.C.* | 2009 |
| Wakamoto Pharmaceutical Co., Ltd. | Finishing, Commercial | Kanagawa, Japan | E.P.C. | 2009 |
| Nichi-Iko Pharmaceutical Co., Ltd. | Finishing, Commercial | Toyama, Japan | E.P.C.V.* | 2010 |
| Kihara Memorial Yokohama Foundation for the Advancement of Life Sciences | Bio Clinical | Yokohama, Japan | E.P.C.V. | 2011 |
| Astellas Pharma Inc. | Finishing Clinical | Shizuoka, Japan | E.P.C.V. | 2013 |
| Nichi-Iko Pharmaceutical Co., Ltd. | Finishing, Commercial | Toyama, Japan | E.P.C.V. | 2013 |
| UNIGEN Inc. | Bio, API, Commercial | Gifu, Japan | E.P.C.V. | 2013 |
| Wako Pure Chemical Industries, Ltd. | Finishing, Commercial | Mie, Japan | E.P.C.V. | 2014 |
| Institute of Industrial Promotion Kawasaki | Innovation Center | Kanagawa, Japan | E.P.C. | 2015 |
| KNC Laboratories Co., Ltd. | Nucleic acid, peptide | Izumo, Japan | E.P.C.V. | 2015 |
| The Research Foundation for Microbial Diseases of Osaka University | Finishing, Commercial | Kagawa, Japan | E.P.C.V. | 2015 |
| I'rom Group Co., Ltd. / ID Pharma Co., Ltd. | Vectors for gene therapy and regenerative medicine, Commercial | Ibaraki, Japan | E.P.C.V. | 2016 |
| CMIC CMO Co., Ltd. | Finishing, Commercial | Tochigi, Japan | E.P.C.V. | 2018 |
| CMIC JSR Biologics Co., Ltd. | Bio, API | Shizuoka, Japan | E.P.C.V. | 2018 |
| Nichi-Iko Pharmaceutical Co., Ltd. | Finishing, Commercial | Toyama, Japan | E.P.C.V.* | 2018 |
| Tosoh Corporation | Officers | Yamaguchi, Japan | E.P.C. | 2018 |
| Nippon Shokubai Co., Ltd. | API, Commercial | Osaka, Japan | E.P.C.V.* | 2019 |
| PeptiStar Inc. | API, Commercial | Osaka, Japan | E.P.C.V. | 2019 |
| Shionogi & Co., Ltd. | Bio, API, Commercial | Gifu, Japan | E.P.C.V. | 2023 |

* Main Contractor: Chiyoda Techno Ace Co., Ltd.

6. Green Device, Non-Ferrous Metal Plants and Transportation

Scope of Work

FEED: Front End Engineering Design

E: Engineering

M: Start-up and Commissioning

P: Procurement

C: Construction

6-1.Green Device

| Client | Type of Plant | Capacity | Location | Scope of Work | Year of Completion |
|------------------------|-----------------------------------|------------|----------------------|---------------|--------------------|
| Undisclosable | Flexible Printed Circuit Plant | — | Fukuoka, Japan | E.P.C. | 2005 |
| Undisclosable | Precious Metal Recycle Plant | — | Chiba, Japan | E.P.C. | 2009 |
| Mitsubishi Corporation | Lithium Ion Battery Plant | — | Shiga, Japan | E.P.C. | 2011 |
| Solar Frontier K.K. | CIS Photovoltaic Production Plant | 900MW/year | Miyazaki, Japan | FEED, E.P.C. | 2011 |
| Solar Frontier K.K. | CIS Photovoltaic Production Plant | 150MW/year | Miyagi, Japan | E.P.C. | 2015 |
| Undisclosable | Ceramic Fiber Plant | — | Japan | E.P.C. | 2016 |
| Undisclosable | Precious Metal Recycle Plant | — | Chiba, Japan | E.P.C. | 2018 |
| Undisclosable | Precious Metal Recycle Plant | — | Chiba, Japan | E.P.C. | 2021 |
| Undisclosable | Local Rlectrical Grid System | — | Undisclosable, Japan | FS, E.P.C. | (2023) |

6-2.Non-Ferrous Metal Plants

| Client | Type of Plant | Capacity | Location | Scope of Work | Year of Completion |
|--|--|------------------|----------------------|---------------|--------------------|
| P.T. Smelting Co. | Copper Cathode Plant | 200,000 ton/year | Indonesia | E.P.C. | 1998 |
| Myanmar Ivanhoe Copp | Copper Cathode Plant | 25,000 ton/year | Myanmar | E.P.C. | 1998 |
| Toho Titanium Co., Ltd. | Titanium Chlorination & Distillation Plant | 4,000 ton/month | Fukuoka, Japan | E.P.C. | 2009 |
| Toho Titanium Co., Ltd. | Titanium Chlorination & Distillation Plant | 30% increase | Fukuoka, Japan | E.P.C. | 2012 |
| Taganito HPAL Nickel Corporation | Nickel/Cobalt Mixed Sulfide Plant | 30,000 ton/year | Taganito, Philippine | E.P.C. | 2013 |
| Toho Titanium Co., Ltd. and Advanced Metal Industries Cluster Company Ltd. | Titanium Sponge Plant | 15,600 ton/year | Yanbu, Saudi Arabia | E.P.C. | 2017 |
| PT Freeport Indonesia | Copper Cathode Plant | -- | Gresik, Indonesia | E.P.C. | (2024) |

6-3.Transportation Project

| Client | Type of Plant | Capacity | Location | Scope of Work | Year of Completion |
|---|---------------|----------|---|---------------|--------------------|
| Civil Aviation Authority of Mongolia | Airport | — | Ulaanbaatar, Mongolia | P.C. | 2017 |
| Department of Transportation and Communication, the Government of the Republic of the Philippines | Airport | — | Panglao Island, Bohol province, the Republic of the Philippines | P.C. | 2018 |

7. New Energy

Scope of Work

FEED: Front End Engineering Design

E: Engineering

M: Start-up and Commissioning

P: Procurement

C: Construction

7-1. Photovoltaic Power Plants

| Client | Type of Plant | Capacity | Location | Scope of Work | Year of Completion |
|---------------------------------------|--|----------|------------------|---------------|--------------------|
| Solar Frontier K.K. | CIS Photovoltaic Power Plant (Rooftop) | 2,000kW | Miyazaki, Japan | E.P.C. | 2011 |
| AIKAWA PRESS INDUSTRY CO., LTD. | CIS Photovoltaic Power Plant (On Ground) | 1,800kW | Yamanashi, Japan | E.P.C. | 2013 |
| INPEX CORPORATION | CIS Photovoltaic Power Plant (On Ground) | 2,300kW | Niigata, Japan | E.P.C. | 2013 |
| OR Solar Co, Ltd. | CIS Photovoltaic Power Plant (On Ground) | 2,500kW | Toyama, Japan | E.P.C. | 2013 |
| Sanco Real Estate Co, Ltd. | CIS Photovoltaic Power Plant (On Ground) | 5,200kW | Mie, Japan | E.P.C. | 2013 |
| Sanco Real Estate Co, Ltd. | CIS Photovoltaic Power Plant (On Ground) | 2,500kW | Mie, Japan | E.P.C. | 2013 |
| SHOWA SHELL SEKIYU K.K. | CIS Photovoltaic Power Plant (Rooftop) | 2,400kW | Miyazaki, Japan | E.P.C. | 2013 |
| LM Sun Power Co, Ltd. | CIS Photovoltaic Power Plant (On Ground) | 2,500kW | Ibaraki, Japan | E.P.C. | 2013 |
| LM Sun Power Co, Ltd. | CIS Photovoltaic Power Plant (On Ground) | 2,600kW | Fukui, Japan | E.P.C. | 2013 |
| LM Sun Power Co, Ltd. | CIS Photovoltaic Power Plant (On Ground) | 2,600kW | Fukuoka, Japan | E.P.C. | 2014 |
| Japan Petroleum Exploration Co., Ltd. | CIS Photovoltaic Power Plant (On Ground) | 2,400kW | Hokkaido, Japan | E.P.C. | 2014 |
| MITSUI & Co, Ltd. | CIS Photovoltaic Power Plant (On Ground) | 19,600kW | Aichi, Japan | E.P.C. | 2014 |
| Sanco Real Estate Co, Ltd. | CIS Photovoltaic Power Plant (On Ground) | 2,400kW | Mie, Japan | E.P.C. | 2014 |
| Seibu Oil Company Co, Ltd. | CIS Photovoltaic Power Plant (On Ground) | 10,400kW | Yamaguchi, Japan | E.P.C. | 2014 |
| Solar Frontier K.K. | CIS Photovoltaic Power Plant (On Ground) | | Miyazaki, Japan | E.P.C. | 2014 |
| AIDEX CO., LTD. | CIS Photovoltaic Power Plant (On Ground) | | Yamaguchi, Japan | E.P.C. | 2015 |
| INPEX LOGISTICS (JAPAN) CO., LTD. | CIS Photovoltaic Power Plant (On Ground) | 2,500kW | Niigata, Japan | E.P.C. | 2015 |
| Sanco Real Estate Co, Ltd. | CIS Photovoltaic Power Plant (On Ground) | 4,500kW | Mie, Japan | E.P.C. | 2015 |
| Sanco Real Estate Co, Ltd. | CIS Photovoltaic Power Plant (On Ground) | 2,900kW | Mie, Japan | E.P.C. | 2015 |
| Sanco Real Estate Co, Ltd. | CIS Photovoltaic Power Plant (On Ground) | 15,500kW | Mie, Japan | E.P.C. | 2015 |
| LM Sun Power Co, Ltd. | CIS Photovoltaic Power Plant (On Ground) | 8,800kW | Miyagi, Japan | E.P.C. | 2015 |
| LM Sun Power Co, Ltd. | CIS Photovoltaic Power Plant (On Ground) | 8,200kW | Fukushima, Japan | E.P.C. | 2016 |
| Nagasaki Solar Energy Godo Kaisha | CIS Photovoltaic Power Plant (On Ground) | 29,700kW | Nagasaki, Japan | E.P.C. | 2016 |
| Niigata Shimami Solar Park LLC. | CIS Photovoltaic Power Plant (On Ground) | 14,200kW | Niigata, Japan | E.P.C. | 2016 |
| Sanco Real Estate Co, Ltd. | CIS Photovoltaic Power Plant (On Ground) | 14,000kW | Mie, Japan | E.P.C. | 2017 |
| Sanco Real Estate Co, Ltd. | CIS Photovoltaic Power Plant (On Ground) | 12,800kW | Mie, Japan | E.P.C. | 2017 |
| SDT Solar Power K.K. | CIS Photovoltaic Power Plant (On Ground) | 17,300kW | Yamaguchi, Japan | E.P.C. | 2017 |
| Solar Frontier K.K. | CIS Photovoltaic Power Plant (On Ground) | 13,000kW | Iwate, Japan | E.P.C. | 2017 |
| Ube Nishioki Solar Energy LLC | CIS Photovoltaic Power Plant (On Ground) | 18,500kW | Yamaguchi, Japan | E.P.C. | 2019 |
| GK JRE Takashima | Photovoltaic Power Plant (On Ground) | 13,200kW | Shiga, Japan | E.P.C. | 2020 |
| Pacifico Energy Toyota LLC | Photovoltaic Power Plant (On Ground) | 62,000kW | Aichi, Japan | E.P.C. | 2020 |
| FS Japan Project 18 G.K. | Photovoltaic Power Plant (On Ground) | 16,800kW | Ibaraki, Japan | E.P.C. | |
| FS Japan Project 6 G.K. | Photovoltaic Power Plant (On Ground) | 60,500kW | Kyoto&Mie, Japan | E.P.C. | (2023) |

7-2.Biomass Firing Power Plant

| Client | Type of Plant | Capacity | Location | Scope of Work | Year of Completion |
|-----------------------------------|----------------------------|----------|--------------|---------------|--------------------|
| Sodegaura Biomass Power Co., Ltd. | Biomass Firing Power Plant | 75MW | Chiba, Japan | E.P.C.M. | (2023) |

7-3. Battery and Decentralized Energy System

| Client | Type of Plant | Capacity | Location | Scope of Work | Year of Completion |
|---|-------------------------------|----------|-----------------|---------------|--------------------|
| North Hokkaido Wind Energy Transmission Corporation | Battery Energy Storage System | 720MWh | Hokkaido, Japan | E.P.C. | (2023) |

7-4. Biofuel Plant

| Client | Type of Plant | Capacity | Location | Scope of Work | Year of Completion |
|-------------------|---|------------|-----------------|---------------|--------------------|
| euglena Co., Ltd. | Biojet and diesel fuel production demonstration plant | 125kl/year | Kanagawa, Japan | B.E.P.C. | 2018 |

7-5.Power to Liquid

| Client | Type of Plant | Capacity | Location | Scope of Work | Year of Completion |
|--|-----------------------------|---------------|----------|-------------------|--------------------|
| New Energy and Industrial Technology Development Organization (NEDO) | E-jet fuel production plant | undisclosable | U.A.E | Feasibility Study | (2023) |



www.chiyodacorp.com