STORAGE TANKS EXPERIENCE

ENKA
Engineering for a Better Future

STORAGE TANKS EXPERIENCE

ENKA’s experience in storage tanks projects began in 1970s.

Over the years, ENKA has been undertaking projects of storage tanks as standalone or within the scope of power plants and oil, gas & petrochemicals projects in Türkiye and abroad.

ENKA Group company named ÇİMTAŞ, has a vast experience in storage tanks starting from 1978 with Liquid Storage Tanks.

ÇİMTAŞ provides design, engineering, supply, fabrication and assembly of field-installed storage tanks including Liquid Storage Tanks, LNG Tanks, Spherical Storage Tanks and Over Size Mounded Storage Tanks for petroleum and the petrochemical industries.

ENKA FEATURED PROJECTS OF STORAGE TANKS

PROJECT	COUNTRY	LOCATION	CLIENT	COMMENCE DATE	COMPLETION DATE
Stade Liquefied Natural Gas Regasification Terminal	Germany	Stade, Lower Saxony	Hanseatic Energy Hub GmbH	2023	2027
West Qurna I Produced Water 2 (PW2) Facility	Iraq	Basra	ExxonMobil Iraq Limited (EMIL)	2019	2023
Samawa 750 MW Combined Cycle Power Plant	Iraq	Samawa	Ministry of Electricity of Iraq	2019	2021
Dhi Qar 750 MW Combined Cycle Power Plant	Iraq	Nasiriyah	Ministry of Electricity of Iraq	2019	2021
Crude Shipment Capacity Project	Kazakhstan	Tengiz	Tengizchevroil LLP	2014	2019
SCPX Early Works and Facilities	Georgia		South Caucasus Pipeline Company	2014	2019
Besmaya 1,500 MW Combined Cycle Power Station	Iraq	Baghdad	Mass Group Holding Limited	2014	2018
Sulaymaniyah 1,500 MW Combined Cycle Power Plant	Iraq	Sulaymaniyah	Mass Group Holding Limited	2013	2016
Bazyan 500 MW Simple Cycle Power Plant	Iraq	Sulaymaniyah	Qaiwan Company for Trading, General Contracts, Oil Services & General Transport Ltd	2014	2016
Erbil 1,500 MW Combined Cycle Power Plant	Iraq	Erbil	Mass Group Holding Ltd	2012	2015
West Qurna 2 PGP & Power Distribution System	Iraq	Basra	LUKOIL Mid-East Limited	2011	2014
Majnoon Oil Field-Central Processing Facility	Iraq	Basra	Shell Iraq Petroleum Development BV	2011	2013
Sakhalin II - Onshore O&G Processing Facility (OPF)	Russian Federation	Sakhalin Island	Sakhalin Energy Investment Company Ltd. (Royal Dutch Shell, Mitsui and Mistubishi)	2003	2009
EgeGaz Aliaga LNG Terminal	Türkiye	İzmir	EgeGaz Inc.	2000	2001
Storage Tanks of Middle Anatolian Refinery	Türkiye	Kırıkkale	Turkish Petroleum Co. Inc. - T.P.A.O.	1979	1983
TPAO Aliağa Refinery New Storage Tanks	Türkiye	İzmir	Turkish Petroleum Co. Inc. - T.P.A.O.	1979	1981
Petkim Yarımca Complex New Tank Farm	Türkiye	İzmit	Petkim - Petrochemical Co. Inc.	1976	1978

PROJECT LOCATION
Stade, Germany

CLIENT
Hanseatic Energy Hub Gmbh

CONSTRUCTION PERIOD
April 2023 – August 2027

CONTRACT TYPE
EPC

STADE LIQUEFIED NATURAL GAS REGASIFICATION TERMINAL

PROJECT DESCRIPTION

ENKA's wholly owned subsidiary Entrade GmbH, in a consortium formed together with Técnicas Reunidas and FCC Industrial, has signed an EPC (Engineering, Procurement and Construction) contract with the Hanseatic Energy Hub company for the Liquefied Natural Gas (LNG) Regasification Terminal to be built at the Stade Industrial Park situated on the banks of Elbe River, Lower Saxony, Germany.

The contract is for the design and construction of a new storage and regasification terminal for liquified gases, featuring unloading facilities on a newly built modern energy port at Stade.

The land on which the facility will be built belongs to the large chemical company, Dow Chemicals, which is participating in the project as one of the development partners. The terminal will utilize Dow's industrial waste heat and therefore will be able to regasify the gases without additional CO2 emissions. The terminal is an important element of Germany's current energy policy, as one of its main objectives is to diversify its natural gas supply with liquefied natural gas (LNG) and green gases while preparing for the market ramp-up of hydrogen.

The terminal, which will have a nominal annual capacity of 13.3 billion m3, involves a total investment of 1 billion Euros and the share of Entrade GmbH is approximately 25%. Following the first phase of 5 months for preliminary and engineering works, the second phase, the main works, is planned to commence with the final investment decision to be taken by the client.

Entrade GmbH, a subsidiary of ENKA will perform the electromechanical assembly works of the project including piping prefabrication. Scope of works to be carried out under Entrade's responsibility will be summarized as mechanical and electrical equipment erection works, steel structure erection works, electrical and instrumentation works, piping fabrication and erection works, painting and fireproofing, insulation, scaffolding, pre-commissioning and testing works.

Optionally, Entrade will also provide supervision and manpower support during the commissioning phase. Pipe spool prefabrication of the plant will be carried out at ENKA subsidiary Cimtas Pipe's facilities, and the spools will be delivered to site for its installation. The project includes two LNG storage tanks, full containment type, with a net capacity of 240,000 m3 each.

PROJECT LOCATION

Basra, Iraq

CLIENT

ExxonMobil Iraq Limited

CONSTRUCTION PERIOD

December 2019 – April 2023

PROJECT VALUE

US$ 71 Million

ENR GLOBAL BEST PROJECTS

WINNER

WEST QURNA I PRODUCED WATER 2 (PW2) FACILITY

PROJECT DESCRIPTION

ENKA had been awarded the contract by ExxonMobil Iraq Limited (EMIL) in December 2019 for a new produced water facility.

In the Produced Water 2 (PW2) project ENKA executed the entire EPCC scope, encompassing detailed design engineering, procurement, fabrication, construction, erection, and commissioning of the three water treatment trains, one produced water tank, one local equipment room, transfer pumps and all associated systems. The PW2 project will produce 210,000 barrels of water per day of outlet stream treated produced water in order to meet forecast produced water across West Qurna 1 De-gassing Stations 6, 7 and 8. The treated produced water is to be sent to the Water Injection Storage Tank that feeds the High-Pressure Water Injection Pump System for injection wells. The end user of this new facility is the Basrah Oil Company (BOC) of Iraq.

SAMAWA 750 MW COMBINED CYCLE POWER PLANT

PROJECT LOCATION

Samawa, Iraq

CLIENT

Ministry of Electricity of Iraq

CONSTRUCTION PERIOD

March 2019 - June 2021

PROJECT VALUE

$336 Million

Tag No:	Type	Tank Centerline Diameter (m)	Height of Tank (m)	Max Operating Liquid Level (m)	Net Working Capacity (m^3)	Nominal Capacity (m^3)
LDO	Light Distillate Oil Tank 1	34.30	12.50	11.30	9,430	10,182
LDO	Light Distillate Oil Tank 2	34.30	12.50	11.30	9,430	10,182
LDO	Auxillary Light Distillate Oil Tank	7.60	6.00	4.60	150	195
HFO	Raw Heavy Fuel Oil Tank 1	30.50	13.50	11.70	8,100	7,754
HFO	Raw Heavy Fuel Oil Tank 2	30.50	13.50	11.70	8,100	7,754
HFO	Treated Heavy Fuel Oil Tank 1	22.90	11.50	10.10	3,563	3,975
HFO	Treated Heavy Fuel Oil Tank 2	22.90	11.50	10.10	3,563	3,975
HFO	Treated Heavy Fuel Oil Tank 3	22.90	11.50	10.10	3,563	3,975
HFO	Certification Heavy Fuel Tank 1	15.30	9.00	7.80	1,188	1,375
HFO	Certification Heavy Fuel Tank 2	15.30	9.00	7.80	1,188	1,375
Water	Raw Water Tank	30.50	11.50	10.70	7,200	8,008
Water	Deminarilize Water Tank	34.30	14.00	13.50	11,520	12,264
Water	Fire Water Tank	26.70	12.00	11.30	5,680	6,172
Water	Potable Water Tank	5.70	6.50	5.40	120	141
Water	UF Permate Tank	7.63	6.00	4.58	150	195
	Grand Total				72,945	77,522

DHI QAR 750 MW COMBINED CYCLE POWER PLANT

PROJECT LOCATION
Nasiriyah, Iraq

CLIENT
Ministry of Electricity of Iraq

CONSTRUCTION PERIOD
March 2019 - June 2021

PROJECT VALUE
$335 Million

Tag No:	Type	Tank Centerline Diameter (m)	Height of Tank (m)	Max Operating Liquid Level (m)	Net Working Capacity (m^3)	Nominal Capacity (m^3)
LDO	Light Distillate Oil Tank 1	34.33	12.50	11.30	9,430	10,182
LDO	Light Distillate Oil Tank 2	34.33	12.50	11.30	9,430	10,182
LDO	Auxillary Light Distillate Oil Tank	7.63	6.00	4.58	150	195
CO	Raw Crude Oil Tank 1	30.52	14.00	13.50	8,025	9,415
CO	Raw Crude Oil Tank 2	30.52	14.00	13.50	8,025	9,415
CO	Treated Crude Oil Tank 1	22.89	13.00	12.35	4,015	4,800
CO	Treated Crude Oil Tank 2	22.89	13.00	12.35	4,015	4,800
CO	Treated Crude Oil Tank 3	22.89	13.00	12.35	4,015	4,800
CO	Certification Crude Tank 1	15.26	10.50	9.86	1,355	1,700
CO	Certification Crude Tank 2	15.26	10.50	9.86	1,355	1,700
Water	Raw Water Tank	30.52	11.50	10.65	7,200	8,008
Water	Deminarilized Water Tank	34.33	14.00	13.45	11,520	12,264
Water	Fire Water Tank	26.73	12.00	11.30	5,680	6,172
Water	Potable Water Tank	5.72	6.50	5.45	120	141
Water	UF Permate Tank	7.63	6.00	4.58	150	195
	Grand Total				74,485	83,969

CRUDE SHIPMENT CAPACITY PROJECT

PROJECT LOCATION

Tengiz, Kazakhstan

CLIENT

Tengizchevroil (TCO - a Joint Venture between Chevron, ExxonMobil, LukArco and KazMunayGas)

CONSTRUCTION PERIOD

July 2014 – December 2019

PROJECT VALUE

US$ 440 Million

PROJECT DESCRIPTION

The Crude Shipment Capacity Project, which had commenced in July 2014, encompassed engineering, procurement and construction activities which were required to provide the Tengizchevroil's existing Crude Tank Farm with additional storage and export capabilities through the addition of new crude oil storage tanks (3 x 50,000 m3 floating roof and 1 x 30,000 m3 fixed roof), switching manifolds and export pumps, along with all their associated piping systems, utilities and control systems.

The project established an optimal crude tank farm and export system, so that the existing and planned volumes of crude could be delivered to the Caspian Pipeline Consortium and Crude Rail Loading without any loss of product quality or interruption in availability.

Tag No:	Type	Liquid	ID (m)	Height (m)	Capacity (m^3)	Spec
T-031	Fixed Roof Tank	Crude Oil	48.00	18.00	30,000	API Std 650
T-032	External Floating Roof Tank	Crude Oil	61.50	18.00	50,000	API Std 650
T-033	External Floating Roof Tank	Crude Oil	61.50	18.00	50,000	API Std 650
T-034	External Floating Roof Tank	Crude Oil	61.50	18.00	50,000	API Std 650

PROJECT LOCATION

Georgia

CLIENT

South Caucasus Pipeline Company Ltd.

CONSTRUCTION PERIOD

February 2014 – October 2019

PROJECT VALUE

US$ 878 Million

SCPX EARLY WORKS AND FACILITIES PROJECT

PROJECT DESCRIPTION

A joint venture between Bechtel and ENKA was awarded the SCPX Early Works and Facilities contract and responsible for the construction of two Compressor Stations (CSG-1 and CSG-2) and a Pressure Reduction and Metering Station (AREA 81) at three different locations within Georgia, and for all related early civil works and facilities.

The early works stage for Compressor Station 2 (CSG-2) included the construction of a 15 km access road between the existing Millennium Highway and the compressor station.

The Bechtel-ENKA JV's scope of works also included the supply and fabrication of all structural steel and fabrication of all piping including the pipeline connection sections to the South Caucasus Pipeline.

Type	Volume (m3)	Internal Diameter (mm)	Top of Shell Height (mm)
Diesel Storage Tank	250	6.6	8.4
Potable Water Storage Tank	70	4.4	5.99

PROJECT LOCATION

Baghdad, Iraq

CLIENT

Mass Group Holding Limited

CONSTRUCTION PERIOD

October 2014 – February 2018

PROJECT VALUE

US$ 569 Million

BESMAYA 1,500 MW COMBINED CYCLE POWER STATION

PROJECT DESCRIPTION

The Baghdad Electrical Power Station - Besmaya Project was an EPC contract undertaken and executed by ENKA, on a lump sum turnkey basis, including engineering, procurement, construction, commissioning, start-up and performance testing.

The contract, signed between ENKA and Mass Energy Group Holding Ltd., comprised the first phase of the project, namely a 1,500 MW gas fired Combined Cycle Power Plant including all the infrastructure and utilities to serve also the future extension of the plant capacity to 3,000 MW. Phase-1, configured as 2 blocks of 2 x 2 x 1 combined cycle (1,500 MW), was designed and built to make 1,000 MW available for commercial operation on simple cycle mode by the end of 2016 and to add 500 MW with steam cycle by the end of 2017.

The combined cycle part of the plant consists of 4 Heat Recovery Steam Generators, including surface type condensers, 2 nominal rated 250 MW steam turbine generators, 2 wet type mechanical draft cooling towers, all the requisite equipment and systems for a safe, reliable and efficient combined cycle power generating facility.

Type	Volume (m3)	Internal Diameter (mm)	Top of Shell Height (mm)
Demin Water Tank (2 ea)	4,000	22,823	12,250
Service Water Tank	6,000	26,627	13,475
Evap Cooling Tank (3 ea)	9,000	34,234	13,475
Raw Water Tank	2,000	19,019	9,800
Light Distillate Oil Tank (4 ea)	10,000	34,234	14,000
Light Distillate Oil Unloading Tank	16,000	41,842	14,700

SULAYMANIYAH 1,500 MW COMBINED CYCLE POWER PLANT

PROJECT DESCRIPTION

The existing simple cycle Sulaymaniyah Gas Power Station had been developed by MGH - Mass Group Holding Ltd. with a capacity of 1,000 MW with eight GE - 9E gas turbines. Through the use of steam turbines manufactured by GE, the combined cycle gas turbines conversion added 500 MW installed capacity to the plant, making an overall capacity of 1,500 MW. The Sulaymaniyah Combined Cycle Power Plant Project was designed to work on two types of fuel – natural gas as the primary and diesel as the secondary source and to utilize the exhaust heat produced by the existing Sulaymaniyah Gas Power Station.

The major works under the contract were the design, engineering, procurement, shipment/ delivery, installation construction, interconnection, pre-commissioning, commissioning and start-up of eight Heat Recovery Steam Generators, two nominally rated 250 MW GE Steam Turbine Generators, two GSU Transformers, two 40-cell Air Cooled Condenser systems and all other Balance of Plant equipment to convert the simple cycle plant into two blocks of 4x4x1 combined cycle configuration, as well as demonstrating parallel operation with the grid at the required net output, performance testing, training of the operating and maintenance personnel, and preparation of the integrated operation and maintenance manuals.

PROJECT LOCATION
Sulaymaniyah, Iraq

CLIENT
Mass Group Holding Ltd

CONSTRUCTION PERIOD
July 2013 - July 2016

PROJECT VALUE
US$ 434 Million

ENR GLOBAL BEST PROJECTS WINNER 2017

Type	Volume (m3)	Internal Diameter (mm)	Top of Shell Height (mm)
Demin Water Tank (2 ea)	4,000	20,420	12,190
Service Water Tank	2,000	14,150	12,200

PROJECT LOCATION

Sulaymaniyah, Iraq

CLIENT

Qaiwan Company for Trading, General Contracts, Oil Services & General Transport Ltd

CONSTRUCTION PERIOD

September 2014 – March 2016

PROJECT VALUE

US$ 222 Million

BAZYAN 500 MW SIMPLE CYCLE POWER PLANT

PROJECT DESCRIPTION

The Qaiwan Group awarded ENKA, the Bazyan Simple Cycle Power Plant Project on an EPC turnkey basis. The power capacity of the plant is 500 MW generated by four GE-9E-3 gas turbines, an air insulated switchyard of 132kV, fuel gas conditioning system, three Distillate Fuel Oil tanks, each of 15,000 m3 capacity, a water treatment plant and all Balance of Plant systems, to be completed with all accessories, including piping, wiring, instrumentation controls and panels and all other facilities and required capabilities.

The scope of the work covered all engineering, design, procurement, manufacturing, shipment/ delivery, construction, installation, testing, interconnection, pre-commissioning, commissioning, start-up, demonstration of parallel operation with the grid at the required net output and performance testing activities as well as preparation of operation & maintenance manuals and classroom training of the operating and maintenance.

Type	Volume (m3)	Internal Diameter (mm)	Top of Shell Height (mm)
Demin Water Tank (2 ea)	2,000 (each)	17,000	10,000
Raw Water Tank (2 ea)	2,000 (each)	17,000	10,000
Diesel Fuel Tank (3 ea)	15,000 (each)	37,000	15,000

PROJECT LOCATION

Erbil, Iraq

CLIENT

Mass Group Holding Ltd

CONSTRUCTION PERIOD

April 2012 – October 2015

PROJECT VALUE

US$ 488 Million

ERBIL 1,500 MW COMBINED CYCLE POWER PLANT

PROJECT DESCRIPTION

ENKA executed the design, procurement, installation and start-up of eight Heat Recovery Steam Generators, two nominally rated 250 MW Steam Turbine Generators, two GSU Transformers, two 40-cell Air Cooled Condenser systems and all other equipment, to convert the simple cycle plant into two blocks of 4x4x1 combined cycle configuration, including all civil and erection works.

Erbil Combined Cycle Power Plant project was designed to work on two types of fuel – natural gas as the primary and diesel as the secondary source and utilizes the exhaust heat produced by the existing Erbil Gas Power Station.

The Erbil 1,500 MW Combined Cycle Power Plant project was Iraq's the first conversion project from simple cycle to combined cycle and the first combined cycle power plant in the country.

Type	Volume (m3)	Internal Diameter (mm)	Top of Shell Height (mm)
Demin Water Tank	1,000	12,350	9,758
Service Water Tank	2,000	14,150	12,200

PROJECT LOCATION

Basra, Iraq

CLIENT

LUKOIL Mid-East Limited

CONSTRUCTION PERIOD

December 2011 – July 2014

PROJECT VALUE

US$ 387 Million

WEST QURNA 2 PGP & POWER DISTRIBUTION SYSTEM

PROJECT DESCRIPTION

ENKA performed the full front-end engineering design, detailed engineering, procurement, construction, commissioning, start-up and performance testing scope of works for the West Qurna 2 Power Generation Plant & Power Distribution System project, utilizing in-house resources on a lump sum turnkey basis.

The specific content of the plant consisted of three (3) GE MS6001B Heavy Duty Dual Fuel Gas Turbine Generators - Simple Cycle - 42 MW each, a Fuel Gas Treatment Plant (45,000 Nm^3/hour capacity) and a compression system included with fuel gas buffer storage, a liquid fuel unloading, storage and distribution system; 33kV/132kV GIS switchgear, power management system, a water treatment plant; firefighting and protection systems, utilities' networks; all associated balance of plant, buildings and infrastructure.

The project has a high level of operational intelligence and reliability, compared to a standard power plant, due to its being the sole source of electric power for a giant oil field.

Type	Volume (m3)	Internal Diameter (mm)	Top of Shell Height (mm)
Diesel Storage Tank (2 ea)	2,500	17,500	12,090
Fire & Raw Water Storage Tank	2,928	17,500	14,010

PROJECT LOCATION

Basra, Iraq

CLIENT

Shell Iraq Petroleum Development BV

CONSTRUCTION PERIOD

July 2011 – December 2013

PROJECT VALUE

US$ 247 Million

MAJNOON OIL FIELD– MEI WORKS OF CPF

PROJECT DESCRIPTION

Central Processing Facility of Early Production Phase (Greenfield)

- 100,000 bpd capacity with 2 trains
- ENKA scope: Mechanical, Piping, Electrical, Instrumentation works, Pre-commissioning, Commissioning Support

DS-2 Mechanical Works (Brownfield)

ENKA signed another contract with Shell, to take over the rehabilitation brownfield work at existing Degassing Station DS-2, in order to restore current capacity of 65k bpd to the original design inlet of 100k bpd and further debottleneck the process, in order to increase the production capacity to 120k bpd. The project consisted of implementation of all rehabilitation and upgrading work packages.

Type	Volume (m3)	Internal Diameter (mm)	Top of Shell Height (mm)
Crude Oil Storage Tank	21,500	45,000	13,500
Crude Oil Buffer Tank	5,000	19,000	16,600
Produced Water Storage Tank	4,000	19,000	14,000
Wash Water Storage Tank	1,000	12,000	9,000
Raw Water Buffer Tank	270	7,000	7,000

SAKHALIN II ONSHORE PROCESSING FACILITY (OPF)

PROJECT LOCATION
Sakhalin, Russia

CLIENT
Sakhalin Energy Investment Co.

CONSTRUCTION PERIOD
May 2003 - July 2009

PROJECT VALUE
US$ 1.1 Billion

PROJECT DESCRIPTION

The Sakhalin II Onshore Processing Facility, located in the Nogliki district, 7 km inland in the north-east of Sakhalin Island, is the first combined oil & gas processing facility built in Russia and the largest of its kind globally. It is the key element of the Sakhalin II integrated oil and gas field development project, producing oil and gas from two major offshore fields located on the northeastern shelf of Sakhalin Island in the Okhotsk Sea.

The scope of work included the design and construction of buildings, multi-discipline fabrication, construction and erection works and provision of commissioning and start-up assistance for the whole facility; and also procurement of bulk materials; material management; transportation and logistics of all process equipment and materials sourced worldwide and free-issued by the client.

Type	Tank Centerline Diameter (m)	Height of Tank (m)	Weight (ton)	Volume (m^3)	Total Work Volume (m^3)
Condensate Storage Tank (2 ea)	29.50	13.50	254 t/ea	8,097 m^3/ea	16,194
Meg Storage Tank	22	18	189	6,005	6,005
Fire Fighting Water Storage Tank (2 ea)	18	1.5	19 t/ea	335 m^3/ea	670
Storm Water Surge Tank	18	12	92	2,680	2,680
Meg Storage Tank (2 ea)	16	8	48 t/ea	1,412 m^3/ea	2,824
Hot Oil Storage Tank	5.5	8.3	10	173	173
Diesel Storage Tank	4.7	7	6	107	107
Potable Water Tank	4.5	4	3	56	56
Diesel Storage Tank	4.3	4.2	3	54	54
Metanol Storage Tank	4.2	4.2	3	51	51
Waste Oil Storage Tank	4	4	3	44	44

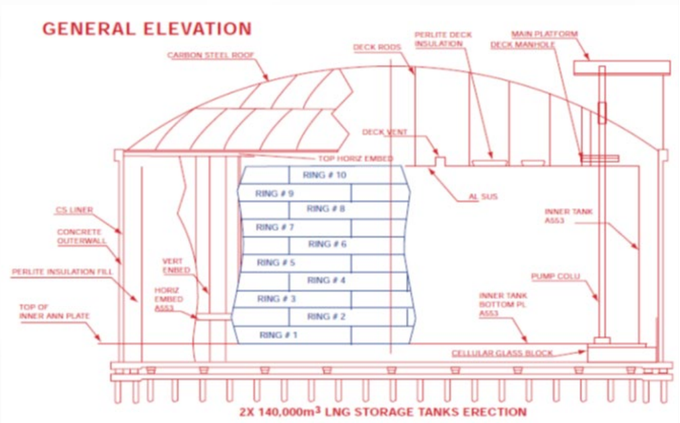

Figure 3. 140,000m³ LNG storage tank. The 9% Ni-steel shell is indicated in blue.

PROJECT LOCATION

İzmir, Türkiye

CLIENT

EgeGaz Inc.

CONSTRUCTION PERIOD

March 2000 – September 2001

EGEGAZ ALİAĞA LNG TERMINAL

PROJECT DESCRIPTION

Mechanical Erection (Steel Works) of tanks was performed by CİMTAŞ (a subsidiary of ENKA). The very unique feature of the project is the lifting operation of the tank roofs. Following the ground assembly, the tank roof with a single piece weight of 800 tons and a diameter of 80 m has been lifted to its final position at +35 m by means of compressed air blowing.

- Capacity: 2 x 140,000 m³
- Height: 31 meters
- Diameter: 82 meters
- Materials: A553 Type 1 (9% Ni)
- Concrete, carbon-steel-lined outer wall and dome roof, an ASTM A 553 type 1 9%Ni steel tank, a suspended aluminium deck type ASTM B 209 5083 and stainless steel piping and stairs
- Designed by: CB&I as per API 620 and have a total steel weight of 7,000 tons
- Inner tank steel material being ASTM A553 Type 1 requiring advanced welding technology

PROJECT LOCATION

Kırıkkale, Türkiye

CLIENT

Turkish Petroleum Co. Inc. - T.P.A.O.

CONSTRUCTION PERIOD

July 1979 – March 1983

PROJECT VALUE

US$ 60 Million

STORAGE TANKS OF MIDDLE ANATOLIAN REFINERY

PROJECT DESCRIPTION

- Construction and erection of 82 cylindrical tanks for the storage of crude oil and oil products
- 31 floating roofs, and 3 spherical tanks for LPG storage
- Capacities of cylindrical tanks range between 11,000 m³ and 136,000 m³ and amount to a total capacity of 1,250,000 m³

TPAO ALİAĞA REFINERY NEW STORAGE TANKS

PROJECT DESCRIPTION

Fabrication, erection, piping and insulation of various tanks:

- 2 x 100,000 tons floating roof crude oil tanks
- 1 x 40,000 tons fixed roof light oil tank
- 1 x 20,000 tons floating roof naphtha tank

PROJECT LOCATION
İzmir, Türkiye

CLIENT
Turkish Petroleum Co. Inc. - T.P.A.O.

CONSTRUCTION PERIOD
March 1979 – February 1981

PROJECT VALUE
US$ 11.4 Million

PETKIM YARIMCA COMPLEX NEW TANK FARM

PROJECT DESCRIPTION

Fabrication, erection, piping and insulation of different type of tanks:

- 2 x 40,000 tons and 1 x 10,000 tons floating roof tanks for naphta and benzol respectively
- 2 x 40,000 tons fixed roof tank for fuel oil
- 1 x 40,000 tons fixed roof tank for water storage

PROJECT LOCATION

İzmir, Türkiye

CLIENT

Petkim - Petrochemical Co. Inc.

CONSTRUCTION PERIOD

September 1976 – January 1978

PROJECT VALUE

US$ 10 Million

CIMTAS FEATURED STORAGE TANKS PROJECTS

Type	Media	Qty	Contract	Year / Client	Code	Design by	Material	Thickness	Capacity
Dome Roof Double Wall	LNG	2	Egegaz Aliağa/Turkey	2001 Egegaz	API 620	CBI	A553 Type 1 (9% Ni)	10-24 mm	140.000 m³ Ø80 m x 50 m
Fixed Cone Roof	Gas Oil/ Kerosene	2	Ataş Refinery Mersin/Turkey	1996 Ataş Refinery	API 650	ÇİMTAŞ	A283 GRB	5-16 mm	10.760 m³ Ø33.5 m x 12.20 m
Fixed Cone Roof *	Gas Oil	7	Elf/Selyak Samsun Terminal	1996 Elf/Selyak	API 650	FW/BİMAŞ	St-37.2	6-10 mm	1.600 m³ Ø14 m x 10.5 m
Fixed Cone Roof *	Gasoline	1	Elf/Selyak Samsun Terminal	1996 Elf/Selyak	API 650	FW/BİMAŞ	St-37.2	6-13 mm	6.500 m³ Ø24.5 m x 12.8 m
Fixed Cone Roof *	Fire Water	1	Elf/Selyak Samsun Terminal	1996 Elf/Selyak	API 650	FW/BİMAŞ	St-37.2	6-8 mm	1.620 m³ Ø14 m x 10.5 m
Fixed Cone Roof *	Gas Oil	1	Elf/Selyak Samsun Terminal	1996 Elf/Selyak	API 650	FW/BİMAŞ	St-37.2	6-10 mm	3.200 m³ Ø17.5 m x 13.5 m
Fixed Dome Roof	Light Oil	2	Heating Center Krasnodar/Russia	1993 SVSI	API 620	KUNZE ÇİMTAŞ	St-37.2	5-7 mm	800 m³ Ø11 m x 9 m
Floating Roof *	Gasoline	1	Loading Terminal Gebze/Turkey	1993 UPET	API 650	UPET	St-37.2	5-26 mm	22.000 m³ Ø45 m x 13.9 m
Floating Roof *	Gasoline	1	Loading Terminal Haramidere/Turkey	1993 UPET	API 650	UPET	St-37.2	5-26 mm	22.000 m³ Ø45 m x 13.9 m
Fixed Roof *	Diesel	1	Loading Terminal Haramidere/Turkey	1993 UPET	API 650	UPET	St-37.2	6-8 mm	2.500 m³ Ø16 m x 12.5 m
Floating Roof *	Gasoline	2	Loading Terminal Haramidere/Turkey	1993 UPET	API 650	UPET	St-37.2	6-12 mm	5.500 m³ Ø25 m x 12.4 m
Int. Floating Roof *	Benzene	3	Loading Terminal Haramidere/Turkey	1993 UPET	API 650	UPET	St-37.2	6 mm	1.000 m³ Ø13.5 m x 7.3 m

CIMTAS FEATURED STORAGE TANKS PROJECTS

Type	Media	Qty	Contract	Year / Client	Code	Design by	Material	Thickness	Capacity
Fixed Roof *	Diesel	1	Loading Terminal Haramidere/Turkey	1993 UPET	API 650	UPET	St-37.2	6 mm	1.000 m³ Ø13.5 m x 7.3 m
Fixed Roof	Slope	2	Loading Terminal Haramidere/Turkey	1993 UPET	API 650	UPET	St-37.2	5 mm	150 m³ Ø5 m x 7.6 m
Floating Roof (Repair)	Crude Oil	1	Yarımca Refinery İzmit/Turkey	1993 TÜPRAŞ	API 650	LINDE	A283C	6-36 mm	135.000 m³ Ø101 m x 16.5 m
Fixed Cone Roof	Crude Oil	2	E.Oil Recovery İkiztepe/Turkey	1992 JEORA	API 650	TOYO ÇİMTAŞ	A36	6-9 mm	385 m³ Ø7 m x 10 m
Fixed Dome Roof	Water	1	E.Oil Recovery İkiztepe/Turkey	1992 JEORA	API 620	TOYO ÇİMTAŞ	A36	5-7 mm	635 m³ Ø9 m x 10 m
Fixed Roof *	Ballast	2	Balast System Aliağa/Turkey	1992 TÜPRAŞ	API 650	ÇİMTAŞ *	St-37.2	6-24 mm	15.000 m³ Ø37 m x 14 m
Dome Roof *	Liq. Ethlene	1	Process Yarımca/Turkey	1991 PETKİM	API 620	LINDE	A 553 TI A283C	5-20 mm	8.800 m³ Ø28 m x 14.4 m
Floating Roof *	Naphta	1	Extension Aliağa/Turkey	1991 TÜPRAŞ	API 650	ÇİMTAŞ *	St-37.2	6-24 mm	20.000 m³ Ø45 m x 12.7 m
Fixed Roof *	Diesel Oil	2	Loading Terminal Gebze/Turkey	1990 UPET	API 650	UPET	St-37.2	5-22 mm	20.000 m³ Ø45 m x 12.75 m
Floating Roof *	Gasoline	4	Loading Terminal Gebze/Turkey	1990 UPET	API 650	UPET	St-37.2	6-12 mm	6.000 m³ Ø24.7 m x 12.8 m
Fixed Roof *	Diesel	6	Loading Terminal Gebze/Turkey	1990 UPET	API 650	UPET	St-37.2	6 mm	1.000 m³ Ø13.5 m x 7.3 m
Fixed Roof *	Sulphr. Acid	1	Extension Ereğli/Turkey	1989 ERDEMIR	API 650	ÇİMTAŞ *	St-37.2	6 mm	1.800 m³ Ø15 m x 10.2 m

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Type	Media	Qty	Contract	Year / Client	Code	Design by	Material	Thickness	Capacity
Floating Roof (Repair)	Crude Oil	2	Delta Terminal Yumurtalık/Turkey	1988 BOTAŞ	API 650	LINDE	A283C St-52	6-36 mm	135.000 m³ Ø125 m x 11.2 m
Dome Roof *	Acetic Acid	1	PTA Factory Aliağa/Turkey	1988 ALPET	API 620	ÇİMTAŞ *	A240 TP 316 L	6 mm	1.000 m³ Ø13.5 m x 7.3 m
Dome Roof *	Paper Pulp	1	Waste Treatment Çorlu/Turkey	1988 PAPER FACT.	API 620	ACB	St-37.2	14-6 mm	10.000 m³ Ø32m x 12.6 m
Fixed Roof *	Fuel Oil	8	Delta Terminal İskenderun/Turkey	1987 DELTA	API 650	ÇİMTAŞ *	St-37.2	5-18 mm	15.000 m³ Ø39 m x 12.6 m
Floating Roof *	Crude Oil	2	Delta Terminal İskenderun/Turkey	1987 DELTA	API 650	ÇİMTAŞ *	St-37.2	6-20 mm	20.000 m³ Ø45 m x12.7 m
Fixed Roof *	Diesel Oil	2	Delta Terminal İskenderun/Turkey	1987 DELTA	API 650	ÇİMTAŞ *	St-37.2	6-20 mm	20.000 m³ Ø45 m x 12.7 m
Floating Roof *	Crude Oil	3	Delta Terminal İskenderun/Turkey	1987 DELTA	API 650	ÇİMTAŞ *	St-37.2	5-18 mm	15.000 m³ Ø37 m x 14 m
Open Roof	Phosph. Acid	2	Delta Terminal Mersin/Turkey	1986 AKGÜBRE	API 650	ÇİMTAŞ *	St-37.2	6-10 mm	4.500 m³ Ø23.8 m x 10.2 m
Floating Roof *	Naphta	4	Delta Terminal İskenderun/Turkey	1986 DELTA	API 650	ÇİMTAŞ *	St-37.2	5-16 mm	12.500 m³ Ø30 m x 17.9 m
Floating Roof *	Naphta	2	Export Port. İskenderun/Turkey	1985 GÜBRE FAB.	API 650	ÇİMTAŞ *	St-37.2	6-22 mm	25.000 m³ Ø50.5 m x 12.7 m
Floating Roof *	Crude Oil	1	Refinery Batman/Turkey	1985 TÜPRAŞ	API 650	ÇİMTAŞ *	St-37.2	6-13 mm	7.950 m³ Ø26.7 m x 14.5 m
Fixed Roof *	Diesel Oil	1	Process Batman/Turkey	1985 TÜPRAŞ	API 650	ÇİMTAŞ *	St-37.2	6-10 mm	4.770 m³ Ø22.5 m x 12.7 m

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Type	Media	Qty	Contract	Year / Client	Code	Design by	Material	Thickness	Capacity
Fixed Roof *	Fuel Oil	2	Heating İskenderun/Turkey	1984 İSDEMİR	API 650	ÇİMTAŞ *	St-37.2	5-10 mm	5.000 m³ Ø22.5 m x 12.8 m
Concrete Lined *	JP-4	2	Air Field Dalaman/Turkey	1984 NATO	API 650	TÜMAŞ	St-37.2	7 mm	700 m³ Ø11.5 m x 7.2 m
Floating Roof	Crude Oil	3	M.A. Refinery Kırıkkale/Turkey	1980 TPAO	API 650	CMP	A283C	6-38 mm	136.000 m³ Ø120 m x 12.50 m
Floating Roof	Various	2	M.A. Refinery Kırıkkale/Turkey	1980 TPAO	API 650	CMP	A283C	6-35 mm	64.000 m³ Ø70 m x 16.70 m
Floating Roof	Various	4	M.A. Refinery Kırıkkale/Turkey	1980 TPAO	API 650	CMP	A283C	5-28 mm	35.000 m³ Ø55.9 m x 14.5 m
Floating Roof	Various	4	M.A. Refinery Kırıkkale/Turkey	1980 TPAO	API 650	CMP	A283C	5-22 mm	24.000 m³ Ø47m x 14.20 m
Floating Roof	Various	7	M.A. Refinery Kırıkkale/Turkey	1980 TPAO	API 650	CMP	A283C	6-18 mm	16.000 m³ Ø37 m x 14.90 m
Floating Roof	Various	45	M.A. Refinery Kırıkkale/Turkey	1980 TPAO	API 650	CMP	A283C	6-38 mm	124.000 m³ Ø120 m x 11 m
Fixed Roof	Diesel Oil	1	İzmir Rafinery Aliağa/Turkey	1981 TPAO	API 650	CMP	A283C	5-29 mm	40.000 m³ Ø60 m x 14.50 m
Floating Roof	Naphta	1	İzmir Rafinery Aliağa/Turkey	1981 TPAO	API 650	CMP	A283C	8-20 mm	20.000 m³ Ø45m x 12.70 m
Floating Roof	Crude Oil	2	İzmir Rafinery Aliağa/Turkey	1981 TPAO	API 650	CMP	A283C	5-38 mm	100.000 m³ Ø100 m x 12.90 m
Open Roof *	Water	1	Utility Yarımca/Turkey	1979 İPRAS	API 650	ÇİMTAŞ *	St-37.2	6-14 mm	10.000 m³ Ø32 m x 12.6 m

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Type	Media	Qty	Contract	Year / Client	Code	Design by	Material	Thickness	Capacity
Fixed Roof	Water	1	New Tank Farm Yarımca/Turkey	1978 PETKİM	API 650	ANÖ ÇİMTAŞ *	A283C	6-24 mm	40.000 m³ Ø60m x 14.5 m
Fixed Roof	Fuel Oil	2	New Tank Farm Yarımca/Turkey	1978 PETKİM	API 650	ANÖ ÇİMTAŞ *	A283C	6-24 mm	40.000 m³ Ø60m x 14.5 m
Floating Roof	Naphta	2	New Tank Farm Yarımca/Turkey	1978 PETKİM	API 650	ANÖ ÇİMTAŞ *	A283C	6-24 mm	40.000 m³ Ø60m x 14.5 m
Floating Roof	Benzol	1	New Tank Farm Yarımca/Turkey	1978 PETKİM	API 650	ANÖ ÇİMTAŞ *	St-37.2	5-20 mm	10.000 m³ Ø32 m x 12.6 m
TOTAL		**157**							**8.257.565 m³**

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