

# WORLDWIDE CONSTRUCTION UPDATE

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Listed are major construction projects by processing and pipeline categories. Contractors, estimated completion date, and added capacity are provided when available.

## Construction project abbreviations:

Engr.	Engineer	PE	Procurement engineering
Contr.	Contractor	CS	Construction supervision
Tech.	Technology	PD	Process design
Dsgn.	Design	DD	Detailed design
Constr.	Construction	JV	Joint venture
PM	Project management	Lic.	License
CM	Construction management	FEED	Front-end engineering and design
EPC	Engineering procurement construction		

## REFINING

Added capacity listed in barrels per day (b/d) unless otherwise specified.

Country	Company	Location	Project	Added capacity	Status	Expected completion	Contractor/ contract type	Project notes
ALGERIA	Sonatrach SPA	Skikda	Catalytic reformer	80,329	Engineering	2019	KBR--E.PMC; ; China Petroleum Engineering & Construction Corp--EPC; Tecnicas Reunidas SA--PMC	
	Sonatrach SPA	Skikda	Gas oil hydrocracker	92,378	Engineering	2019	KBR--E.PMC; ; China Petroleum Engineering & Construction Corp--EPC; Tecnicas Reunidas SA--PMC	
	Sonatrach	Arzew	MTBE	3,446	Planning		Honeywell UOP LLC	
	Sonatrach SPA	Tiaret	Refinery	100,411	Planning		Amec Foster Wheeler--FEED; China Petroleum Engineering & Construction Corp--EPC	Grassroots project
	Sonatrach SPA	Skikda	Penex isomerization		—		Honeywell UOP--TL/E/D	
	Sonatrach SPA	Skikda	CCR Platforming		—		Honeywell UOP--TL/E/D	
	Sonatrach SPA	Skikda	Solvent deasphalter	24,100	—		Honeywell UOP--TL/E/D	
	Sonatrach SPA	Skikda	Unicracker	81,000	—		Honeywell UOP--TL/E/D	
	Sonatrach SPA	Hassi Messaoud	Refinery	100,411	Planning		Amec Foster Wheeler--FEED; China Petroleum Engineering & Construction Corp--EPC	Grassroots project
	Sonatrach SPA	Algiers	Revamp		Under constr.			Previously planned to expand capacity to 3.6 million tpy from 2.7 million tpy
Sonatrach SPA	Biskra	Refinery	100,411	Planning		Amec Foster Wheeler--FEED; China Petroleum Engineering & Construction Corp--EPC	Grassroots project	
ANGOLA	Sonangol EP	Luanda	Refinery		Planning			
	Sonangol EP	Lobito	Refinery		Planning			
	Sonangol	Lobito	Refinery	200,000	Under constr.		KBR--E/PE/Cm	\$2 billion. Technip (60%), Sonangol (40%).
	Sonangol EP	Cabinda	Refinery	60,000	Planning		United Shine Consortium	United Shine consortium 90% stake - Sonangol Refinacion-Sonaref SA 10% stake
	Sonangol EP	Luanda	Naphtha hydrotreating		Engineering		Maire Tecnimont--EPC	Part of financing agreement with Eni SPA; to boost gasoline production. KT-Kinetics Technology will provide EPC services for the naphtha hydrotreater, including a naphtha splitter, and a catalytic reforming unit. Scope of work on the project also will include some unidentified utilities and offsites, as well as necessary tie-ins for integration with the existing refinery. Scheduled for start-up and testing in about 2 years from the start date of the project, the new units will enable the refinery to quadruple the gasoline production to 1,100 tonnes/day from 280 tonnes/day, as well as improve product quality while minimizing the site's global environmental footprint.
Sonangol EP	Luanda	Gasoline production		Engineering		United Shine--EPC	Part of financing agreement with Eni SPA; to boost gasoline production.	
Sonangol EP	Luanda	Platforming unit		Engineering			Part of financing agreement with Eni SPA; to boost gasoline production.	
ARUBA	Government of Aruba	San Nicolas	Refinery	235,000	Planning			The Aruban government has reached an agreement with Citgo Petroleum Corp. to take back control of former Valero Energy Corp.'s 235,000-b/d refinery and terminal in San Nicolas, Aruba, which Citgo Aruba Refinery NV previously intended to restart. As of October 2019, Aruba now retains rights to seek other interests for operation of the refinery, dock, and terminal. With the MOU now in place, Aruba plans to start discussions with more than 25 companies that have expressed interest in taking over the refining and terminal operations with which the government previously was unable to negotiate.
AUSTRALIA	ExxonMobil Corp.	Altona,Victoria	Jet fuel treater	2,000	Under constr.			Expansion to 12,000 b/d from 10,000 b/d.
	ExxonMobil Corp.	Altona,Victoria	Crude distillation	10,000	Planning			Expansion, upgrading program.
AZERBAIJAN	State Oil Co. of Azerbaijan Republic	Heydar Aliyev,Baku	Sulfur recovery	1,205	Under constr.	2020	Maire Tecnimont--TL	
	State Oil Co. of Azerbaijan Republic	Heydar Aliyev,Baku	Refinery	30,123	Under constr.	2020	SOCAR-KBR--TL; Tecnicas Reunidas SA--EPC	Expansion. Modernization, upgrading.
	State Oil Co. of Azerbaijan Republic	Heydar Aliyev,Baku	Isomerization		Under constr.	2020	Honeywell UOP--TL	

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	State Oil Co. of Azerbaijan Republic	Heydar Aliyev,Baku	MTBE		Under constr.	2020	Honeywell UOP--TL	
	State Oil Co. of Azerbaijan Republic	Heydar Aliyev,Baku	Fluid catalytic cracking		Under constr.	2020	Honeywell UOP--TL	
	State Oil Co. of Azerbaijan Republic	Heydar Aliyev,Baku	Sulfur removal		Under constr.	2020	Honeywell UOP--TL	
	State Oil Co. of Azerbaijan Republic	Heydar Aliyev,Baku	LPG Merox		Under constr.	2020	Honeywell UOP--TL	
	State Oil Co. of Azerbaijan Republic	Heydar Aliyev, Baku	PSA unit	30,100	Planning	2021	Honeywell UOP--TL	
	State Oil Co. of Azerbaijan Republic	Heydar Aliyev,Baku	Amine treatment		Under constr.	2020	Honeywell UOP--TL	
	State Oil Co. of Azerbaijan Republic	Heydar Aliyev,Baku	Naphtha hydrotreating		Under constr.	2020	Honeywell UOP--TL	
<b>BAHRAIN</b>	Bahrain Petroleum Co.	Sitra	Refinery expansion	93,000		2022	TechnipFMC,Samsung Engineering,Tecnicas Reunidas--EPCWorley Parsons--PM	Upgrade. \$56 million.
	Bahrain Petroleum Co.	Sitra	Diesel hydrotreating		Under const.	2022	Chevron Lummus Global--TL	
	Bahrain Petroleum Co.	Sitra	Delayed coking		Under const.	2022		
	Bahrain Petroleum Co.	Sitra	Vacuum gas oil hydrocracking		Under const.	2022	Chevron Lummus Global--TL	
	Bahrain Petroleum Co.	Sitra	Sulfur recovery		Under const.	2022		
	Bahrain Petroleum Co.	Sitra	Residue hydro-cracking		Under const.	2022	Chevron Lummus Global--TL	
<b>BANGLADESH</b>	Eastern Refinery Ltd.	Chittagong	Crude distillation	60,247	Engineering		Engineers India--PMC	Expansion
<b>CAMBODIA</b>	Cambodian Petrochemical Co. Ltd.	Preah Sihanouk	Hydrocracker	100,411	Engineering		KBR-Tinajin Petrochemical Engineering Design Co. Ltd.--EPC,TL	2 million-tpy Phase 1 due in 2018.
<b>CAMEROON</b>	SONARA	Limbe refinery	Effluent plant		Engineering	2018	Suez SA--TL; Sogea Satom,Ingenica--EPC	
	SONARA	Limbe refinery	Vacuum distillation		Engineering		Amec Foster Wheeler--EPC	
	SONARA	Limbe refinery	Crude distillation		Engineering		Amec Foster Wheeler--EPC	Expansion to 3.5 million tpy.
	SONARA	Limbe refinery	Catalytic reformer		Engineering		Amec Foster Wheeler--EPC	
<b>CANADA</b>	Kitimat Clean Ltd.	Kitimat,BC	Refinery	400,000	Planning	2024		Proposed bitumen-processing refinery.
	NARL Refining LP	Come-by-Chance, Newf.	Delayed coking		Planning	2023		
	NARL Refining LP	Come-by-Chance, Newf.	Crude flexibility; expansion	30,000	Planning	2020		
<b>CHECHNYA</b>	OJSC Grozneftegaz	Grozny	Refinery	120,493	Planning		Genoil--TL/Constr.	
<b>CHILE</b>	Empresa Nacional del Petroleo (Enap)	Hualpen,Bio Bio	ROSE solvent deasphalting unit	30,000	Engineering		KBR Inc.--TL/E/D	
<b>CHINA</b>	Sinochem Hongrun Petrochemical Co. Ltd.	Weifang City,Shandong province	Residual upgrading	24,099	Engineering	2020	ExxonMobil Catalysts & Licensing Co.--TL	
	Hengli Petrochemical (Dalian) Co. Ltd.	Dalian	Refinery	400,000	Under constr.	2019	Axens--TL; DuPont--TL; Honeywell UOP--TL; Rotork PLC--Eq.	
	China Petrochemical Corp. (Sinopec (Maoming Petrochemical Co.))	Maoming,Guangdong province	BOTB upgrading plant	46,000	Engineering	2020	Eni SPA--TL	Eni slurry technology.
	Saudi Aramco, China North Industries Group Corp., Panjin Sincen	China's Liaoning province	Grassroots refining and petrochemical complex	300,000	Planning	2024		
	Zhejiang Petrochemical Co. Ltd. (ZPC)	Zhoushan,Zhejiang Province	Alkylation unit		Engineering		McDermott--TL/E/D	
	Zhejiang Petrochemical Co. Ltd. (ZPC)	Zhoushan,Zhejiang Province	PSA unit (4)		Engineering		Honeywell UOP,HPS--TL/E/D	UOP's modular Polybed PSA unit.
	Zhejiang Petrochemical Co. Ltd. (ZPC)	Zhoushan,Zhejiang Province	PSA unit (3)		Engineering		Honeywell UOP,HPS--TL/E/D	UOP's modular Polybed PSA unit.
	PetroChina Co. Ltd. (Dalian Petrochemical Co.)	Dalian,Liaoning province	Alkylation unit		---		McDermott--TL/E/D	CDAlky units to ensure gasoline-diesel production complies with with China 6-quality specifications capping sulfur content at maximum of 10 ppm starting in 2020.
	Zhejiang Petrochemical Co. Ltd. (ZPC)	Zhoushan,Zhejiang Province	Naphtha hydrotreater		Engineering		Honeywell UOP,HPS--TL/E/D	UOP's Unionfining process.
	Zhejiang Petrochemical Co. Ltd. (ZPC)	Zhoushan,Zhejiang Province	RFCC	100,411	Engineering		Honeywell UOP,HPS--TL/E/D	UOP's RCD Unionfining and RFCC processes.
	Zhejiang Petrochemical Co. Ltd. (ZPC)	Zhoushan,Zhejiang Province	Diesel hydro-cracker (2)		Engineering		McDermott--TL/E/D	
	Zhejiang Petrochemical Co. Ltd. (ZPC)	Zhoushan,Zhejiang Province	PSA unit (2)		Engineering		Honeywell UOP,HPS--TL/E/D	UOP's modular Polybed PSA unit.
	PetroChina Co. Ltd. (Urumqi Petrochemical Co.)	Urumqi,Xinjiang Uygur Autonomous Region	Alkylation unit		---		McDermott--TL/E/D	CDAlky units to ensure gasoline-diesel production complies with with China 6-quality specifications capping sulfur content at maximum of 10 ppm starting in 2020.
	PetroChina Co. Ltd. (Jinzhou Petrochemical Co.)	Jinzhou,Liaoning province	Alkylation unit		---		McDermott--TL/E/D	CDAlky units to ensure gasoline-diesel production complies with with China 6-quality specifications capping sulfur content at maximum of 10 ppm starting in 2020.
	Zhejiang Petrochemical Co. Ltd. (ZPC)	Zhoushan,Zhejiang Province	Continuous catalytic reformer (2)		Under constr.		Honeywell UOP,HPS--TL/E/D	UOP's CCR Platforming process.

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	Zhejiang Petrochemical Co. Ltd. (ZPC)	Zhoushan, Zhejiang Province	Sulfuric acid regeneration unit		Under constr.		DuPont--TL/E/D	
	Zhejiang Petrochemical Co. Ltd. (ZPC)	Zhoushan, Zhejiang Province	Diphenyl carbonate unit	4,418	Under constr.		McDermott--TL/E/D	
	Chemical (Lianyungang) Co. Ltd.	Lianyungang City, Jiangsu Province	HyK Distillates Hydrocracking Unit	69,283	Engineering		Axens--TL	Based on Axens' HyK distillates hydrocracking technology.
	Sinochem Hongrun Petrochemical Co. Ltd.	Weifang City, Shandong Province	Alkylation Unit		Planning		Honeywell UOP--TL	Based on Honeywell UOP-licensed ISOALKY alkylation technology.
	Zhejiang Petrochemical Co. Ltd. (ZPC)	Zhoushan, Zhejiang Province	Paraxylene unit	80,329	Under constr.		Honeywell UOP,HPS--TL/E/D	UOP's LD Parex process, including Sulofane, Isomar, and Tatoray technologies.
	Zhejiang Petrochemical Co. Ltd. (ZPC)	Zhoushan, Zhejiang Province	Diesel hydrocracker (1)		Under constr.		McDermott--TL/E/D	
	Zhejiang Petrochemical Co. Ltd. (ZPC)	Zhoushan, Zhejiang Province	Continuous catalytic reformer (1)		Under constr.		Honeywell UOP,HPS--TL/E/D	UOP's CCR Platforming process.
	Zhejiang Petrochemical Co. Ltd. (ZPC)	Zhoushan, Zhejiang Province	PDH unit	12,049	Under constr.		Honeywell UOP,HPS--TL/E/D	UOP's Oleflex process.
	Zhejiang Petrochemical Co. Ltd. (ZPC)	Zhoushan, Zhejiang Province	Hydrocracker		Under constr.		Honeywell UOP,HPS--TL/E/D	UOP's Unicracking process.
	Zhejiang Petrochemical Co. Ltd. (ZPC)	Zhoushan, Zhejiang Province	PSA unit (1)		Under constr.		Honeywell UOP,HPS--TL/E/D	UOP's modular Polybed PSA unit.
	Zhejiang Petrochemical Co. Ltd. (ZPC)	Zhoushan, Zhejiang Province	Refinery	803,288	Under constr.			New integrated complex to be built in two phases.
	Tianjin Petroleum & Chemical Corp.	Tianjin Binhai New Area, Tianjin	Alkylation unit	7,700	Under constr.		DuPont--TL/E/D	\$1.6 billion.
	Shenghong Petrochemical Group Co. Ltd.	Lianyungang City, Jiangsu Province	Alkylation	10,987 b/sd	Engineering	2021	DuPont Clean Technologies--TL, Eng., Equip.	The STRATCO alkylation unit will be designed to produce 10,987 b/sd of alkylate product, enabling the complex to generate low-sulfur, high-octane, low-RVP alkylate—with zero olefins—that meets the criteria of upcoming China VI standards which will take effect before start-up of Shenghong's 320,000-b/sd complex in 2021.
	Shenghong Petrochemical Group Co. Ltd.	Lianyungang City, Jiangsu Province	H-Oil Hydrocracking Unit	64,263	Engineering		Axens--TL	Based on Axens' ebullated-bed residue hydrocracking technology (H-Oil).
	Sinopec-Kuwait Petroleum Corp.	Donghai Island, Zhanjiang City, Guangdong Province	Refinery	300,000	Under constr.		DuPont Clean Technologies--TL/E/Eq.; LyondellBasell Industries BV--TL;Kaji Technology Corp.--Eq.	Integrated refining and petrochemical complex.
	Datong Coal Mine Group Co. Ltd.	Datong, China	Grassroots Polypropylene unit	430000 tonne/year	Planning	2022		As part of the contract, Grace will license its proprietary UNIPOL PP process technology as well as its CONSISTA catalyst for the 430,000-tonne/year unit, which will enable the operator to produce more than 200 resin grades to provide more PP options to its customers, the service provider said.
	PetroChina Guangdong Petrochemical Co. Ltd. (China National Petroleum Corp.'s PetroChina Co. Ltd.)	Jieyang Nandahai Petrochemical Industrial Zone, Guangdong Province	CCR platforming	120,500	Under const.	2023	Honeywell UOP--TL	Part of a refining-chemical integration project under way at PetroChina Guangdong Petrochemical's 400,000-b/d heavy crude oil processing and petrochemical site in the Jieyang Nandahai Petrochemical Industrial Zone of China's Guangdong province.
	PetroChina Guangdong Petrochemical Co. Ltd. (China National Petroleum Corp.'s PetroChina Co. Ltd.)	Jieyang Nandahai Petrochemical Industrial Zone, Guangdong Province	Hydrocracking	74,300	Under const.	2023	Honeywell UOP--TL	Part of a refining-chemical integration project under way at PetroChina Guangdong Petrochemical's 400,000-b/d heavy crude oil processing and petrochemical site in the Jieyang Nandahai Petrochemical Industrial Zone of China's Guangdong province.
<b>CROATIA</b>	INA Industrija Nafta DD INA Industrija Nafta DD	Rijeka Urinj	Modernization Residual upgrading		Planning Planning	2023		\$400 million.
<b>CURACAO</b>	Refineria Di Korsou NV	Emmstad	Refinery modernization		Planning			Modernization planned under new proposed ownership by Guangdong Zhenrong Energy Co. beginning Jan. 1, 2020.
<b>CZECH REPUBLIC</b>	Unipetrol RPA SRO - Rafinerie Unipetrol RPA SRO	Litvinov, Czech Republic Rafinerie	Unit Upgrading Project Energy efficiency study		Planning Planning	2020	McDermott International Inc. - EPCM Neste Jacobs Oy	
<b>EGYPT</b>	Suez Oil Processing Co. Middle East Oil Refinery Co. Middle East Oil Refinery Co.'s Assiut Oil Refining Co. Assiut Oil Refining Co.	Suez Alexandria El Amreya Free Zone Assiut	Refinery upgrade Refinery expansion Refinery Hydrocracking complex Delayed coking	60,000 50,205	Planning Under constr. Engineering Engineering	2022 2022	TechnipFMC--EPC TechnipFMC PLC, EPC WorleyParsons--PMC; ANOPC--Constr.; TechnipFMC--D Bechtel Corp.--TL	Increase crude flexibility; enable production of lower-sulfur fuels.
<b>FRANCE</b>	Total SA Total SA	Donges Donges	Sour-water stripping unit Vacuum heavy oil hydrodesulfurization unit	40,000	Under constr. Under constr.	2019 2019	Amec Foster Wheeler--FEED Axens--E/TL; Amec Foster Wheeler--FEED	
<b>GERMANY</b>	Royal Dutch Shell PLC (Shell Deutschland Oil GMBH)	Rheinland	Hydrogen plant	26	Planning	2020		Expansion of existing plant.

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	Royal Dutch Shell PLC (Shell Deutschland Oil GMBH)	Rheinland	Residue processing plant		Planning	2020		Proposed expansion to boost production of fuels conforming the International Maritime Organization's 0.5% sulfur cap on marine fuels taking effect on Jan. 1, 2020.
	OMV Deutschland GMBH (OMV AG)	Burghausen	Isobutene	60,000 tpy	Engineering	2020	OMV-BASF SE--TL	The 60,000-tpy ISO C4 unit—which will be integrated into the refinery's existing metathesis plant responsible for energy-efficient manufacturing of propylene for the plastics industry—will feature the first global application of an OMV-BASF SE jointly developed technology for direct production of high-purity isobutene.
<b>GUINEA</b>	Brahms Oil Refineries Ltd.	Kamsar	Refinery	10,000	Engineering		SNC-Lavalin Group Inc.--PM/FEED/EPC	Preliminary studies due by yearend 2017.
<b>HUNGARY</b>	MOL Group	Szazhalombatta, near Budapest	Duna Refinery desalting		Planning		Frames Group BV, Alphen aan den Rijn	
<b>INDIA</b>	Indian Oil Corp. Ltd.	Bongaigaon	Refinery	14,861	Planning			
	Indian Oil Corp. Ltd.	Koyali, Vadadora, Gujarat	PSA unit		Under constr.	2019	Honeywell UOP--TL	
	Indian Oil Corp. Ltd.	Koyali, Vadadora, Gujarat	Isomerization unit	924	Under constr.			Expansion.
	Indian Oil Corp. Ltd.	Koyali, Vadadora, Gujarat	Continuous catalytic reforming unit	3,615	Under constr.			Expansion.
	Indian Oil Corp. Ltd.	Koyali, Vadadora, Gujarat	Amine regeneration unit	33,425	Under constr.			New unit.
	Indian Oil Corp. Ltd.	Koyali, Vadadora, Gujarat	FCC gasoline desulfurization unit	14,058	Under constr.			New unit.
	Indian Oil Corp. Ltd.	Koyali, Vadadora, Gujarat	Hydrogen	1,456	Under constr.			New unit.
	Indian Oil Corp. Ltd.	Koyali, Vadadora, Gujarat	Diesel hydrotreater	40,164	Under constr.			New unit.
	Indian Oil Corp. Ltd.	Koyali, Vadadora, Gujarat	Sour-water stripping unit	9,676	Under constr.			New unit.
	Indian Oil Corp. Ltd.	Koyali, Vadadora, Gujarat	Vacuum gas oil hydrotreater	2,008	Under constr.			Expansion.
	Indian Oil Corp. Ltd.	Koyali, Vadadora, Gujarat	Diesel hydrodesulfurization unit	8,635	Under constr.			Expansion.
	Indian Oil Corp. Ltd.	Koyali, Vadadora, Gujarat	Diesel hydrotreater	13,254	Under constr.			Expansion.
	Indian Oil Corp. Ltd.	Barauni, Bihar	Prime G+ desulfurization unit	7,230	Engineering		Engineers India Ltd.--EPC; Axens--TL	New unit
	Indian Oil Corp. Ltd.	Barauni, Bihar	Naphtha splitter	5,944	Engineering		Engineers India Ltd.--EPC	New unit
	Indian Oil Corp. Ltd.	Barauni, Bihar	Diesel hydrotreater	22,090	Engineering		Engineers India Ltd.--EPC	Expansion
	Indian Oil Corp. Ltd.	Barauni, Bihar	Catalytic reformer	3,414	Engineering		Engineers India Ltd.--EPC	Expansion
	Indian Oil Corp. Ltd.	Barauni, Bihar	Naphtha hydrotreater	3,414	Engineering		Engineers India Ltd.--EPC	Expansion
	Indian Oil Corp. Ltd.	Barauni, Bihar	Refinery expansion	60,247	Engineering		Engineers India Ltd.--EPC	
	HPCL	Mittal Energy Ltd.	BS 6 fuels project		Under constr.	2019	Engineers India Ltd.--EPCm	
	HPCL	Mittal Energy Ltd.	Hydrogen	442	Engineering	2019		Unit revamp.
	HPCL	Mittal Energy Ltd.	Diesel hydrotreater	38,156	Engineering	2019	Haldor Topsoe AS--TL/Eq.	
	Indian Oil Corp. Ltd.	Koyali, Vadadora, Gujarat	Refinery expansion	86,353	Engineering	2021	Amec Foster Wheeler--E/TL	McDermott International Inc. to provide proprietary technology and catalyst for new units.
	Mongol Refinery State Owned LLC	Altanshiree Soum	Refinery		Planning		Engineers India Ltd.	
	Hindustan Petroleum Corp. Ltd.	Maharashtra	Refinery	361,479	Planning			
	Chennai Petroleum Corp. Ltd.	Manali	Refinery	80,329	Planning			Expansion. \$29 million. Refinery III.
	Chennai Petroleum Corp. Ltd.	Manali	Refinery	70,288	Planning			Expansion. \$32 million. Refinery I.
	Bharat Petroleum Corp. Ltd.	Mumbai	Amine regeneration unit		Under constr.	2019	Engineers India Ltd.--PMC	Revamp
	Bharat Petroleum Corp. Ltd.	Mumbai	Sour water stripper		Under constr.	2019	Engineers India Ltd.--PMC	Revamp
	Hindustan Petroleum Corp. Ltd.	Mumbai	FCCU	28,115	Under constr.			
	Hindustan Petroleum Corp. Ltd.	Mumbai	Crude-vacuum distillation (Unit 1)	150,616	Engineering			Expansion
	Hindustan Petroleum Corp. Ltd.	Mumbai	Propylene recovery unit	2,008	Engineering			New unit
	Hindustan Petroleum Corp. Ltd.	Mumbai	Prime G+ unit		Engineering			Expansion
	Bharat Petroleum Corp. Ltd., Hindustan Petroleum Corp. Ltd., Indian Oil Corp. Ltd. Consortium	Maharashtra	Refinery	1,204,932	Planning		Engineers India Ltd.--Detailed feasibility study	Megarefinery project to be built in two phases.
	Indian Oil Corp. Ltd.	Mathura	Vacuum residue upgrading unit		Engineering		Chevron Lummus Global--TL/E/D	Isocracking technology.
	Hindustan Petroleum Corp. Ltd.	Vishakhapatnam, Andhra Pradesh	Gasoline hydrotreater		Under constr.	2020	Engineers India Ltd.--EPC	30% expansion to 1.5 million tpy.
	Hindustan Petroleum Corp. Ltd.	Vishakhapatnam, Andhra Pradesh	Nonhydroprocessing sour water stripper	52,776	Under constr.	2020	Engineers India Ltd.--EPC	New unit
	Hindustan Petroleum Corp. Ltd.	Vishakhapatnam, Andhra Pradesh	Effluent treatment plant	150,955	Under constr.	2020	Engineers India Ltd.--EPC; Larsen & Toubro--EPC	New unit

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	Numaligarh Refinery Ltd.	Assam	Refinery	120,500	Engineering		Engineers India Ltd.	Expansion to 180,750 b/d.
	Indian Oil Corp. Ltd.	Mathura	PSA unit		Under constr.	2019	Honeywell UOP--TL	
	Hindustan Petroleum Corp. Ltd.	Vishakhapatnam, Andhra Pradesh	Continuous catalytic reformer	20,890	Under constr.	2020	Engineers India Ltd.--EPC	35% expansion to 1.04 million tpy.
	Hindustan Petroleum Corp. Ltd.	Vishakhapatnam, Andhra Pradesh	FCC naphtha hydrotreater	30,125	Under constr.	2020	Engineers India Ltd.--EPC	Upgrade to enable BS V, BS VI-quality fuels.
	Hindustan Petroleum Corp. Ltd.	Vishakhapatnam, Andhra Pradesh	Propylene recovery unit	704	Under constr.	2020	Engineers India Ltd.--EPC	New unit
	Hindustan Petroleum Corp. Ltd.	Vishakhapatnam, Andhra Pradesh	Slurry hydrocracker	50,205	Under constr.	2020	Engineers India Ltd.--EPC	New unit
	Hindustan Petroleum Corp. Ltd.	Vishakhapatnam, Andhra Pradesh	Hydrogen generation unit (1)	2,269	Under constr.	2020	Engineers India Ltd.--EPC; TechnipFMC--TL/EPCC/PM	New unit
	Hindustan Petroleum Corp. Ltd.	Mumbai	Hydrogen generation unit	723	Engineering			New unit
	Hindustan Petroleum Corp. Ltd.	Vishakhapatnam, Andhra Pradesh	Amine regeneration unit (2)	94,997	Under constr.	2020	Engineers India Ltd.--EPC	New unit
	Hindustan Petroleum Corp. Ltd.	Vishakhapatnam, Andhra Pradesh	Sulfur recovery LPG treating unit	2,249	Under constr.	2020	Engineers India Ltd.--EPC	New unit
	Hindustan Petroleum Corp. Ltd.	Mumbai	Visbreaker	11,346	Engineering			New unit
	Hindustan Petroleum Corp. Ltd.	Mumbai	Diesel hydrotreater	44,181	Under constr.			
	Hindustan Petroleum Corp. Ltd.	Vishakhapatnam, Andhra Pradesh	Vacuum gas oil hydrocracker	66,271	Under constr.	2020	L&T Hydrocarbon Engineering Ltd.--EPCC; Chevron Lummus--TL	New unit; LC-MAX, ISOTREATING technologies.
	Hindustan Petroleum Corp. Ltd.	Vishakhapatnam, Andhra Pradesh	Crude distillation unit	180,740	Under constr.	2020	L&T Hydrocarbon Engineering Ltd.--EPCC	New unit
	Hindustan Petroleum Corp. Ltd.	Mumbai	Continuous catalytic reformer		Engineering			Expansion
	Bharat Petroleum Corp. Ltd.	Kochi, Ambalugal, Kerala	Refinery	120,493	Engineering		Petron Engineering Construction Ltd.--E	Expansion. \$34.4 million.
	Indian Oil Corp. Ltd.	Orissa	Refinery	301,233	Under constr.		Amec Foster Wheeler--E/Constr./D	
	Indian Oil Corp. Ltd.	Barauni, Bihar	Polypropylene unit		Engineering		Engineers India Ltd.--EPC	New unit. McDermott International Inc. to provide proprietary technology and catalyst for new units.
	Hindustan Petroleum Corp. Ltd.	Vishakhapatnam, Andhra Pradesh	Diesel hydrotreater	57,430	Under constr.	2020	Engineers India Ltd.--EPC	30% expansion to 2.86 million tpy.
	Hindustan Petroleum Corp. Ltd.	Vishakhapatnam, Andhra Pradesh	Solvent deasphalting unit	62,255	Under constr.	2020	Engineers India Ltd.--EPC	New unit
	Indian Oil Corp. Ltd.	Panipat	PSA unit		Under constr.	2019	Honeywell UOP--TL	
	Hindustan Petroleum Corp. Ltd.	Vishakhapatnam, Andhra Pradesh	Sulfur recovery unit (2)	2,639	Under constr.	2020	Engineers India Ltd.--EPC	New unit
	Hindustan Petroleum Corp. Ltd.	Vishakhapatnam, Andhra Pradesh	Naphtha isomerization unit	5,864	Under constr.	2020	Engineers India Ltd.--EPC; Honeywell UOP--TL/E/D	New unit
	Indian Oil Corp. Ltd.	Orissa	Delayed coker	82,337	Engineering		Jacobs Engineering--PM	\$350 million.
	Hindustan Petroleum Corp. Ltd.	Vishakhapatnam, Andhra Pradesh	Hydroprocessing sour water stripper	32,545	Under constr.	2020	Engineers India Ltd.--EPC	New unit
	Hindustan Petroleum Corp. Ltd.	Vishakhapatnam, Andhra Pradesh	Sulfur recovery unit (1)	2,639	Under constr.	2020	Engineers India Ltd.--EPC	New unit
	Hindustan Petroleum Corp. Ltd.	Vishakhapatnam, Andhra Pradesh	Hydrogen generation unit (2)	2,269	Under constr.	2020	Engineers India Ltd.--EPC; TechnipFMC--TL/EPCC/PM	New unit
	Hindustan Petroleum Corp. Ltd.	Mumbai	Diesel hydrotreater		Engineering			Revamp
	Hindustan Petroleum Corp. Ltd.	Mumbai	Isomerization unit		Engineering			Expansion
	Bharat Petroleum Corp. Ltd.	Mumbai	Diesel hydrodesulfurization unit		Under constr.	2019	Engineers India Ltd.--PMC	Revamp
	Indian Oil Corp. Ltd.	Haldia, Purba Medinipur, West Bengal	Lubricants base oil plant	270,000 tpy	Engineering		Chevron Lummus Global--TL, Eng.	Unit to be equipped with CLG's proprietary Isodewaxing and Isofinishing technologies.
	Indian Oil Corp. Ltd.	Panipat, Haryana	Fluid catalytic cracking		Engineering		McDermott--TL, eng., equip.	The FCC unit will be equipped with INDMAX technology, which—developed in partnership with IOCL—is licensed by McDermott's Lummus Technology division. The INDMAX FCC forms part of IOCL's project to expand petrochemicals production at the Panipat refining complex.
	Chennai Petroleum Corp. Ltd.	Nagapattinam, Tamilnadu	Polypropylene	475,000 tpy	Engineering		McDermott--TL, Eng., D	McDermott will deliver licensing, basic engineering design, and proprietary catalyst supply for the 475,000-tpy polypropylene unit, which will be equipped with proprietary Novolen reactors and proprietary NHP catalyst from McDermott-Chevron Corp. joint venture Chevron Lummus Global LLC (CLG). Part of proposed grassroots Cauvery Basin refinery, will include 50,200-b/d delayed coker licensed by McDermott's CLG; total refinery project will require an investment of 274.5-274.6 billion rupees to complete.
	HPCL Rajasthan Refinery Ltd.	Barmer, Rajasthan	Refinery	181,000	Under constr.	2022	Engineers India Ltd.--EPC; McDermott--TL, Eng.	McDermott will deliver license and basic engineering design of two 420,000-tonne/year polypropylene units that will use Lummus' proprietary Novolen process reactors and proprietary NHP catalyst to produce a full range of polypropylene products for the Indian and regional markets, the service provider said.

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Country	Company	Location	Project	Added capacity	Status	Expected completion	Contractor/ contract type	Project notes
	Chennai Petroleum Corp. Ltd.	Nagapattinam, Tamilnadu	Refinery	180,740	Planning		Engineers India Ltd.; Chevron Lummus Global--TL	Proposed grassroots Cauvery Basin refinery; will include 50,200-b/d delayed coker licensed by McDermott's Chevron Lummus Global; total refinery project will require an investment of 274.5-274.6 billion rupees to complete.
	HPCL Rajasthan Refinery Ltd. Nayara Energy Ltd.	Barmer, Rajasthan Vadinar, Gujarat	Delayed coking Propylene	48,200 450,000 tpy	Engineering Engineering		Chevron Lummus Global--TL, Eng. W.R. Grace & Co.--TL	Grace will license its proprietary Unipol PP process technology as well as its Consista catalyst for the 450,000-tpy unit, which will process propylene feedstock to produce phthalate-free homopolymer products for the Indian market
	Bharat Petroleum Corp. Ltd.	Mumbai	Hydrocracker		Engineering		Chevron Lummus Global--TL, D	As part of the contract, CLG will provide its proprietary Isocacking, Isodewaxing, and Isofinishing technologies for the unit, which will produce high-quality clean fuels, premium grades of lubricating base oils, and white oils.
	Bharat Petroleum Corp. Ltd.	Mumbai	Gasoline hydrotreater	18,074	Under constr.	2019	Engineers India Ltd.--PMC	New unit
	Hindustan Petroleum Corp. Ltd.	Vishakhapatnam, Andhra Pradesh	Residue upgrading facility	73,300	Engineering	2020	LTHE--EPCC; Lummus--TL	To be equipped with technology licensed by Chevron Lummus Global, the 70,300-b/d plant—to be the first of its kind in India—will enable HPCL to convert the heaviest oils into high-quality Euro 6 diesel while simultaneously eliminating fuel oil production, as well as increasing feedstock and product flexibility, according to the service provider. Awarded on a lump-sum turnkey basis, this latest contract follows previous contract awards to LTHE to deliver EPCC services for a crude distillation unit (CDU) and vacuum distillation unit (VDU) that will have a combined nameplate capacity of 180,700 b/d, as well as EPCC services on a 61,300-b/d full-conversion hydrocracker to be added as part of the VRMP.
	Hindustan Petroleum Corp. Ltd.	Vishakhapatnam, Andhra Pradesh	Fuel gas pressure-swing adsorption unit	723	Under constr.	2020	Engineers India Ltd.--EPC	New unit
	Hindustan Petroleum Corp. Ltd.	Vishakhapatnam, Andhra Pradesh	Amine regeneration unit (1)	94,997	Under constr.	2020	Engineers India Ltd.--EPC	New unit
<b>INDONESIA</b>	PT Pertamina Rosneft Pengolahan dan Petrokimia	East Java	Refinery	300,000	Planning			Integrated refining and petrochemical complex.
	PT Kilang Kaltim Continental	Balikpapan	Refinery	24,000	Engineering	2020	Lone Star Technical Solutions Group--FEED	Modular refinery.
	PT Pertamina (Persero)	Balikpapan	Propylene recovery		Under constr.	2020	Axens--TL	
	PT Pertamina (Persero)	Cilacap	Hydrotreating	36,000	Engineering		Axens--TL	
	PT Pertamina (Persero)	Balikpapan	Alkylation		Under constr.	2020	McDermott--TL/E/D; Hyundai Engineering Co. Ltd.--EPC	
	PT Pertamina (Persero)	Balikpapan	RFCC	90,000	Under constr.	2020	Axens--TL; Hyundai Engineering Co. Ltd.--EPC	
	PT Pertamina (Persero)	Balikpapan	Unionfining hydrotreater	13,000	Under constr.	2020	Honeywell UOP--TL/E/D; Hyundai Engineering Co. Ltd.--EPC	
	PT Pertamina (Persero)	Balikpapan	Continuous catalytic reforming	33,000	Under constr.	2020	Honeywell UOP--TL/E/D; Hyundai Engineering Co. Ltd.--EPC	
	PT Pertamina (Persero)	Balikpapan	Hydrotreating	80,000	Under constr.	2020	Axens--TL; Hyundai Engineering Co. Ltd.--EPC	
	PT Pertamina (Persero)	Balikpapan	Refinery expansion	100,000	Under constr.	2020	Hyundai Engineering Co. Ltd.--EPC	
	PT Pertamina (Persero)	Balikpapan	Sulfrex LPG SRU		Under constr.	2020	Axens--TL; Hyundai Engineering Co. Ltd.--EPC	
	PT Pertamina Rosneft Pengolahan dan Petrokimia (PJSC Rosneft-Pertamina)	Tuban, East Java	Refinery	300,000	Engineering		Tecnicas Reunidas SA	The proposed refinery will have a crude processing capacity of 300,000 b/d and include a petrochemical complex equipped to produce more than 1 million tonnes/year of ethylene and 1.3 million tpy of aromatic hydrocarbons.
<b>IRAQ</b>	Iraqi Ministry of Oil	Karbala	Refinery	140,000	Under constr.	2020	Hyundai Engineering & Construction	
<b>IVORY COAST</b>	Societe Ivoirienne de Raffinage (SIR)	Abidjan	Refinery modernization		Planning			Proposed modernization of the refinery; SIR has secured a €577-million debt financing to enable the project.
<b>JAMAICA</b>	Petrojam Ltd.	Kingston	Vacuum distillation unit		Engineering	2020	Sinohydro Corp. Ltd.--EPC	
	Petrojam Ltd.	Kingston	Refinery expansion	14,000	Engineering	2020	Sinohydro Corp. Ltd.--EPC	
	Petrojam Ltd.	Kingston	Tail gas treating		Engineering	2020	Sinohydro Corp. Ltd.--EPC	
	Petrojam Ltd.	Kingston	Wastewater treatment		Engineering	2020	Sinohydro Corp. Ltd.--EPC	
	Petrojam Ltd.	Kingston	Distillate hydrotreater		Engineering	2020	Sinohydro Corp. Ltd.--EPC	
	Petrojam Ltd.	Kingston	Sour water stripper		Engineering	2020	Sinohydro Corp. Ltd.--EPC	
	Petrojam Ltd.	Kingston	Delayed coker		Engineering	2020	Sinohydro Corp. Ltd.--EPC	
	Petrojam Ltd.	Kingston	Continuous catalytic reformer		Engineering	2020	Sinohydro Corp. Ltd.--EPC	
	Petrojam Ltd.	Kingston	Naphtha hydrotreater		Engineering	2020	Sinohydro Corp. Ltd.--EPC	

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	Petrojam Ltd.	Kingston	Sulfur recovery unit		Engineering	2020	Sinohydro Corp. Ltd.--EPC	
	Petrojam Ltd.	Kingston	Amine treatment		Engineering	2020	Sinohydro Corp. Ltd.--EPC	
<b>JORDAN</b>	Jordan Petroleum Refinery Co.	Zarqa	CCR Platforming unit		Engineering		Honeywell UOP LLC--TL/FEED/E/D/Eq.	Preliminary engineering to be completed early 2018.
	Jordan Petroleum Refinery Co.	Zarqa	Hydrotreater		Engineering		Honeywell UOP LLC--TL/FEED/E/D/Eq.	Preliminary engineering to be completed early 2018.
	Jordan Petroleum Refinery Co.	Zarqa	Penex unit		Engineering		Honeywell UOP LLC--TL/FEED/E/D/Eq.	Preliminary engineering to be completed early 2018.
	Jordan Petroleum Refinery Co.	Zarqa	Selectfining unit		Engineering		Honeywell UOP LLC--TL/FEED/E/D/Eq.	Preliminary engineering to be completed early 2018.
	Jordan Petroleum Refinery Co.	Zarqa	Mercox unit		Engineering		Honeywell UOP LLC--TL/FEED/E/D/Eq.	Preliminary engineering to be completed early 2018.
	Jordan Petroleum Refinery Co.	Zarqa	Polybed PSA unit		Engineering		Honeywell UOP LLC--TL/FEED/E/D/Eq.	Preliminary engineering to be completed early 2018.
	Jordan Petroleum Refinery Co.	Zarqa	Residue hydro-processing unit		Engineering		KBR Inc.--E/D	Preliminary engineering to be completed early 2018.
	Jordan Petroleum Refinery Co.	Zarqa	MinAlk unit		Engineering		Honeywell UOP LLC--TL/FEED/E/D/Eq.	Preliminary engineering to be completed early 2018.
	Jordan Petroleum Refinery Co.	Zarqa	Unicracking unit		Engineering		Honeywell UOP LLC--TL/FEED/E/D/Eq.	Preliminary engineering to be completed early 2018.
	Jordan Petroleum Refinery Co.	Zarqa	Refinery expansion	20,000	Engineering		Honeywell UOP LLC--TL/FEED/E/D/Eq.	Preliminary engineering to be completed early 2018.
<b>KUWAIT</b>	Kuwait National Petroleum Corp.	Southern Kuwait	Refinery		Planning			
	Kuwait Integrated Petroleum Industries Co.	Al-Zour	UOP Mercox (two units)		Engineering		Honeywell UOP--Eng., Design, TL, Equip.	Part of the reconfiguration of refining and petrochemicals sections of KIPIC's grassroots 615,000-b/d Al-Zour integrated refining and petrochemical complex under construction in southern Kuwait.
	Kuwait Integrated Petroleum Industries Co.	Al-Zour	Butamer unit	11,800	Engineering		Honeywell UOP--Eng., Design, TL, Equip.	Part of the reconfiguration of refining and petrochemicals sections of KIPIC's grassroots 615,000-b/d Al-Zour integrated refining and petrochemical complex under construction in southern Kuwait.
	Kuwait Integrated Petroleum Industries Co.	Al-Zour	RFCC complex	98,000	Engineering		Honeywell UOP--Eng., Design, TL, Equip.	Part of the reconfiguration of refining and petrochemicals sections of KIPIC's grassroots 615,000-b/d Al-Zour integrated refining and petrochemical complex under construction in southern Kuwait.
	Kuwait Integrated Petroleum Industries Co.	Al-Zour	UOP Selectfining unit		Engineering		Honeywell UOP--Eng., Design, TL, Equip.	Part of the reconfiguration of refining and petrochemicals sections of KIPIC's grassroots 615,000-b/d Al-Zour integrated refining and petrochemical complex under construction in southern Kuwait.
	Kuwait Integrated Petroleum Industries Co.	Al-Zour	Sulfuric acid generation unit	513	Under constr.	2022	DuPont Clean Technologies--TL/D	MECS advanced SAR unit.
	Kuwait Integrated Petroleum Industries Co.	Al-Zour	Refinery	615,000	Under constr.	2019	Tecnicas Reunidas-Sinopec Eng.-Hanwha E&C--EPCC	
	Kuwait Integrated Petroleum Industries Co.	Al-Zour	Alkylation unit	9,100	Under constr.	2022	DuPont Clean Technologies--TL/D	STRATCO alkylation unit.
	Kuwait Integrated Petroleum Industries Co.	Al-Zour	Aromatics complex (paraxylene)	1,400,000 tpy	Engineering		Kuwait Integrated Petroleum Industries Co.	Part of the reconfiguration of refining and petrochemicals sections of KIPIC's grassroots 615,000-b/d Al-Zour integrated refining and petrochemical complex under construction in southern Kuwait. Complex will use the latest generation LD Parex aromatics technology, including the Sulfolane, Isomar, and Tatoray processes. CR Platforming unit and naphtha hydrotreater also will be expanded to meet the needs of the larger gasoline and aromatics complexes.
<b>LIBERIA</b>	ECOWAS Refinery Liberia Ltd.	Buchanan	Refinery	100,000	Planning		KBR Inc.--PF	
<b>MALAYSIA</b>	Petronas	Melaka	Hydrogen generation unit		Planning		Hyundai Engineering--EPC; John Wood Group--E/Equip.; ABB Ltd.--Equip.	Steam methane reformer; Terrace Wall process technology; part of Diesel Euro-5 project.
	Hengyuan Refining Co. Bhd.	Port Dickson, Negeri Sembilan	Euro 5 gas oil project		Under constr.	2020		The \$26.61-million project involves a revamp of the refinery's existing hydrosulfurization Unit No. 2 to help meet Malaysia's upcoming 10-ppmw Euro 5 gas oil sulfur specification—which takes effect on Sept. 1, 2020—and to reinstate the unit's capacity to 46,180 b/d.
	Hengyuan Refining Co. Bhd.	Port Dickson, Negeri Sembilan	Euro 4M-grade mogas		Under constr.	2020		Targeted for completion during first-quarter 2020, the Euro 4M-grade mogas project involves installation of an integrated complex that is designed to desulfurize the full range cat-cracked gasoline produced by the refinery's long-residue catalytic cracking unit (LRCCU) to enable production of gasoline that meets the Euro 4M specification requiring sulfur content to be less than 50 ppmv.
	Hengyuan Refining Co. Bhd.	Port Dickson, Negeri Sembilan	Hydrogen Manufacturing Unit		Under constr.	2020		The \$66.4-million development comes as part of a hydrogen generation (H2Gen) project for production of cleaner fuels at the refinery by September 2020.
<b>MEXICO</b>	Petroleos Mexicanos	Minatitlan	Vacuum distillation	1,100	Under constr.	2019	Amec Foster Wheeler--D	
	Petroleos Mexicanos	Minatitlan	Crude distillation	30,000	Under constr.	2019	Amec Foster Wheeler--D	

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Country	Company	Location	Project	Added capacity	Status	Expected completion	Contractor/ contract type	Project notes
	Petroleos Mexicanos	Salamanca	Hydrodesulfurization	36,100	Under constr.		Samsung Engineering--E/PE	
	Petroleos Mexicanos	Tula	Heavy oil plant revamp		Under constr.		Saipem SPA,Saimexicana SA de CV--EPC	
	Petroleos Mexicanos	Tula	Refinery	86,000	Under constr.			
	Petroleos Mexicanos	Salamanca	Sour water stripping	4,500	Under constr.			
	Petroleos Mexicanos	Tula	Amine regeneration		Under constr.			
	Petroleos Mexicanos	Tula	Desulfurization	30,000	Under constr.			
	Pemex	Dos Bocas	Refinery	340,000	Planning	2022		
<b>MONGOLIA</b>	Mongol Refinery State Owned LLC (Government of Mongolia)	Altanshiree,Domogovi province	Refinery	30,100	Under constr.	2022	Engineers India Ltd.--FEED/EPC	
<b>MOZAMBIQUE</b>	Empresa Nacional de Hidrocarbonetos EP	TBD	Refinery		Planning			Feasibility study due.
<b>NETHERLANDS</b>	ExxonMobil Corp.	Rotterdam	Hydrocracker	85	Under constr.		Amec Foster Wheeler--EPC	Expansion
	Gunvor Group Ltd.	Rotterdam	Refinery upgrade		Planning			
	Zeeland Refinery	Vlissingen	Hydrocracker		Engineering		Amec Foster Wheeler--EPC	Upgrade
<b>NEW ZEALAND</b>	New Zealand Refining Co.	Marsden Point	Refinery upgrade		Planning			Emissions and energy reduction projects.
<b>NIGERIA</b>	Dangote Group	Lagos,Lekki Free Trade Zone	Refinery	650,000	Under constr.	2020	Engineers India Ltd.--EPC	
	Niger Delta Petroleum Resources Ltd.	Rivers State	Refinery	10,000	Engineering			Expansion
	Nigerian National Petroleum Corp.	Assah North Ohaji South Area,Imo State	Refinery	100,000	Planning			New condensate refinery.
	Nigerian National Petroleum Corp.	Western Forcados Area,Delta State	Refinery	100,000	Planning			New condensate refinery.
	Sinopec International Petroleum Service Corp. (SIPS),Peyang Chemical Equipment Co. (PCC) and African Infrastructure Partners	Edo State	Refinery	5,500	Planning			Modular refinery.
	PT Intim Perkasa Nigeria Ltd.	Akwa Ibom State	Refinery	10,000	Planning			Modular refinery.
	Eko Petrochem & Refining Co. Ltd.	Tomaro Island,Lagos	Refinery	20,000	Planning			Modular refinery.
	Waltersmith Refining & Petrochemical Ltd.	Ibige,Imo State	Refinery	5,000	Under constr.		Lambert Electromec Ltd.,VFuels LLC--EPC	Modular refinery.
	Kaduna Refining & Petrochemical Co. Ltd.	Kaduna State	Refinery modernization		Planning	2022		Nigerian National Petroleum Corp. rehabilitation program.
	Warri Refining & Petrochemical Co. Ltd.	Delta State	Refinery modernization		Planning	2022		Nigerian National Petroleum Corp. rehabilitation program.
	Port Harcourt Refining Co. Ltd.	Rivers State	Refinery modernization		Planning	2022	Maire Technimont SPA	Nigerian National Petroleum Corp. rehabilitation program.
<b>NORWAY</b>	Equinor	Mongstad	Gas residue debottlenecking project		Engineering		John Wood Group--FEED	
	Equinor	Mongstad	Low-sulfur gasoline unit		Engineering		John Wood Group--E/P/D	
<b>OMAN</b>	Duqm Refinery & Petrochemical Industries Co. LLC	Duqm	Delayed coker		Engineering		John Wood Group--FEED	FEED scheduled for completion in 2020.
	Duqm Refinery & Petrochemical Industries Co. LLC	Duqm	Refinery	230,000	Under constr.		Galfar Engineering & Contracting SAOG--Site preparation, Saipem SPA,McDermott--EPC Package 3; Petrofac International Ltd.,Samsung Engineering Co. Ltd.--EPC Package 2; Tecnicas Reunidas SA,Daewoo Engineering & Construction Co. Ltd.--EPC Package 1; Amec Foster Wheeler--PM	
<b>PAKISTAN</b>	Falcon Oil PLC	Dera Ismail Khan,Khyber Pakhtunkhawa	Refinery	100,000	Engineering		Guandong Electrical Design Institute--EPC	
	Pakistan Refinery Ltd.	Karachi	Refinery		Planning		Amec Foster Wheeler--D	Upgrade and expansion project.
<b>PHILIPPINES</b>	Petron Corp.	Bataan	Unionfining unit		Engineering		Honeywell UOP--E/D/TL	Upgrading production capacity expansion project.
	Petron Corp.	Bataan	Merox unit		Engineering		Honeywell UOP--E/D/TL	Upgrading production capacity expansion project.
	Petron Corp.	Bataan	CCR Platforming unit		Engineering		Honeywell UOP--E/D/TL	Upgrading production capacity expansion project.
	Petron Corp.	Bataan	Naphtha hydrotreater		Engineering		Honeywell UOP--E/D/TL	Upgrading production capacity expansion project.
	Petron Corp.	Bataan	Condensate fractionation unit		Engineering		Honeywell UOP--E/D/TL	Upgrading production capacity expansion project.
	Petron Corp.	Bataan	Sulfolane unit		Engineering		Honeywell UOP--E/D/TL	Upgrading production capacity expansion project.
	Petron Corp.	Bataan	LPG unit		Engineering		Honeywell UOP--E/D/TL	Upgrading production capacity expansion project.
<b>POLAND</b>	Grupa Lotos SA	Gdansk	Hydrorefining	50,000	Under constr.			



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Country	Company	Location	Project	Added capacity	Status	Expected completion	Contractor/ contract type	Project notes
	Grupa Lotos SA	Gdansk	Catalytic hydrocracking	4,000	Under constr.			Expansion
	PKN Orlen SA	Plock	Hydrogen		Engineering		Technip--EPC	
	Grupa Lotos SA	Gdansk	Crude/vacuum distillation unit	90,000	Under constr.			
	PKN Orlen SA	Plock	Hydrodesulfurization		Engineering		Technip--E/PE/TL	
<b>QATAR</b>	Qatar Petroleum	Messaieed	Refinery	250,000	Engineering		Axens--E	\$60 million. Lump sum contract.
<b>ROMANIA</b>	Rompetrol Rafinare SA	Navodari	Refinery modernization		Planning			
<b>RUSSIA</b>	NefteGazIndustriya LLC	Krasnodar	Hydrocracker	50,205	Engineering	2019	McDermott--EPC; Lummus--TL	
	NefteGazIndustriya LLC	Krasnodar	Crude distillation unit	15,062	Engineering	2019		
	PJSC Gazprom Neft	Omsk	Process condensate purification plant	100	Under constr.	2018	Technological Engineering Peton--E/D	
	PJSC Lukoil	Kstovo	Deep conversion complex	42,173	Under constr.	2021	McDermott--EP/Eq.; Lummus--TL	
	PJSC Gazprom Neft	Moscow	Diesel hydrotreater	40,164	Under constr.			Euro+ CORU project.
	NefteGazIndustriya LLC	Krasnodar	Visbreaker		Engineering	2019		
	PJSC Gazprom Neft	Moscow	Gasoline reforming unit	20,082	Under constr.			Euro+ CORU project.
	PJSC Gazprom Neft	Moscow	Amine regeneration unit		Under constr.			Euro+ CORU project.
	PAO Novatek	Ust-Luga	Hydrocracker Upgrade		Engineering	2020	Haldor Topsoe AS	Hydrocracker upgrade—which will cost an estimated 19 billion rubles—are scheduled to begin in 2019 and be completed by mid-2020
	PJSC Lukoil	Kstovo	PSA unit		Under constr.	2021	KT-Kinetics Technology--EPC	Part of deep conversion complex.
	PJSC Lukoil	Kstovo	Hydrogen generation unit		Under constr.	2021	KT-Kinetics Technology--EPC	Part of deep conversion complex.
	PJSC Lukoil	Kstovo	Diesel fuel hydrotreater		Under constr.	2021	KT-Kinetics Technology--EPC	Part of deep conversion complex.
	PJSC Lukoil	Kstovo	Delayed coker	42,170	Under constr.	2021	McDermott--EPC	Part of deep conversion complex.
	PJSC Rosneft	Novokuibyshev, Samara Oblast	Delayed coker		Under constr.			Reconstruction.
	PJSC Rosneft	Novokuibyshev, Samara Oblast	Hydrotreater		Under constr.			New unit.
	PJSC Rosneft	Novokuibyshev, Samara Oblast	Crude distillation unit 2		Under constr.			New unit.
	PJSC Rosneft	Novokuibyshev, Samara Oblast	MDEA regeneration unit		Under constr.			New unit.
	PJSC Rosneft	Novokuibyshev, Samara Oblast	Hydrocracker		Under constr.			New unit.
	NefteGazIndustriya LLC	Krasnodar	Diesel hydrotreater		Engineering	2019		
	PJSC Gazprom Neft	Moscow	Gas fractionation unit		Under constr.			Euro+ CORU project.
	PJSC Gazprom Neft	Omsk	Hydrocracker	40,164	Under constr.		McDermott--FEED	
	PJSC Gazprom Neft	Moscow	Atmospheric-distillation unit	120,493	Under constr.			Euro+ CORU project.
	PJSC Gazprom Neft	Omsk	Wastewater treatment		Under constr.	2019	PJSC Omskneftekhimproekt--E/D	
	PJSC Lukoil	Kstovo	Sulfur recovery unit		Under constr.	2021	KT-Kinetics Technology--EPC	Part of deep conversion complex.
	PJSC Lukoil	Kstovo	Gas fractionation unit		Under constr.	2021	KT-Kinetics Technology--EPC	Part of deep conversion complex.
	PJSC Gazprom Neft	Omsk	Delayed coker	40,164	Under constr.	2021	Maire Technimont--EPCM	
	PJSC Lukoil	Volgograd	Solvent deasphalting	1 million tpy	Under constr.			
<b>SAUDI ARABIA</b>	Saudi Aramco Total Refinery & Petrochemicals Co. (Satorp)	Jubail	Debottlenecking		Under constr.	2020	KBR--EPC	Debottlenecking of Train 2 to increase refinery throughput capacity by 15%.
	Saudi Aramco	Riyadh	Solvent Deasphalting Unit		Engineering	2020	KBR--TL	SDA ROSE technology.
	Rabigh Refining & Petrochemical Co.	Rabigh	Fuel oil upgrading		Planning		Jacobs Engineering Group Inc. Eng and FEED	
	Saudi Aramco Shell Refinery Co. (Sasref)	Jubail	Expansion		Engineering	2020	McDermott--EPCM	
	Saudi Aramco	Ras Tanura	Continuous catalytic reformer	90,000	Engineering	2021	Tecnicas Reunidas--EPCC	
	Saudi Aramco	Ras Tanura	Naphtha hydrotreater	138,000	Engineering	2021	Tecnicas Reunidas--EPCC	
	Saudi Aramco	Ras Tanura	Isomerization unit	65,000	Engineering	2021	Tecnicas Reunidas--EPCC	

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<b>SCOTLAND</b>	Ineos AG	Grangemouth	Electric Power Plant		Under constr.		Fluor--EPCC	To support operations at Petroineos Refining Ltd.'s 180,700-b/d Grangemouth integrated complex.
<b>SERBIA</b>	Naftna Industrija Srbije JSC Novi Sad	Pancevo	Delayed coker	14,660	Engineering		McDermott--EPCm	BOTB project.
<b>SICILY</b>	Isab SRL	Priolo,Syracuse province	Revamp		Engineering		Amec Foster Wheeler--E	
<b>SINGAPORE</b>	Singapore Refining Co. Pte. Ltd.	Jurong	Group II base stock expansion		Under constr.	2019	---	
<b>SOUTH AFRICA</b>	Petro SA	Port Elizabeth	Refinery	400,000	Planning		WorleyParsons--E	
<b>SPAIN</b>	Repsol SA	La Coruna	Hydrosulfurization	17,271	Engineering		Intecsa Uhde--E; Honeywell UOP--TL	Revamp
	Repsol SA	Murcia	Hydrocracker	50,000	Planning		Axens--TL	Expansion
	Compania Espanola de Petroleos SA	Huelva	Vacuum distillation	30,500	Under constr.		Amec Foster Wheeler--EPC	
	Repsol SA	Cartagena	Hydrosulfurization	18,676	Engineering		Intecsa Uhde--E; Honeywell UOP--TL	Revamp
	Compania Espanola de Petroleos SA	Gibraltar	Hydrofluoric acid alkylation unit conversion		Engineering	2020	Honeywell UOP--E/D/TL	Conversion to UOP proprietary Detal-Plus technology for production of linear alkybenzene (LAB), which will increase 50,000 tpy to 250,000 tpy.
	BP PLC (BP Oil Espana SAU)	Castellon	Vacuum distillation unit		Engineering		Amec Foster Wheeler--EPC	
	Repsol SA	Cartagena	Refinery	100,000	Engineering		Fluor--PM	Expansion \$4.8 billion. Final capacity: 200,000 b/d.
	Repsol SA	Puertollano	Hydrosulfurization	28,918	Engineering		Intecsa Uhde--E; Honeywell UOP--TL	Revamp
Repsol SA	Tarragona	Hydrosulfurization	19,078	Engineering		Intecsa Uhde--E; Honeywell UOP--TL	Revamp	
<b>SRI LANKA</b>	Ceylon Petroleum Corp.	Sapugaskanda	Refinery	50,000	Planning			Expansion.
	Ceylon Petroleum Corp.	Sapugaskanda	Hydrocracker		Planning			New unit.
<b>SWEDEN</b>	Preem AB	Lysekil	Vacuum Distillation Unit		Under constr.	2019		
	Preem AB	Lysekil	Carbon Capture Plant		Planning	2025	Aker Solutions--Feasibility	
<b>THAILAND</b>	Thai Oil Public Co. Ltd.	Sriracha	Diesel hydrodesulfurization unit		Engineering		Saipem,Petrofac,Samsung--EPCC	Part of Clean Fuels project.
	Thai Oil Public Co. Ltd.	Sriracha	Naphtha hydrotreater		Engineering		Saipem,Petrofac,Samsung--EPCC	Part of Clean Fuels project.
	Thai Oil Public Co. Ltd.	Sriracha	Electric power plant		Engineering		Saipem,Petrofac,Samsung--EPCC	Part of Clean Fuels project.
	Thai Oil Public Co. Ltd.	Sriracha	Sulfur recovery unit		Engineering		Saipem,Petrofac,Samsung--EPCC	Part of Clean Fuels project.
	Thai Oil Public Co. Ltd.	Sriracha	Hydrogen generation unit		Engineering		Saipem,Petrofac,Samsung--EPCC	Part of Clean Fuels project.
	Thai Oil Public Co. Ltd.	Sriracha	Residue hydrocracker		Engineering		Saipem,Petrofac,Samsung--EPCC	Part of Clean Fuels project.
	Thai Oil Public Co. Ltd.	Sriracha	Vacuum gas oil hydrocracker		Engineering		Saipem,Petrofac,Samsung--EPCC	Part of Clean Fuels project.
	Thai Oil Public Co. Ltd.	Sriracha	Crude distillation unit	220,000	Engineering		Saipem,Petrofac,Samsung--EPCC	Part of Clean Fuels project.
	Thai Oil Public Co. Ltd.	Chonburi	Refinery expansion	135,000	Engineering		Rotary Engineering Ltd.--Tank construction	Expansion and clean-fuels project.
<b>UGANDA</b>	Albertine Graben Refinery Consortium	Kabaale,Hoima District	Refinery	60,000	Engineering	2023	Saipem SPA--FEED, EPC	\$3-4 billion grassroots project.
<b>UNITED ARAB EMIRATES</b>	Emirates National Oil Co.	Jebel Ali,Dubai	Condensate processing train	70,000	Under constr.	2019	Technip--EPC	New train.
	Abu Dhabi National Oil Co.	Ruwais	Refinery	600,000	Planning	2025	John Wood Group PLC - preliminary front-end engineering and design (pre-FEED)	New refinery construction to expand total Ruwais capacity to 817,000 b/d.
	Abu Dhabi National Oil Co.	Ruwais	Refinery	600,000	Engineering		Wood--pre-FEED	New refinery to be built for integration with existing petrochemical infrastructure in Ruwais; part of ADNOC's broader \$45-billion program to become a global downstream leader under a new combined model of strategic partnerships and investments.
	Emirates National Oil Co.	Jebel Ali,Dubai	Isomerization unit		Under constr.	2019		
	Abu Dhabi National Oil Co.	Ruwais	Atmospheric desulfurization units (2)		Engineering	2022	Samsung Engineering,McDermott--EPC	
	Abu Dhabi National Oil Co.	Ruwais	Waste-heat recovery		Engineering	2022	Samsung Engineering--EPC	
	Abu Dhabi National Oil Co.	Ruwais	Crude flexibility		Engineering	2022	Samsung Engineering--EPC	
	Emirates National Oil Co.	Jebel Ali,Dubai	Diesel hydrotreater		Under constr.	2019		
Emirates National Oil Co.	Jebel Ali,Dubai	LPG-naphtha hydrotreater		Under constr.	2019	Amec Foster Wheeler--E/Constr.; Axens--TL		

# REFINING CONT.

Country	Company	Location	Project	Added capacity	Status	Expected completion	Contractor/ contract type	Project notes
	Emirates National Oil Co.	Jebel Ali, Dubai	Kerosine hydrotreater		Under constr.	2019		
	Brooge Petroleum & Gas Investment Co. FZc	Fujairah, UAE.	Refinery	250,000	Planning			
	Brooge Petroleum & Gas Investment Co.	Fujairah	Refinery	250,000	Under const.	2020-21		The refinery will be the first of its kind in the Middle East and North Africa to comply with new regulations of the International Maritime Organization (IMO) 2020 by capping sulfur content in shipping fuels. Details regarding future phases not disclosed.
<b>UNITED KINGDOM</b>	ExxonMobil Corp.	Fawley	Hydrotreating		Planning	2021		Will include a new hydrotreating unit and new hydrogen plant to increase ULSD production by 38,000 b/d.
<b>UNITED STATES</b>	Chevron Corp.	Salt Lake City, Utah	Alkylation unit	4,500	Under constr.	2020	Worley Parsons--EPCm; Honeywell UOP--TL	Hydrofluoric acid-to-ISOALKY unit conversion.
	Marathon Petroleum Co. LLC	Texas City, Tex.	South Texas Asset Relocation program		Under constr.	2021	Fluor Corp.--EP	
	Marathon Petroleum Co. LLC	Galveston Bay, Tex.	Tier 3 project		Under constr.	2019	Fluor Corp.--EPCm	
	Meridian Energy Group Inc.	Billings County, ND	Refinery	49,500	Under constr.	2020	Vepica--E/D; McDermott--FEED	
	ExxonMobil Corp.	Beaumont, Tex.	Crude		Under const.	2022	KBR Inc.	Already under construction, the project will add a third crude unit within the refinery's existing footprint that will increase light crude refining capacity.
	ExxonMobil Corp.	Beaumont, Tex.	Crude distillation		Under const.	2022		Proceeding with FEED; construction scheduled to begin in 2019, subject to final investment decision.
	ExxonMobil Corp.	Beaumont, Tex.	Refinery Expansion	250,000	Under constr.	2022	TechnipFMC--EPC; KBR--EPC (offsites and interconnections)	Expansion project to add a third crude unit within the refinery's existing footprint; will also include a new atmospheric pipe still, kerosine hydrotreater, diesel hydrotreater, and benzene recovery unit.
	Flint Hills Resources LP	Rosemount, Minn.	Hydrotreater		Under constr.	2019		Naphtha-Processing Improvement Project
	CVR Refining LP	Wynnewood, Okla.	Hydrofluoric acid (HF) alkalation unit revamp		Planning		KBR Inc. engr	To be based on KBR's Solid Acid Alkylation Technology (K-SAAT) as part of a revamp of the existing HF alkylation unit.
	MMEX Resources Corp.	Pecos County, Tex.	Refinery	10,000	Planning	2020	Blanchard Industrial--EPC	
	Delek US Holdings Inc	Krotz Springs, La.	Alkylation Unit	6,500	Under constr.	2019	E.I. DuPont de Nemours & Co. - Tech	
	Valero Energy Corp.	Port Arthur, Tex.	Coker Unit; Sulfur Recovery Unit	55,000	Under constr.	2022		
	Meridian Energy Group Inc.	Winkler County, Tex.	Refinery	60,000	Engineering		Winkler Cos. LLC--Site control	Proposed grassroots refinery based on Meridian Energy's Davis refinery under construction in Billings County, ND.
	Flint Hills Resources LP	Rosemount, Minn.	Refinery		Under constr.			Pine Bend Technology & Efficiency Improvement Projects.
	Valero Energy Corp.	Houston	Alkylation unit	13,000	Under constr.	2019		
	Phillips 66	Old Ocean, Tex.	Hydrogen		Engineering	2021	Linde PLC	To support P66's 256,000-b/d Sweeny refinery in Old Ocean, Tex.
	Marathon Petroleum Co. LLC	Galveston Bay, Tex.	South Texas Asset Relocation program		Under constr.	2021	Fluor Corp.--EP	Emissions-compliance works.
	Flint Hills Resources LP	Rosemount, Minn.	Upgrading		Under constr.	2019		Polymer-grade propylene splitter.
	Marathon Petroleum Co. LLC	Detroit, Mich.	FCC-alkylation project		Planning			Emissions-compliance works.
	Flint Hills Resources LP	Rosemount, Minn.	Hydrocracker		Under constr.	2019		Diesel Selectivity Project.
	Flint Hills Resources LP	Rosemount, Minn.	Delayed coker		Under constr.	2019		Coker Improvement Project.
	Valero Energy Corp.	Norco, La.	Alkylation unit	17,000	Under constr.	2020	McDermott--TL/Eq.	
	Freeport Commodities LLC-Rigby Refining LLC	US Gulf Coast	Refinery	10,000	Planning	2021		Freeport and Rigby Refining signed definitive contracts to form a joint venture to develop processing plants around the world to help meet the growing demand for International Marine Organization (IMO) 2020-compliant marine fuel. The JV's first project will be the design and construction of a 10,000-b/d fuel oil processing plant in the USGC. The facility would be equipped with Rigby's proprietary process to remove sulfur from fuel oil and produce low-sulfur, IMO 2020-compliant marine fuel.
	Limetree Bay Ventures LLC	St. Croix, US Virgin Islands	Refinery restart	200,000	Under const.	2019		Restart of portion of former Hovensa refinery by yearend 2019.
	Husky Energy Inc.	Superior, Wis.	Refinery rebuild		Under const.	2021		Husky Energy Inc. has received required permit approvals to begin reconstruction of its 47,500-b/cd refinery in Superior, Wis., after a fire that broke out at the site on Apr. 26, 2018. Key features of the rebuild and modernization project will include: <ul style="list-style-type: none"> <li>• Implementation of best available control technology (BACT) incorporating advances in technology and efficiencies from across the refining industry.</li> <li>• Increased energy efficiency, in full compliance with federal, state, and local regulations.</li> <li>• Configuration for the refinery to run in a continuous mode averaging 45,000 b/sd, which includes a 5,000-b/d average increase in heavy oil processing to 25,000 b/sd.</li> <li>• Work to equip the refinery to produce a full slate of products, including asphalt, gasoline, and diesel, enhancing Husky's ability to service the US Midwest.</li> </ul>

# REFINING CONT.

Country	Company	Location	Project	Added capacity	Status	Expected completion	Contractor/ contract type	Project notes
UZBEKISTAN	Jizzakh Petroleum JV LLC	Jizzakh	Refinery	100,411	Under constr.	2021	Amec Foster Wheeler,Hyundai Engineering,Enter Engineering--EPC	
	Jizzakh Petroleum JV LLC	Jizzakh	Merox unit		Engineering	2021	Honeywell UOP--E/D/TL	
	Jizzakh Petroleum JV LLC	Jizzakh	CCR Platforming unit		Engineering	2021	Honeywell UOP--E/D/TL	
	Jizzakh Petroleum JV LLC	Jizzakh	Distillate Union-fining unit		Engineering	2021	Honeywell UOP--E/D/TL	
	Jizzakh Petroleum JV LLC	Jizzakh	Par-Isom unit		Engineering	2021	Honeywell UOP--E/D/TL	
	Jizzakh Petroleum JV LLC	Jizzakh	Unicracking unit		Engineering	2021	Honeywell UOP--E/D/TL	
VIETNAM	PetroVietnam	Dung Quat	Refinery expansion	40,164	Engineering	2021	Amec Foster Wheeler--FEED	Expansion
	PetroVietnam	Dung Quat	Hydrogen unit		Engineering	2021		New unit as part of expansion.
	PetroVietnam	Dung Quat	Alkylation unit		Engineering	2021		New unit as part of expansion.
	PetroVietnam	Dung Quat	Diesel hydrotreater		Engineering	2021		New unit as part of expansion.
	PetroVietnam	Dung Quat	Sulfur removal unit		Engineering	2021		New unit as part of expansion.
	PetroVietnam	Dung Quat	Gasoline hydrotreater		Engineering	2021		New unit as part of expansion.
	PetroVietnam	Dung Quat	Naphtha hydrotreater		Engineering	2021		New unit as part of expansion.
	PetroVietnam	Dung Quat	Solvent deasphalting unit		Engineering	2021		New unit as part of expansion.
	Valero Energy Corp.	Houston	Alkylation unit	13,000	Under constr.	2019		
	Phillips 66	Old Ocean, Tex.	Hydrogen		Engineering	2021	Linde PLC	To support P66's 256,000-b/d Sweeny refinery in Old Ocean, Tex.
	ArcLight Capital Partners LLC (Limetree Bay Refining)	St. Croix,US Virgin Islands	Refinery restart	200,000	Planning			Restart of portion of former Hovensa refinery by yearend 2019.
	Marathon Petroleum Co. LLC	Galveston Bay,Tex.	South Texas Asset Repositioning program		Under constr.	2021	Fluor Corp.--EP	Emissions-compliance works.
	Valero Energy Corp.	Port Arthur, Tex.	Coker Unit; Sulfur Recovery Unit	55,000	Under constr.	2022		
	Flint Hills Resources LP	Rosemount,Minn.	Upgrading		Under constr.	2019		Polymer-grade propylene splitter.
	Marathon Petroleum Co. LLC	Detroit,Mich.	FCC-alkylation project		Planning			Emissions-compliance works.
	Flint Hills Resources LP	Rosemount,Minn.	Hydrocracker		Under constr.	2019		Diesel Selectivity Project.
	Flint Hills Resources LP	Rosemount,Minn.	Delayed coker		Under constr.	2019		Coker Improvement Project.
	Valero Energy Corp.	Norco, La.	Alkylation unit	17,000	Under constr.	2020	McDermott--TL/Eq.	
	ExxonMobil Corp.	Beaumont,Tex.	Refinery Expansion	250,000	Under constr.	2022	TechnipFMC--EPC; KBR--EPC (offsites and interconnections)	Expansion project to add a third crude unit within the refinery's existing footprint; will also include a new atmospheric pipe still, kerosine hydrotreater, diesel hydrotreater, and benzene recovery unit.
	Flint Hills Resources LP	Rosemount,Minn.	Hydrotreater		Under constr.	2019		Naphtha-Processing Improvement Project
CVR Refining LP	Wynnewood, Okla.	Hydrofluoric acid (HF) alkylation unit revamp		Planning		KBR Inc. engr	To be based on KBR's Solid Acid Alkylation Technology (K-SAAT) as part of a revamp of the existing HF alkylation unit.	
MMEX Resources Corp.	Pecos County, Tex.	Refinery	10,000	Planning	2020	Blanchard Industrial--EPC		
Delek US Holdings Inc	Krotz Springs, La.	Alkylation Unit	6,500	Under constr.	2019	E.I. DuPont de Nemours & Co. - Tech		
Meridian Energy Group Inc.	Winkler County, Tex.	Refinery	60,000	Engineering		Winkler Cos. LLC--Site control	Proposed grassroots refinery based on Meridian Energy's Davis refinery under construction in Billings County, ND.	
UZBEKISTAN	Jizzakh Petroleum JV LLC	Jizzakh	Refinery	100,411	Under constr.	2021	Amec Foster Wheeler,Hyundai Engineering,Enter Engineering--EPC	
	Jizzakh Petroleum JV LLC	Jizzakh	Merox unit		Engineering	2021	Honeywell UOP--E/D/TL	
	Jizzakh Petroleum JV LLC	Jizzakh	CCR Platforming unit		Engineering	2021	Honeywell UOP--E/D/TL	
	Jizzakh Petroleum JV LLC	Jizzakh	Distillate Union-fining unit		Engineering	2021	Honeywell UOP--E/D/TL	
	Jizzakh Petroleum JV LLC	Jizzakh	Par-Isom unit		Engineering	2021	Honeywell UOP--E/D/TL	
	Jizzakh Petroleum JV LLC	Jizzakh	Unicracking unit		Engineering	2021	Honeywell UOP--E/D/TL	
VIETNAM	PetroVietnam	Dung Quat	Refinery expansion	40,164	Engineering	2021	Amec Foster Wheeler--FEED	Expansion
	PetroVietnam	Dung Quat	Alkylation unit		Engineering	2021		New unit as part of expansion.
	PetroVietnam	Dung Quat	Diesel hydrotreater		Engineering	2021		New unit as part of expansion.
	PetroVietnam	Dung Quat	Sulfur removal unit		Engineering	2021		New unit as part of expansion.
	PetroVietnam	Dung Quat	Gasoline hydrotreater		Engineering	2021		New unit as part of expansion.
	PetroVietnam	Dung Quat	Naphtha hydrotreater		Engineering	2021		New unit as part of expansion.
	PetroVietnam	Dung Quat	Solvent deasphalting unit		Engineering	2021		New unit as part of expansion.
	PetroVietnam	Dung Quat	Hydrogen unit		Engineering	2021		New unit as part of expansion.

# PETROCHEMICALS

Added capacity listed in tons per year (tpy) unless otherwise specified.

Country	Company	Location	Project	Added capacity	Status	Expected completion	Contractor/ contract type	Project notes
ALGERIA	Sonatrach	Skikda	Benzene linear alkyl	100,000	Planning		Engineers India Ltd.--Feasibility study/PMC	
	Sonatrach	Skikda	Polypropylene	600,000	Planning		Engineers India Ltd.--Feasibility study/PMC	
	Sonatrach	Skikda	Methanol	1,000,000	Planning		Engineers India Ltd.--Feasibility study/PMC	
	Sonatrach	Arzew	Ethylene	1,100,000	Engineering		Total SA--Constr.	
	Sonatrach	Skikda	Ethylene	1,000,000	Planning		Engineers India Ltd.--Feasibility study/PMC	
	Sonatrach	Arzew	Methyl tertiary butyl ether	200,000	Planning		Amec Foster Wheeler--E	
	Sonatrach Total Entreprise Polymeres	Arzew	Polypropylene	565,000	Planning		Honeywell UOP--TL, E, D, Eq.	Sonatrach 51%-Total SA 49% joint venture; FEED scheduled to begin in November 2018.
AUSTRALIA	Coogee Chemicals Pty. Ltd.	Darwin, Northern Territory	Methanol	350,000	Planning	2024		The methanol project would be built close to Inpex's Ichthys LNG plant at Middle Arm on Darwin Harbor. A final investment decision for the Darwin project is expected in early 2021 which would enable the plant to be brought on stream in 2024.
AZERBAIJAN	SOCAR GPC	Garadagh	Polyethylene	600,000	Engineering	2022	Univation Technologies--D/TL	
	SOCAR GPC	Garadagh	Propylene	120,000	Engineering	2022	Technip--D/TL	
	SOCAR GPC	Garadagh	Ethylene	610,000	Engineering	2022	Technip--D/TL	
	Azerikimya Production Union	Sumgait	Ethylene		Engineering	2019	Technip--EPC	Modernization and upgrading project.
BELGIUM	Borealis AG	Kallo	Propylene	740,000	Engineering	2021	Honeywell UOP--E/TL	
	Ineos AG	Antwerp	Propylene	750,000	Engineering	2023	McDermott--TL/D	CATOFIN dehydrogenation process technology.
	Ineos AG	Antwerp	Ethylene		Planning	2023		
	BASF Antwerpen NV	Verbund, Antwerp	Ethylene oxide	400,000	Engineering	2022		At a total investment amounting to more than €500 million, the expansion will add a second large EO plant at the site to increase production capacity by about 400,000 tonnes/year, as well as involve additional investments in various installations for EO derivatives, including nonionic surfactants, glycol ethers for automotive applications, and other alkoxyates.
	Borealis AG	Kallo, Belgium	Propane Dehydrogenation (PDH) plant	750,000	Planning		Maire Tecnimont SPA - EPCM	
CANADA	Canada Kuwait Petrochemical Corp.	Sturgeon County, Alta.	Propylene	550,000	Engineering	2023	Honeywell UOP LLC--TL/Eq.	FEED to be completed in late 2018; FID to follow.
	Inter Pipeline Ltd.	Strathcona County, Alta.	Polypropylene		Engineering	2021	W.R. Grace & Co.--TL/Catalyst	
	West Coast Olefins Ltd.	Prince George, BC	Ethylene	1,000,000	Planning	2023		WCOL has now secured a 300-acre site in the BCR Industrial Area of Prince George in preparation for construction of the proposed petrochemical project, which would include both an ethylene and polyethylene (PE) plant for manufacturing of PE product for export to growing markets in Asia Pacific. The overall project also would include an NGL recovery plant to recover ethane, propane, butane, and natural gas condensate from Enbridge Inc.'s Westcoast Pipeline; a polyethylene plant to consume most of the ethylene produced; associated off-site facilities and infrastructure; and a possible monoethylene glycol plant on site to utilize the balance of produced ethylene.
CHINA	Zhejiang Satellite Petrochemical Co. Ltd.	Pinghu City, Zhejiang Province	Polypropylene	300,000	Engineering	2019	Siemens AG--Eq.	
	Nanjing Chengzhi Yongqing Energy Technology Co. Ltd.	Changlu area of Nanjing Chemical Industrial Park, Nanjing, Jiangsu Province	Methanol-to-olefins recovery	600,000	Engineering	2019	Honeywell UOP LLC--TL/Catalyst	Advanced MTO process technology to convert coal-derived methanol into ethylene and propylene.
	Hengli Petrochemical (Dalian) Co. Ltd.	Dalian, Liaoning Province	Polypropylene	450,000	Under constr.	2019	W.R. Grace & Co.--TL/Catalyst	Unipol PP process technology; SHAC Ziegler Natta PP catalyst
	ExxonMobil Corp.	Huizhou Dayawan Petrochemical Industrial Park, Guangdong Province	Ethylene	1,200,000	Planning	2023		

# PETROCHEMICALS CONT.

Country	Company	Location	Project	Added capacity	Status	Expected completion	Contractor/ contract type	Project notes
	Chenghong Refining & Technology Co. Ltd.	Lianyungang City in China's province of Jiangsu	Residue Hydro-cracking Process Technology		Planning		Axens	
	ExxonMobil Corp.	Huizhou Dayawan Petrochemical Industrial Park, Guangdong Province	Polyethylene		Planning	2023		Polyethylene Line 2.
	ExxonMobil Corp.	Huizhou Dayawan Petrochemical Industrial Park, Guangdong Province	Polypropylene		Planning	2023		Polypropylene Line 2.
	Hubei Sanning Chemical Industry Co. Ltd.	Xhijiang, Hubei Province	Polybed pressure-swing adsorption unit	165,000 cu m/hr	Planning		Honeywell UOP--TL	
	ExxonMobil Corp.	Huizhou Dayawan Petrochemical Industrial Park, Guangdong Province	Polypropylene		Planning	2023		Polypropylene Line 1.
	ExxonMobil Corp.	Huizhou Dayawan Petrochemical Industrial Park, Guangdong Province	Polyethylene		Planning	2023		Polyethylene Line 1.
	Dongguan Grand Resource Science & Technology Co. Ltd.	Dongguan City, Guangdong Province	Propylene	600,000	Under constr.		McDermott--E/D/TL	Part of phased propane dehydrogenation and polypropylene project.
	CNOOC & Shell Petrochemicals Co. Ltd.	Ningbo, Huizhou, Guangdong Province	Unidentified expansion		Planning			Unidentified petrochemical manufacturing installations.
	Shandong Wonfull Petrochemical Co. Ltd.	Huantai Economic Development Zone, Shandong Province	Propylene	250,000	Engineering		Honeywell UOP--D/Equip./TL	C3 Oleflex propane dehydrogenation technology.
	Lihuayi Lijin Refining & Chemical Co. Ltd.	Dongying, Shandong Province	Olefins		Engineering		KBR--TL/Catalyst/E/D	Catalytic Olefins Technology (K-OTC) and Selective Cracking Optimum Recovery (SCORE) technologies.
	Jinneng Science & Technology Co. Ltd.	Qingdao, Shandong Province	Propylene	900,000	Engineering			
	Jiangsu Jiarui Chemical Co. Ltd.	Taixing Industrial Zone, Jiangsu Province	Propylene	450,000	Engineering		Honeywell UOP--E/D/TL	C3 Oleflex propane dehydrogenation technology.
	CNOOC Ningbo Daxie Petrochemicals Co. Ltd.	Ningbo, Guangdong Province	Polypropylene	300,000	Engineering		McDermott--TL/D	
	Lianyungang Petrochemical Co. Ltd.	Lianyungang City, Jiangsu Province	Ethylene	1,250,000	Engineering		McDermott--TL/D; Honeywell UOP LLC -T	Plant 1.
	Wanhua Chemical Group Co. Ltd.	Yantai, Shandong Province	Propane Dehydrogenation (PDH) Unit	750,000	Planning		Honeywell UOP LLC	
	Jiangsu Sailboat Petrochemical Co. Ltd.	Lianyungang City, Jiangsu Province	Propylene	700,000	Planning		Honeywell UOP--TL	
	Sinochem Quanzhou Petrochemical Co. Ltd.	Quanzhou, Fujian Province	Ethylene	1,000,000	Planning		Wood--EPCM	New ethylene unit at SQPCL's 240,000-b/d Quanzhou refinery.
	Xuzhou HaiDing Chemical Technology Co. Ltd.	Pizhou, Jiangsu Province	Propylene	600,000	Under constr.		McDermott--TL/E/D; Clariant International Ltd. Catalyst	Catofin catalytic dehydrogenation process technology; Catofin catalyst.
	Tianjin Bohua Chemical Development Co. Ltd.	Bohai Chemical Industry Park, Tianjin Port Economic Zone (1)	Methanol-to-olefins recovery	530,000	Engineering		McDermott--E/D/TL	
	Tianjin Bohua Chemical Development Co. Ltd.	Bohai Chemical Industry Park, Tianjin Port Economic Zone	Propylene oxide	200,000	Engineering		Repsol Quimica--TL	
	Tianjin Bohua Chemical Development Co. Ltd.	Bohai Chemical Industry Park, Tianjin Port Economic Zone	Styrene monomer	450,000	Engineering		Repsol Quimica--TL	
	Zhejiang Petroleum & Chemical Co. Ltd.	Zhoushan, Zhejiang Province	Ethylene	1,400,000	Under constr.		Wison Engineering (China) Ltd--EPC	Phase 1 of the complex is due for startup by December 2018, while Phase 2-which will double processing and production capabilities at the site-is scheduled for commissioning during first-quarter 2021.
	Tianjin Bohua Chemical Development Co. Ltd.	Bohai Chemical Industry Park, Tianjin Port Economic Zone	Methanol-to-olefins recovery (2)	1,800,000	Engineering		Luoyang Petrochemical Engineering--SYN Energy Technology--TL	
	Tianjin Bohua Chemical Development Co. Ltd.	Bohai Chemical Industry Park, Tianjin Port Economic Zone	Polypropylene	300,000	Engineering		McDermott--E/D/TL	
	SP Olefins (Taixing) Co. Ltd.	Taixing, Jiangsu Province	Ethylene	650,000	Engineering		Technip--D/TL	
	Tianjin Bohua Chemical Development Co. Ltd.	Bohai Chemical Industry Park, Tianjin Port Economic Zone	Ethylbenzene	530,000	Engineering		McDermott--E/D/TL	

# PETROCHEMICALS CONT.

Country	Company	Location	Project	Added capacity	Status	Expected completion	Contractor/ contract type	Project notes
	Fujian Petrochemical Co. Ltd.	Zhangzhou Gulei Petrochemical Base, Zhangzhou, Fujian Province	Ethylene	1,000,000	Under constr.	2019		
	Shandong Yuhuang Shengshi Chemical Inc. Ltd.	Heze City, Shandong Province	Polyethylene	200,000	Engineering	2019	LyondellBasell--TL	
	Jiangsu Jiarui Chemical Co. Ltd.	Taixing Industrial Zone, Jiangsu Province	Monoethylene glycol	600,000	Under constr.	2019		
	Lihuayi Lijin Refining & Chemical Co. Ltd.	Dongying, Shandong Province	Ethylene	1,250,000	Engineering		McDermott--TL/D	Plant 2.
	PetroChina Guangdong Petrochemical Co. Ltd. (China National Petroleum Corp.'s PetroChina Co. Ltd.)	Jieyang Nandahai Petrochemical Industrial Zone, Guangdong Province	Paraxylene	52,200 b/d	Under construction	2023	Honeywell UOP--TL	Part of a refining-chemical integration project under way at PetroChina Guangdong Petrochemical's 400,000-b/d heavy crude oil processing and petrochemical site in the Jieyang Nandahai Petrochemical Industrial Zone of China's Guangdong province.
	LyondellBasell; Liaoning Bora Enterprise Group (Bora)	Panjin	Ethylene	1,100,000	Under construction		LyondellBasell--TL	LyondellBasell signed a memorandum of understanding to form a 50-50 joint venture with Liaoning Bora Enterprise Group (Bora) to operate the ethylene cracker. The facility will produce olefins and polyolefins that will be marketed by LyondellBasell.
	Datong Coal Mine Group Co. Ltd.	Datong	Polypropylene	430,000	Engineering	2022	W.R. Grace & Co.--TL	
	Fujian Meide Petrochemical Co. Ltd. (China Soft Packaging Group Co. Ltd.)	Fuzhou City, Fujian Province	Propylene	660,000	Engineering		Honeywell UOP--TL	Honeywell UOP will deliver its Honeywell Process Reliability Advisor service, which continuously feeds plant data through Honeywell UOP process and fault models with specialized software to provide key performance information and process recommendations to help the plant run more smoothly and detect problems before they can affect production and plant profitability.
	PetroChina Guangdong Petrochemical Co. Ltd. (China National Petroleum Corp.'s PetroChina Co. Ltd.)	Jieyang Nandahai Petrochemical Industrial Zone, Guangdong Province	Polypropylene	500,000	Under construction	2023	W.R. Grace & Co.--TL	Part of a refining-chemical integration project under way at PetroChina Guangdong Petrochemical's 400,000-b/d heavy crude oil processing and petrochemical site in the Jieyang Nandahai Petrochemical Industrial Zone of China's Guangdong province.
<b>CZECH REPUBLIC</b>	Unipetrol RPA SRO	Chempark Zaluži, Litvínov	Polyethylene	270,000	Under constr.	2019	Technip--EPC	PE3 production unit.
<b>EGYPT</b>	Sidi Kerir Petrochemicals Co.	Alexandria	Polypropylene	450,000	Engineering		W.R. Grace & Co. TL/Catalyst	
<b>HUNGARY</b>	MOL Petrochemicals Co. Ltd.	Tiszaújváros	Propylene	100,000	Engineering		McDermott--Eng., TL, FEED	McDermott will deliver licensing, basic engineering design, catalyst, and FEED for the olefins conversion technology (OCT) unit that will have a production capacity of 100,000 tpy of polymer-grade propylene from steam cracker and refinery feedstocks using McDermott-Chevron Corp. joint venture Chevron Lummus Global LLC's proprietary OCT as well as a CDHydro deisobutenizer unit.
<b>INDIA</b>	Indian Oil Corp. Ltd.	Koyali, Vadodara, Gujarat	Polypropylene	420,000	Planning		McDermott--TL, Eng.	Additional unit at Vadodara refinery.
	Indian Oil Corp. Ltd.	Barauni, Begusarai District, Bihar	Polypropylene	200,000	Planning		McDermott--TL, Eng.	Additional unit at Barauni refinery
	HPCL-Mittal Energy Ltd.	Guru Gobind Singh refinery, Village Phullokhar, Bathinda, Punjab State	Polypropylene	500,000	Engineering			Part of the Guru Gobind Singh Polymer Additions Complex.
	HPCL-Mittal Energy Ltd.	Guru Gobind Singh refinery, Village Phullokhar, Bathinda, Punjab State	Butene-1	55,000	Engineering			Part of the Guru Gobind Singh Polymer Additions Complex.
	HPCL-Mittal Energy Ltd.	Guru Gobind Singh refinery, Village Phullokhar, Bathinda, Punjab State	HDPE unit	450,000	Engineering			Part of the Guru Gobind Singh Polymer Additions Complex.
	HPCL-Mittal Energy Ltd.	Guru Gobind Singh refinery, Village Phullokhar, Bathinda, Punjab State	LLDPE-HDPE swing unit 2	400,000	Engineering			Part of the Guru Gobind Singh Polymer Additions Complex.

# PETROCHEMICALS CONT.

Country	Company	Location	Project	Added capacity	Status	Expected completion	Contractor/ contract type	Project notes
	HPCL-Mittal Energy Ltd.	Guru Gobind Singh refinery, Village Phullokhar, Bathinda, Punjab State	LLDPE-HDPE swing unit 1	400,000	Engineering			Part of the Guru Gobind Singh Polymer Additions Complex.
	HPCL-Mittal Energy Ltd.	Guru Gobind Singh refinery, Village Phullokhar, Bathinda, Punjab State	Ethylene	1,200,000	Engineering		McDermott TL/E	New mixed-feed ethylene plant expandable to 1.5 million tpy as part of the Guru Gobind Singh Polymer Additions Complex.
	Indian Oil Corp. Ltd.	Paradip, Odisha	Monoethylene Glycol; Ethylene Recovery	357,000; 180,000	Planning		Larsen&Toubro--EPCC	New units at the Paradip refinery.
	HPCL-Mittal Energy Ltd.	Bathinda, Punjab State	Polypropylene	500,000	Engineering		Tecnimont SPA, Tecnimont Private Ltd.--EPCC	
	HPCL-Mittal Energy Ltd.	Bathinda, Punjab State	Ethylene	1,200,000	Planning			
	HPCL-Mittal Energy Ltd.	Bathinda, Punjab State	Polyethylene	450,000	Engineering		Tecnimont SPA, Tecnimont Private Ltd.--EPCC	
	HPCL Rajasthan Refinery Ltd.	Barmer, Rajasthan	Polypropylene	840,000	Engineering	2022	McDermott--TL, Eng.	McDermott will deliver licensing and basic engineering design of two 420,000-tpy polypropylene units that will use Lummus' proprietary Novolen process reactors and proprietary NHP catalyst to produce a full range of polypropylene products at the new integrated refinery.
	Bharat Petroleum Corp. Ltd.	Kochi, at Ambalamugal, Ernakulam district, Kerala State	Propylene oxide	300,000	FEED	2022	Sumitomo Chemical--TL	BPCCL currently is conducting front-end engineering design and detailed engineering on the proposed petrochemical project, which alongside the PO plant, also will include a polyols plant; part of propylene derivatives petrochemical project to diversify the refinery's output of niche petrochemicals, which will be produced from polymer-grade propylene supplies resulting from increased crude processing at the integrated complex.
	Bharat Petroleum Corp. Ltd.	Kochi, at Ambalamugal, Ernakulam district, Kerala State	Propylene		Under constr.		Essar Projects India Ltd. EPC	Propylene derivatives petrochemical project to diversify the refinery's output of niche petrochemicals, which will be produced from polymer-grade propylene supplies resulting from increased crude processing at the integrated complex.
	Abu Dhabi National Oil Co.- Adani Group-BASF SE-Borealis AG	Mundra, Gujarat	Propylene-polypropylene		Planning	2024		The partners said they plan to finalize the joint feasibility study by the end of first-quarter 2020. The collaboration includes evaluating a joint world-scale propane dehydrogenation (PDH) plant to produce propylene based on propane feedstock to be supplied by ADNOC that will be partially used as feedstock for a polypropylene (PP) complex, owned by ADNOC and Borealis, based on proprietary Borealis Borstar technology.
	Chennai Petroleum Corp. Ltd	Tamilnadu, India	Cauvery Basin Refinery delayed coking unit	50,200	Planning		Cevron Lummus Global	
<b>INDONESIA</b>	PT Chandra Asri Petrochemical Tbk	Ciwandan, Cilegon, Banten Province	Polyethylene	400,000	Engineering	2020	Univation Technologies LLC--TL; Toyo Engineering Corp.--FEED	New unit; UNIPOL PE and XCAT metallocene PE process technologies.
	PT Chandra Asri Petrochemical Tbk	Ciwandan, Cilegon, Banten Province	Mixed C4s	15,000	Engineering	2020	McDermott--TL/E/D/Eq.	Expansion; construction to begin in third-quarter 2018.
	PT Chandra Asri Petrochemical Tbk	Ciwandan, Cilegon, Banten Province	Pygas	20,000	Engineering	2020	McDermott--TL/E/D/Eq.	Expansion; construction to begin in third-quarter 2018.
	PT Chandra Asri Petrochemical Tbk	Ciwandan, Cilegon, Banten Province	Propylene	20,000	Engineering	2020	McDermott--TL/E/D/Eq.	Expansion; construction to begin in third-quarter 2018.
	PT Chandra Asri Petrochemical Tbk	Ciwandan, Cilegon, Banten Province	Ethylene	40,000	Engineering	2020	McDermott--TL/E/D/Eq.	Expansion; construction to begin in third-quarter 2018.
	PT Chandra Asri Petrochemical Tbk (PT Petrokimia Butadiene Indonesia)	Ciwandan, Cilegon, Banten Province	Butadiene	37,000	Engineering	2019		In July 2019, OMV AG signed a memorandum of understanding with CAP2 and Mubadala Investment Co. to explore opportunities for collaboration in Indonesia's petrochemical business, including the proposed petrochemical complex.
	PT Chandra AsriPerkasal (CAP2)	Ciwandan, Cilegon, Banten Province	Ethylene	1,100,000	Engineering		McDermott--TL/E	In July 2019, OMV AG signed a memorandum of understanding with CAP2 and Mubadala Investment Co. to explore opportunities for collaboration in Indonesia's petrochemical business, including the proposed petrochemical complex.



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Country	Company	Location	Project	Added capacity	Status	Expected completion	Contractor/contract type	Project notes
	PT Chandra AsriPerkasal (CAP2)	Ciwandan, Cilegon, Banten Province	Butadiene	175,000	Engineering		McDermott--TL/E	In July 2019, OMV AG signed a memorandum of understanding with CAP2 and Mubadala Investment Co. to explore opportunities for collaboration in Indonesia's petrochemical business, including the proposed petrochemical complex.
	PT Chandra AsriPerkasal (CAP2)	Ciwandan, Cilegon, Banten Province	Propylene	600,000	Engineering		McDermott--TL/E	
IRAN	Kangan Petro Refining Co.	Pars Special Economic Energy Zone, Tonbak, Boushehr Province	Monoethylene glycol	500,000	Engineering		Hyundai Engineering Co. Ltd.-Hyundai Engineering & Construction Co. Ltd.--EPC	
	Kangan Petro Refining Co.	Pars Special Economic Energy Zone, Tonbak, Boushehr Province	Polyethylene	700,000	Engineering		Hyundai Engineering Co. Ltd.-Hyundai Engineering & Construction Co. Ltd.--EPC	
	Kangan Petro Refining Co.	Pars Special Economic Energy Zone, Tonbak, Boushehr Province	Ethylene	1,000,000	Engineering		Hyundai Engineering Co. Ltd.-Hyundai Engineering & Construction Co. Ltd.--EPC	
JAPAN	Tosoh Corp.	Yokkaichi, Mie Prefecture	Ethylene		Engineering	2019	Toyo Engineering Corp.--EPC; Chevron Lummus Global--TL	Expansion of existing 527,000-tpy naphtha cracker.
KAZAKHSTAN	Kazakhstan Petrochemical Industries Inc. LLP	Atyrau	Polypropylene	500,000	Engineering		McDermott--TL/D/PM	
KUWAIT	Petrochemical Industries Co. KSC	Al-Zour	Paraxylene	1,400,000	Engineering	2022	Amec Foster Wheeler--FEED/PMC McDermott--TL, Eng.	Integration project with Al-Zour refinery.
	Petrochemical Industries Co. KSC	Al-Zour	Polypropylene	940,000	Engineering	2022		
	Kuwait Petroleum Corp.	Al-Zour	Propylene	330,000	Planning			
MALAYSIA	Petronas	Pengerang	Naphtha cracker	3,000,000	Under constr.	2019		\$20 billion. Petrochemical and polymer complex.
NIGERIA	Dangote Group	Lekki Free Trade Zone, Lagos	Polypropylene		Engineering	2019	Engineers India Ltd.--EPC	
NORWAY	Ineos AG	Rafnes	Ethylene	450,000	Planning			Part of European ethylene, propylene growth plans announced in June 2017.
OMAN	Oman Oil Refineries & Petroleum Industries Co.	Sohar Industrial Port Area	Ethylene	880,000	Engineering	2019	McDermott--FEED	\$40 million.
	Projects Development & Management International LLC	Muscat	Chloralkali polyvinyl chloride	225,000	Engineering		SNC-Lavalin Group--EPCm	
	Duqm Refinery & Petrochemical Industries Co. LLC	Duqm	Ethylene		Planning		John Wood Group--FEED	
PHILLIPINES	JG Summit Petrochemicals Group	Barangay Simlong, Batangas City	Propylene	50,000	Engineering	2020	Fluor Corp.--EPCm	
	JG Summit Petrochemicals Group	Barangay Simlong, Batangas City	Ethylene	160,000	Engineering	2020	Fluor Corp.--EPCm	
POLAND	PKN Orlen SA	Plock	Paraxylene	400,000	Engineering		Technip--EPC; Honeywell UOP--TL	\$221.9 million. Project will increase production of ethylene and aromatics, as well as improve flexibility of gasoline production, at its 327,300-b/d Plock integrated refining and petrochemical complex. Honeywell UOP will license its proprietary MaxEne process, which separates full-range naphtha into a stream of normal paraffins ideal for steam crackers because they produce high yields of light olefins, and a second stream of isoparaffins, naphthenes, and aromatics ideal for catalytic reforming units because they produce high yields of aromatics.
	PKN Orlen SA	Plock	Ethylene		Engineering		Honeywell UOP--TL	

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Country	Company	Location	Project	Added capacity	Status	Expected completion	Contractor/contract type	Project notes
QATAR	Chevron Phillips Chemical Co. LLC-Qatar Petroleum	Ras Laffan Industrial City	Polyethylene	1,680,000	Planning	2025		The proposed complex will include a 1.9 million-tpy ethane cracker as well as two HDPE derivative units with a combined capacity of 1.68 million tpy. In addition to exclusive licensing of its proprietary MarTECH loop slurry process for manufacturing HDPE, CPCC will provide project management, engineering, and construction services to develop the project. As part of the development phase, the companies also will study potential efficiencies that could be realized by harnessing existing capabilities of Qatar Chemical Co. joint ventures to provide overall operational management of the completed complex. In June 2019, CPCC said it expects the project's engineering design phase to begin shortly, with planned start-up of the complex targeted for late 2025. QP will own a 70% majority share of the joint venture, while CPCC will hold the remaining 30%.
	Chevron Phillips Chemical Co. LLC-Qatar Petroleum	Ras Laffan Industrial City	Ethylene	1,900,000	Engineering	2025	CPCC--PM, Eng., Constr., TL	The proposed complex will include a 1.9 million-tpy ethane cracker as well as two HDPE derivative units with a combined capacity of 1.68 million tpy. In addition to exclusive licensing of its proprietary MarTECH loop slurry process for manufacturing HDPE, CPCC will provide project management, engineering, and construction services to develop the project. As part of the development phase, the companies also will study potential efficiencies that could be realized by harnessing existing capabilities of Qatar Chemical Co. joint ventures to provide overall operational management of the completed complex. In June 2019, CPCC said it expects the project's engineering design phase to begin shortly, with planned start-up of the complex targeted for late 2025. QP will own a 70% majority share of the joint venture, while CPCC will hold the remaining 30%.
RUSSIA	PJSC Nizhnekamskneftekhim	Nizhnekamsk, Tatarstan	Ethylene	600,000	Engineering	2022	Linde AG--TL/D/P/E consulting	Expansion to double existing capacity; will include additional 600,000 tpy of other chemicals; further planned expansions to boost overall ethylene capacity to 1.8 million tpy by 2025.
	Irkutsk Oil Co. Ltd. (Irkutsk Polymer Plant)	Irkutsk Region of East Siberia	Ethylene;	650,000;	Planning	2022	Toyo Engineering Corp - Eng., Proc., TL; McDermott--TL, Eng.	
	PJSC Nizhnekamskneftekhim	Nizhnekamsk, Tatarstan	Methanol Unit	500,000	Planning		Haldor Topsoe AS - Tech	
	SIBUR	Tobolsk	Propylene	500,000	Engineering		Linde AG--FEED	
	SIBUR	Tobolsk	Polypropylene	500,000	Engineering		Linde AG--FEED	
	PJSC Kazanorgsintez	Kazan, Tatarstan	Ethylene		Engineering		Technip--E/P/TL	Modernization project.
	JSC Gazprom Neftekhim Salavat	Salavat, Bashkortostan	Ethylene		Planning		Wilson Engineering Services Co. Ltd.--Prefeasibility studies	
	SIBUR	Tobolsk	Polyethylene	1,500,000	Engineering		Linde AG--FEED	
	PJSC Kazanorgsintez	Kazan, Tatarstan	Propylene		Planning		Wilson Engineering Services Co. Ltd.--Prefeasibility studies	
	SIBUR	Tobolsk	Butadiene	100,000	Engineering		Linde AG--FEED	
	SIBUR	Tobolsk	Ethylene	1,500,000	Engineering		Linde AG--FEED	
	PJSC Gazprom-PJSC Sibur Holding	Yamal-Nenets Autonomous Area	Gas chemical complex		Planning			Part of a second roadmap of agreements between Gazprom and Sibur outlines diagnostics, engineering surveys, and design documentation to be drawn up regarding construction of the Novy Urengoy gas chemical complex in the Yamal-Nenets Autonomous Area. The companies are evaluating cooperation on the proposed project.
	JSC Sibur-Neftekhim (PJSC Sibur Holding)	Nizhniy Novgorod	Benzene		Engineering		Sulzer Chemtech Ltd.--TL, E, Eq.	Modernization of a benzene production complex at Sibur Kstovo LLC's olefins production plant near Nizhniy Novgorod. Sulzer GTC will deliver licensing of its proprietary pyrolysis gasoline (pygas) processing technologies for the proposed revamp, including design of a GT-BTX extractive distillation unit as well as revamp the existing pygas fractionation, first and second-stage hydrotreating, and the thermal hydrodealkylation unit to process additional feed.

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Country	Company	Location	Project	Added capacity	Status	Expected completion	Contractor/ contract type	Project notes
	Nakhodka Mineral Fertilizer Plant CJSC	Vladivostok	Methanol	1,800,000	Under construction	2023	Haldor Topsoe--TL; China Chengda Engineering Co. Ltd.--EPC	Due for start-up in 2023 with a planned total capacity of as much as 1.8 million tonnes/year of methanol and up to 1.8 million tpy of ammonia, the plant—which will be located near the major Russian seaport Nakhodka in the Primorsky region—aims to export products to destinations in Southeast Asia.
	GTM One (AEON Infrastructure Corp.)	Khimprom, Volgograd	Methanol	3,000 tonne/day	FEED	2020	Haldor Topsoe--TL; Mitsubishi Heavy Industries Engineering--FEED	
<b>SAUDI ARABIA</b>	Saudi Aramco-SABIC	Yanbu	COTC complex	9,000,000	Engineering	2025	KBR--FEED; John Wood Group--pre-FEED,PM	Proposed crude oil-to-chemicals complex; FID due upon completion of FEED.
	National Petrochemical Industrial Co.	Yanbu Industrial City	Propylene-Polypropylene	400,000	Planning		Maire Tecnimont--EPC	
	Huajin Aramco Petrochemical Co. Ltd.	Panjin, Liaoning Province	Ethylene; Paraxylene	1,500,000; 1,300,000	Planning	2024		JV of Saudi Aramco and China North Industries Group Corp. as part of the proposed integrated 300,000-b/d refinery and petrochemicals complex.
	Saudi Kayan Petrochemical Co.	Al-Jubail	Ethylene	93,000	Engineering		Technip--E	Expansion
	Saudi Aramco Total Refinery & Petrochemicals Co.	Jubail	Ethylene	1,500,000	Engineering	2024	Lummus Technology--TL, E	FEED under way.
<b>SCOTLAND</b>	Ineos AG	Grangemouth	Ethylene	450,000	Engineering	2020	Selas-Linde GMBH--Const.	Part of European ethylene, propylene growth plans announced in June 2017; construction to begin in 2019.
<b>SOUTH KOREA</b>	S-Oil Corp.	Ulsan	Ethylene	1,500,000	Planning	2023		Feasibility study under way.
	PolyMirae Co. Ltd.	Ulsan	Polypropylene	400,000	Engineering	2021		Scheduled to begin construction in 2019.
	Hanwha Total Petrochemicals Co. Ltd.	Daesan, Chungnam Province	Polyethylene	400,000	Engineering	2020		Expansion of polyethylene capacity to 1.1 million tpy. W.R. Grace & Co. will license its proprietary UNIPOL PP process technology as well as its CONSISTA catalyst for the 400,000-tonne/year unit.
	S-Oil Corp.	Ulsan	Polyethylene		Planning	2023		Feasibility study under way.
	GS Caltex Corp.	Yeosu, Jeollanam-do Province	Ethylene	700,000	Engineering		KBR--TL/E/D/Equip.	Scheduled to begin construction in 2019.
	GS Caltex Corp.	Yeosu, Jeollanam-do Province	Polyethylene	500,000	Engineering		KBR--TL/E/D/Equip.	Scheduled to begin construction in 2019.
	S-Oil Corp.	Ulsan	Polypropylene		Planning	2023		Feasibility study under way.
	Hyundai Chemical Co. Ltd.	Daesan, Chungcheongnam-do Province	Polyethylene	300,000	Under constr.	2021	Univation Technologies LLC--TL	Univation will provide its UNIPOL PE technology for the 300,000-tpy high-density polyethylene (HDPE) plant
	S-Oil Corp. Saudi Aramco	Ulsan	Ethylene	1,500,000	Planning	2024		In June 2019, S-Oil and Saudi Aramco signed a memorandum of understanding between the two companies to collaborate on Phase 2 of the Ulsan complex, which will involve construction of a \$6-billion, 1.5 million-tpy mixed-feed steam cracker and olefins downstream project scheduled to be completed by 2024
	Hyundai Chemical Co. Ltd.	Daesan, Chungcheongnam-do Province	Polypropylene	250,000	Under constr.	2021	W.R. Grace & Co.--TL	The UNIPOL PP unit, which will be used to produce high-end, specialty-grade random copolymer resins, comes as part of a larger cracker complex that is scheduled to begin operations in 2021.
	LG Chem Ltd.	Daesan, Chungcheong Province	Ethylene	230,000	Engineering	2019	KBR--E/D/TL	Expansion
	Lotte Chemical Corp.	Yeosu, Jeollanam-do Province	Ethylene	200,000	Engineering	2019		Expansion
	Lotte Chemical Corp.	Yeosu, Jeollanam-do Province	Propylene	100,000	Engineering	2019		Expansion
<b>THAILAND</b>	Map Ta Phut Olefins Co. Ltd.	Rayong Province	Ethylene	350,000	Engineering	2021	McDermott--E/D/TL	Debottlenecking project to increase ethylene production.
	IRPC PLC	Rayong Province	Benzene	495,000	Engineering	2022	Honeywell UOP--TL/D/Equip./Catalyst	
	IRPC PLC	Rayong Province	Paraxylene	1,200,000	Engineering	2022	Honeywell UOP--TL/D/Equip./Catalyst	
	Bangkok Synthetics Co. Ltd.	Map Ta Phut, Rayong	Butadiene; Butene-1	80,000; 34,000	Engineering	2021	Toyo--EPC	
	PTT Global Chemical PCL	Map Ta Phut, Rayong Province	Propylene	250,000	Engineering		McDermott--TL/E; Samsung Engineering,TTCL--EPC	
	PTT Global Chemical PCL	Map Ta Phut, Rayong Province	Ethylene	500,000	Engineering		McDermott--TL/E; Samsung Engineering,TTCL--EPC	

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Country	Company	Location	Project	Added capacity	Status	Expected completion	Contractor/ contract type	Project notes
	GC Oxirane Co. Ltd. (PTT Global Chemical Public Co. Ltd.)		Propylene oxide	200,000	Under construction	2020	Sumitomo Chemical--TL	The PO project comes alongside a polyols project currently under execution by GC Polyols Co. Ltd. (GPC), a joint venture of PTTGC and Japanese partners Sanyo Chemical Industries and Toyota Tsusho Corp. GPC's polyols project also is due for start-up in 2020.
<b>TURKEY</b>	Ceyhan Polypropilen Uretim AS (Ronesans Holding—Sonatrach SPA)	Ceyhan Mega Petrochemistry Industry Zone, Ceyhan	Propylene	457,000	Engineering	2023	Honeywell UOP--TL, E, D, Eq.	Part of Ceyhan Polypropilen Uretim's grassroots petrochemical complex to be built in Ceyhan. The new PDH unit will enable Ceyhan Polypropilen Uretim to manufacture polypropylene domestically, reducing Turkey's dependence on imports from manufacturers in the Middle East and Western Europe. Formed in early 2019, Ceyhan Polypropilen Uretim plans to begin production at its new \$1.2-billion, 450,000-tpy polypropylene plant in 2023. The complex also will include a PDH unit that will produce 457,000 tpy of polymer-grade propylene.
	Ceyhan Polypropilen Uretim AS (Ronesans Holding—Sonatrach SPA)	Ceyhan Mega Petrochemistry Industry Zone, Ceyhan	Polypropylene	450,000	Engineering	2023		
<b>UNITED ARAB EMIRATES</b>	Abu Dhabi Polymers Co. Ltd.	Ruwais	Polypropylene	480,000	Engineering	2021	Tecnimont SPA--EPC	Proposed PP5 plant to be equipped with Borstar proprietary polyolefin multimodal process technology; tender planned to launch after July 2017; FID due by yearend 2018.
	Abu Dhabi Polymers Co. Ltd.	Ruwais	Ethylene	1,800,000	Planning	2023	WorleyParsons--PMC	Proposed Bourouge 4 expansion; entering FEED phase as of July 2017; FID due by yearend 2018.
<b>UNITED KINGDOM</b>	SABIC UK Petrochemicals Ltd.	Teeside, Wilton, UK	Ethylene	250,000	Planning			Olefins 6 plant Phase 2 expansion; feasibility study under way, with final investment decision to follow upon completion.
	INEOS AG	Saltend, Hull	Vinyl acetate monomer	300,000	Engineering		Fluor Corp.--FEED	
	ExxonMobil Corp.	Fife, Scotland	Ethylene		Planning	2022		A £140-million additional investment program over the next 2 years at the 800,000-tonne/year ethylene plant in Fife, Scotland, to upgrade key infrastructure and introduce technologies that will improve operational reliability and performance. A portion of the investment will go toward technologies that reduce the impact of flaring, including a state-of-the-art flare tip, which will reduce noise and vibration.
<b>UNITED STATES</b>	Total SA	Port Arthur, Tex.	Polyethylene	625,000	Engineering	2020	Borealis AG--TL	
	Total SA	Port Arthur, Tex.	Ethylene	1,000,000	Engineering	2020	McDermott--FEED/TL	
	LyondellBasell Industries NV	La Porte, Tex.	Polyethylene	1.1 billion lb/year	Under constr.	2020	LyondellBasell--TL	
	LyondellBasell Industries NV	Channelview, Tex.	Propylene oxide	1 billion	Under constr.	2021		
	Lotte Chemical Corp.	Lake Charles, La.	Monoethylene glycol	700,000	Under constr.	2019	Taiyo Nippon Sanso--Air separation unit	
	IGP Methanol LLC	Plaquemines Parish, La.	Methanol	1.8 million	Engineering	2020	McDermott--FEED,EPC; Haldor Topsoe--TL	Plant 1.
	LAAC LLC	Lake Charles, La.	Ethylene	1,000,000	Engineering	2019	McDermott--EPC/TL	
	Bayport Polymers LLC	Bayport, Tex.	Polyethylene	625,000	Engineering	2021	McDermott--EPC	
	Bayport Polymers LLC	Port Arthur, Tex.	Ethylene	1,000,000	Under constr.	2020	McDermott--EPC	
	Bayport Polymers LLC (Bastar)	Pasadena, Tex.	Polyethylene unit		Under Constr.	2020		
	South Louisiana Methanol LP (SLM)/Saudi Arabian Basic Industries Corp. (SABIC)	St. James Parish	Methanol Complex	2,000,000	Planning			
	LyondellBasell Industries NV	La Porte, Tex.	Tertiary butyl alcohol	2.2 billion lb/year	Under constr.	2021		
	ExxonMobil Corp.	Baton Rouge, La.	Polypropylene unit	450,000	Planning	2021		
	Ineos AG	Chocolate Bayou, Alvin, Tex.	Polyalphaolefin	120,000	Under constr.	2019	SNC-Lavalin Group,JV Driver Group--EPC	
	Royal Dutch Shell PLC (Shell Chemical Appalachia LLC)	Potter Township, Beaver County, Pa.	Ethylene	1,500,000	Under constr.		McDermott--FEED/TL	
	PTT Global Chemical	Belmont County, Ohio	Ethylene	1,000,000	Planning			FID in 2016-17.
	Formosa Plastics Corp.	St. James Parish, La.	Ethylene		Planning			Construction could begin as soon as 2019 pending approvals.
	Formosa Plastics Corp.	Point Comfort, Tex.	Polyethylene	625,500	Engineering		ThyssenKrupp Industrial Solutions AG--E/TL	Expansion
	Formosa Plastics Corp.	Point Comfort, Tex.	Propylene	545,000	Engineering		ThyssenKrupp Industrial Solutions AG--E/TL	Expansion

# PETROCHEMICALS CONT.

Country	Company	Location	Project	Added capacity	Status	Expected completion	Contractor/ contract type	Project notes
	Yuhuang Chemical Inc.	St. James Parish, La.	Methanol	1,700,000	Under constr.	2019	China Huanqiu Contracting & Engineering Corp.--E; Air Liquide Global E&C Solutions--TL; Amec Foster Wheeler--D	
	DowDupont	Freeport, Tex.	Ethylene	500,000	Planning			Expansion of September 2017-commissioned 1.5 million-tpy Freeport ethylene plant; part of \$4-billion wave of comprehensive growth investments over the next 5 years to expand its US petrochemicals manufacturing business.
	Shintech Inc. IGP Methanol LLC	Palquimine, La. Plaquemines Parish, La.	Ethylene Methanol	500,000 1.8 million	Engineering Engineering	2019	Toyo Engineering Corp--C; Lummus--TL McDermott--FEED,EPC; Haldor Topsoe--TL	\$1.4 billion. Plant 4.
	IGP Methanol LLC	Plaquemines Parish, La.	Methanol	1.8 million	Engineering		McDermott--FEED,EPC; Haldor Topsoe--TL	Plant 3.
	IGP Methanol LLC	Plaquemines Parish, La.	Methanol	1.8 million	Engineering		McDermott--FEED,EPC; Haldor Topsoe--TL	Plant 2.
	Braskem America Inc.	La Porte, Tex.	Polypropylene	450,000	Engineering		Linde AG EPC; W.R. Grace & Co. TL	The Delta PP plant project will more than double Braskem's capacity at La Porte to 804,000 tpy; Unipol PP process technology.
	Sasol Ltd.	Westlake, La.	Polyethylene	900,000	Under constr.	2019		Part of Sasol's long-planned Lake Charles Chemicals Project (LCCP), an integrated ethane cracker and downstream derivatives complex under construction in Westlake, La., near Lake Charles. Includes two large polymers plants capable of producing a combined 900,000 tpy of low-density polyethylene (LDPE) and LLDPE.
	Chevron Phillips Chemical Co. LLC-Qatar Petroleum	US Gulf Coast	Polyethylene	1,000,000	Planning	2024	CPCC--PM, Eng., Constr., TL	To be known as the USGC II, the complex will include a 2 million-tpy ethylene cracker and two 1 million-tpy high-density polyethylene (HDPE) units. CPCC would own 51% interest in the project, with QP holding the remaining 49% interest. Alongside providing project management and oversight, CPCC also would be responsible for operation and management of the complex, which the companies estimate will cost about \$8 billion. CPCC and QP said they expect to take a final investment decision on the project no later than 2021, followed by full funding and award of engineering, procurement, and construction contracts, for a targeted start-up of the new complex in 2024.
	Shell Chemical LP	Geismar, Ascension Parish, La.	Monoethylene glycol (MEG)		Planning			Royal Dutch Shell PLC subsidiary Shell Chemical LP has started feasibility studies for a potential \$1.2-billion manufacturing expansion of MEG production at its 841-acre Geismar chemicals complex in Ascension Parish, La. As part of the project, the operator would build an MEG plant at the site that—pending final engineering, design, and investment decisions—Shell could approve as early as 2020.
	ExxonMobil Corp.	Baytown, Tex.	Polymers	400,000	Engineering	2022	Tecnimont SPA-Performance Contractors Inc.--FEED	A consortium of Maire Tecnimont SPA subsidiary Tecnimont SPA and Performance Contractors Inc. will provide FEED, early execution studies, and early procurement activities for new process units and associated offsites and utilities at the operator's \$2-billion project to expand its Baytown, Tex., chemical plant. The Tecnimont USA Inc.-led consortium's scope of work includes implementation of new innovative process units, including a 400,000-tonne/year Vista-maxx performance polymer unit as well as a 350,000-tpy linear alpha olefins unit.
	Methanex Corp.	Geismar, La.	Methanol	5,000 tonne/day	Planning	2022	KBR--FEED; Johnson Matthey--TL	Methanex will make a \$1.3-1.4-billion capital investment in the G3 project, which will involve construction of the company's third methanol plant at Geismar. Construction on the plant—which will be equipped with Johnson Matthey PLC's proprietary autothermal reforming and methanol technology to produce about 1.8 million tpy of methanol—will begin during second-half 2019.

# PETROCHEMICALS CONT.

Country	Company	Location	Project	Added capacity	Status	Expected completion	Contractor/ contract type	Project notes
	Chevron Phillips Chemical Co. LLC-Qatar Petroleum	US Gulf Coast	Ethylene	2,000,000	Planning	2024		To be known as the USGC II, the complex will include a 2 million-tpy ethylene cracker and two 1 million-tpy high-density polyethylene (HDPE) units. CPCC would own 51% interest in the project, with QP holding the remaining 49% interest. Alongside providing project management and oversight, CPCC also would be responsible for operation and management of the complex, which the companies estimate will cost about \$8 billion. CPCC and QP said they expect to take a final investment decision on the project no later than 2021, followed by full funding and award of engineering, procurement, and construction contracts, for a targeted start-up of the new complex in 2024.
	Ineos AG	Alvin, Tex.	Ethylene Oxide (EO) and Ethylene Oxide Derivatives (EOD) plant	520,000	Planning	2023		The new 1.2 billion-lb (520,000-tpy) EO unit and associated downstream EOD plant will be built at Ineos's Chocolate Bayou petrochemicals manufacturing site in Alvin, Tex., south of Houston on the Gulf of Mexico coast
	ExxonMobil Corp.	Baytown, Tex.	Linear alpha olefins (LAO)	350,000	Engineering	2022	Tecnimont SPA-Performance Contractors Inc.--FEED	A consortium of Maire Tecnimont SPA subsidiary Tecnimont SPA and Performance Contractors Inc. will provide FEED, early execution studies, and early procurement activities for new process units and associated offsites and utilities at the operator's \$2-billion project to expand its Baytown, Tex., chemical plant. The Tecnimont USA Inc.-led consortium's scope of work includes implementation of new innovative process units, including a 400,000-tonne/year Vista-maxx performance polymer unit as well as a 350,000-tpy linear alpha olefins unit.
	Enterprise Products Partners LP	Mont Belvieu, Tex.	Propylene	1.65 billion lb/year	Planning	2023	S&B Engineers & Constructors Ltd.--EPC; Honeywell UOP--TL	Part of a long-term contract with LyondellBasell Industries NV under which Enterprise will process LyondellBasell-provided propane to the unit for a fixed fee.
	Dow Chemical Co.	Plaquemine, La.	Propylene	100,000	Under construction	2021	Dow Chemical--TL	Dow Chemical Co. is retrofitting its proprietary fluidized catalytic dehydrogenation technology into one of its mixed-feed crackers in Plaquemine, La., to produce on-purpose propylene. The Plaquemine retrofit comes amid Dow and other US cracker operator's growing consumption of ethane instead of heavier feed slates, resulting in a reduction of coproduct production, including propylene.
	Saudi Arabian Basic Industries Corp.-ExxonMobil Chemical Co.	San Patricio County, Tex.	Ethylene	1,800,000	Under construction	2022	Amec Foster Wheeler--EPC; Bay Ltd.--Civil, site maintenance; John Wood Group PLC, McDermott, Turner Industries, Chiyoda Corp., Kiewit Corp., Mitsubishi Heavy Industries Ltd., Zachry Group--EPC	
	Saudi Arabian Basic Industries Corp.-ExxonMobil Chemical Co.	San Patricio County, Tex.	Monoethylene glycol	1,100,000	Under construction	2022	CTCI McDermott Integrated--Constr.	Two units.
	Saudi Arabian Basic Industries Corp.-ExxonMobil Chemical Co.	San Patricio County, Tex.	Polyethylene		Under construction	2022		
	Formosa Plastics Corp. Louisiana (Formosa Plastics Corp. USA)	Baton Rouge, La.	Polyvinyl chloride	300 million lb/year	Under construction			The project will include installation of new machinery and equipment for the expansion of the PVC resin production unit, expected to result in a 20% increase in production capacity and sales; installation of new machinery and equipment for a halogenated acid production unit for internal use in the production of vinyl chloride monomer; and installation of utilities equipment needed for operations.
	PetroLogistics II LLC (Quantum Energy Partners)	US Gulf Coast	Propane dehydrogenation (PDH)	500,000	FEED		Dow Chemical Co.--TL; McDermott--FEED	The 500,000-tpy PDH unit will be equipped with Dow's proprietary fluidized catalytic dehydrogenation (FCDH) technology, which uses a novel reactor design based on fluidized catalytic cracking for on-purpose propylene production. PetroLogistics has yet to decide between two alternative USGC sites under evaluation for the project's location.

## PETROCHEMICALS CONT.

Country	Company	Location	Project	Added capacity	Status	Expected completion	Contractor/ contract type	Project notes
UZBEKISTAN	JSC Uzneftegazdobycha (Shurtan Gas Chemical Complex LLC)	Guzar District, Kashkadarya Region	Polyethylene	325,000	Engineering	2020		Project to increase the complex's current 125,000-tpy polyethylene production capacity to 450,000 tpy from 431,000 tpy of synthetic naphtha produced by NHC Uzneftegaz subsidiary Uzbekistan GTL LLC's Oltin Yo'l gas-to-liquids plant at Shurtan beginning in second-half 2020.
	JSC Uzneftegazdobycha (Shurtan Gas Chemical Complex LLC)	Guzar District, Kashkadarya Region	Hexene-1		Engineering		McDermott TL/E	Part of grassroots ethylene plant to be built at existing Shurtan petrochemical complex.
	JSC Uzneftegazdobycha (Shurtan Gas Chemical Complex LLC)	Guzar District, Kashkadarya Region	Polypropylene		Engineering		McDermott TL/E	Part of grassroots ethylene plant to be built at existing Shurtan petrochemical complex.
	JSC Uzneftegazdobycha (Shurtan Gas Chemical Complex LLC)	Guzar District, Kashkadarya Region	Ethylene		Engineering		McDermott TL/E	Grassroots ethylene plant to be built at existing Shurtan petrochemical complex.
VIETNAM	Long Son Petrochemical Co. Ltd.	Long Son Island in Vung Tau City, Ba Ria Province	Propylene	400,000	Engineering	2021	TechnipFMC,SK E&C--EPCC	
	Long Son Petrochemical Co. Ltd.	Long Son Island in Vung Tau City, Ba Ria Province	Ethylene	950,000	Engineering	2021	TechnipFMC,SK E&C--EPCC	
	Phu My Plastics Production JSC	Vung, Tau Province, Vietnam	Propane Dehydrogenation (PDH) Unit	306,000	Planning		Honeywell UOP LLC	
	Vung Ro Petroleum Ltd.	Phu Yen Province	Polypropylene	900,000	Engineering		Ineos--TL	\$4 billion.

# GAS PROCESSING

Added capacity listed in tons per year (tpy) unless otherwise specified.

Country	Company	Location	Project	Added capacity	Status	Expected completion	Contractor/ contract type	Project notes
ALGERIA	Sonatrach	Alrar	NGL automation		Planning		Emerson Electric Co. - engineering, procurement, commissioning, testing. Fores Engineering SRL	
	Sonatrach	Hassi Messaoud, ZCINA LPG Complex	LPG Train 4	282.5	Development		Maire Technimont SPA (Technimont SPA), EPC	
	Sonatrach	Adrar Province	Gas plant	141.3			Larsen & Toubro Ltd., EPCC	Hassi Tidjerane field
	Sonatrach	Adrar Province	Gas plant	141.3			Larsen & Toubro Ltd., EPCC	Tinerkoug field
	Sonatrach	Adrar Province	Gas plant	211.9			Larsen & Toubro, EPCC	Hassi Ba Hamou and Reg Mouaded field
AUSTRALIA	Senex Energy Ltd.	Garadagh	Gas plant	40	Planning			Project to accelerate proposed Atlas coal seam gas project in Surat basin of southeast Queensland for delivery of gas to domestic market by late 2019.
	Australian Gas Infrastructure Group (AGIG)	Western Australia	Gas Storage Facility		Planning			
AZERBAIJAN	SOCAR GPC	Garadagh	Gas plant	10	Engineering	2022	Technip--E/D/TL	
BAHRAIN	National Oil & Gas Authority	Bahrain field	Gas dehydration plant	500	Engineering		Petrofac--EPC	
BRAZIL	Petroleo Brasileiro SA	Itaboraí, Rio de Janeiro	Gas plant	21	Engineering	2020	Shandong Kerui Petroleum Equipment Co. Ltd.,Metodo Potencial Engenharia SA--EPC	
CANADA	Tidewater Midstream & Infrastructure Ltd.	Grande Prairie, Alta.	Sour Gas Processing Plant	20,000	Planning		WorleyParsons Ltd.	Phase 2 of the Wapiti development project to add another 150 MMcfd of sour gas processing capacity. Phase 1 of the Wapiti development project to create 150 MMcfd of sour gas processing capacity. Pipestone Central plant; to serve Montney producers in the Pipestone region of the Western Canadian Sedimentary Basin. In an August 2019 presentation to investors, Tidewater said there is large customer support for a Pipestone Plant Phase 2 project—for which it already has a 10-year, 20-MMcfd take-or-pay commitment—upon which the operator plans to reach a final investment decision in the coming months by yearend..
	Keyera Corp.	Grand Prairie, Alta.	Gas plant	150	Engineering	2020	Jacobs Engineering Group Inc. EPC	
	Keyera Corp.	Grand Prairie, Alta.	Gas plant	150	Under constr.	2019	Jacobs Engineering Group Inc. EPC	
	SemCAMS ULC	Alberta	Gas plant	280	Planning			
	Tidewater Midstream & Infrastructure Ltd.	Pipestone, Grande Prairie, Alta.	Gas processing		Planning			
CHINA	Sinochem Quanzhou Petrochemical	Quanzhou	Refinery Ethylene Project		Planning		John Wood Group PLC - EPC	
EGYPT	ENI SPA	Port Said	Gas plant	350	Under constr.		Frames Group--Equipment	
	ENI SPA	Port Said	Gas plant	350	Under constr.		Frames Group--Equipment	
	ENI SPA	Port Said	Gas plant	350	Under constr.		Frames Group--Equipment	
	ENI SPA	Port Said	Gas plant	350	Under constr.		Frames Group--Equipment	
INDONESIA	PT Pertamina EP Cepu	Bojonegoro, East Java	Gas plant	330	Engineering		JGC Corp.--EPC	
KUWAIT	Kuwait Oil Co.	Jurassic field	Gas plant		Engineering		Black & Veatch Corp.--FEED	
MOROCCO	Sound Energy PLC	eastern Morocco	Gas plant		Engineering		Enagas SA,Electron SA,Fomento--FEED	FEED activities scheduled to conclude late 2018-early 2019.
NIGERIA	Chevron Nigeria Ltd.	Western Niger Delta region	Gas plant		Engineering		Frames Group BV--EPC	Part of Okan field debottlenecking project.
	Southfield Petroleum Ltd.	Utorogu field	Gas plant	250	Engineering		China Machinery Engineering Corp.--EPC	
OMAN	BP PLC	Khazzan	Gas plant	500	Engineering	2020	Petrofac--EPCC	Phase 2, adding a third gas train to expand capacity to 1.5 bcfd.
ROMANIA	Winstar Satu Mare SA	Pannonian basin, Romania	Gas plant	15	Under constr.		Confind SRL EPCC	To accommodate first production from the Moftinu gas development project on the Satu Mare concession in northwestern Romania's Pannonian basin, along the borders with Hungary and Ukraine.
RUSSIA	PJSC Gazprom	Amur region	Gas plant	42	Under constr.	2021	NIPlgazpererabotka Contr.; China Petroleum Engineering & Construction Corp.--EPC; China Gezhoubu Group Corp. Constr.; Linde AG TL; Technimont SPA,Sinopec Ningbo Engineering Corp. EPCC (utilities,infrastructure,off sites)	Subsidiary OOO Gazprom Pererabotka Blagoveshchensk's grassroots Amur gas processing plant near Svobodny in Russia's far-east Amur region.



# GAS PROCESSING CONT.

Country	Company	Location	Project	Added capacity	Status	Expected completion	Contractor/ contract type	Project notes
	PJSC Gazprom-PJSC Sibur Holding	Tatarstan	Gas processing		Planning			Part of a first roadmap of agreements between Gazprom and Sibur stipulates, among other things, a feasibility study to be carried out regarding transmission of ethane-containing gas from fields in the Nadym-Pur-Taz region as well as construction of a gas processing plant in Tatarstan. The companies are evaluating cooperation on the proposed project.
<b>SAUDI ARABIA</b>	Saudi Arabian Oil Co.	Wasit, Jubail	Gas plant	3	Under constr.	2019	SNC-Lavalin Group--C	
	Saudi Arabian Oil Co.	al-Fadhili	Gas plant	3	Under constr.	2019	Foster Wheeler--FEED	
<b>UAE</b>	Abu Dhabi Gas Development Co. (Al Hosn Gas)	Shah onshore field	Gas plant	500	Engineering		Amec Foster Wheeler--FEED	Expansion of Al Hosn sour gas plant; October 2018 proposal to increase sour gas processing by 50% of existing 1-bcf/d capacity.
<b>UNITED STATES</b>	Lone Star NGL LLC	Mont Belvieu, Tex.	Fractionator	150,000 b/d	Planning	2020		Lone Star NGL LLC is a subsidiary of Energy Transfer LP
	WTG Gas Processing LP (WTG South Permian Midstream LLC)	Glasscock County, Tex.	Gas plant	200	Engineering	2019	Honeywell UOP LLC--Modular turnkey plant	UOP Russell technology.
	Williams Cos. Inc.-Crestwood Equity Partners LP	Converse County, Wyo.	Gas plant	25	Planning	2019		Expansion of Bucking Horse plant to 145 MMcf/d from 120 MMcf/d.
	Valiant Midstream LLC	Arkoma STACK play, southeast Oklahoma.	Gas plant	200	Under constr.	2018		
	Targa Resources Corp.	West Texas	Gas plant	250	Engineering	2020		Peregrine plant.
	Targa Resources Corp.	West Texas	Gas plant 2	250	Engineering	2019		Unidentified location
	Targa Resources Corp.	West Texas	Gas plant 1	250	Engineering	2019		Unidentified location
	Targa Resources Corp.	West Texas	Gas plant	250	Under constr.	2018		Wildcat plant, Delaware basin.
	Targa Resources Corp.	West Texas	Gas plant	200	Under constr.	2018	KP Engineering LP--EPC	Johnson plant in Reagan County, Tex., near Midkiff, in the Permian basin; will include a 5,000 b/d condensate stabilizer.
	Phillips 66 Partners LP	Old Ocean, Tex.	Fractionation	150000	Engineering	2020	S&B Engineers & Constructors Ltd.--EPC	\$1.5-billion expansion to increase overall NGL fractionation capacity at Sweeny hub to 400,000 b/d and enable access to 15 million bbl of total storage capacity.
	Phillips 66 Partners LP	Old Ocean, Tex.	Fractionation	150000	Engineering	2020	S&B Engineers & Constructors Ltd.--EPC	\$1.5-billion expansion to increase overall NGL fractionation capacity at Sweeny hub to 400,000 b/d and enable access to 15 million bbl of total storage capacity.
	Oneok Inc.	McKenzie County, ND	Gas plant	200	Planning	2020		Demicks Lake II plant.
	Oneok Inc.	Mont Belvieu, Tex.	Fractionation	125000	Engineering	2021		MB-5 fractionator.
	Oneok Inc.	Canadian County, Okla.	Gas plant	200	Under constr.	2018		Canadian Valley II project; expansion of 200-MMcf/d Canadian Valley natural gas processing facility in the Sooner Trend Anadarko basin Canadian and Kingfisher counties (STACK) play.
	Oasis Petroleum Inc.	McKenzie County, ND	Gas plant	200	Engineering	2018		Expansion of Wild basin plant.
	Matador Resources Co.	Eddy County, Tex.	Gas plant	200	Engineering	2018		Expansion of Black River plant.
	MarkWest Energy Partners LP	Loving County, Tex.	Gas plant	200	Planning	2019		Tornado plant.
	Linn Midstream LLC (Blue Mountain Midstream LLC)	Central Oklahoma	Gas plant	250	Planning	2019		Further expansion of Chisholm Trail system in the Merge play.
	Enterprise Products Partners LP	Mont Belvieu, Tex.	Fractionation	150000	Under constr.	2020		Tenth fractionator.
	Enterprise Products Partners LP	Mentone, Loving County, Tex.	NGL recovery	40000	Under constr.	2020		
	Enterprise Products Partners LP	Mentone, Loving County, Tex.	Gas plant	300	Under constr.	2020		
	Discovery DJ Services LLC	Weld County, Colo.	Gas plant	225	Under constr.	2019	BCC Holding Co.--EPC	
	Cureton Midstream LLC	Weld County, Colo.	Gas plant	60	Engineering	2018	Honeywell UOP LLC--Modular turnkey plant	Niobrara basin
	Crestwood Equity Partners LP-First Reserve JV	Orla, Tex.	Gas plant	200	Under constr.	2018		
			Gas plant	200	Under constr.	2019	Saulsbury Industries Inc. EPC	Train 3.
			Gas plant	200	Under constr.	2019	Saulsbury Industries Inc. EPC	Train 2.
	Apache Corp.	Reeves County, Tex.	Gas plant	200	Under constr.	2019	Saulsbury Industries Inc. EPC	Train 1.
	Cogent Midstream LLC	Reagan County, Tex.	Gas plant	200	Engineering	2019	Honeywell UOP LLC--Modular turnkey plant and UOP Russell modular cryogenic plant with refrigeration and dehydration units	UOP Russell technology; Big Lake II plant.
	Hess Midstream Partners LP	North Dakota	Gas plant expansion	150	Development	2021		Expanding capacity of 250-MMcf/d Tioga gas plant to 400 MMcf/d
	Raven Petroleum LLC	Duval County, Tex.	Fractionator	30,000	Development			Approved by Texas Commission on Environmental Quality
	Hess Midstream Partners LP	North Dakota	Gas Plant	100	Under construction	2019		Little Missouri 4 gas plant in McKenzie County; JV with Targa Resources Corp.; due for completion in third-quarter 2019
	Oneok Inc.	McKenzie County, ND	Gas plant	200	Under constr.			Demicks Lake I plant.
	MarkWest Energy Partners LP-Antero Midstream Partners LP	West Virginia	Gas plant		Engineering	2018		Expansion of Sherwood complex.

## GAS PROCESSING CONT.

Country	Company	Location	Project	Added capacity	Status	Expected completion	Contractor/ contract type	Project notes
	Oneok Inc.	Mont Belvieu, Tex.	Fractionation		Planning	2021		MB-6 fractionator.
	Brazos Midstream Holdings LLC	Southern Delaware basin	Fractionation	4500	Under constr.		Honeywell UOP LLC--Modular turnkey plant	UOP Russell technology.
	Evolution Midstream LLC	Converse County, Wyo.	Gas plant	40	Under constr.		John Wood Group--Const.	Expandable to 100 MMcfd in 2019.
	Tall Oak Midstream LLC	Southeast Oklahoma	Gas plant		Planning			To be built as part of subsidiary Tall Oak III LLC's East STACK system.
	MarkWest Energy Partners LP- Antero Midstream Partners LP	Ohio	Fractionator	60000 b/d	Under constr.	2018	Honeywell UOP LLC--Modular turnkey plant	Expansion at Hopedale complex; UOP Russell fractionation plant.
	Oneok Inc.	Permian basin	Fractionation	65,000 b/d	Planning	0		Expansions to Oneok's Midcontinent NGL fractionation facilities; to cost \$150 million, with 15,000 b/d expected to be completed in third-quarter 2020 and 50,000 b/d expected to be completed in first-quarter 2021.
	Oneok Inc.	Williston basin	Gas processing	200	Planning	2021		Expansion of the Bear Creek gas processing facility and related systems.
	Altus Midstream Co.	Alpine High, Delaware basin	Gas processing	200	Under constr.	2019	Honeywell UOP--TL	Once commissioned, this will be the third 200-MMcfd processing train at the Diamond Cryo Complex (DCC) in Alpine High in the Delaware basin. DCC's Trains 1 and 2 were started up in June and July 2019, respectively. All three cryogenic trains will feature Honeywell UOP LLC's supplemental rectification with reflux (SRX) processing technology to optimize processing economics with better NGL recoveries in both ethane recovery and rejection mode vs. more commonly used processing methods in the Permian basin.
	Thunder Creek Gas Services LLC	Converse County, Wyo.	Gas processing	200	Under constr.	2019		To be known as Steamboat I, the new plant—which will have a nameplate capacity of 200 MMcfd—is scheduled to come into service early in this year's third quarter, bringing Meritage's total processing capacity in the basin to 380 MMcfd. The Steamboat complex is large enough to accommodate two additional 200-MMcfd cryogenic processing plants as customer demand warrants.
	Lucid Energy Group	Lea County, NM	Gas processing	230	Engineering	2020		To be known as Red Hills V and scheduled for start-up in second-quarter 2020, the new plant will have the capacity to process 230 MMcfd and will bring the total processing capacity of Lucid's natural gas processing franchise in the northern Delaware basin to 1.2 bcf/d. The proposed expansion will follow scheduled commissioning of Lucid's 230-MMcfd Red Hills IV plant in October 2019.
	Enterprise Products Partners LP	Mont Belvieu, Tex.	Fractionation	150000	Under constr.	2020		Eleventh fractionator.
	Western Midstream Partners LP	Weld County, Colo.	Gas processing	400	Under constr.	2019		Latham I & II cryogenic processing trains, each with a capacity of 200 MMcfd.
<b>VIETNAM</b>	ExxonMobil Exploration & Production Vietnam Ltd.		Ca Voi Xanh (Blue Whale)		Planning	2020		

# LNG

Added capacity listed in millions of tons per year (million tpy) unless otherwise specified.

Country	Company	Project	Location	Project type	Added capacity	Status	Completion	Contractor/ contract type	Project notes
ARGENTINA	YPF	Vaca Muerta LNG	Vaca Muerta shale field	LNG	5	Engineering	2024	McDermott International Inc., engineering design	The contract was valued at \$150 million.
AUSTRALIA	AGL Energy		Crib Point, Victoria	LNG terminal	0	Planning	2021		Delayed as State of Victoria calls for full environmental assessment
	ExxonMobil EPIK	Newcastle LNG	Gippsland basin Port of Newcastle	LNG terminal	0	Planning	2022		Offshore, pipe to Victoria FSRU to supply New South Wales.
	Woodside, Shell, BP	Browse LNG	Offshore Western Australia	LNG		Planning	2027		Begin FEED Q4 2019. FID first-half 2021.
	Australian Industrial Energy	Port Kembla LNG terminal	Port Kembla, NSW	LNG terminal	0	Under constr.	2021	Hoegh LNG, FSRU; SCSB joint venture, wharf facility and pipeline construction	NSW granted development consent April 2019 
	Venice Energy	Outer Harbor LNG	Port Adelaide	LNG terminal	0	Planning	2020		Construction scheduled to begin Q1 2020
BAHRAIN	National Oil & Gas Authority of Bahrain, Teekay, Gulf Investment, Samsung	Bahrain LNG	Offshore Khalifa bin Salman port	LNG terminal	3	Under constr.	2019		Expandable to 6 mtpy. 173,400-cu m FSU delivered Jan. 2019 
BENIN	Total	Cotonou LNG		LNG terminal	0.5	Planning	2021		FSRU
BRAZIL	CELSE	Barra dos Coqueiros	Porto de Sergipe	LNG terminal	3	Under constr.	2020	Golar	Golar Nanook, 170,000 cu m
	Golar	Terminal Gas Sul	Babitonga Bay, Santa Catarina	LNG terminal	2	Planning			160,000-cu m FSRU near coast. Connection to Gasbol pipeline and Engie power plant
	Cosan	Santos	Santos, Sao Paulo	LNG terminal	2	Planning			FSRU. Supply local distributor Comgas, replacing pipeline imports from Bolivia. Supply Parana state power plants
	Copel, Shell	Pontal do Parana	Pontal do Parana or Paranagua	LNG terminal	2	Planning			
	Prumo Logistica, BP, Siemens	Acu Port	Sao Joao da Barra, Rio de Janeiro	LNG terminal	3	Engineering	2021	BW	FSRU BW Magna. Supply new-build power plants UTE GNA 1 (1.3 Gw, 2021) and UTE GNA 2 (1.6 Gw, 2023)
	TPK Logistica, Port of Rotterdam	Presidente Kennedy	Espirito Santo state	LNG terminal	3	Planning			FSRU. Supply two regional new-build power plants
	Golar	Sao Marcos Bay	Maranhao state	LNG terminal	3	Engineering			Supply regional power plants.
	Celse, Golar	Barcarena	Vila do Conde port, Para state	LNG terminal	2	Planning			FSRU.
CANADA	Liquefied Natural Gas Ltd.	Bear Head LNG	Strait of Canso	LNG	12	Planning	2024		Signed First Nations, labor agreements Feb. 2019.
	Pieridae Energy Ltd.	Goldboro LNG	Nova Scotia	LNG	10	Planning	2024	KBR	Pieridae expects to begin construction 2019.
	Shell, Petronas, PetroChina, Mitsubishi, Kogas	LNG Canada	Kitimat	LNG	24	Under constr.	2025	JGC-Fluor EPC	FID made October 2018. NEB considering jurisdictional challenge to supply pipeline
	Steelhead LNG	Kwispaa LNG	West coast of Vancouver Island	LNG	12	Planning	0	HHI	Steelhead put project on hold Feb. 2019
	Chevron, Woodside	Kitimat LNG	Bish Cove	LNG	11	Engineering	2027	KBR-FEED, Fluor-EPC	Woodside looking to sell part of its 50% stake as of Sept. 2019
	Pacific Oil and Gas Ltd.	Woodfibre LNG	Squamish	LNG	2.1	Engineering	0	KBR/JGC-FEED	Expect FID by Q4 2019. Looking for floating worker accommodations Oct. 2019.
CHINA	CNOOC	Shanghai LNG	Shanghai	LNG terminal	0	Under constr.	2020		200,000-cu m storage expansion
	CNOOC	Rudong LNG Phase 3	Binhai, Jiangsu	LNG terminal	0	Under constr.	2021		2 x 200,000 cu m storage, pipe most gas 156 km to Anhui
	CNOOC	Zhangzhou LNG	Zhangzhou, Fujian	LNG terminal	2.6	Engineering	2021		Design received final approval March 2019.
	Sinopec, Zhejiang Energy Group Co. Ltd.	Wenzhou LNG	Wenzhou, Zhejiang	LNG terminal	0	Planning	2021	4 x 200,000 cu m storage, 16 mile pipeline	Reached supply agreement with ExxonMobil April 2019.
CONGO-BRAZZAVILLE	NewAge LNG		Block Marine XII	LNG	1.2	Planning	2021	SBM Offshore-JGC	FSRU
CROATIA	LNG Croatia		Island of Krk	LNG terminal	2	Planning	2020		Community, environmental protests March 2019.
CYPRUS	DEFA		Vasilikos Bay	LNG terminal		Engineering	2021	ETYFA, construction	FSRU
GERMANY	Uniper	Wilhelmshaven LNG	Wilhelmshaven	LNG terminal	7	Planning		Mistui OSK, FSRU	Open season held May 2019. Seeking partner.
GERMANY	RWE	Brunsbuettel	Kiel Canal mouth	LNG terminal		Planning	2023		FID early 2020. Four prequalified potential partners chosen.
GHANA	Quantum Power Ghana Gas Ltd., GNPC	Tema LNG	12 km off Tema	LNG terminal	2	Under constr.	2020	Micoperi, HR Wallingford, China Harbour Engineering Co.	FSU will be converted LNG Flora vessel. To be paired with barge-based FRU.
INDIA	Adani Group/IOC/GAIL	Dharma LNG	Dharma, Odisha	LNG terminal	5	Planning	2020		IOC booked 3 mtpy capacity
	Swan Energy	Swan LNG	Jafrabad, Gujarat	LNG terminal	5	Under construction	2020	NMIPL	FSRU. Expandable to 10 mtpy.

# LNG CONT.

Country	Company	Project	Location	Project type	Added capacity	Status	Completion	Contractor/ contract type	Project notes
	Petronet LNG		Dahej, Gujarat	LNG terminal	5	Under construction	2019		Expand capacity to 20 from 15, add seventh storage tank
	H-Energy	West Bengal LNG	Hooghly River, East Medinipur	LNG terminal	5	Planning	2021		Initial capacity of 1.5-3.0 mtpy
	H-Energy		Jaigarh port, Maharashtra	LNG terminal	4	Under construction	2019	L&T	Full commercial operations to begin by end-2019.
	AG&P	Karaikal LNG	Karaikal port	LNG terminal	1	Planning	0	Stolt-Nielsen	Osaka Gas Co. and JBIC bought minority stake July 2019
<b>INDONESIA</b>	Inpex/Shell	Masela LNG	South Tanimbar, Maluku	LNG terminal	9	Engineering	2027	GE Oil & Gas	Onshore terminal will deliver gas by pipeline
	BP	Tangguh LNG	Papua Barat province	LNG terminal	3.8	Under construction	2020	GE Oil & Gas/Tripatra/Chiyoda/Saipem/Suluh Ardhi/ABB	Third train. Will raise total capacity to 11.4 million tpy
	Inpex Holdings, Shell	Abadi LNG	Abadi field	LNG	9.5	Engineering	2020	KBR, pre-FEED	Government approved revised onshore development plan July 2019
<b>LATVIA</b>	Skulte LNG Terminal Co.	Skulte LNG	Skulte Port, Gulf of Riga	LNG terminal		Planning			Able to receive carriers up to 174,000 du m.
<b>LEBANON</b>	Lebanon LNG	Lebanon LNG	Offshore Beddawi, Selaata, and Zahrani	LNG terminal	0	Planning	2021		Three FSRU along coast. Tendered July 2019.
<b>MALAYSIA</b>	Petronas	FLNG 2	Rotan gas field	LNG	1.5	Under constr.	2020	JGC, Samsung Heavy Industries-EPC/C	240 km off Sabah
<b>MAURITANIA-SENEGAL</b>	BP/Kosmos	Tortue LNG	Offshore both countries LNG	LNG	3	Engineering	2022	Black & Veatch, Keppel	Gimi FLNG will develop.
<b>MEXICO</b>	Pemex	Pajaritos LNG	Coatzacoalcos, Veracruz	LNG terminal	0	Planning	0		Project indefinitely halted Jan. 2019
<b>MOZAMBIQUE</b>	Anadarko Petroleum Corp.	Mozambique LNG		LNG	13	Engineering		CCS JV, EPC	CCS JV previously provided front-end engineering design services for the development. McDermott's values its initial portion of the EPC contract at \$2 billion.
	ExxonMobil, Eni, CNPC, ENH, Kogas, Galp	Rovuma LNG	Area 4	LNG	15	Engineering	2025	Mitsubishi, Hitachi	Offtake agreements with partner affiliates Dec. 2018.
	Eni	Coral South LNG	Area 4, Rovuma basin	LNG	3.4	Under constr.	2022	Samsung, Technip-FMC, JGC	Hull expected to be launched in 2020
	Total/ONGC/BPRL/OIL/PTT	Area 1 LNG	Onshore plant on the Afungi peninsula, Cabo Delgado	LNG	12.9	Planning	2023	TechnipFMC, VanOord-Subsea	FID reached June 2019
<b>NIGERIA</b>	Brass LNG Ltd.	Brass LNG	Bayelsa State	LNG	10	Engineering	0	Bechtel-Engr./Contr./PD/DD/PE/CS/PM	Two trains: 5 million tpy/train. Corruption investigation underway.
	Nigeria LNG	Bonny Island Trains 7-8	Bonny Island	LNG	8	Engineering	0	Chiyoda-FEED; Saipem, Chiyoda, Daewoo-EPC	Stalled. LOI for Train 7 EPC signed Sept. 2019.
<b>PAKISTAN</b>	Pakistan GasPort Ltd.	Gwadar LNG	Gwadar	LNG terminal	9.2	Planning	0		Two FSRU at a jetty. Delayed, but likely to be revived by new gov't.
	Younus Bros., Sapphire, Halmore Power Generation	Energas LNG	Port Qasim, Karachi	LNG terminal	6	Planning	0		Awaiting site allocation at Port Qasim.
<b>PAPUA NEW GUINEA</b>	Total SA, Oil Search, ExxonMobil	Papua LNG	Caution Bay, Port Moresby	LNG	0	Planning	2024		FID in 2020. Develop Elk and Antelope fields.
<b>PHILIPPINES</b>	First Gen, Tokyo Gas Co. Ltd.		Batangas province	LNG terminal	5	Planning	2023		FID late 2019/early 2020
	CNOOC, Phoenix Petroleum, Philippine National Oil Co.	Batangas Energy Hub	Batangas Bay	LNG terminal	0	Engineering	2023		Construction slated to begin 2019.
	Energy World Corp.	Pagbilao LNG	Quezon	LNG terminal	3	Under constr.	2019		Almost complete May 2019
<b>POLAND</b>	Gaz-System	Polskie LNG	Gdansk Harbor	LNG terminal	2.8	Planning	2025		FSRU
			Swinoujscie	LNG terminal	2.5	Planning	2021	Selas-Linde, SCV vaporizer supply	Expansion from 5 mtpy to 7.5. Co-financing deal signed with government April 2019.
<b>QATAR</b>	Qatar Petroleum	Expansion	Ras Laffan	LNG	33	Planning	2024	McDermott, Consolidated Contractors, Chiyoda	Four-train expansion to existing plant
<b>RUSSIA</b>	Gazprom/Shell/Mitsui/Mitsubishi	Sakhalin II Train 3		LNG	0	Planning	2024		Discussions between Gazprom, Mitsubishi ongoing
	Novatek		Kamchatka	LNG terminal	0	Planning	2022		Transshipment point for Russian exports to Asia
	Total SA/Novatek	Arctic LNG 2	Gydan Peninsula	LNG	20	Engineering	2023	TechnipFMC, EPC; QMW, module supply	FID made 2019. Saudi Arabia considering 30% share.  
	Gazprom	Baltic LNG	Ust-Luga port	LNG	10	Planning	2021		Pre-FEED signed Oct. 2018. Shell left project April 2019. State development bank VEB to invest \$1.68 billion
	Gazprom	Portovaya LNG	Vyborgsky, Leningrad	LNG	1.5	Under constr.	2019	SRDI Oil & Gas Peton	Nord Stream branch to supply feedgas completed March 2018. Onshore storage, offshore terminal in progress

# LNG CONT.

Country	Company	Project	Location	Project type	Added capacity	Status	Completion	Contractor/contract type	Project notes
	ExxonMobil/Rosneft/SODECO, ONGC Videsh	Far East LNG	Di Kastri port, Khabarovsk	LNG	6.2	Planning	0		FID made Sept. 2019
<b>TAIWAN</b>	CPC Corp.		Kuantan Industrial Zone, Taoyuan	LNG terminal	3	Under constr.	2023		Construction scheduled to start mid-2019 pending permits
<b>TANZANIA</b>	Equinor/Shell/ExxonMobil/Ophir	Lindi LNG	Lindi region	LNG			2028		Partners plan to build onshore plant. Tanzania says construction to start 2022.
<b>THAILAND</b>	PTT LNG Co. Ltd.	Rayong LNG	Nong Fab, Rayong	LNG terminal	7.5	Engineering	2022	Saipem/CTCI Corp., EPC	
	Gulf MPT	Map Ta Phut LNG	Map Ta Phut (Rayong)	LNG terminal	5	Planning	2025		Government of Thailand jointed project Oct. 2019
<b>UNITED ARAB EMIRATES</b>	SNOC/Uniper	Sharjah LNG	Hamriyah port, Sharjah	LNG terminal	4	Planning	0		Supply Sharjah Electricity and Water Authority. EPC award delayed March 2019.
<b>UNITED KINGDOM</b>	InfraStrata	Cumbria LNG	Offshore Barrow-in-Furness	LNG terminal	5	Planning			Exclusivity agreement with Meridian Holdings July 2019.
<b>UNITED STATES</b>	NextDecade	Galveston Bay LNG	Galveston, Tex.	LNG	16.5	Planning	2027		FERC filings expected Q4 2019. EIS anticipated 2022.
	Kinder Morgan	Elba Liquefaction Project	Elba Island	LNG	2.5	Under constr.	2020	IHI E&C International Corp.	First of 10 planned trains started operations Oct. 2019. All units to be operational by mid-2020.
	SCT&E LNG	Monkey Island LNG	Cameron Parish, La.	LNG	15.8	Planning	2022		FID Q4 2020
	Venture Global	Calcasieu Pass LNG	Cameron Parish, La.	LNG	10	Engineering	2022	BHGE, liquefaction trains	FID made August 2019. Equipment deliveries second-half 2020.
	Liquefied Natural Gas Ltd.	Magnolia LNG	Lake Charles, La.	LNG	8.8	Engineering	2024	KBR-SKE&C	FERC prepared draft EIS for expansion to 8.8 mtpy in Sept. 2019.
	Energy Transfer/Shell	Lake Charles LNG	Lake Charles, La.	LNG	16.5	Planning	2025	--	FID as early as end-2020
	Commonwealth Projects LLC	Commonwealth LNG	Cameron Parish, La.	LNG	8.4	Planning	2024	TechnipFMC	FID Q4 2020
	NextDecade	Rio Grande LNG	Brownsville	LNG	27	Planning	2023	Bechtel, EPC for Phase 1	20-year SPA with Shell for 2 mtpy reached April 2019. Fish and Wildlife Service approval Oct. 2019.
	Exelon Corp.	Annova LNG	Brownsville, Tex.	LNG	7	Planning	2024		Final EIS issued April 2019. Asked FERC to speed approval Sept. 2019. FID expected late 2019.
	Freeport LNG	Freeport LNG	Quintana Island, Tex.	LNG	15	Under construction	2019	McDermott, Zachry Industrial, Chiyoda International Corp. KBR, Train 4	Production from Train 1 started August 2019. Train 2 online Jan. 2020. Train 3 online by May 2020. Fourth train in 2021 will bring production to 20 mtpy.
	Annova	Texas LNG	Brownsville, Tex.	LNG	2	Planning	2024		TCEQ set contested case hearing for permit application in June 2019. FID expected in 2020.
	Sempra	Cameron LNG	Cameron Parish, La.	LNG	15	Under construction	2020	McDermott International Inc., Chiyoda Corp., lead contractors	Train 1 began commercial operations August 2019. Trains 2-3 to follow Q1 and Q2 2020. Regulatory approval has been granted for two more trains, but a decision to build them has not been made.
	Tellurian	Driftwood LNG	Carlyss, La.	LNG	27.6	Planning	2022		FERC approved April 2019. DOE export authorization May 2019. Petronet LNG bought 18% equity Sept. 2019.
	Alaska Gasline Development Corp.	Alaska LNG	Nikiski, Alas.	LNG	0	Planning	2025		FERC issued draft EIS June 2019. Valdez competing for plant location. AGDC will decide whether to continue project June 2020.
	Kinder Morgan	Gulf LNG	Pascagoula, Miss.	LNG	11.7	Planning			Two liquefaction trains. FERC approved construction, DOE exports, July 2019.
	Fairwood	Delfin LNG	Cameron Parish, La.	LNG	13	Planning	2023		1-year extension granted July 2019. FID pushed to 2020.
	Venture Global	Plaquemines LNG	Plaquemines Parish, La.	LNG	20	Planning	2022		DOE authorized non-FTA exports Oct. 2019
	Veresen Inc.	Jordan Cove LNG	Coos Bay	LNG	7.8	Planning	2025	KBJ	Coos Bay city council to take up deliberations Jan. 2020. FERC decision due Feb. 2020.
	Cheniere	Sabine Pass Train 6	Cameron Parish, La.	LNG	4.9	Under constr.	2023	Bechtel Oil, Gas & Chemicals Inc, Construction	The Sabine Pass LNG plant includes five existing LNG storage tanks with capacity of 16.9 bcf of gas equivalent, two marine berths that can accommodate vessels with nominal capacity of as much as 266,000 cu m, and vaporizers with regasification capacity of 4 bcf.
	Pointe LNG		Plaquemines Parish, La.	LNG	6	Planning	2025		FERC issued intent to prepare EIS Feb. 2019
	Venture Global	Delta LNG	Plaquemines Parish, La.	LNG	20	Planning	2024		FERC filed notice of intent to prepare EIS Aug. 2019.
	Qatar Petroleum, ExxonMobil	Golden Pass LNG	Sabine Pass, Tex.	LNG	15.6	Under constr.	2025		Construction started May 2019
	Sempra	Port Arthur LNG	Port Arthur, Tex.	LNG	13.5	Planning	2023	Bechtel	Hope to make FID mid-2020
	Cheniere	Corpus Christi LNG Train 3	Corpus Christi, Tex.	LNG	9.5	Under constr.	2021	Bechtel	Nearly 70% complete Nov. 2019
<b>VIETNAM</b>	Korea Gas Corp. (Kogas), Energy Capital Vietnam (ECV)	Mui Ke Ga LNG terminal	Mui Ke Ga, Binh Thuan Province	LNG terminal		Planning		KBR, feasibility and cost estimates	A privately funded LNG regasification terminal, storage, gas supply system, and a 3,200-Mw gas-fired electric power project.

# PIPELINES

Diameter of pipe is listed in inches.

Country	Company	Project	From Where	To Where	Pipeline Type	Project Miles	Diameter	Status	Expected Completion	Contractor	Project notes
ALGERIA	Sonatrach	EGDPF 48	El Aricha	Beni Saf	G	122	48	Planning	2020		Link two existing export pipelines (GPDF and Medgaz) to improve efficiency of shipments to Europe via Spain.
ARGENTINA	TGS	Vaca Muerta gathering	Bajada de Anelo	Sierra Chata	G	57	36	Planning	2019		Spanning areas from Bajada de Anelo to Sierra Chata
AUSTRALIA	Jemena	Project Atlas	Surat basin	Wallumbilla hub	G	37	0		2019		Transport Surat basin gas to Wallumbilla hub
	Newmont Mining Co.	Tanami Gas Pipeline	Alice Springs-Darwin pipeline	Newmont Tanami mine	G	112	8	Engineering	2019	Australian Gas Infrastructure Group	Supply gas from the existing Alice Springs-Darwin line
	Woodside Petroleum Ltd.	Scarborough export	Scarborough field	Pluto LNG, Karratha gas plant	G	233	Large	Engineering	2023	Subsea Engineering Associates; Boskalis, seabed intervention and shore crossing sectors	Deliver gas to Pluto LNG and Karratha gas plant
BANGLADESH	Bangladesh Navy	A-1	Narayangaj	Dhaka	P	11	8	Planning	2020		Ship A-1 jet fuel to international airport
	Bangladesh Army	Dhaka-Chittagong	Chittagong	Dhaka	P	147	0	Planning	2020		Ship diesel to capital
BRAZIL	Alvopetro Energy Ltd.	Transfer pipeline	Cabure production	Enerflex gas treatment plant	G	7		Engineering	2019	Tecmester	Treated gas will be sold to Bahiagas
BULGARIA	BEH, DEPA, Edison	Gas Interconnector Greece-Bulgaria (IGB Pipeline)	Greece	Bulgaria	G	113	32	Engineering	2020		Provide gas from Turkey-Greece-Italy interconnector to Bulgaria and the Balkans.
CANADA	Pembina	Peace Phase VI expansion	LaGlace, Alta.	Wapiti, Alta.	P	0	16	Planning	2020		Condensate, NGL, 16-in. LaGlace to Wapiti, Alta.; 20-in. Kakwa to Lator
	Enbridge	Line 3 Replacement segments	Morden, Man. (loop)	Brandon, Man. (loop)	C	117	36	Under constr.	2020	SA Energy Group	Two segments: 60 miles near Morden, Man.; 57 miles near Brandon, Man.
	NGTL	2021 System Expansion			G	200	48	Planning	2021		Eight separate looping sections. Service starting Nov. 2020, full April 2021
	NGTL	West Path Delivery	Saddle Hills, Alta.	Clear Hill, Alta.	G	15	42	Engineering	2019		Expansion between Saddle Hills and Clear Hills, Alta.
	Enhance, Wolf Carbon Solutions	Alberta Carbon Trunk Line	Sturgeon refinery, Redwater fertilizer	Enhance EOR, Clive, Alta.	G	149	16	Planning	2020		Deliver CO2 from Sturgeon Refinery and Redwater Fertilizer to Enhance EOR project in Clive, Alta.
	Plains, SemGroup	Montney to Market	Montney	Market	C/P	0	0	Planning	2020		Transport NGL, condensate, light crude from Wapiti and maybe Pipestone to Edmonton and Fort Saskatchewan
	Gazduq		NE Ontario	Saguenay, Que.	G	465	42	Planning	2024		Part of system delivering from Alberta to Energie Saguenay
	Plains Midstream Canada (PMC)	Rangeland crude oil pipeline expansion	Edmonton, Alta	border at Carway, Alta	C			Planning	2021		Service between Edmonton and Sundre will be expanded to 100,000 b/d from 50,000 b/d and will be capable of bidirectional service. Sundre, south to the border, will be expanded up to 100,000 b/d from 20,000 b/d.
	NGTL	North Montney Mainline	Eastern BC	NGTL Groundbirch mainline	G	128	42	Under Constr.	2020		Connect eastern BC to NGTL Groundbirch Mainline. Service to be phased in starting Jan. 2020.
Government of Canada	Trans Mountain expansion	Edmonton	Westridge, BC	C	612	36	Planning	2022		Regulators approved June 2019. Court challenges from First Nations along route.	
TC Energy	Coastal GasLink	Dawson Creek, BC	LNG Canada near Kitimat, BC	G	415	48	Engineering	2023	JGC, Fluor	TC selling. Mubadala interested.	
CHINA	CNOOC	Jiangsu to Anhui province	Jiangsu	Anhui province	G	98	0	Planning	2021		Move gas from Binhai LNG terminal to Anhui
	Sinopec	Xinjiang-Guangdong-Zhejiang	Xinjiang	Guangdong-Zhejiang	G	5563	40	Planning	2020		Move gasified coal east
CYPRUS	Energean		Eastern Med	Cyprus	G	124	0	Planning	2021		FPSO serving Karish and Tanin fields to Cyprus, up to 1 bcm/y.
EGYPT	Noble, Delek, Shell	Block 12 Aphrodite	Aphrodite field	Edku LNG	G			Planning	2025		Egypt approved Oct. 2019
GERMANY	Gascade	European Gas Pipeline Link (EUGAL)	Nord Stream landfall	Czech border	G	300	56	Under constr.	2020		Nord Stream to Czech border
	E.ON, OMV, Royal Dutch Shell, Gazprom	Nord Stream 2	Ust-Luga, Russia	Greifswald, Germany	G	759	48	Under constr.	2020		85% laid. Center section near Denmark missing. Denmark approved Oct. 2019.
GHANA	Ghana Gas	Tema	Aboadze	Tema (Greater Accra)	G	172	24	Engineering	2020	Yantai Jereh Group	Chinese contractor will build-own-operate on 15-year initial term

# PIPELINES CONT.

Country	Company	Project	From/Where	To/Where	Pipeline Type	Project Miles	Diameter	Status	Expected Completion	Contractor	Project notes
<b>GREECE</b>	BP, SOCAR, Snam, Fluxys, Enagas, Axpo	Trans Adriatic Pipeline (TAP)	Kipoi, Greece	San Foca, Italy	G	544	48	Under constr.	2020	Bonatti, J&P Avax, Spiecapag, Saipem	Could be twinned in the future.
<b>INDIA</b>	Gas Authority of India Bharat Petroleum Corp.	Jaigarh-Mangalore West Bengal to North Bangladesh	Jaigarh West Bengal	Mangalore North Bangladesh	G P	394 81	0 22	Under constr. Under constr.	2019 2021	H-Energy Pvt. Ltd.	Building from both ends towards the middle Supply diesel to Bangladesh from India
	Indian Oil Corp., Nepal Oil Corp.	Motihari to Chitwan	Motihari	Chitwan	P	82	11	Under constr.	2019		LPG from India to Nepal
	Indian Oil Corp.	Indian Oil Corp.	Ennore	Tuticorin	G	729	28	Under constr.	2019		Facing local opposition along route
	Gujarat State Petronet Ltd.	Mallavaram to Bhilwara	Mallavaram	Bhilwara	G	992	24	Under constr.	2020		30 MMscmd from India's east coast to central and northern parts of the country.
	Gas Authority of India	Jagdishpur to Dhamra spurs	Jagdishpur	Dhamra	G	699	12, 30	Under constr.	2021		Spur and feeder lines for above.
	Gas Authority of India	Jagdishpur to Dhamra	Jagdishpur	Dhamra	G	2111	24, 36	Under constr.	2021	MECON	241-mile Phase 1 completed Feb. 2019. Phase 2 (1,178 miles) to be complete by December 2020.
	GAIL (India) Ltd.		Barauni, Bihar	Guwahati, Assam	G	453	24	Engineering	2021		Part of spurs for the 2,111-mile Jagdishpur-Haldia-Bokaro-Dhamra system under construction in northeastern India.
	Numaligarh Refinery Ltd. (NRL)		Numaligarh	Siliguri	P	406		Planning	2023		
	Numaligarh Refinery Ltd. (NRL)	Paradip to Numaligarh	Paradip	Numaligarh	C	868		Planning	2023		
	Indian Oil Corp., Bharat Petroleum Corp., Hindustan Petroleum Corp.	Kandla to Uttar Pradesh LPG pipeline	Kandla	Uttar Pradesh	P	1713		Planning			Indian Oil Corp. will hold a 50% share of the venture. Bharat Petroleum Corp. and Hindustan Petroleum Corp. will hold 25% each. Estimated cost \$1.46 billion. It spans between Kandla, Gujarat, and Gorakhpur, Uttar Pradesh.
	Gujarat State Petronet Ltd., Indian Oil Corp., HPCL, Bharat Petroleum Corp.	Mehsana-Srinagar	Mehsana	Srinagar	G	1525	42	Under constr.	2020		Phase 1 (Mehsana-Bhatinda) to be commissioned 2020. Construction of Phase 2 to Srinagar to follow.
<b>IRAN</b>	National Iranian Gas Co.	IGAT IX	Asalouyeh	West Azerbaijan province	G	1147	56	Under constr.	2020	Kogas	Export gas to Europe.
	National Iranian Gas Co.	Iran to Oman	Iran	Oman	G	236	36, 56	Engineering	0		Progress curtailed by sanctions.
<b>IRAQ-JORDAN</b>	NIOC	Basra-Aqaba pipeline	Basra, Iraq	Aqaba, Jordan	C	1043	56	Planning	2021		Iraq, Jordan agreed to revive project December 2018. Discussions continuing July 2019.
<b>ISRAEL-GREECE</b>	IGI Poseidon SA	EastMed	Eastern Mediterranean	Greece	G	1178	24	Planning	2025		10 bcm/y. Connect with Poseidon pipeline for continued shipment to Italy.
<b>JORDAN</b>	National Electric Power Co.	Israel to Jordan	Israel	Jordan	G	40	36	Under constr.	2019		Supply power plants in Mafraq from Leviathan field
<b>LATVIA</b>	Skulte LNG Terminal Co.	Regas pipeline	Skulte Port	Incukalns underground storage, Riga	G	24		Planning			Kogas potential partner.
<b>MEXICO</b>	TC Energy	Tula-Villa de Reyes	Tula	Villa de Reyes	G	261	36	Under Constr.	2020		Construction ongoing. Phased-in operations could begin end-2019
<b>NIGER</b>	China National Petroleum Corp.	Niger-Benin crude line	Agadem block Niger	Benin's Port of Seme	C	1181		Under Constr.	2021		Construction began Sept. 2019
<b>NIGERIA</b>	NNPC	OB3	Obiafu	Obrikom-Oben	G	79	48	Under constr.	2019		Boost domestic supply, reduce flaring.
	NNPC	AKK	Ajaokuta-Abuja	Kaduna-Kano	G	403	40	Under Constr.	2020		Phase 1 of Trans-Nigeria Gas Pipeline.
<b>NORWAY</b>	Statoil	Johan Sverdrup export	Johan Sverdrup	Karsto gas terminal	G	97	18	Engineering	2019	Saipem	Export North Sea gas to shore
<b>PAKISTAN</b>	Pakistan Government	Machike-Taru Jabba Oil Pipeline Project	Machike	Taru Jabba	P	182	14, 18	Planning	2021	Frontier Oil Co.	Follow same route as Inter-State Gas Systems line. 109 miles of 14-in., balance 18.
	Pakistan Government	Karachi to Lahore	Karachi	Lahore	G	682	42	Planning	2023	Rostec	Financing approved early 2018
	Pakistan Government	Balochistan to Nawabshah	Balochistan	Nawabshah	G	192	42	Planning	0	ISGS	1.2 bcf/d from Bahria Foundation LNG terminal. Petroleum Division plans to revive (Jan. 2019).
	Pakistan Government	Gwadar to Nawabshah, Sind province	Gwadar	Nawabshah, Sind province	G	434	42	Planning	2020	China Petroleum Pipeline Bureau	Transport LNG terminal output. Shelved 2017. Revived Jan. 2019.
<b>POLAND</b>	PGNiG	Baltic Pipe	Norway	Poland	G	171	40	Planning	2022		Construction to start Q2 2020. Turbines purchased Aug. 2019

# PIPELINES CONT.

Country	Company	Project	From Where	To Where	Pipeline Type	Project Miles	Diameter	Status	Expected Completion	Contractor	Project notes
<b>QATAR</b>	Qatar Petroleum	Qatar Petroleum	Ras Laffan	Hamad Int'l Airport	P	50	24	Engineering	2019	Consolidated Contractors, Teyseer Contracting Co.	Move jet fuel to Hamad Int'l Airport
<b>ROMANIA</b>	Transgaz	Midia	Black Sea wells	National gas grid	G	26	16, 8	Engineering	2021		FID made Sept. 2019. 24 km export line (16-in.), 18 km between offshore wells (8-in.).
	Transgaz	BRUA	Bulgaria	Austria	G			Engineering			Bridge from Podisor to Trans Adriatic Pipeline
	Transgaz	Podisor	Tuzla	Podisor	G			Under Constr.	2021		Black Sea landfall to connection with BRUA
<b>RUSSIA</b>	Gazprom	Power of Siberia 2 (former Altai)	Western Siberia	Xinjiang, China	G	1612	56	Planning	2021		Negotiations still under way between Russia and China
<b>SAUDI ARABIA</b>	Saudi Aramco	Marjan field development	Offshore Saudi Arabia	Shore	G	40	0	Under Constr.	2019	McDermott	Work to be completed by DB50 and DB27.
<b>TANZANIA</b>	TPDC	Gas pipeline	Dar es Salaam	Uganda	G	1100	24	Planning	2024		Pass through Tanga to Mwanza. Second proposal would use Hoima-Tanga crude line corridor
<b>TURKEY</b>	Gazprom	TurkStream	Russkaya compressor	Kiyikoy, Turkey	G	676	32	Under constr.	2019		Offshore pipelay completed Nov. 2018. Onshore construction ongoing.
<b>TURKMENISTAN</b>	Turkmengaz, Afghan Gas Enterprise, Inter-State Gas Systems (Private) Ltd., GAIL (India) Ltd.	TAPI	Galkynysh field	Fazilka, India	G	1125	56	Under constr.	2021		Pakistan construction to begin early 2019. Saudi-German JV supplying pipe to Turkmenistan, which began arriving Nov. 2018. No Afghan construction yet.
<b>UGANDA</b>	Total/Tullow/CNOOC	East African Crude Oil Pipeline (EACOP)	Hoima, Uganda	Tanga, Tanzania	C	899	24	Engineering	2021		Allow export of Ugandan crude via the Indian Ocean through Tanzania
<b>UKRAINE</b>	UkrTransGaz	Gas Interconnector Poland-Ukraine	Hermanowice, Poland	Bliche Volytsia, Ukraine	G	62	40	Under Constr.	2020		Construction complete on Polish side
<b>UNITED KINGDOM</b>	Shell	Penguins	Penguins	FLAGS pipeline	G	6	16	Engineering	2021	Subsea 7	Export line. Part of greater field redevelopment.
	Shell	Pierce depressurization	Haewene Brim FPSO	Export pipeline	G	19		Engineering	2021	Subsea 7, EPCI	Project 160 miles offshore, east of Aberdeen
<b>UNITED STATES</b>	MPLX LP and partners	Whistler Pipeline	Waha, Tex.	Agua Dulce market hub	G	450	42	Planning	2021 Q3		Partners include First Infrastructure Capital-backed WhiteWater Midstream, and a joint venture of Stonepeak Infrastructure Partners and West Texas Gas Inc.
	Enterprise Products Partners (EPP), Lavaca Pipe Line	Baymark ethylene pipeline extension	Bayport, Harris County	Markham, Matagorda County	P	90		Planning	2020 Q4		
	Energy Transfer Partners	Lone Star Express expansion	Permian basin	Fort Worth, Tex.	P	352	24	Planning	2020		Existing pipeline network extends to Mont Belvieu
	Wolf Midstream Partners LLC	Red Wolf Crude Connector	Big Spring, Tex.	Colorado City, Tex.	C	40	16	Planning	2019		Move Midland basin crude to terminal and interconnections
	Tallgrass Energy LP	Seahorse	Cushing, Okla.	St. James, La.	C	700	30	Planning	2021		Anchor shipper named November 2018
	Veresen Inc.	Pacific Connector	Malin hub	Jordan Cove LNG	G	232	42	Planning	2024		Supply gas to Jordan Cove LNG plant
	Transcontinental Gas Pipe Line Co. LLC	Northeast Supply Enhancement	Northeast Supply	NY citygate	G	34	26, 42	Planning	2020		Includes 23.5 miles of 26-in. in New York Bay. FERC pushed EIS release back to Jan. 2019
	Tellurian	Driftwood	Gillis, La.	Driftwood LNG	G	96	48	Planning	2023		Gillis to Driftwood LNG
	Tellurian	Haynesville Global Access	Haynesville shale	Gillis, La.	G	200	42	Planning	2022		Haynesville shale to Gillis
	Targa, NextEra, WhiteWater, MarkWest/MPLX	Whistler	Waha, Tex.	Agua Dulce hub	G	477	42, 30	Planning	2020		450 miles of 42-in. 27-mile 30-in. extension into Midland basin.
	Summit Midstream Partners	Double E Pipeline	Delaware basin	Waha hub	G	120	30	Planning	2021		Delaware basin to Waha hub
	Permico Energia LLC	Companero	Permian	Corpus Christi, Tex.	P	510	24	Planning	2020		Also includes 350-mile downstream system, 8-million bbl storage
	Oryx Midstream Services	Northern Delaware basin	New Mexico	Texas	C	500	0	Under Constr.	2019		Permian crude gathering system expansion
	Alaska Gasline Development Corp.	Alaska LNG	North Slope	Nikiski, Alas.	G	800	42	Planning	2024		Transport natural gas for liquefaction and export. Sales agreements with BP, ExxonMobil. Talks with ConocoPhillips. AGDC plans to build construction camps and access roads starting Q2 2020.
	Enterprise Products Partners	Gulf Coast Ethylene	Mont Belvieu	Bayport, Tex.	P	24	24	Planning	2020		Connect producing and consuming sites with Houston Ship Channel.
Energy Transfer Partners LP, Magellan, MPLX, Delek	Permian Gulf Coast	Wink, Crane, Midland, Tex.	Nederland, Tex., East Houston	C	600	24	Planning	2020		Wink, Crane, and Midland to Nederland and East Houston terminals	
Enable Midstream	Gulf Run	NW Louisiana	SW Louisiana	G	165	42	Planning	2022		NW to SW Louisiana for LNG exports	



# PIPELINES CONT.

Country	Company	Project	From Where	To Where	Pipeline Type	Project Miles	Diameter	Status	Expected Completion	Contractor	Project notes
	Crimson Midstream, MPLX	Swordfish Pipeline	St. James, Raceland, La.	LOOP	C	60	30	Planning	2020		Connect St. James and Raceland, La., terminals to LOOP
	Consumers Energy	Saginaw Trail	Zilwaukee City Gate	Clawson Control	G	78	24	Planning	2022		Replace 1940s-era pipe
	Cheniere Energy	Midship Pipeline	Kingfisher County, Okla.	Bennington, Okla.	G	199	36	Under Constr.	2019		FERC approved August 2018. Permission to start building granted Feb. 2019.
	Oneok Inc.	West Texas LPG Expansion	Delaware basin	Arbuckle II interconnections	P	0	16	Planning	2019		Looping. Supported by production from six planned third-party gas plants
	Oneok Inc.	Arbuckle II	Oklahoma	Mont Belvieu, Tex.	P	530	24, 30	Planning	2020		Oklahoma to Mont Belvieu
	National Fuel Gas Co.	Northern Access Pipeline	Sergeant Township, Pa.	Elma, NY	G	97	24	Planning	2022		New York appellate court ruled against eminent domain process November 2018. US appeals court vacated state's water quality certificate denial February 2019. FERC granted 3-year extension to complete project.
	NAmerico Partners LP	Pecos Trail Pipeline	Permian basin	Corpus Christi	G	468	42	Under Constr.	2019		Link production to existing lines delivering to Mexico and Corpus Christi.
	Midcoast Energy	CJ Express	Carthage, Tex.	Houston Ship Channel	G	150	36	Planning	2020		Carthage, Tex., to Houston Ship Channel
	Medallion Delaware Express/Medallion Pipeline Co. LLC	Delaware Express	Southern Delaware basin	Crane County, Tex.	C	93	16	Planning	2019		90,000 b/d. 30 miles gathering. 63 miles, 16-in mainline.
	Magellan Midstream Partners LP/Plains All American Pipeline LP	BridgeTex expansion	Midland-Colorado City, Tex.	East Houston	C	0	0	Planning	2019		Expansion to 440,000 b/d
	Liberty Utilities	Granite Bridge	Manchester, NH	Strathan, NH	G	27	16	Planning	2021		Manchester to Strathan, NH
	JupiterMLP LLC	Jupiter Pipeline	Permian basin	Brownsville, Tex.	C	650	36	Engineering	2020		Permian to Brownsville. Also building export terminal.
	Oneok Inc.	West Texas LPG pipeline			P			Planning	2021		Cost of \$145 million. Part of greater system expansion, including gas processing and fractionation.
	Cogent Midstream LLC		Reagan County, Tex.	Kinder Morgan's Gulf Coast Express Pipeline	G	25	20	Planning			
	Kinder Morgan	Texas Intrastate Crossover expansion	KM Tejas mainline	Freeport LNG Pipeline	G	40	0	Engineering	2019		Lateral
	WhiteWater	Steady Eddy	Eddy County, NM	Culberson County, Tex.	G	25	24	Planning	2019		
	Williams	Bluebonnet Market Express	Waha	Katy, Tex.	G	0	0	Engineering	2020		2 bcf/d
	Oneok	Elk Creek	Bakken shale	Kansas	P	900	20	Under Constr.	2019		Roughly follows Bakken Pipeline's route. 240,000 b/d of NGL
	EagleClaw Midstream	Delaware Link	Delaware basin	Waha hub	G	40	30	Planning	0		Starts at gas processing sites in Reeves County, Tex. 1.2 bcf/d.
	Concho, Frontier	Beta Crude Connector	Andrews, Martin, Midland counties, Texas	Transmission interconnects, local refineries	C	100	0	Engineering	2019		Initial capacity of 150,000 b/d
	Targa	Grand Prix extension	Southern Oklahoma	Kingfisher County, Okla, Bluestem	P	110	24	Planning	2021		
	Permian Global Access Pipeline LLC (PGAP)	PGAP line	Permian basin	Southwestern Louisiana	G		42	Planning	2023		
	Targa	Grand Prix	Permian	Mont Belvieu	G		24	Under Constr.	2019		
	Williams Cos.	Bluestem NGL	Overland Pass Pipeline	Grand Prix NGL	G	188	16	Planning	2020		
	ExxonMobil Corp., Plains All American Pipeline LP, Lotus Midstream LLC	Wink to Webster Pipeline LLC	Wink and Midland, Tex.	Webster, Baytown, Tex., with connectivity to Texas City and Beaumont, Tex.	C	650	36	Planning	2021		The partners said existing pipeline corridors would be used when possible to limit potential community and environmental disruptions.
	MDU Resources Group Inc.	North Bakken Expansion Project	Tioga, ND	McKenzie Contry, ND	G	67	20	Engineering	2021		Dependent on regulatory and environmental permitting and finalization of transportation agreements with customers, construction is expected to begin in early 2021 and be completed late that year.
	Phillips 66 Partners, Harvest Midstream Co., and PBF Logistics LP	ACE Pipeline system	St. James, La.	Belle Chasse, Meraux, and Chalmette	C			Planning	2020		
	Tallgrass Pony Express Pipeline LLC	Pony Express expansion	Guernsey, Wyo	Cushing, Okla.	C	0	0	Planning	2020		
	Saddlehorn Pipeline Co. LLC, ARB Midstream LLC	Matador Pipeline	Platteville, Colo.	Cushing, Okla.	C	38	20	Under Constr.	2019		
	Magellan Midstream Partners LP, Navigator Energy Services	Voyager Pipeline	Cushing, Okla.	Houston, Tx.	C	500	20 or 24	Planning	2020		
	SemGroup Corp., DCP Midstream	Gladiator Pipeline	Cushing, Okla.	Houston, Tx	C	0	0	Engineering	2020		Mostly conversion of existing NGL pipeline
	Crimson Midstream LLC, MPLX LP	Swordfish Pipeline	St. James, La. and Raceland, La.	Louisiana Offshore Oil Port LLC (LOOP) Clovelly, La.	C	50	16, 20, 30	Engineering	2020		

# PIPELINES CONT.

Country	Company	Project	From Where	To Where	Pipeline Type	Project Miles	Diameter	Status	Expected Completion	Contractor	Project notes
	Williams	Leidy South expansion	Clinton County, Pa.	Lycoming County, Pa.	G	12	36, 42	Planning	2021		Replacement and looping to increase capacity by 580 MMcf
	Magellan	Saddlehorn Pipeline expansion	Ft. Laramie, Wyo.		C			Planning	2020		
	Venture Global	TransCameron	TETCO interconnect	Calcasieu Pass LNG	G	24	42	Planning	2022		Deliver gas to Venture's liquefaction plant
	Kinder Morgan	Permian Pass			G			Planning	2023		In early development stages. Timing of gas demand growth being monitored.
	Kinder Morgan, EagleClaw, Apache, ExxonMobil	Permian Highway	Waha, Tex.	Katy, Tex.	G	430	42	Under Constr.	2021		85% of ROW acquired.
	Salt Creek Midstream LLC	Delaware basin crude line	New Mexico's Eddy and Lea counties	SCM's Wink and Orla	C			Planning			
	Sunoco Logistics Partners LP	Mariner East 2X	Mariner		P	350	16	Under Constr.	2020		Plans announced Nov. 2018 would include existing 12-in. line as well. Pennsylvania DEP suspended review of permits Feb. 2019.
	TC Energy	Keystone XL	Hardisty, Alta.	Steele City, Neb.	C	1179	36	Planning	2020		US State Dept. announced need for Supplemental EIS Nov. 30, 2018. Judge blocked preconstruction work Dec. 2018. DOJ appealed ruling Jan. 2019. NEB approved winter clearing work for north section Jan. 2019. Ruling upheld March 2019. Pres. Trump issued new permit April 2019. Nebraska court approved Aug. 2019. Start of work delayed October 2019 waiting for US District Court hearing.
	Tellurian	Permian Global Access	Waha, Tex.	Gillis, La.	G	625	42	Planning	2024		Interconnect to Creole Trail Pipeline and others. Company expects to file complete FERC application Oct. 2020.
	Shell Pipeline Co. LP	Falcon Ethane Pipeline System	Houston, Pa., and Cadiz, Ohio	Beaver County, Pa.	P	97	12	Under Constr.	2020		HDD under Ohio River completed Aug. 2019
	EPIC, Noble, Altus, Rattler	EPIC Crude Oil Pipeline	Permian basin	Corpus Christi	C	650	30	Under Constr.	2020		Permian to Corpus Christi,
	Holly Energy, Plains All American	Cushing Connect	Cushing, Okla.	Tulsa, Okla.	C			Planning	2021		Deliver crude to HollyFrontier Corp. refining complex
	Enbridge Inc.	Line 3 Replacement Project	Neche, ND	Superior, Wisc.	C	364	36	Planning	2020		Minnesota PUC approved summer 2018, petitions for reconsideration filed. Review restarted by Minnesota regulators Oct. 2019.
	Williams	Constitution	NE Pennsylvania	Interconnect in Schoharie County, NY	G	124	30	Engineering	2021		Granted 2-year extension to enter service by FERC, Nov. 2018. US appeals court said FERC can revisit March 2019. FERC said NYSDEC waited too long to deny.
	Enterprise Products Partners LP	Gillis Lateral	Cheneyville, La.	Gillis, La.	G	80		Engineering	2021		Haynesville shale to LNG market via third-party interconnects near Gillis
	Phillips 66, Andeavor	Gray Oak	Helena hub, Three Rivers terminal	Corpus Christi, Sweeny-Freeport, Tex.	C	900	30	Under constr.	2019		Helena hub and Three Rivers terminal to Corpus Christi, Sweeny/Freeport, and HSC.
	Enbridge, NextDecade	Rio Bravo Pipeline		Brownsville, Tex.	G			Planning			Supply gas to proposed Rio Grande LNG plant
	Bridger, Phillips 66	Equality Pipeline	Bakken	Guernsey, Wyoming	C		20	Engineering	2020		Deliver crude through Guernsey terminal to Liberty Pipeline
	Easton Energy Services	Seadog	Markham, Tex.	Stratton Ridge, Tex.	P	53	12	Engineering	2020		Bidirectional Connects Markham, Clemens Caverns, and Stratton Ridge storage, transporting ethane and propane.
	Easton Energy Services	Black Jack	Markham, Clemens Caverns storage	Purity Pipeline #2	P			Engineering	2020		Move butane, isobutane, natural gasoline to Houston and beyond.
	Phillips 66, Plains All American	Red Oak	Cushing, Okla.	Corpus Christi, Tex.	C		30, 20	Planning	2021		Use 30-in. pipe from Cushing to Wichita Falls and Sealy, Tex. Also 30-in. from Sealy to Corpus/Ingleside. 20-in. pipe from Sealy to Houston/Beaumont
	EQM Midstream Partners	Mountain Valley	Wetzel County, WV	Pittsylvania County, Va.	G	303	42	Under Constr.	2020		Work suspended at 80% complete Oct. 2018. Federal appeals courts upheld eminent domain and FERC approval February 2019. FERC asked US Fish and Wildlife Service to start permitting over Aug. 2019. Federal court stays authorizations Oct. 2019.
	Phillips 66, Bridger Pipeline LLC	Liberty Pipeline	Bakken	Cushing, Okla.	C	1300	24	Planning	2021		Likely use at least some existing pipeline. Pipe arriving October 2019. Construction to start fall/winter.
	Sendero	Sendero	Permian processing plant	Waha hub	G	23		Planning			FERC approved Oct. 2019
	PennEast Pipeline Co. LLC	PennEast	Luzerne County, Pa.	NJ	G	116	36	Planning	2020		US Circuit Court blocks condemnation of state-owned land in New Jersey Sept. 2019. NJDEC denies water permit Oct. 2019.
	Enterprise Products Partners LP	M2E4	Midland, Tex.	Echo Terminal in South Texas	C	500	30	Engineering	2021	Enterprise Products Partners LP	Fourth ECHO line. Expandable to 540,000 b/d.
	Dominion Energy, Duke Energy, Piedmont Natural Gas, Southern Gas	Atlantic Coast Pipeline	Benson, WV	Prospect, NC	G	599	20, 36, 42	Under Constr.	2022		Dominion suspended work Dec. 2018 due to court stay of environmental ruling. PHMSA cited project for unsafe construction practices Aug. 2019. US Supreme Court to hear case involving authority to cross Appalachian Trail. Construction resumes end-2020.
	EPIC, Noble	EPIC Y Grade	DLK Black River Midstream	Corpus Christi	P	700	24	Under constr.	2019		Parallels EPIC Pipeline. Will ship crude over third phase from Benedum, Tex., to Corpus Christi until EPIC Crude Line starts.