

Osaka Gas in brief 2021

LNG / Electricity Business

I. LNG Business

(1) LNG Handled

(thousand ton)

FY	2012.3	2013.3	2014.3	2015.3	2016.3	2017.3	2018.3	2019.3	2020.3	2021.3
Brunei	798	731	640	626	763	556	765	781	704	454
Indonesia	2,124	1,713	1,250	587	612	750	523	505	175	285
Malaysia	1,636	1,654	1,678	1,684	1,063	1,025	940	1,203	936	945
Australia	1,488	1,587	1,864	1,749	1,325	2,039	3,024	3,225	3,084	3,436
Russia	256	386	505	577	507	703	575	384	382	384
Qatar	176	410	296	359	409	359	415	354	238	421
Oman	1,461	1,333	1,476	1,348	1,309	1,454	1,269	1,389	1,322	1,271
Papua New Guinea	-	-	-	539	1,451	1,724	1,667	1,252	1,243	1,308
U.S.A.	-	-	-	-	-	-	132	60	788	1,836
Others	169	339	479	605	363	305	208	265	-	235
Total	8,108	8,153	8,187	8,075	7,802	8,915	9,519	9,419	9,186	10,575

(2) LNG Vessels

Name of vessel	Year the service started	Tank capacity (Moss type)	Builder	Operator
LNG JAMAL	2000	135,000 m ³ (5 tanks)	Mitsubishi Heavy Industries	NYK Line
LNG DREAM	2006	145,000 m ³ (4 tanks)	Kawasaki Shipbuilding	NYK Line
LNG BARKA	2008	153,000 m ³ (4 tanks)	Kawasaki Shipbuilding	NYK Line
LNG JUPITER	2009	153,000 m ³ (4 tanks)	Kawasaki Shipbuilding	NYK Line
LNG VENUS	2014	153,000 m ³ (4 tanks)	Mitsubishi Heavy Industries	Mitsui O.S.K. Lines
LNG MARS	2016	153,000 m ³ (4 tanks)	Mitsubishi Heavy Industries	Mitsui O.S.K. Lines
LNG SATURN	2016	153,000 m ³ (4 tanks)	Mitsubishi Heavy Industries	Mitsui O.S.K. Lines
LNG JUNO	2018	180,000 m ³ (4 tanks)	Mitsubishi Heavy Industries	Mitsui O.S.K. Lines

(As of March 31, 2021)

(3) Upstream Business (Excluding Power Generation Business)

Project	Location	Main business	Ownership (%)	Year of participation
Sunrise LNG Project	Australia, East Timor	LNG production	10	2000
Idemitsu Snorre Oil Development Co., Ltd.	Norway	Oil production	1 - 10	2005
Qalhat LNG	Oman	LNG production	3	2006
Crux Gas and Condensate Field	Australia	LNG production	3	2007
Gorgon LNG Project	Australia	LNG production	1.25	2009
Ichthys LNG Project	Australia	LNG, condensate production	1.2	2012
Sabine Oil & Gas Corporation	U. S. A.	Natural gas / condensate / natural gas liquids development	100	2018

(As of March 31, 2021)

(4) Mid-, Down-Stream Business (Excluding Power Generation Business)

Project	Location	Main business	Ownership (%)	Acquired
Freeport LNG Terminal (gasification)	U. S. A.	LNG terminal	10.81	2008
Sagunto LNG Terminal	Spain	LNG terminal	20	2010
Sumisho Osaka Gas Water UK Limited	United Kingdom	Water utility	50	2013
City-OG Gas Energy Services	Singapore	Gas sales	49	2013
Osaka Gas (THAILAND)	Thailand	Energy-utility-related business	49	2013
Freeport LNG Terminal (liquefaction)	U. S. A.	LNG liquefaction business	25	2014
NS-OG Energy Solutions (Thailand)	Thailand	Cogeneration business	30	2014
OGP Energy Solutions	Thailand	Fuel switch / energy service	29.4	2015
Erogasmet	Italy	Gas distribution	-	2015
PT Osaka Gas Indonesia	Indonesia	Gas sales / energy service	100	2018
Sojitz Osaka Gas Energy	Vietnam	Natural gas distribution	49	2019
AGP	Singapore	Mid/small LNG terminal	-	2019
Igloo Energy Supply	U. K.	Energy retail	-	2019

II. LNG Terminals

(1) Outline of LNG Terminals

(As of April 1, 2021)

	Senboku	Himeji
LNG vaporization capacity (thousand m ³ / hour)	1,918	891
LNG vaporizers	20	7
LNG tanks	18	8
Total storage capacity (LNG)	1,710,000 kl	740,000 kl
Main resource	LNG	LNG

III. Power Generation Business

(1) Composition of Power Plant

(MW)

	Total	Thermal		Renewables	Others	
		LNG	Coal			
Domestic and International	6,421	5,720	5,501	219	691	10
Operating	4,690	4,287	4,068	219	393	10
Under construction, etc.	1,730	1,433	1,433	-	298	-
Domestic	3,914	3,047	3,047	219	638	10
Operating	2,371	1,082	1,802	219	340	10
Under construction, etc.	1,543	1,245	1,245	-	298	-
International	2,507	2,454	2,454	-	53	-
Operating	2,319	2,267	2,267	-	53	-
Under construction, etc.	188	188	188	-	-	-

(2) Power Generation Facilities of Daigas Group (for Domestic Electricity Business)

◆ In Operation

	Projects	Location	Total capacity	Generation type	Group ownership (%)	Commercial operation commenced
Natural gas-fired	Senboku LNG Terminal	Osaka	18,000 kW	GTCC	100	2002
	Senboku Natural Gas Power Plant (Senboku LNG Terminal) Unit: 1, 2 Unit: 3, 4	Osaka	277,000 kW x 2 277,500 kW x 2 Total 1,109,000 kW	GTCC	90	2009
	Himeji LNG Terminal	Hyogo	58,000 kW	GTCC, etc.	100	2004
	Funamachi Power Plant	Osaka	149,000 kW	GTCC	95	1999
	Torishima Energy Center	Osaka	140,500 kW	GTCC	100	2002
	Uji Energy Center	Kyoto	66,800 kW	GTCC	100	2004
	Fukushima Natural Gas Power Plant	Fukushima	1,180,000 kW	GTCC	20	2020
	Settsu Energy Center	Osaka	17,460 kW	Gas turbine	100	2006
	Senri Energy Center	Osaka	6,910 kW	Gas turbine	100	2008
	Total (equity ratio basis)			1,801,670 kW		
Other	Senboku LNG Terminal	Osaka	2,400 kW	Differential pressure	100	-
	Himeji LNG Terminal	Hyogo	1,100 kW	Differential pressure	100	-
	Himeji LNG Terminal	Hyogo	6,500 kW	Cryogenic	100	-
	Total (equity ratio basis)			10,000 kW		
Coal	Nagoya Power Plant	Aichi	142,000 kW (excluding biomass)	Steam turbine, biomass (5%)	95	2000
	Nagoya Power Plant II	Aichi	77,000 kW (excluding biomass)	Steam turbine, biomass (30%)	95	2017
	Total (equity ratio basis)			219,000 kW		
Wind	Hayama Wind Power Generation	Kochi	20,000 kW	Wind	100	2006
	Hirogawa Myojin-yama Wind Power	Wakayama	16,000 kW	Wind	100	2008
	Yura Wind Power	Wakayama	9,950 kW	Wind	100	2011
	Hizen Wind Power	Saga	12,000 kW	Wind	100	2005
	Hizen Minami Wind Power	Saga	18,000 kW	Wind	100	2008
	Hirao Wind Power	Yamaguchi	9,000 kW	Wind	99.8	2009
	Inami Wind Power	Wakayama	26,000 kW	Wind	100	2018
	Total (equity ratio basis)			111,000 kW		

Solar	Torishima Solar Power Plant	Osaka	1,800 kW *	Photovoltaic	100	2013
	Torishima Solar Power Plant II	Osaka	1,200 kW *	Photovoltaic	100	2014
	Shoo Solar Power Plant	Okayama	900 kW *	Photovoltaic	100	2013
	Hirogawa Myojin-yama Solar Power Plant	Wakayama	800 kW *	Photovoltaic	100	2013
	Yahata Solar Power Plant	Mie	700 kW *	Photovoltaic	100	2013
	Daigas Oita Mirai Solar Power Plant	Oita	26,500 kW *	Photovoltaic	100	2013
	Yura Solar Power Plant	Wakayama	1,700 kW *	Photovoltaic	100	2016
	Kuwaharajou Mega Solar (No. 4)	Kagoshima	12,000 kW *	Photovoltaic	50	2020
	Isoharacho Extra High Voltage Power Plant	Ibaraki	35,000 kW *	Photovoltaic	50	2021
	Daigas Energy Co., Ltd.	9 stations	11,000 kW *	Photovoltaic, etc.	-	-
	Energy Bank Japan Co., Ltd.	24 stations	48,000 kW *	Photovoltaic, etc.	-	-
	Total (equity ratio basis)			139,300 kW *		
Biomass	Matsusaka Woody Biomass Power Plant	Mie	2,000 kW	Biomass	14.5	2018
	Nagoya Power Plant	Aichi	7,800 kW	Biomass	95	2000
	Nagoya Power Plant II	Aichi	33,000 kW	Biomass	95	2017
	Ichihara Power Plant	Chiba	49,900 kW	Biomass	39	2020
	Total (equity ratio basis)			90,200 kW		
Total capacity (equity ratio basis)			2,371,170 kW			

* Total generation capacity of solar panels.

(3) Power Generation Facilities of Daigas Group (Overseas, in Operation)

	Projects	Location	Total capacity	Source / Generation type	Group ownership (%)	Commercial operation commenced
Thermal power plant	Tenaska Gateway	Texas, U. S. A.	845,000 kW	Natural gas, GTCC	40	2004
	Whitewater	Wisconsin, U. S. A.	245,000 kW	Natural gas, GTCC	26	2005
	Lakewood	New Jersey, U. S. A.	265,000 kW	Natural gas, GTCC	20	2005
	Crockett	California, U. S. A.	240,000 kW	Natural gas, GTCC	8	2005
	Saranac	New York, U. S. A.	239,000 kW	Natural gas, GTCC	20	2005
	Lockport	New York, U. S. A.	211,000 kW	Natural gas, GTCC	24	2005
	St. Charles Energy Center	Maryland, U. S. A.	725,000 kW	Natural gas, GTCC	25	2017
	Daandine	Queensland, Australia	27,000 kW	Natural gas, Gas engine	30.2	2008
	Mt. Isa	Queensland, Australia	32,000 kW	Natural gas, Gas engine	30.2	2008
	Shuweihat S2 IWPP	Abu Dhabi, UAE	1,510,000 kW	Natural gas, GTCC	10	2011
	Shore	New Jersey, U. S. A.	725,000 kW	Natural gas, GTCC	20	2017
	Michigan Power	Michigan, U. S. A.	125,000 kW	Natural gas, GTCC	100	2018
	Kleen Energy	Connecticut, U. S. A. (ISO-New England)	620,000 kW	Natural gas, GTCC	24.3	2018
	Towantic	Connecticut, U. S. A. (ISO-New England)	805,000 kW	Natural gas, GTCC	49.5	2018
	Fairview	Pennsylvania, U. S. A. (PJM)	1,050,000 kW	Natural gas, GTCC	50	2019
Total (equity ratio basis)			2,266,500 kW			
Wind	Hallett 4 Wind Farm Project	South Australia, Australia	132,000 kW	Wind power	39.9	2011
	Total (equity ratio basis)			53,000 kW		

