

APPENDIX F

Existing LNG Liquefaction Plants, October 2003

	Plant Capacity		Number of Trains	Lead Plant Operator	Start-Up Date	Comments/Expansion Plans
	Million tons of LNG/year	Billion cubic feet of gas/year				
AFRICA						
<i>Algeria</i>						
Arzew GL1Z	7.9	385	6	Sonatrach	1978	Revamped 1997
Arzew GL2Z	8.3	404	6	Sonatrach	1981	Revamped 1996
Arzew (Camel) GL4Z	0.9	44	3	Sonatrach	1964	Revamped 1999
Skikda GL1K Phase I and II	6.0	292	6	Sonatrach	1972/1981	Revamped 1999
Total Algeria	23.1	1,125	21			
<i>Libya</i>						
Marsa el Brega	0.6	29	3	NOC (Sirte Oil Company)	1970	Technical limitations only allow the plant to operate at about 1/4 its nominal capacity of 2.5 million tpy.
<i>Nigeria</i>						
Bonny Island	6.6	321	2	Nigerian LNG Ltd (NNPC, Shell Elf, Agip)	1999	Operating at 10 percent above design
Bonny Island Train 3	2.9	141	1	Nigerian LNG Ltd.	2002	
Total Nigeria	9.5	463	3			
TOTAL AFRICA	33.2	1,617	26			
ASIA PACIFIC						
<i>Australia</i>						
Withnell Bay	7.5	365	3	NWS joint venture (Woodside, Shell, BHP, BP, Chevron, Mitsubishi/Mitsui)	1989	Debottlenecked 1995
<i>Brunei</i>						
Lumut 1	7.2	351	5	Brunei LNG (Brunei govt., Shell, Mitsubishi)	1972	
<i>Indonesia</i>						
Arun Phase I		–		PT Arun NGL (Pertamina, ExxonMobil, JILCO)	1978	
Arun Phase II		–		PT Arun NGL	1984	
Arun Phase III	6.8	331	4	PT Arun NGL	1986	Two trains decommissioned 2000. Shortage of gas supply means capacity determined by contract volumes rather than liquefaction capacity
Bontang A-H	22.6	1,101	8	PT Badak NGL (Pertamina, VICO Total, JILCO)	1977	A/B: 1977; C/D: 1986; E: 1989; F: 1993; G: 1998; H: 1999
Total Indonesia	29.4	1,432	12			

continued

Existing LNG Liquefaction Plants, October 2003 (continued)

	Plant Capacity		Number of Trains	Lead Plant Operator	Start-Up Date	Comments/Expansion Plans
	Million tons of LNG/year	Billion cubic feet of gas/year				
<i>Malaysia</i>						
Bintulu MLNG 1	7.6	370	3	MLNG 1 (Petronas, Shell, Mitsubishi)	1983	
Bintulu MLNG 2	7.8	380	3	MLNG 2 (Petronas, Shell, Mitsubishi, Sarawak)	1994	
Bintulu MLNG 3	3.4	166	1	MLNG 3 (Petronas, Shell, Nippon Oil, Mitsubishi, Sarawak)	2003	One train commissioned March 2003 but shutdown in Aug because of fire. Train 2 due on stream in Nov 2003. Less than two-thirds of capacity sold.
Total Malaysia	18.8	916	7			
TOTAL ASIA PACIFIC	62.9	3,063	27.0			
MIDDLE EAST						
Total Qatar	14.9	726	5			
<i>Oman</i>						
Galhat	7.3	356	2	Oman LNG (Oman govt., Shell, Total, Korea LNG, others)	2000	First two trains operating 10 percent above design. Further increases possible through debottlenecking.
<i>Qatar</i>						
Ras Laffan	8.3	404	3	Qatargas (QP, Exxon Mobil, Total, Marubeni, Mitsui)	1996	Currently debottlenecking to raise capacity to 9.5 million tpy. First stage (0.6 million tpy completed Oct 2003)
Ras Laffan	6.6	321	2	Ras Laffan LNG Co. (QP, Exxon Mobil)	1998	
<i>United Arab Emirates (Abu Dhabi)</i>						
Das Island I, II	5.7	278	3	ADGAS (ADNOC, BP, Total, Mitsui)	1977/1994	
TOTAL MIDDLE EAST	27.9	1,359	10			
NORTH AND SOUTH AMERICA						
<i>Trinidad & Tobago</i>						
Point Fortin	9.9	482	3	Train 1: Atlantic LNG Co. (BP, BG, Repsol, Tractebel, NGC); Trains 2&3: BP, BG, Repsol	1999/2003	
<i>United States</i>						
Kenai	1.4	68	2	Marathon/Phillips	1969	
TOTAL NORTH AND SOUTH AMERICA	11.3	550	3			
WORLD TOTAL	135.3	6,589	66			

Data from IEA 2003 *Natural Gas Information*, Gas Technology Institute's *World LNG Source Book 2001*, and updated based on trade press reports as assembled by the Gas Technology Institute.