

Appendix I

Reference case projections for natural gas production

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Table II. World total natural gas production by region, Reference case, 2012–40
(trillion cubic feet)

Region/country	Projections						Average annual percent change, 2012–40
	2012	2020	2025	2030	2035	2040	
OECD							
OECD Americas	31.8	35.7	38.6	42.1	44.6	47.3	1.4
United States ^a	24.0	28.7	30.4	32.9	34.0	35.3	1.4
Canada	6.1	5.8	6.6	7.2	7.9	8.6	1.2
Mexico	1.7	1.2	1.5	2.0	2.6	3.3	2.5
Chile	0.0	0.0	0.0	0.0	0.0	0.1	1.5
OECD Europe	10.3	8.7	9.1	10.1	11.1	11.9	0.5
North Europe	9.9	8.1	8.3	9.2	10.0	10.5	0.2
South Europe	0.3	0.3	0.4	0.5	0.7	0.8	3.7
Southwest Europe	0.0	0.0	0.0	0.0	0.0	0.0	10.9
Turkey and Israel	0.1	0.2	0.4	0.4	0.5	0.5	6.0
OECD Asia	2.3	3.5	4.3	5.1	6.1	7.2	4.2
Japan	0.1	0.1	0.1	0.1	0.1	0.2	0.1
South Korea	0.0	0.0	0.0	0.0	0.0	0.0	2.2
Australia and New Zealand	2.1	3.3	4.2	5.0	5.9	7.0	4.4
Total OECD	44.4	47.9	52.0	57.4	61.9	66.4	1.4
Non-OECD							
Non-OECD Europe and Eurasia	28.5	28.9	30.4	33.2	37.3	40.9	1.3
Russia	21.8	21.9	23.4	25.9	29.3	31.8	1.4
Central Asia	5.5	5.8	5.7	5.9	6.4	7.1	0.9
Non-OECD Europe	1.2	1.2	1.3	1.4	1.6	2.0	2.0
Non-OECD Asia	14.6	18.3	22.5	26.4	30.1	33.3	3.0
China	3.7	7.2	11.1	14.2	16.7	18.7	6.0
India	1.4	1.5	1.6	1.7	1.9	2.1	1.3
LNG Exporters	5.2	5.5	5.9	6.4	7.0	7.5	1.4
Other Asia	4.3	4.0	3.9	4.1	4.5	5.0	0.5
Middle East	19.2	23.0	26.3	29.7	32.8	35.8	2.3
Arabian Producers	4.3	5.5	5.6	6.0	6.5	7.0	1.7
Iran	5.6	7.4	8.7	10.1	11.4	12.4	2.9
Iraq	0.0	0.0	0.3	0.5	0.7	1.0	15.0
Qatar	5.5	5.8	7.0	7.6	8.0	8.4	1.5
Saudi Arabia	3.5	4.0	4.7	5.5	6.2	6.9	2.4
Other Middle East	0.3	0.2	0.1	0.2	0.1	0.2	-1.3
Africa	7.6	9.8	11.2	13.2	14.9	16.5	2.8
North Africa	5.6	7.1	7.1	7.1	7.3	7.7	1.1
West Africa	1.7	2.3	3.6	5.5	6.8	7.9	5.6
East Africa	0.2	0.3	0.3	0.3	0.5	0.6	4.6
Other Africa	0.1	0.2	0.3	0.3	0.4	0.4	6.8
Non-OECD Americas	5.5	6.1	7.0	7.6	8.4	9.4	2.0
Brazil	0.6	0.9	1.0	1.1	1.4	1.8	4.0
Northern Producers	2.5	2.9	3.3	3.3	3.3	3.5	1.1
Southern Cone	1.3	1.3	1.9	2.3	2.8	3.1	3.3
Andean	1.1	1.0	0.9	0.8	0.9	1.0	-0.4
Central America and Caribbean	0.0	0.0	0.0	0.0	0.1	0.1	3.1
Total Non-OECD	75.3	86.1	97.4	110.1	123.5	136.0	2.1
Total World	119.7	134.0	149.4	167.5	185.4	202.4	1.9
Discrepancy ^b	-0.1	0.8	0.4	0.9	0.1	-0.9	

^aIncludes supplemental production less any forecast discrepancy.

^bBalancing item. Differences between global production and consumption totals results from independent rounding and differences in conversion factors derived from heat contents of natural gas that is produced and consumed regionally.

Sources: History: EIA, International Energy Statistics database (as of November 2015), www.eia.gov/ies. Projections: United States: EIA, *Annual Energy Outlook 2015*, DOE/EIA-0383(2015) (Washington, DC, April 2015), www.eia.gov/aeo. Others: EIA, International Natural Gas Model (2016).

Table I2. World tight gas, shale gas and coalbed methane production by region, Reference case, 2012–40
(trillion cubic feet)

Region/country	2012	Projections					Average annual percent change, 2012–40
		2020	2025	2030	2035	2040	
OECD							
OECD Americas	19.8	26.0	29.0	31.4	34.3	37.0	2.3
United States ^a	16.6	22.1	23.9	25.1	26.5	27.8	1.9
Canada	3.3	3.8	4.9	5.5	6.3	7.0	2.8
Mexico	0.0	0.1	0.3	0.8	1.4	2.2	—
Chile	0.0	0.0	0.0	0.0	0.0	0.0	—
OECD Europe	0.0	0.5	1.7	3.3	4.6	5.5	21.8
North Europe	0.0	0.5	1.6	3.0	4.1	4.9	21.3
South Europe	0.0	0.0	0.1	0.2	0.3	0.3	—
Southwest Europe	0.0	0.0	0.0	0.0	0.0	0.0	—
Turkey and Israel	0.0	0.0	0.0	0.1	0.2	0.2	—
OECD Asia	0.3	1.1	1.7	2.3	3.1	4.0	9.4
Japan	0.0	0.0	0.0	0.0	0.0	0.0	—
South Korea	0.0	0.0	0.0	0.0	0.0	0.0	—
Australia and New Zealand	0.3	1.1	1.7	2.3	3.1	4.0	9.6
Total OECD	20.2	27.6	32.5	37.0	42.0	46.5	3.0
Non-OECD							
Non-OECD Europe and Eurasia	0.4	0.4	0.8	1.9	4.3	7.2	11.3
Russia	0.4	0.4	0.6	1.4	3.0	5.0	9.9
Central Asia	0.0	0.0	0.1	0.4	0.9	1.5	—
Non-OECD Europe	0.0	0.0	0.1	0.2	0.3	0.7	—
Non-OECD Asia	1.7	4.6	8.5	12.0	15.2	17.9	8.8
China	1.5	4.1	7.7	10.5	12.9	14.7	8.4
India	0.0	0.1	0.2	0.3	0.4	0.5	—
LNG Exporters	0.2	0.4	0.6	0.9	1.2	1.4	8.2
Other Asia	0.0	0.0	0.1	0.4	0.8	1.2	—
Middle East	0.0	0.0	0.0	0.2	0.6	1.1	34.8
Arabian Producers	0.0	0.0	0.0	0.1	0.2	0.5	31.1
Iran	0.0	0.0	0.0	0.1	0.3	0.5	—
Iraq	0.0	0.0	0.0	0.0	0.0	0.0	—
Qatar	0.0	0.0	0.0	0.0	0.0	0.0	—
Saudi Arabia	0.0	0.0	0.0	0.0	0.0	0.0	—
Other Middle East	0.0	0.0	0.0	0.0	0.0	0.1	—
Africa	0.0	0.0	0.8	1.1	2.8	4.2	27.8
North Africa	0.0	0.1	0.5	1.2	1.8	2.4	25.2
West Africa	0.0	-0.2	0.0	-0.3	0.6	1.4	—
East Africa	0.0	0.0	0.0	0.0	0.0	0.0	—
Other Africa	0.0	0.1	0.2	0.3	0.4	0.4	—
Non-OECD Americas	0.0	0.4	1.1	1.9	3.0	4.0	17.3
Brazil	0.0	0.0	0.1	0.1	0.2	0.4	—
Northern Producers	0.0	0.0	0.0	0.2	0.5	0.8	—
Southern Cone	0.0	0.4	1.1	1.6	2.1	2.6	15.5
Andean	0.0	0.0	0.0	0.1	0.2	0.2	—
Central America and Caribbean	0.0	0.0	0.0	0.0	0.0	0.0	—
Total Non-OECD	2.1	5.5	11.2	17.2	25.8	34.3	10.5
Total World	22.3	33.1	43.8	54.2	67.8	80.9	4.7

^aIncludes supplemental production less any forecast discrepancy.

Sources: History: EIA, International Energy Statistics database (as of November 2015), www.eia.gov/ies. Projections: United States: EIA, *Annual Energy Outlook 2015*, DOE/EIA-0383(2015) (Washington, DC, April 2015), www.eia.gov/aeo. Others: EIA, International Natural Gas Model (2016).

Table I3. World other natural gas production by region, Reference case, 2012–40
(trillion cubic feet)

Region/country	Projections						Average annual percent change, 2012–40
	2012	2020	2025	2030	2035	2040	
OECD							
OECD Americas	12.0	9.8	9.5	10.7	10.3	10.3	-0.5
United States ^a	7.5	6.6	6.5	7.8	7.5	7.5	0.0
Canada	2.8	2.0	1.8	1.7	1.6	1.5	-2.2
Mexico	1.7	1.2	1.2	1.2	1.2	1.2	-1.2
Chile	0.0	0.0	0.0	0.0	0.0	0.1	2.6
OECD Europe	10.2	8.2	7.4	6.9	6.5	6.3	-1.7
North Europe	9.9	7.6	6.7	6.2	5.8	5.6	-2.0
South Europe	0.3	0.3	0.3	0.4	0.4	0.4	1.3
Southwest Europe	0.0	0.0	0.0	0.0	0.0	0.0	—
Turkey and Israel	0.1	0.2	0.3	0.3	0.3	0.3	—
OECD Asia	2.0	2.3	2.6	2.8	3.0	3.2	1.7
Japan	0.1	0.1	0.1	0.1	0.1	0.1	-1.4
South Korea	0.0	0.0	0.0	0.0	0.0	0.0	—
Australia and New Zealand	1.8	2.2	2.4	2.6	2.9	3.1	1.9
Total OECD	24.2	20.3	19.5	20.3	19.9	19.9	
Non-OECD							
Non-OECD Europe and Eurasia	28.1	28.5	29.6	31.3	33.1	33.7	0.6
Russia	21.4	21.6	22.8	24.5	26.3	26.8	0.8
Central Asia	5.5	5.8	5.6	5.5	5.5	5.6	0.1
Non-OECD Europe	1.2	1.2	1.2	1.2	1.3	1.3	0.3
Non-OECD Asia	12.9	13.6	14.0	14.3	14.8	15.4	0.6
China	2.1	3.1	3.5	3.6	3.8	3.9	2.2
India	1.4	1.4	1.4	1.4	1.5	1.6	0.4
LNG Exporters	5.0	5.1	5.3	5.6	5.8	6.1	0.7
Other Asia	4.3	4.0	3.8	3.7	3.7	3.8	-0.4
Middle East	19.2	23.0	26.3	29.5	32.2	34.7	2.1
Arabian Producers	4.3	5.5	5.5	5.9	6.2	6.5	1.5
Iran	5.6	7.4	8.7	10.0	11.1	11.9	2.7
Iraq	0.0	0.0	0.3	0.5	0.7	1.0	15.0
Qatar	5.5	5.8	7.0	7.6	8.0	8.4	—
Saudi Arabia	3.5	4.0	4.7	5.5	6.2	6.9	2.4
Other Middle East	0.3	0.2	0.1	0.1	0.1	0.1	-3.3
Africa	7.5	9.8	10.5	12.1	12.1	12.3	1.8
North Africa	5.6	6.9	6.5	5.9	5.4	5.3	-0.2
West Africa	1.7	2.5	3.6	5.8	6.2	6.5	4.9
East Africa	0.2	0.3	0.3	0.3	0.5	0.6	4.7
Other Africa	0.1	0.1	0.0	0.0	0.0	0.0	—
Non-OECD Americas	5.4	5.6	5.9	5.7	5.4	5.4	—
Brazil	0.6	0.8	0.9	1.0	1.1	1.4	3.1
Northern Producers	2.5	2.9	3.3	3.2	2.9	2.7	0.2
Southern Cone	1.2	0.9	0.8	0.7	0.7	0.6	-2.5
Andean	1.1	1.0	0.8	0.8	0.8	0.7	-1.5
Central America and Caribbean	0.0	0.0	0.0	0.0	0.0	0.0	—
Total Non-OECD	73.2	80.6	86.2	92.9	97.7	101.6	1.2
Total World	97.4	100.9	105.7	113.3	117.6	121.5	—

^aIncludes supplemental production less any forecast discrepancy.

Sources: History: EIA, International Energy Statistics database (as of November 2015), www.eia.gov/ies. Projections: United States: EIA, *Annual Energy Outlook 2015*, DOE/EIA-0383(2015) (Washington, DC, April 2015), www.eia.gov/aeo. Others: EIA, International Natural Gas Model (2016).

Table I4. World net trade in natural gas by region, Reference case, 2012–40
(trillion cubic feet)

Region/country	Projections						Average annual percent change, 2012–40
	2012	2020	2025	2030	2035	2040	
OECD							
OECD Americas	0.3	-2.6	-4.0	-5.4	-6.2	-6.9	—
United States ^a	1.5	-2.6	-3.5	-4.8	-5.2	-5.6	—
Canada	-2.3	-1.9	-2.3	-2.4	-2.7	-2.8	0.7
Mexico	1.0	1.7	1.7	1.6	1.5	1.3	1.1
Chile	0.1	0.1	0.1	0.2	0.2	0.2	1.7
OECD Europe	7.8	10.9	11.9	12.7	13.0	14.0	2.1
North Europe	2.4	5.2	5.9	6.1	6.1	6.3	3.5
South Europe	2.5	2.6	2.8	3.1	3.3	3.6	1.3
Southwest Europe	1.4	1.4	1.5	1.6	1.7	1.8	1.0
Turkey and Israel	1.6	1.7	1.7	1.9	2.0	2.3	1.4
OECD Asia	5.3	5.4	5.4	5.2	5.2	5.0	-0.2
Japan	4.3	5.0	5.4	5.5	5.7	5.8	1.1
South Korea	1.7	2.1	2.2	2.4	2.7	3.0	2.1
Australia and New Zealand	-0.7	-1.7	-2.2	-2.7	-3.2	-3.8	6.3
Total OECD	13.4	13.7	13.3	12.5	12.1	12.0	-0.4
Non-OECD							
Non-OECD Europe and Eurasia	-5.4	-6.5	-6.6	-8.3	-10.9	-15.0	3.7
Russia	-6.1	-6.6	-7.6	-9.7	-12.3	-15.6	3.4
Central Asia	-1.9	-2.2	-1.6	-1.4	-1.6	-2.0	0.3
Non-OECD Europe	2.5	2.3	2.6	2.8	2.9	2.6	0.2
Non-OECD Asia	0.5	2.7	4.7	7.7	12.4	17.5	13.4
China	1.4	2.1	2.4	3.4	6.0	8.9	6.8
India	0.6	0.8	1.3	2.1	3.0	3.9	6.7
LNG Exporters	-2.7	-2.6	-2.6	-2.6	-2.7	-2.7	0.0
Other Asia	1.2	2.5	3.6	4.9	6.1	7.4	6.8
Middle East	-4.4	-5.2	-5.9	-6.2	-6.8	-7.2	1.7
Arabian Producers	-0.2	-0.7	0.2	0.7	0.9	1.2	—
Iran	-0.1	-0.8	-1.2	-1.4	-1.9	-2.0	11.9
Iraq	0.0	0.0	-0.3	-0.5	-0.7	-1.1	—
Qatar	-4.1	-3.9	-4.8	-5.3	-5.5	-5.8	1.2
Saudi Arabia	0.0	0.0	0.0	0.0	0.0	0.0	—
Other Middle East	0.0	0.1	0.2	0.3	0.3	0.4	—
Africa	-3.4	-4.4	-5.0	-5.5	-5.5	-5.4	1.7
North Africa	-2.3	-3.3	-2.5	-1.1	0.1	1.2	—
West Africa	-1.1	-1.1	-2.5	-4.4	-5.5	-6.4	6.5
East Africa	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	2.4
Other Africa	0.1	0.1	0.1	0.0	0.0	0.0	—
Non-OECD Americas	-0.6	-0.3	-0.5	-0.4	-0.5	-0.7	0.4
Brazil	0.5	0.5	0.5	0.6	0.5	0.4	-0.6
Northern Producers	-0.7	-0.9	-1.1	-1.0	-0.8	-0.8	0.5
Southern Cone	0.1	0.4	0.1	-0.1	-0.3	-0.4	—
Andean	-0.6	-0.4	-0.2	0.0	0.0	0.0	—
Central America and Caribbean	0.1	0.1	0.1	0.1	0.1	0.1	0.9
Total Non-OECD	-13.4	-13.6	-13.3	-12.7	-11.3	-10.8	-0.8
Total World	0.0	0.1	0.1	-0.2	0.8	1.2	13.3

^aIncludes supplemental production less any forecast discrepancy.

Sources: History: EIA, International Energy Statistics database (as of November 2015), www.eia.gov/ies. Projections: United States: EIA, *Annual Energy Outlook 2015*, DOE/EIA-0383(2015) (Washington, DC, April 2015), www.eia.gov/aeo. Others: EIA, International Natural Gas Model (2016).