

Appendix E

Projections of Transportation Energy Use in the Reference Case

Table E1. World Total Energy Consumption for Transportation by Region, Reference Case, 1990-2020
 (Million Barrels of Oil per Day)

Region/Country	History			Projections				Average Annual Percent Change, 1999-2020
	1990	1998	1999	2005	2010	2015	2020	
Industrialized Countries								
North America	12.6	14.7	15.1	17.4	19.2	21.1	23.1	2.0
United States ^a	11.0	12.8	13.2	15.1	16.6	17.9	19.3	1.8
Canada.	0.9	1.1	1.1	1.2	1.3	1.3	1.4	1.2
Mexico	0.6	0.8	0.8	1.1	1.4	1.8	2.4	5.2
Western Europe	6.2	7.2	7.3	7.9	8.4	8.7	9.0	1.0
United Kingdom	1.0	1.1	1.1	1.2	1.3	1.4	1.5	1.5
France	0.9	1.0	1.1	1.2	1.2	1.3	1.3	1.1
Germany	1.2	1.4	1.4	1.5	1.6	1.6	1.7	0.9
Italy.	0.7	0.8	0.9	0.9	0.9	1.0	1.0	0.6
Netherlands	0.4	0.5	0.5	0.5	0.6	0.6	0.6	1.0
Other Western Europe.	2.0	2.3	2.4	2.6	2.7	2.8	2.9	1.0
Industrialized Asia	2.1	2.6	2.6	2.8	3.0	3.1	3.2	1.0
Japan	1.6	1.9	2.0	2.1	2.1	2.2	2.2	0.7
Australasia	0.5	0.6	0.7	0.7	0.8	0.9	0.9	1.8
Total Industrialized	20.9	24.4	25.0	28.1	30.5	32.8	35.3	1.6
EE/FSU								
Former Soviet Union	2.7	1.4	1.4	1.8	2.1	2.4	2.6	2.9
Eastern Europe	0.6	0.6	0.6	0.8	0.9	1.0	1.1	2.6
Total EE/FSU	3.3	2.0	2.1	2.6	3.0	3.4	3.7	2.8
Developing Countries								
Developing Asia	3.1	5.3	5.6	7.7	9.9	12.9	16.1	5.1
China.	0.8	1.4	1.5	2.1	3.0	4.3	5.7	6.7
India	0.5	0.9	1.0	1.5	2.2	3.2	4.3	7.3
South Korea	0.3	0.7	0.8	0.9	1.1	1.2	1.3	2.5
Other Asia	1.4	2.3	2.4	3.1	3.7	4.2	4.8	3.3
Middle East	1.2	1.8	1.8	2.2	2.7	3.6	4.8	4.8
Turkey	0.2	0.3	0.3	0.4	0.4	0.4	0.5	2.4
Other Middle East	1.0	1.5	1.5	1.8	2.3	3.1	4.3	5.2
Africa	0.9	1.1	1.2	1.5	1.7	1.9	2.2	3.0
Central and South America . . .	1.6	2.1	2.1	2.8	3.5	4.4	5.5	4.6
Brazil	0.7	0.9	0.9	1.1	1.5	1.8	2.3	4.8
Other Central/South America . .	0.9	1.3	1.3	1.7	2.1	2.6	3.2	4.5
Total Developing	6.8	10.4	10.7	14.2	17.9	22.8	28.6	4.8
Total World	31.0	36.8	37.8	44.9	51.4	59.1	67.5	2.8

^aIncludes the 50 States and the District of Columbia. U.S. Territories are included in Australasia.

Notes: EE/FSU = Eastern Europe/Former Soviet Union. Totals may not equal sum of components due to independent rounding.

Sources: **History:** Derived from Energy Information Administration (EIA), *International Energy Annual 1999*, DOE/EIA-0219(99) (Washington, DC, January 2001). **Projections:** EIA, *Annual Energy Outlook 2001*, DOE/EIA-0383(2001) (Washington, DC, December 2000), Table A2; and World Energy Projection System (2001).

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Table E2. World Total Gasoline Consumption for Transportation by Region, Reference Case, 1990-2020
 (Million Barrels of Oil per Day)

Region/Country	History			Projections				Average Annual Percent Change, 1999-2020
	1990	1998	1999	2005	2010	2015	2020	
Industrialized Countries								
North America	7.6	8.9	9.1	10.2	11.1	12.0	13.0	1.7
United States ^a	6.6	7.8	8.0	8.9	9.5	10.1	10.7	1.4
Canada.	0.5	0.6	0.6	0.7	0.7	0.7	0.7	1.0
Mexico	0.4	0.5	0.6	0.7	0.9	1.2	1.6	5.1
Western Europe	2.6	2.8	2.8	3.0	3.0	3.0	3.0	0.3
United Kingdom	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.5
France	0.4	0.3	0.3	0.4	0.4	0.4	0.4	0.2
Germany.	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.3
Italy.	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.2
Netherlands	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.6
Other Western Europe.	0.7	0.8	0.8	0.9	0.9	0.9	0.9	0.3
Industrialized Asia	1.0	1.2	1.2	1.3	1.3	1.3	1.3	0.4
Japan	0.7	0.8	0.8	0.9	0.9	0.9	0.9	0.1
Australasia	0.3	0.3	0.3	0.4	0.4	0.4	0.4	1.1
Total Industrialized	11.2	12.9	13.1	14.5	15.4	16.4	17.3	1.3
EE/FSU								
Former Soviet Union	1.1	0.4	0.4	0.6	0.7	0.8	0.8	2.9
Eastern Europe	0.3	0.3	0.3	0.4	0.5	0.5	0.5	2.1
Total EE/FSU	1.3	0.7	0.8	1.0	1.2	1.3	1.3	2.6
Developing Countries								
Developing Asia	1.0	1.8	1.9	2.6	3.4	4.5	5.5	5.2
China.	0.4	0.8	0.8	1.2	1.8	2.6	3.4	7.1
India	0.1	0.1	0.1	0.2	0.3	0.4	0.5	6.7
South Korea	0.1	0.2	0.2	0.2	0.3	0.3	0.3	2.0
Other Asia	0.4	0.7	0.8	1.0	1.1	1.2	1.3	2.4
Middle East	0.6	0.8	0.8	1.0	1.2	1.6	2.3	5.3
Turkey	0.1	0.1	0.1	0.1	0.1	0.2	0.2	1.6
Other Middle East	0.5	0.7	0.7	0.8	1.1	1.5	2.1	5.7
Africa	0.4	0.5	0.6	0.7	0.8	0.9	1.0	2.8
Central and South America . . .	0.6	0.9	0.9	1.2	1.6	2.0	2.5	4.8
Brazil	0.1	0.2	0.2	0.3	0.4	0.5	0.6	5.0
Other Central/South America . .	0.5	0.7	0.7	0.9	1.2	1.5	1.8	4.7
Total Developing	2.5	4.0	4.1	5.5	7.0	9.0	11.2	4.9
Total World	15.1	17.6	18.0	21.0	23.6	26.6	29.8	2.4

^aIncludes the 50 States and the District of Columbia. U.S. Territories are included in Australasia.

Notes: EE/FSU = Eastern Europe/Former Soviet Union. Totals may not equal sum of components due to independent rounding.

Sources: **History:** Derived from Energy Information Administration (EIA), *International Energy Annual 1999*, DOE/EIA-0219(99) (Washington, DC, January 2001). **Projections:** EIA, *Annual Energy Outlook 2001*, DOE/EIA-0383(2001) (Washington, DC, December 2000), Table A2; and World Energy Projection System (2001).

Table E3. World Total Diesel Fuel Consumption for Transportation by Region, Reference Case, 1990-2020
 (Million Barrels of Oil per Day)

Region/Country	History			Projections				Average Annual Percent Change, 1999-2020
	1990	1998	1999	2005	2010	2015	2020	
Industrialized Countries								
North America	2.4	2.9	3.0	3.7	4.1	4.5	5.0	2.3
United States ^a	2.0	2.5	2.6	3.1	3.5	3.8	4.1	2.3
Canada.	0.2	0.2	0.2	0.3	0.3	0.3	0.3	1.5
Mexico	0.2	0.2	0.2	0.3	0.3	0.4	0.6	4.8
Western Europe	2.2	2.7	2.8	3.1	3.2	3.4	3.5	1.0
United Kingdom	0.3	0.3	0.4	0.4	0.4	0.5	0.5	1.5
France	0.4	0.5	0.5	0.6	0.6	0.7	0.7	1.2
Germany.	0.4	0.5	0.5	0.6	0.6	0.7	0.7	1.2
Italy.	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.6
Netherlands	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.8
Other Western Europe.	0.7	0.9	0.9	1.0	1.0	1.1	1.1	0.8
Industrialized Asia	0.6	0.8	0.8	0.9	1.0	1.0	1.0	1.1
Japan	0.5	0.7	0.7	0.8	0.8	0.8	0.8	0.9
Australasia	0.1	0.1	0.1	0.2	0.2	0.2	0.2	2.0
Total Industrialized	5.2	6.5	6.6	7.6	8.3	8.9	9.5	1.7
EE/FSU								
Former Soviet Union	0.6	0.3	0.4	0.5	0.6	0.7	0.7	3.3
Eastern Europe	0.2	0.2	0.2	0.3	0.3	0.4	0.4	2.8
Total EE/FSU	0.8	0.6	0.6	0.8	0.9	1.0	1.1	3.1
Developing Countries								
Developing Asia	1.2	2.3	2.5	3.5	4.5	5.9	7.5	5.4
China.	0.2	0.3	0.4	0.5	0.8	1.2	1.7	7.5
India	0.4	0.7	0.8	1.2	1.7	2.5	3.5	7.4
South Korea	0.2	0.4	0.4	0.5	0.5	0.6	0.6	2.2
Other Asia	0.5	0.9	1.0	1.2	1.4	1.6	1.7	2.8
Middle East	0.3	0.6	0.6	0.7	0.9	1.1	1.5	4.9
Turkey	0.1	0.1	0.2	0.2	0.2	0.2	0.2	2.0
Other Middle East	0.2	0.4	0.4	0.5	0.7	0.9	1.3	5.7
Africa	0.3	0.3	0.3	0.4	0.5	0.5	0.6	3.0
Central and South America . . .	0.4	0.6	0.6	0.7	0.9	1.1	1.3	4.1
Brazil	0.1	0.1	0.2	0.2	0.2	0.2	0.2	2.0
Other Central/South America . .	0.3	0.4	0.4	0.5	0.7	0.9	1.1	4.8
Total Developing	2.2	3.8	3.9	5.3	6.7	8.6	10.9	5.0
Total World	8.3	10.8	11.1	13.7	15.9	18.6	21.5	3.2

^aIncludes the 50 States and the District of Columbia. U.S. Territories are included in Australasia.

Notes: EE/FSU = Eastern Europe/Former Soviet Union. Totals may not equal sum of components due to independent rounding.

Sources: **History:** Derived from Energy Information Administration (EIA), *International Energy Annual 1999*, DOE/EIA-0219(99) (Washington, DC, January 2001). **Projections:** EIA, *Annual Energy Outlook 2001*, DOE/EIA-0383(2001) (Washington, DC, December 2000), Table A2; and World Energy Projection System (2001).

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Table E4. World Total Jet Fuel Consumption for Transportation by Region, Reference Case, 1990-2020
 (Million Barrels of Oil per Day)

Region/Country	History			Projections				Average Annual Percent Change, 1999-2020
	1990	1998	1999	2005	2010	2015	2020	
Industrialized Countries								
North America	1.7	1.8	1.9	2.1	2.5	2.9	3.3	2.8
United States ^a	1.6	1.7	1.7	2.0	2.3	2.6	3.0	2.6
Canada.	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.3
Mexico	0.0	0.1	0.1	0.1	0.1	0.2	0.2	6.7
Western Europe	0.6	0.8	0.8	1.1	1.2	1.4	1.6	3.2
United Kingdom	0.1	0.2	0.2	0.2	0.3	0.3	0.4	3.7
France	0.1	0.1	0.1	0.1	0.2	0.2	0.2	3.0
Germany.	0.1	0.1	0.1	0.2	0.2	0.2	0.2	2.9
Italy.	0.0	0.1	0.1	0.1	0.1	0.1	0.1	2.8
Netherlands	0.0	0.1	0.1	0.1	0.1	0.1	0.1	3.2
Other Western Europe.	0.2	0.3	0.3	0.4	0.4	0.5	0.6	3.3
Industrialized Asia	0.2	0.3	0.3	0.4	0.4	0.5	0.5	2.5
Japan	0.1	0.2	0.2	0.2	0.2	0.3	0.3	1.8
Australasia	0.1	0.1	0.1	0.1	0.2	0.2	0.2	3.5
Total Industrialized	2.5	3.0	3.0	3.5	4.1	4.8	5.5	2.9
EE/FSU								
Former Soviet Union	0.4	0.2	0.2	0.3	0.3	0.4	0.6	4.7
Eastern Europe	0.0	0.0	0.0	0.1	0.1	0.1	0.1	5.9
Total EE/FSU	0.5	0.2	0.2	0.3	0.4	0.5	0.7	4.9
Developing Countries								
Developing Asia	0.3	0.5	0.5	0.8	1.1	1.6	2.1	6.9
China.	0.0	0.1	0.1	0.1	0.2	0.2	0.3	6.8
India	0.0	0.1	0.1	0.1	0.1	0.2	0.3	8.0
South Korea	0.0	0.0	0.0	0.1	0.1	0.1	0.2	6.4
Other Asia	0.2	0.3	0.3	0.5	0.7	1.0	1.3	6.7
Middle East	0.1	0.2	0.2	0.2	0.3	0.4	0.6	6.5
Turkey	0.0	0.0	0.0	0.0	0.1	0.1	0.1	6.4
Other Middle East	0.1	0.1	0.1	0.2	0.2	0.3	0.5	6.5
Africa	0.1	0.1	0.1	0.2	0.2	0.3	0.4	5.0
Central and South America . . .	0.1	0.2	0.2	0.2	0.3	0.4	0.5	6.0
Brazil	0.0	0.0	0.0	0.1	0.1	0.1	0.2	6.2
Other Central/South America . .	0.1	0.1	0.1	0.2	0.2	0.3	0.3	5.9
Total Developing	0.6	0.9	1.0	1.4	2.0	2.7	3.6	6.4
Total World	3.6	4.1	4.3	5.3	6.5	8.0	9.8	4.0

^aIncludes the 50 States and the District of Columbia. U.S. Territories are included in Australasia.

Notes: EE/FSU = Eastern Europe/Former Soviet Union. Totals may not equal sum of components due to independent rounding.

Sources: **History:** Derived from Energy Information Administration (EIA), *International Energy Annual 1999*, DOE/EIA-0219(99) (Washington, DC, January 2001). **Projections:** EIA, *Annual Energy Outlook 2001*, DOE/EIA-0383(2001) (Washington, DC, December 2000), Table A2; and World Energy Projection System (2001).

Table E5. World Total Residual Fuel Consumption for Transportation by Region, Reference Case, 1990-2020
 (Million Barrels of Oil per Day)

Region/Country	History			Projections				Average Annual Percent Change, 1999-2020
	1990	1998	1999	2005	2010	2015	2020	
Industrialized Countries								
North America	0.5	0.4	0.4	0.5	0.5	0.5	0.5	0.7
United States ^a	0.5	0.3	0.4	0.4	0.4	0.4	0.4	0.8
Canada.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
Mexico	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
Western Europe	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.3
United Kingdom	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
France	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3
Germany.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Italy.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Netherlands	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3
Other Western Europe.	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3
Industrialized Asia	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.4
Japan	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.4
Australasia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
Total Industrialized	1.2	1.1	1.2	1.2	1.2	1.3	1.3	0.5
EE/FSU								
Former Soviet Union	0.2	0.1	0.1	0.1	0.1	0.1	0.1	2.2
Eastern Europe	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9
Total EE/FSU	0.2	0.1	0.1	0.1	0.1	0.1	0.1	2.1
Developing Countries								
Developing Asia	0.3	0.5	0.5	0.6	0.7	0.7	0.8	1.8
China.	0.0	0.1	0.1	0.1	0.1	0.1	0.1	2.5
India	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2
South Korea	0.0	0.1	0.1	0.2	0.2	0.2	0.2	1.6
Other Asia	0.3	0.3	0.3	0.4	0.4	0.4	0.5	1.8
Middle East	0.2	0.3	0.3	0.3	0.4	0.4	0.4	1.7
Turkey	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5
Other Middle East	0.2	0.3	0.3	0.3	0.3	0.4	0.4	1.7
Africa	0.1	0.1	0.1	0.1	0.2	0.2	0.2	1.3
Central and South America . . .	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.9
Brazil	0.0	0.0	0.0	0.1	0.1	0.1	0.1	1.1
Other Central/South America . .	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.8
Total Developing	0.8	1.1	1.1	1.2	1.3	1.4	1.6	1.6
Total World	2.2	2.3	2.3	2.5	2.7	2.8	2.9	1.1

^aIncludes the 50 States and the District of Columbia. U.S. Territories are included in Australasia.

Notes: EE/FSU = Eastern Europe/Former Soviet Union. Totals may not equal sum of components due to independent rounding.

Sources: **History:** Derived from Energy Information Administration (EIA), *International Energy Annual 1999*, DOE/EIA-0219(99) (Washington, DC, January 2001). **Projections:** EIA, *Annual Energy Outlook 2001*, DOE/EIA-0383(2001) (Washington, DC, December 2000), Table A2; and World Energy Projection System (2001).