

MEXICO
ENERGY BALANCE TABLES

2002										Mtoe
	Coal	Oil	Gas	Hydro	Nuclear	NRE	Electricity	Heat	Total	
Production	5.3	174.9	32.4	2.1	2.5	12.0				229.2
Net Imports	3.5	- 92.0	3.3							- 85.2
TPED	7.9	82.9	35.7	2.1	2.5	12.0				143.1
Electricity and Heat Generation	- 6.9	- 18.8	- 16.5	- 2.1	- 2.5	- 4.7	16.1			- 35.5
Petroleum Refineries		- 10.4					- 0.3			- 10.7
Others			- 9.5							- 9.5
TFED	1.0	59.6	9.4			7.3	14.4			91.6
Industry	1.0	11.9	8.5			1.2	9.4			32.0
Transport		38.5					0.1			38.6
Residential		7.4	0.6			6.1	3.3			17.4
Commercial		1.8	0.2			0.1	1.6			3.7

2010										Mtoe
	Coal	Oil	Gas	Hydro	Nuclear	NRE	Electricity	Heat	Total	
Production	5.9	163.3	32.8	2.6	2.6	12.9				220.0
Net Imports	3.2	- 65.0	18.0				0.4			- 43.3
TPED	9.2	98.3	50.8	2.6	2.6	12.9	0.4			176.7
Electricity and Heat Generation	- 8.4	- 15.2	- 28.7	- 2.6	- 2.6	- 5.6	20.5			- 42.6
Petroleum Refineries		- 11.7					- 0.4			- 12.0
Others			- 8.5							- 8.5
TFED	0.8	71.4	13.6			7.2	20.5			113.6
Industry	0.8	13.8	11.8			0.9	13.9			41.2
Transport		47.4	0.1				0.1			47.6
Residential		7.9	1.3			6.2	4.5			19.9
Commercial		2.2	0.5			0.1	2.1			4.9

2020										Mtoe
	Coal	Oil	Gas	Hydro	Nuclear	NRE	Electricity	Heat	Total	
Production	6.9	184.4	37.7	2.9	2.7	13.1				247.7
Net Imports	9.0	- 68.7	33.2							- 26.5
TPED	15.9	115.7	70.9	2.9	2.7	13.1				221.2
Electricity and Heat Generation	- 15.3	- 13.0	- 43.0	- 2.9	- 2.7	- 6.0	28.7			- 54.1
Petroleum Refineries		- 10.3					- 0.4			- 10.6
Others			- 9.1							- 9.1
TFED	0.6	92.5	18.7			7.1	28.4			147.3
Industry	0.6	17.4	15.2			0.9	19.4			53.6
Transport		63.8	0.1				0.1			64.1
Residential		8.7	2.4			6.0	6.0			23.1
Commercial		2.6	0.9			0.1	2.9			6.6

2030										Mtoe
	Coal	Oil	Gas	Hydro	Nuclear	NRE	Electricity	Heat	Total	
Production	8.0	208.4	59.5	2.9	2.7	12.9				294.4
Net Imports	17.0	- 70.9	30.0				0.6			- 23.3
TPED	25.0	137.4	89.5	2.9	2.7	12.9	0.6			271.1
Electricity and Heat Generation	- 24.4	- 10.7	- 56.9	- 2.9	- 2.7	- 6.2	38.0			- 65.9
Petroleum Refineries		- 9.8					- 0.3			- 10.2
Others			- 9.8							- 9.8
TFED	0.6	116.9	22.8			6.7	38.3			185.2
Industry	0.6	20.4	18.3			0.9	26.7			66.9
Transport		84.0	0.2				0.1			84.4
Residential		9.5	3.1			5.5	7.6			25.7
Commercial		3.0	1.2			0.2	3.9			8.3

MEXICO

MACRO ASSUMPTIONS

	1980	2002	2010	2020	2030	Growth Rate (% per annum)				
						80-02	02-10	10-20	20-30	02-30
GDP (2000 PPP US\$ billion)	566	962	1 289	1 952	2 868	2.4	3.7	4.2	3.9	4.0
Population (million)	67	101	112	122	131	1.9	1.3	0.9	0.7	0.9
GDP per capita (2000 PPP US\$)	8 466	9 519	11 517	15 975	21 850	0.5	2.4	3.3	3.2	3.0
GDP in Services (2000 PPP US\$ billion)	393	622	843	1 252	1 811	2.1	3.9	4.0	3.8	3.9
GDP in Industry (2000 PPP US\$ billion)	155	242	316	465	666	2.1	3.4	4.0	3.7	3.7
Urbanisation level (%)	67	75	77	81	83	0.5	0.4	0.5	0.3	0.4

ENERGY PROJECTIONS

	Mtoe					Growth rate (% per annum)				
	1980	2002	2010	2020	2030	80-02	02-10	10-20	20-30	02-30
Production	147.6	229.2	220.0	247.7	294.4	2.0	- 0.5	1.2	1.7	0.9
Coal	1.7 (1%)	5.3 (2%)	5.9 (3%)	6.9 (3%)	8.0 (3%)	5.2	1.5	1.5	1.5	1.5
Oil	115.2 (78%)	174.9 (76%)	163.3 (74%)	184.4 (74%)	208.4 (71%)	1.9	- 0.9	1.2	1.2	0.6
Gas	21.5 (15%)	32.4 (14%)	32.8 (15%)	37.7 (15%)	59.5 (20%)	1.9	0.1	1.4	4.7	2.2
Hydro	1.5 (1%)	2.1 (1%)	2.6 (1%)	2.9 (1%)	2.9 (1%)	1.8	2.2	1.3		1.1
NRE	7.7 (5%)	12.0 (5%)	12.9 (6%)	13.1 (5%)	12.9 (4%)	2.1	0.9	0.2	- 0.2	0.3
Nuclear		2.5 (1%)	2.6 (1%)	2.7 (1%)	2.7 (1%)		0.3	0.3	0.2	0.2
Net Imports	- 49.3	- 85.2	- 43.3	- 26.5	- 23.3	2.5	- 8.1	- 4.8	- 1.3	- 4.5
Coal	0.6	3.5	3.2	9.0	17.0	8.4	- 1.0	10.8	6.5	5.8
Oil	- 47.6	- 92.0	- 65.0	- 68.7	- 70.9	3.0	- 4.3	0.6	0.3	- 0.9
Gas	- 2.4	3.3	18.0	33.2	30.0		23.4	6.3	- 1.0	8.1
Electricity	0.1		0.4		0.6					
Total Primary Energy Demand	97.1	143.1	176.7	221.2	271.1	1.8	2.7	2.3	2.1	2.3
Coal	2.4 (2%)	7.9 (5%)	9.2 (5%)	15.9 (7%)	25.0 (9%)	5.6	2.0	5.7	4.6	4.2
Oil	66.5 (68%)	82.9 (58%)	98.3 (56%)	115.7 (52%)	137.4 (51%)	1.0	2.2	1.6	1.7	1.8
Gas	19.1 (20%)	35.7 (25%)	50.8 (29%)	70.9 (32%)	89.5 (33%)	2.9	4.5	3.4	2.4	3.3
Hydro	1.5 (1%)	2.1 (1%)	2.6 (1%)	2.9 (1%)	2.9 (1%)	1.8	2.2	1.3		1.1
NRE	7.7 (8%)	12.0 (8%)	12.9 (7%)	13.1 (6%)	12.9 (5%)	2.1	0.9	0.2	- 0.2	0.3
Nuclear		2.5 (2%)	2.6 (1%)	2.7 (1%)	2.7 (1%)		0.3	0.3	0.2	0.2
Input for Electricity and Heat Generation	- 14.9	- 51.5	- 63.1	- 82.8	- 103.9	5.8	2.6	2.8	2.3	2.5
Coal		- 6.9 (13%)	- 8.4 (13%)	- 15.3 (18%)	- 24.4 (24%)		2.6	6.1	4.8	4.6
Oil	- 9.8 (66%)	- 18.8 (36%)	- 15.2 (24%)	- 13.0 (16%)	- 10.7 (10%)	3.0	- 2.6	- 1.6	- 1.9	- 2.0
Gas	- 2.8 (19%)	- 16.5 (32%)	- 28.7 (45%)	- 43.0 (52%)	- 56.9 (55%)	8.3	7.2	4.1	2.8	4.5
Hydro	- 1.5 (10%)	- 2.1 (4%)	- 2.6 (4%)	- 2.9 (3%)	- 2.9 (3%)	1.8	2.2	1.3		1.1
NRE	- 0.8 (5%)	- 4.7 (9%)	- 5.6 (9%)	- 6.0 (7%)	- 6.2 (6%)	8.4	2.4	0.7	0.3	1.0
Nuclear		- 2.5 (5%)	- 2.6 (4%)	- 2.7 (3%)	- 2.7 (3%)		0.3	0.3	0.2	0.2
Other Transformation	- 13.3	- 20.2	- 20.5	- 19.7	- 20.0	1.9	0.2	- 0.4	0.1	
Coal										
Oil	- 9.9 (74%)	- 10.4 (52%)	- 11.7 (57%)	- 10.3 (52%)	- 9.8 (49%)	0.3	1.4	- 1.3	- 0.4	- 0.2
Gas	- 3.5 (26%)	- 9.5 (47%)	- 8.5 (41%)	- 9.1 (46%)	- 9.8 (49%)	4.7	- 1.3	0.7	0.7	0.1
NRE										
Electricity		- 0.3 (1%)	- 0.4 (2%)	- 0.4 (2%)	- 0.3 (2%)		2.4	- 0.1	- 0.5	0.5
Heat										

MEXICO

	Mtoe					Growth rate (% per annum)				
	1980	2002	2010	2020	2030	80-02	02-10	10-20	20-30	02-30
Total Final Energy Demand	53.5	91.6	113.6	147.3	185.2	2.5	2.7	2.6	2.3	2.5
Coal	1.6 (3%)	1.0 (1%)	0.8 (1%)	0.6 (0%)	0.6 (0%)	-2.2	-3.2	-1.6	-1.2	-1.9
Oil	27.7 (52%)	59.6 (65%)	71.4 (63%)	92.5 (63%)	116.9 (63%)	3.5	2.3	2.6	2.4	2.4
Gas	12.8 (24%)	9.4 (10%)	13.6 (12%)	18.7 (13%)	22.8 (12%)	-1.4	4.8	3.2	2.0	3.2
NRE	6.9 (13%)	7.3 (8%)	7.2 (6%)	7.1 (5%)	6.7 (4%)	0.3	-0.2	-0.2	-0.6	-0.3
Electricity	4.5 (8%)	14.4 (16%)	20.5 (18%)	28.4 (19%)	38.3 (21%)	5.4	4.5	3.3	3.0	3.6
Heat										
Industry	27.9	32.0	41.2	53.6	66.9	0.6	3.2	2.7	2.2	2.7
Coal	1.6 (6%)	1.0 (3%)	0.8 (2%)	0.6 (1%)	0.6 (1%)	-2.2	-3.2	-1.6	-1.2	-1.9
Oil	9.4 (34%)	11.9 (37%)	13.8 (34%)	17.4 (32%)	20.4 (31%)	1.1	1.9	2.3	1.6	2.0
Gas	12.4 (44%)	8.5 (27%)	11.8 (29%)	15.2 (28%)	18.3 (27%)	-1.7	4.1	2.6	1.8	2.8
NRE	1.5 (6%)	1.2 (4%)	0.9 (2%)	0.9 (2%)	0.9 (1%)	-1.2	-2.8			-0.8
Electricity	2.9 (10%)	9.4 (29%)	13.9 (34%)	19.4 (36%)	26.7 (40%)	5.5	5.0	3.4	3.3	3.8
Heat										
Transport	16.4	38.6	47.6	64.1	84.4	4.0	2.6	3.0	2.8	2.8
Coal										
Oil	16.4 (100%)	38.5 (100%)	47.4 (100%)	63.8 (100%)	84.0 (100%)	4.0	2.6	3.0	2.8	2.8
Gas		0.02	0.1	0.1	0.2		15.0	10.0	5.0	9.6
NRE										
Electricity		0.1 (0%)	0.1 (0%)	0.1 (0%)	0.1 (0%)	4.5	1.4	0.8	0.5	0.9
Heat										
Residential	7.7	17.4	19.9	23.1	25.7	3.8	1.7	1.5	1.0	1.4
Coal										
Oil	1.0 (13%)	7.4 (42%)	7.9 (40%)	8.7 (38%)	9.5 (37%)	9.3	0.9	0.9	0.9	0.9
Gas	0.5 (6%)	0.6 (3%)	1.3 (7%)	2.4 (11%)	3.1 (12%)	1.2	10.0	6.5	2.5	6.0
NRE	5.3 (69%)	6.1 (35%)	6.2 (31%)	6.0 (26%)	5.5 (21%)	0.6	0.2	-0.3	-0.9	-0.4
Electricity	0.9 (11%)	3.3 (19%)	4.5 (22%)	6.0 (26%)	7.6 (29%)	6.3	3.8	3.0	2.3	3.0
Heat										
Commercial	1.5	3.7	4.9	6.6	8.3	4.0	3.7	3.0	2.4	3.0
Coal										
Oil	0.9 (56%)	1.8 (49%)	2.2 (45%)	2.6 (40%)	3.0 (36%)	3.4	2.6	1.7	1.3	1.8
Gas		0.2 (6%)	0.5 (10%)	0.9 (14%)	1.2 (14%)		10.0	6.5	2.5	6.0
NRE		0.1 (2%)	0.1 (2%)	0.1 (2%)	0.2 (3%)		5.0	5.0	5.0	5.0
Electricity	0.7 (44%)	1.6 (43%)	2.1 (43%)	2.9 (44%)	3.9 (48%)	3.9	3.6	3.3	3.1	3.3
Heat										

ENERGY SECURITY

	1980	2002	2010	2020	2030
Diversity of Primary Energy Demand (Rated between 1 and 100)	51	65	66	68	70
Net Energy Import Ratio (%)	-50	-59	-24	-12	-9
Net Oil Import Dependency (%)	-72	-111	-66	-59	-52

MEXICO
ELECTRICITY GENERATION

	1980	2002	2010	2020	2030	Growth rate (% per annum)				
						80-02	02-10	10-20	20-30	02-30
Total Electricity Generation (TWh)	67	215	277	384	505	5.4	3.2	3.3	2.8	3.1
Coal		26 (12%)	33 (12%)	60 (16%)	98 (19%)		2.8	6.3	5.0	4.8
Oil	39 (58%)	79 (37%)	66 (24%)	58 (15%)	49 (10%)	3.3	-2.3	-1.3	-1.6	-1.7
Gas	10 (15%)	69 (32%)	129 (47%)	209 (54%)	299 (59%)	9.0	8.1	5.0	3.6	5.4
Hydro	17 (25%)	25 (12%)	30 (11%)	34 (9%)	34 (7%)	1.8	2.2	1.3		1.1
NRE	1 (1%)	6 (3%)	10 (4%)	14 (4%)	16 (3%)	8.8	7.0	3.0	1.7	3.7
Nuclear		10 (5%)	10 (4%)	10 (3%)	10 (2%)		0.3	0.2	0.2	0.2
Total Installed Generation Capacity (GW)	15	41	57	80	94	4.8	4.1	3.4	1.6	3.0
Thermal	9 (58%)	29 (71%)	43 (74%)	62 (78%)	76 (81%)	5.8	4.8	3.9	2.0	3.5
Coal		4 (9%)	5 (9%)	10 (13%)	16 (17%)		4.9	6.9	4.0	5.3
Oil	8 (54%)	15 (37%)	16 (27%)	15 (18%)	12 (12%)	3.1	0.1	-0.6	-2.4	-1.1
Gas	1 (4%)	10 (25%)	22 (38%)	37 (47%)	49 (52%)	14.3	9.8	5.6	2.7	5.7
Hydro	6 (41%)	10 (23%)	11 (20%)	13 (16%)	13 (14%)	2.2	2.0	1.3		1.0
NRE		1 (3%)	2 (3%)	3 (4%)	4 (4%)	7.8	8.2	4.9	1.7	4.6
Nuclear		1 (3%)	1 (2%)	1 (2%)	1 (1%)					

ENERGY INTENSITY & CO₂ EMISSIONS

	1980	2002	2010	2020	2030	Growth Rates (% per annum)				
						80-02	02-10	10-20	20-30	02-30
Energy Intensity (toe per US\$ million GDP)	172	149	137	113	95	-0.6	-1.0	-1.9	-1.8	-1.6
Industry (toe per US\$ million GDP in Industry)	180	132	130	115	100	-1.4	-0.2	-1.2	-1.4	-1.0
Commercial (toe per US\$ million GDP in Services)	4	6	6	5	5	1.9	-0.2	-1.0	-1.3	-0.9
Energy Intensity (kgoe per capita)	1 453	1 417	1 579	1 810	2 065	-0.1	1.4	1.4	1.3	1.4
Industry	417	316	368	439	509	-1.2	1.9	1.8	1.5	1.7
Transport	246	382	425	524	643	2.0	1.3	2.1	2.1	1.9
Residential	115	172	178	189	195	1.8	0.4	0.6	0.3	0.5
Commercial	23	36	44	54	63	2.1	2.4	2.1	1.6	2.0
CO₂ Emissions (million tonnes)	177.3	377.6	448.1	577.7	724.1	3.5	2.2	2.6	2.3	2.4
Electricity Generation	37.9	122.6	146.3	199.6	260.8	5.5	2.2	3.2	2.7	2.7
Transformation other than Electricity Generation	24.5	48.9	51.3	53.4	56.9	3.2	0.6	0.4	0.6	0.5
Industry	60.8	60.1	72.8	91.5	107.5	-0.1	2.4	2.3	1.6	2.1
Transport	47.2	113.9	140.3	188.8	248.8	4.1	2.6	3.0	2.8	2.8
Residential	4.2	26.1	29.5	34.3	38.3	8.7	1.5	1.5	1.1	1.4
Commercial	2.7	6.0	7.9	10.1	11.8	3.6	3.5	2.5	1.6	2.4
CO₂ Emissions Intensity										
CO ₂ emissions per GDP (tonnes per US\$ million)	313.2	392.6	347.6	296.0	252.5	1.0	-1.5	-1.6	-1.6	-1.6
CO ₂ emissions per capita (tonnes per capita)	2.7	3.7	4.0	4.7	5.5	1.6	0.9	1.7	1.6	1.4

ENERGY INVESTMENT REQUIREMENTS

(Cumulative from 2003 -)	2010	2020	2030
Total (2000 US\$ billion)	46.3 - 59.7	112.6 - 146.7	172.1 - 228.3
Coal Production & Transportation	0.31 - 0.41	0.49 - 0.65	0.69 - 0.93
Oil & Gas Production & Processing	8.82 - 12.47	25.99 - 37.85	44.84 - 65.82
Oil & Gas International Trade	4.66 - 5.41	9.42 - 11.03	9.47 - 11.15
Oil & Gas Domestic Pipeline	6.93 - 9.90	15.56 - 22.23	24.63 - 35.19
Electricity Generation & Transmission	25.55 - 31.49	61.15 - 74.92	92.48 - 115.2