Table F21. Delivered energy consumption in Middle East by end-use sector and fuel, Low Zero-carbon Technology Cost case quadrillion British thermal units

Remarkable	Sector and fuel	2022	2025	2030	2035	2040	2045	2050	Average annual percentage change, 2022–2050
Liquif fiels		2022	2023	2030	2033	2040	2043	2030	2022-2030
Natural gas		0.2	0.2	0.2	0.2	0.2	0.2	0.2	-U 3%
Col									
Renewable's 0,0									
rotal 4.8 4.9 4.9 4.6 4.8 5.0 5.2 0.7% Commercia Commercia 0.0									
Commercial Com									
Liquid fuels 0.0 <t< td=""><td></td><td>4.2</td><td>4.3</td><td>4.5</td><td>4.0</td><td>4.0</td><td>5.0</td><td>5.2</td><td>0.776</td></t<>		4.2	4.3	4.5	4.0	4.0	5.0	5.2	0.776
Natural gas		0.0	0.0	0.0	0.0	0.0	0.0	0.0	_0 19⁄
Coal 0.0 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>									
Electricity									
Renewablies									
Total									
Liquid fuels									
Liquid fueles 5.8 5.9 6.2 6.7 7.2 7.5 7.7 1.0% Natural gas 11.4 11.9 12.7 12.4 14.3 15.3 16.3 1.3% Coal 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.2 Electricity 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.0 <t< td=""><td></td><td>1.9</td><td>2.1</td><td>2.3</td><td>2.5</td><td>2.0</td><td>2.0</td><td>2.9</td><td>1.3/6</td></t<>		1.9	2.1	2.3	2.5	2.0	2.0	2.9	1.3/6
Natural gas 11.4 11.9 12.7 13.4 14.3 15.3 16.3 1.3% Coal 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.2% Electricity 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6		EO	E 0	6.2	6.7	7 7	7 5	7 7	1 00/2
Coal									
Electricity 0.6 0.0 <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>									
Renewables									
Total 18.0 18.6 19.7 21.0 22.4 23.7 24.9 1.28 Transportation Using tides 7.3 7.7 8.0 8.3 8.8 9.1 0.0									
Tansportation									
Liquid fuels 7,3 7,7 8,0 8,3 8,5 8,8 9,1 0,8% Natural gas 0,3 0,3 0,3 0,3 0,3 0,3 0,4 0,2% Coal 0,0		10.0	10.0	13.7	21.0	22.4	23.7	24.3	11270
Natural gas 0.3 0.3 0.3 0.3 0.3 0.3 0.4 0.2% Coal 0.0 <td< td=""><td>·</td><td>73</td><td>77</td><td>8 N</td><td>83</td><td>8.5</td><td>8.8</td><td>Q 1</td><td>0.8%</td></td<>	·	73	77	8 N	83	8.5	8.8	Q 1	0.8%
Coal 0.0 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>									
Electricity 0.0 0.0 0.0 0.0 0.1 0.1 0.1 0.1 9.1% Total 7.7 8.1 8.3 8.6 8.8 9.2 9.6 0.8% Components of energy use End-use consumption 1.2 8.7 1.2 8.7 1.2 9.8 Natural gas 14.3 14.9 15.8 16.6 17.7 18.8 20.0 1.2% Coal 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.2 1.2% Coal 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.2 1.2% Coal 0.3 0.3 0.3 0.3 0.3 0.3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.									
Total 7,7 8,1 8,3 8,6 8,8 9,2 9,6 0.8% Components of energy use End-use consumption Liquid fuels 13,4 14,0 14,5 15,3 16,0 16,6 17,2 0.9% Natural gas 14,3 14,9 15,8 16,6 17,7 18.8 20,0 1,2% Coal 0,3 0,3 0,3 0,3 0,3 0,3 0,3 0,2% Electricity 3,8 4,0 4,3 4,5 4,7 5,0 5,2 1,1% Renewables 0,0									
Components of energy use End-use consumption 13.4 14.0 14.5 15.3 16.0 16.6 17.2									
End-use consumption Liquid fuels 13.4 14.0 14.5 15.3 16.0 16.6 17.2 0.9% Natural gas 14.3 14.9 15.8 16.6 17.7 18.8 20.0 1.2% Coal 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 Electricity 3.8 4.0 4.3 4.5 4.7 5.0 5.2 1.1% Renewables 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Total end-use consumption 31.9 33.2 34.8 36.7 38.6 40.7 42.7 1.0% Electricity-related losses 7.0 8.5 7.8 7.9 8.0 8.3 8.7 0.8% Discrepancy 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 Total 38.2 41.0 42.0 43.9 45.9 48.3 50.6 1.0% Electric power Liquid fuels 2.3 2.7 1.4 0.6 0.3 0.1 0.0 0.5 Natural gas 7.9 8.4 8.6 9.5 9.9 10.0 9.6 0.7% Nuclear 0.2 0.7 0.7 0.8 0.9 0.9 0.9 0.9 0.9 Renewables 0.4 0.8 1.3 1.4 1.6 2.2 3.4 0.3% Total 10.8 12.5 12.0 12.4 12.7 13.2 13.9 0.9 Total endruse consumption 15.0 4.3% 4.3% 4.3% 4.3% 4.3% Total endruse consumption 15.0 15.8 15.1 15.1 15.4 15.8 16.3 0.3% Nuclear 0.2 2.3 2.3 2.4 2.4 2.6 2.3 2.7 2.9 2.9 2.9 2.0 Total endruse consumption 15.0 15.8 15.1 15.1 15.1 15.4 15.8 16.3 0.3% Nuclear 0.2 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 Nuclear 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 Nuclear 0.5		,,,	0.1	0.5	0.0	0.0	J.L	3.0	0.07.0
Liquid fuels									
Natural gas 14.3 14.9 15.8 16.6 17.7 18.8 20.0 1.2% Coal 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.27 1.0% 0.0	·	13.4	14.0	14 5	15.3	16.0	16.6	17 2	0.9%
Coal 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.2% Electricity 3.8 4.0 4.3 4.5 4.7 5.0 5.2 1.1% Renewables 0.0									
Electricity 3.8	· · · · · · · · · · · · · · · · · · ·								
Renewables 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 1.0% 1.0% 1.0% 1.0% 1.0% 0.8% 0.8% 8.3 8.7 0.8% 0.8% 1.0% 0.8% 0.8% 8.3 8.7 0.8% 0.8% 0.8% 8.3 8.7 0.8% 0.8% 0.8% 8.3 8.7 0.8% 0.8% 0.9 4.0% 0.0%									
Total end-use consumption 31.9 33.2 34.8 36.7 38.6 40.7 42.7 1.0% Electricity-related losses 7.0 8.5 7.8 7.9 8.0 8.3 8.7 0.8% Discrepancy -0.7 -0.8 -0.9 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>									
Electricity-related losses 7.0									
Discrepancy -0.7	•								
Total 38.2 41.0 42.0 43.9 45.9 48.3 50.6 1.0% Electric power Liquid fuels 2.3 2.7 1.4 0.6 0.3 0.1 0.0 -15.0% Natural gas 7.9 8.4 8.6 9.5 9.9 10.0 9.6 0.7% Coal 0.0									
Electric power Liquid fuels 2.3 2.7 1.4 0.6 0.3 0.1 0.0 -15.0% Natural gas 7.9 8.4 8.6 9.5 9.9 10.0 9.6 0.7% Coal 0.0									1.0%
Liquid fuels 2.3 2.7 1.4 0.6 0.3 0.1 0.0 -15.0% Natural gas 7.9 8.4 8.6 9.5 9.9 10.0 9.6 0.7% Coal 0.0								30.0	
Natural gas 7.9 8.4 8.6 9.5 9.9 10.0 9.6 0.7% Coal 0.0 <t< td=""><td></td><td>2.3</td><td>2.7</td><td>1.4</td><td>0.6</td><td>0.3</td><td>0.1</td><td>0.0</td><td>-15.0%</td></t<>		2.3	2.7	1.4	0.6	0.3	0.1	0.0	-15.0%
Coal 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 6.1% Nuclear 0.2 0.7 0.7 0.8 0.9 0.9 0.9 0.9 4.7% Renewables 0.4 0.8 1.3 1.4 1.6 2.2 3.4 8.3% Total 10.8 12.5 12.0 12.4 12.7 13.2 13.9 0.9% Total energy consumption 15.0 15.8 15.1 15.1 15.4 15.8 16.3 0.3% Natural gas 22.4 23.4 24.6 26.3 27.7 29.0 29.7 1.0% Coal 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 Nuclear 0.2 0.7 0.7 0.8 0.9 0.9 0.9 0.9 0.9 4.7%									
Nuclear 0.2 0.7 0.7 0.8 0.9 0.9 0.9 0.9 4.7% Renewables 0.4 0.8 1.3 1.4 1.6 2.2 3.4 8.3% Total 10.8 12.5 12.0 12.4 12.7 13.2 13.9 0.9% Total energy consumption Liquid fuels 15.0 15.8 15.1 15.1 15.4 15.8 16.3 0.3% Natural gas 22.4 23.4 24.6 26.3 27.7 29.0 29.7 1.0% Coal 0.3 0.3 0.3 0.3 0.3 0.3 0.3 Nuclear 0.2 0.7 0.7 0.8 0.9 0.9 0.9 0.9 4.7%									
Renewables 0.4 0.8 1.3 1.4 1.6 2.2 3.4 8.3% Total 10.8 12.5 12.0 12.4 12.7 13.2 13.9 0.9% Total energy consumption Liquid fuels 15.0 15.8 15.1 15.1 15.4 15.8 16.3 0.3% Natural gas 22.4 23.4 24.6 26.3 27.7 29.0 29.7 1.0% Coal 0.3 0.3 0.3 0.3 0.3 0.3 0.3 Nuclear 0.2 0.7 0.7 0.8 0.9 0.9 0.9 0.9 0.9									
Total 10.8 12.5 12.0 12.4 12.7 13.2 13.9 0.9% Total energy consumption Liquid fuels 15.0 15.8 15.1 15.1 15.4 15.8 16.3 0.3% Natural gas 22.4 23.4 24.6 26.3 27.7 29.0 29.7 1.0% Coal 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.1% Nuclear 0.2 0.7 0.7 0.8 0.9 0.9 0.9 0.9 4.7%									
Total energy consumption Liquid fuels 15.0 15.8 15.1 15.1 15.4 15.8 16.3 0.3% Natural gas 22.4 23.4 24.6 26.3 27.7 29.0 29.7 1.0% Coal 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.1% Nuclear 0.2 0.7 0.7 0.8 0.9 0.9 0.9 0.9 4.7%									
Liquid fuels 15.0 15.8 15.1 15.1 15.4 15.8 16.3 0.3% Natural gas 22.4 23.4 24.6 26.3 27.7 29.0 29.7 1.0% Coal 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 Nuclear 0.2 0.7 0.7 0.8 0.9 0.9 0.9 0.9 4.7%									
Natural gas 22.4 23.4 24.6 26.3 27.7 29.0 29.7 1.0% Coal 0.3	· · · · · · · · · · · · · · · · · · ·	15.0	15.8	15.1	15.1	15.4	15.8	16.3	0.3%
Coal 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.1% Nuclear 0.2 0.7 0.7 0.8 0.9 0.9 0.9 0.9 4.7%									
Nuclear 0.2 0.7 0.7 0.8 0.9 0.9 0.9 4.7%									

Total 38.2 41.0 42.0 43.9 45.9 48.3 50.6 1.0%

Data source: U.S. Energy Information Administration, World Energy Projection System (2023), run lz_230821.151531 and Annual Energy Outlook 2023 (March 2023), www.eia.gov/aeo

Note: Totals may not equal sum of components due to independent rounding. End-use sector electricity consumption and end-use sector delivered energy consumption do not include electrical system energy losses incurred in the generation, transmission, and distribution of electricity. Electricity-related losses include energy losses during generation due to thermal efficiency, energy losses during transmission and distribution, and parasitic load. In all regions except the United States, fuel consumed to produce district heat is allocated to the residential, commercial, and industrial end-use sectors according to their respective share of heat demand. We converted electricity generation from renewable sources such as hydroelectric, wind, or solar to British thermal units at a rate of 8,124 British thermal units per kilowatthour, which reflects the average projected conversion efficiency of the U.S. fossil-fueled generating fleet in the Annual Energy Outlook 2021 over the projection period (2022–2050).