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Analysis of Strategies for Reducing Multiple Emissions from Electric Power plants with Advanced Technology Scenarios

Table ES4. Energy Market Projections in the *CEF-JL* Moderate and Advanced Cases, 2020

		2020				
			CEF-JL Moderate		*CEF-JL* Advanced	
Projections	1999	Reference	Without Emissions Limits	With Emissions Limits	Without Emissions Limits	With Emissions Limits
Primary Energy Consumption (Quadrillion Btu)						
Petroleum	37.9	50.4	47.9	47.9	42.4	42.5
Natural Gas	22.3	35.9	31.3	33.8	30.7	32.0
Coal	21.4	26.3	25.8	15.7	18.3	15.5
Nuclear Power	7.8	6.5	6.4	6.9	6.1	6.6
Renewable Energy	6.5	8.4	8.6	11.5	10.8	11.1
Total	**96.3**	**127.7**	**120.2**	**116.2**	**108.7**	**107.9**
Change in Primary Energy Intensity (Annual Percent Change, 1999-2020)	—	**-1.6**	**-1.9**	**-2.0**	**-2.4**	**-2.4**
Electricity Sales (Billion Kilowatthours)	**3,294**	**4,763**	**4,197**	**3,910**	**3,862**	**3,855**
Electricity Generation, Excluding Cogenerators (Billion Kilowatthours)						
Coal	1,830	2,302	2,296	1,284	1,567	1,276
Petroleum	85	23	21	11	10	9
Natural Gas	370	1,488	908	1,330	1,181	1,416
Nuclear Power	730	610	595	646	575	617
Renewables	355	399	413	624	551	561
Total	**3,369**	**4,821**	**4,231**	**3,893**	**3,883**	**3,878**
Electricity Generation by Cogenerators (Billion Kilowatthours)	**303**	**440**	**443**	**607**	**470**	**463**
Prices						
Natural Gas Wellhead Price (1999 Dollars per Thousand Cubic Feet)	2.08	3.10	2.48	2.82	2.36	2.61
Coal Minemouth Price (1999 Dollars per Short Ton)	17.13	12.93	12.78	13.47	11.51	13.45
Average Delivered Electricity Price (1999 Cents per Kilowatthour)	6.7	6.1	6.0	7.2	6.6	6.6
Cumulative Resource Cost for Electricity Generation, 2001-2020 (Billion 1999 Dollars)	—	**2,031**	**1,751**	**1,913**	**1,682**	**1,811**
Emissions[a]						
CO_2 (Million Metric Tons Carbon Equivalent)[b]	1,511	2,044	1,914	1,690	1,615	1,558
SO_2 (Million Tons)	13.5	9.0	9.0	2.2	4.5	2.2
NO_x (Million Tons)	5.4	4.5	4.3	1.7	3.2	1.6
Hg (Tons)	43.4	45.2	46.2	4.3	29.4	4.3
Allowance Prices						
CO_2 (1999 Dollars per Metric Ton Carbon Equivalent)	0	0	0	68	50	50
SO_2 (1999 Dollars per Ton)	0	200	184	905	707	670
NO_x (1999 Dollars per Ton)[c]	0	0	0	81	0	0
Hg (Million 1999 Dollars per Ton)	0	0	0	468	0	391

[a] CO_2 emissions are from all energy sectors. Other emissions are from electricity generators, excluding cogenerators.
[b] CO_2 emissions are from energy combustion only and do not include emissions from energy production or industrial processes.
[c] Regional NO_x limits are included in the reference case, but the corresponding allowance costs are not included in the table because they are not comparable to a national NO_x limit.
Source: National Energy Modeling System, runs SCENABS.D080301A, SCENCBS.D080301A, SCENCEM.D081601A, SCENDBS.D092601B, and SCENDEMR.D092701A.