



**Corrigendum:** 8<sup>th</sup> ASEAN Energy Outlook (AEO8)

**Issued:** November 2024

**Link to report:** <https://aseanenergy.org/publications/the-8th-asean-energy-outlook/>

### **Page 10**

Replace List of Contents: D.4 Secondary Analysis

With updated: D.4 Socio-Economic Analysis

### **Page 26**

The GDP per capita attained USD 5.3 trillion<sup>1</sup> in 2022 (Figure 1.3), rising from USD 5 trillion<sup>2</sup> in 2021. Having the largest population, Indonesia has contributed the most to ASEAN's GDP since 2005, with a total GDP of USD 1,319 billion in 2022. Thailand and Singapore accounted for the second and third largest share, reaching USD 495 billion and USD 467 billion, respectively. However, in terms of GDP per capita, Singapore reported the highest with USD 82.8 thousand, followed by Brunei Darussalam (USD 37.2 thousand) and Malaysia (USD 12 thousand). This highlights the economic disparities between countries in the region. With an estimated 4.7%<sup>3</sup> growth rate in 2023, ASEAN grows faster, as compared to the expected global average growth rate of 2.7%. From 2023 to 2050, the average GDP growth rate of ASEAN is projected to be 4%.

<sup>1</sup> Replace with: USD 5.3 thousand

<sup>2</sup> Replace with: USD 5 thousand

<sup>3</sup> Replace with: 4.1%



Country	Net Zero/Carbon Neutrality Target	NDC Target (Reduction of GHG Emission)	
		Unconditional	Conditional
Lao PDR	Net Zero by 2050, conditionally	-60% from 2030 BAU scenario	-45.69 MtCO <sub>2</sub> -eq/yr in 2030-2030
Malaysia	Net Zero by 2050	-45% of carbon intensity from 2005 levels	-
Myanmar	Net Zero from forestry and other land use by 2040	-244.52 MtCO <sub>2</sub> -eq (sectoral targets)	-414.75 MtCO <sub>2</sub> e (sectoral targets)
Philippines	No specific target	-2.71% from 2020 to 2030 cumulative BAU scenario	-75% from 2020 to 2030 cumulative BAU scenario
Singapore	Net Zero by 2050	Peak absolute emissions at 65 MtCO <sub>2</sub> -eq	-
Thailand	Carbon Neutrality by 2050; Net Zero by 2065	-30% from 2030 BAU scenario	-40% from 2030 BAU scenario
Vietnam	Net Zero by 2050	-15.8% from 2030 BAU scenario	-43.5% from 2030 BAU scenario

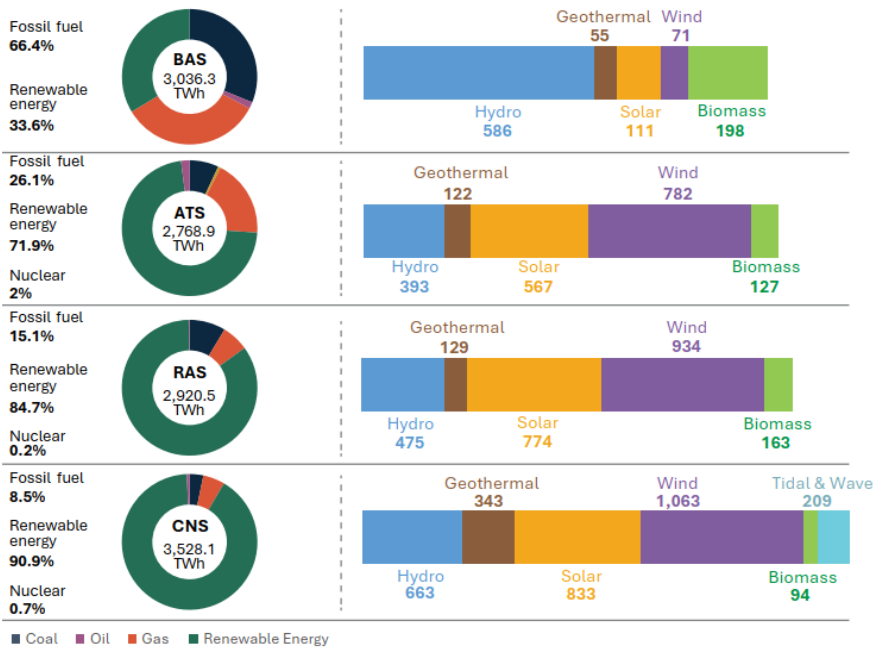
Title of column table, replace with: NDC target in 2030

Conditional Lao PDR, replace 2030 – 2030 with 2020 – 2030

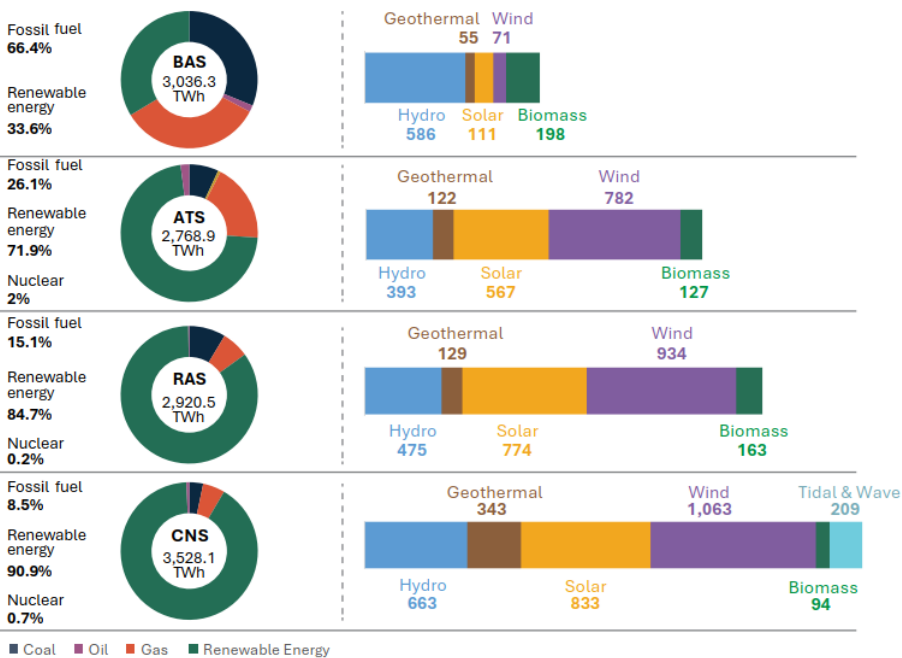
Unconditional Singapore, replace 65 with 60



Replace figure:

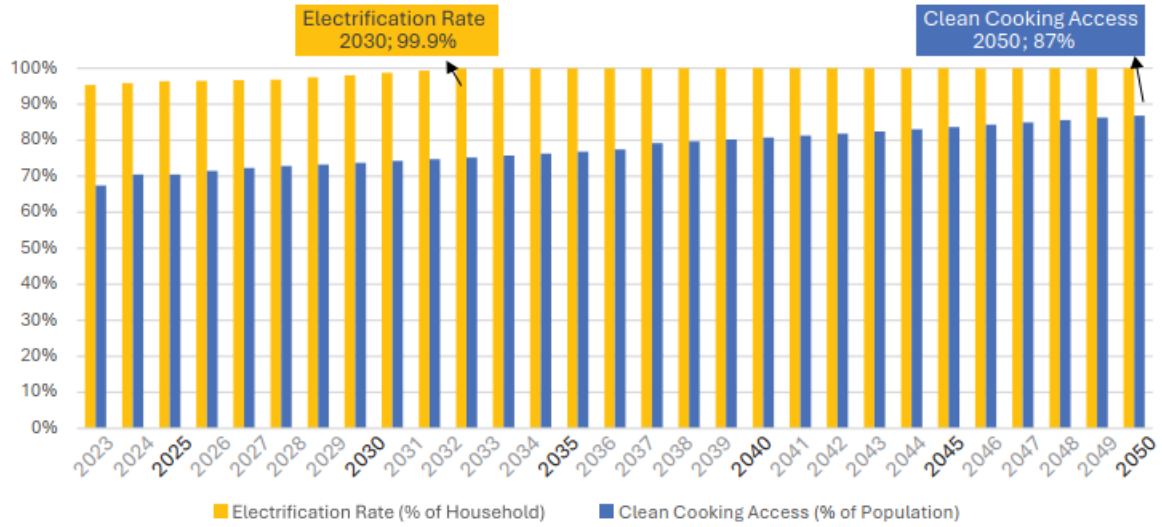


With updated figure:





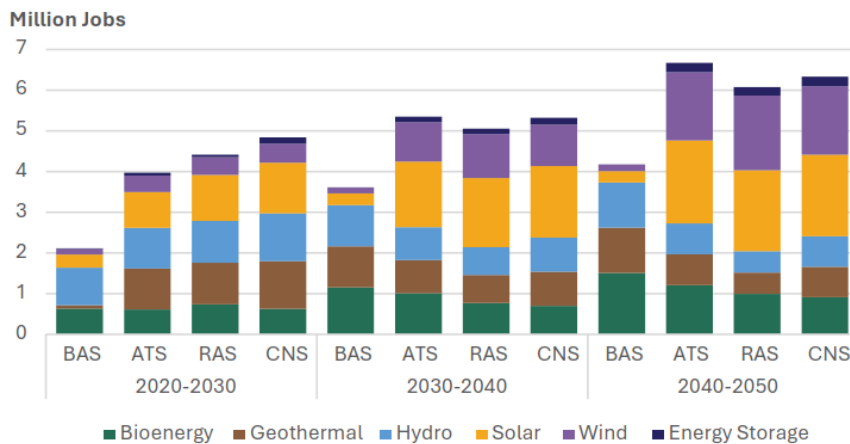
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Revise the arrow pointer on bar 2032, replace it with 2030

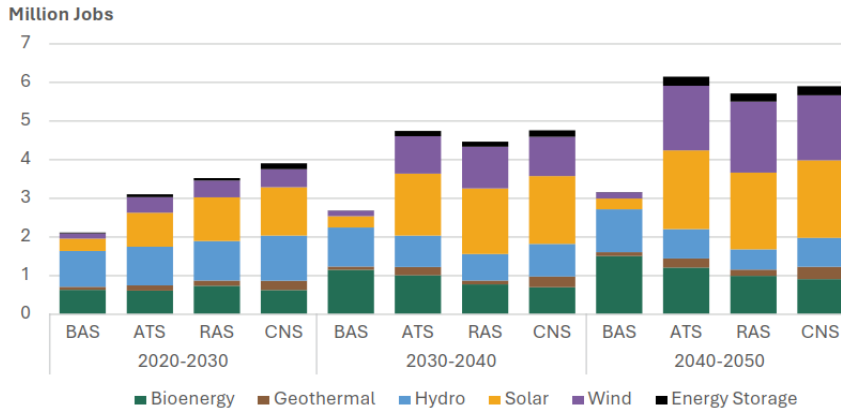
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Replace figure:





With updated figure:



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The power investment cost across scenarios shows an upward trend by 2050 as the scale of additional installed capacity is projected to increase. In Figure 3.37, the required investment in ATS is higher than the BAS given the strengthened commitment of AMS under their Power Development Plan (PDP). The annual investment cost in 2050 under BAS would account for USD 27 billion, which is about 16% lower than the ATS. Meanwhile, cost differences between the ATS and RAS are not significantly different<sup>1</sup>, with annual investment costs in 2050 being USD 32 billion and 274 billion, respectively.

<sup>1</sup>Replace with: substantial



Replace table in Appendix C.1

Fuel	Historical		Baseline Scenario						Share of TPES			CAGR		
	2005	2022	2025	2030	2035	2040	2045	2050	2022	2030	2050	2022-2030	2022-2050	2030-2050
Coal	53.3	212.8	223.0	258.9	301.2	350.8	408.9	473.6	30.5%	27.3%	26.0%	2.5%	2.9%	3.1%
Oil	181.1	221.6	251.2	300.7	353.9	410.7	474.5	543.0	31.7%	31.8%	29.8%	3.9%	3.3%	3.0%
Natural Gas	105.4	137.5	165.6	197.1	231.6	272.0	318.4	370.5	19.7%	20.8%	20.3%	4.6%	3.6%	3.2%
Hydropower	4.7	19.5	21.7	25.9	29.4	33.8	38.4	43.3	2.8%	2.7%	2.4%	3.6%	2.9%	2.6%
Geothermal	14.2	23.3	23.1	25.7	29.7	34.3	39.6	45.0	3.3%	2.7%	2.5%	1.2%	2.4%	2.8%
Modern Biomass	23.2	61.6	77.3	115.9	157.6	205.4	258.0	318.1	8.8%	12.2%	17.5%	8.2%	6.0%	5.2%
Traditional Biomass	39.9	17.2	15.4	14.5	13.3	12.7	12.4	11.9	2.5%	1.5%	0.7%	-2.1%	-1.3%	-1.0%
Solar and Wind	0.0	4.8	6.1	8.2	10.6	13.2	15.9	17.1	0.7%	0.9%	0.9%	6.9%	4.6%	3.8%
Nuclear	-0.6	-0.1	0.3	0.2	-0.1	0.0	-0.1	0.0	0.0%	0.0%	0.0%	-	-	-6.2%
Electricity	421.2	698.1	783.7	947.0	1,127.2	1,333.0	1,566.1	1,822.6	100.0%	100.0%	100.0%	3.9%	3.5%	3.3%
Total	421.2	698.1	739.6	820.4	904.4	992.3	1,101.6	1,219.5	100.0%	86.6%	66.9%	2.0%	2.0%	2.0%

Fuel	Historical		ATS						Share of TPES			CAGR		
	2005	2022	2025	2030	2035	2040	2045	2050	2022	2030	2050	2022-2030	2022-2050	2030-2050
Coal	53.3	212.8	193.2	192.3	173.7	174.7	171.2	176.2	30.5%	23.4%	14.4%	-1.3%	-0.7%	-0.4%
Oil	181.1	221.6	231.7	250.7	267.9	285.6	306.7	328.5	31.7%	30.6%	26.9%	1.6%	1.4%	1.4%
Natural Gas	105.4	137.5	155.9	173.1	193.0	212.7	240.9	268.0	19.7%	21.1%	22.0%	2.9%	2.4%	2.2%
Hydropower	4.7	19.5	23.9	26.9	29.0	28.9	28.1	31.2	2.8%	3.3%	2.6%	4.1%	1.7%	0.7%
Geothermal	14.2	23.3	31.3	43.9	61.8	72.1	86.9	104.3	3.3%	5.3%	8.6%	8.2%	5.5%	4.4%
Modern Biomass	23.2	61.6	77.9	99.1	122.9	142.9	174.0	204.4	8.8%	12.1%	16.8%	6.1%	4.4%	3.7%
Traditional Biomass	39.9	17.2	13.6	11.3	9.4	8.1	7.2	6.1	2.5%	1.4%	0.5%	-5.1%	-3.6%	-3.0%
Solar and Wind	0.0	4.8	11.8	23.0	41.7	67.8	100.7	124.4	0.7%	2.8%	10.2%	21.7%	12.3%	8.8%
Nuclear	0.0	0.0	0.0	0.0	6.3	9.2	11.2	13.8	0.0%	0.0%	1.1%	-	-	-
Electricity	-0.6	-0.1	0.3	0.1	-1.3	-9.8	-25.1	-37.4	0.0%	0.0%	-3.1%	-	23.0%	-
Total	421.2	698.1	739.6	820.4	904.4	992.3	1,101.6	1,219.5	100.0%	86.6%	66.9%	2.0%	2.0%	2.0%

Fuel	Historical		RAS						Share of TPES			CAGR		
	2005	2022	2025	2030	2035	2040	2045	2050	2022	2030	2050	2022-2030	2022-2050	2030-2050
Coal	53.3	212.8	194.8	205.4	188.3	179.7	163.5	148.3	30.5%	27.1%	14.7%	-0.4%	-1.3%	-1.6%
Oil	181.1	221.6	218.0	226.0	232.6	239.3	250.0	261.5	31.7%	29.8%	25.8%	0.2%	0.6%	0.7%
Natural Gas	105.4	137.5	151.7	147.1	150.6	155.0	162.2	166.6	19.7%	19.4%	16.5%	0.8%	0.7%	0.6%
Hydropower	4.7	19.5	23.9	26.1	31.6	35.9	37.1	39.7	2.8%	3.4%	3.9%	3.7%	2.6%	2.1%
Geothermal	14.2	23.3	30.6	40.1	39.9	55.8	68.7	100.5	3.3%	5.3%	9.9%	7.0%	5.4%	4.7%
Modern Biomass	23.2	61.6	70.3	90.1	113.5	133.3	166.5	201.7	8.8%	11.9%	19.9%	4.9%	4.3%	4.1%
Traditional Biomass	39.9	17.2	9.1	4.3	1.4	0.5	0.3	0.2	2.5%	0.6%	0.0%	-15.9%	-14.9%	-14.5%
Solar and Wind	-	4.8	13.4	33.3	54.2	83.4	127.9	168.3	0.7%	4.4%	16.6%	27.4%	13.5%	8.4%
Nuclear	-	-	-	-	2.0	4.6	1.6	1.6	0.0%	0.0%	0.2%	-	-	-
Electricity	-0.6	-0.1	-6.6	-14.2	-18.4	-31.2	-54.7	-76.3	0.0%	-1.9%	-7.5%	82.9%	26.2%	8.8%
Total	259.3	432.2	438.8	467.2	491.0	517.6	548.2	577.7	100.0%	100.0%	100.0%	1.0%	1.0%	1.1%

Fuel	Historical		CNS						Share of TPES			CAGR		
	2005	2022	2025	2030	2035	2040	2045	2050	2022	2030	2050	2022-2030	2022-2050	2030-2050
Coal	53.3	212.8	186.7	173.0	129.9	101.0	62.8	36.8	30.5%	22.6%	3.6%	-2.6%	-6.1%	-7.4%
Oil	181.1	221.6	200.2	178.1	161.0	139.5	119.5	99.1	31.7%	23.3%	9.7%	-2.7%	-2.8%	-2.9%
Natural Gas	105.4	137.5	151.1	154.5	168.6	181.6	192.7	203.4	19.7%	20.2%	20.0%	1.5%	1.4%	1.4%
Hydropower	4.7	19.5	26.2	32.3	43.2	49.7	53.6	56.4	2.8%	4.2%	5.5%	6.5%	3.9%	2.8%
Geothermal	14.2	23.3	45.6	74.5	109.8	174.0	232.7	263.1	3.3%	9.8%	25.8%	15.6%	9.0%	6.5%
Modern Biomass	23.2	61.6	80.9	112.9	143.0	166.9	188.8	193.7	8.8%	14.8%	19.0%	7.9%	4.2%	2.7%
Traditional Biomass	39.9	17.2	7.6	0.5	0.2	0.2	0.2	0.2	2.5%	0.1%	0.0%	-35.1%	-15.2%	-5.7%
Solar and Wind	-	4.8	17.7	44.8	67.3	95.8	139.4	184.2	0.7%	5.9%	18.1%	32.2%	13.9%	7.3%
Nuclear	-	-	-	-	2.1	6.8	5.0	5.4	0.0%	0.0%	0.5%	-	-	-
Tidal and Wave	-	-	-	-	2.0	4.4	10.1	18.0	0.0%	0.0%	1.8%	-	-	-
Electricity	-0.6	-0.1	-5.3	-6.6	-8.9	-15.0	-28.4	-41.9	0.0%	-0.9%	-4.1%	66.1%	23.5%	9.7%
Total	421.2	698.1	710.8	764.1	818.1	904.8	976.4	1,018.4	100.0%	80.7%	55.9%	1.1%	1.4%	1.4%



With updated table:

Fuel	Historical		Baseline Scenario						Share of TPES			CAGR		
	2005	2022	2025	2030	2035	2040	2045	2050	2022	2030	2050	2022-2030	2022-2050	2030-2050
Coal	53.3	212.8	223.0	258.9	301.2	350.8	408.9	473.6	30.5%	27.3%	26.0%	2.5%	2.9%	3.1%
Oil	181.1	221.6	251.2	300.7	353.9	410.7	474.5	543.0	31.7%	31.8%	29.8%	3.9%	3.3%	3.0%
Natural Gas	105.4	137.5	165.6	197.1	231.6	272.0	318.4	370.5	19.7%	20.8%	20.3%	4.6%	3.6%	3.2%
Hydropower	4.7	19.5	21.7	25.9	29.4	33.8	38.4	43.3	2.8%	2.7%	2.4%	3.6%	2.9%	2.6%
Geothermal	14.2	23.3	23.1	25.7	29.7	34.3	39.6	45.0	3.3%	2.7%	2.5%	1.2%	2.4%	2.8%
Modern Biomass	23.2	61.6	77.3	115.9	157.6	205.4	258.0	318.1	8.8%	12.2%	17.5%	8.2%	6.0%	5.2%
Traditional Biomass	39.9	17.2	15.4	14.5	13.3	12.7	12.4	11.9	2.5%	1.5%	0.7%	-2.1%	-1.3%	-1.0%
Solar and Wind	0.0	4.8	6.1	8.2	10.6	13.2	15.9	17.1	0.7%	0.9%	0.9%	6.9%	4.6%	3.8%
Nuclear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%	0.0%	0.0%	-	-	-
Electricity	-0.6	-0.1	0.3	0.2	-0.1	0.0	-0.1	0.0	0.0%	0.0%	0.0%	-	-	-6.2%
Total	421.2	698.1	783.7	947.0	1,127.2	1,333.0	1,566.1	1,822.6	100.0%	100.0%	100.0%	3.9%	3.5%	3.3%

Fuel	Historical		ATS						Share of TPES			CAGR		
	2005	2022	2025	2030	2035	2040	2045	2050	2022	2030	2050	2022-2030	2022-2050	2030-2050
Coal	53.3	212.8	193.2	192.3	173.7	174.7	171.2	176.2	30.5%	23.4%	14.4%	-1.3%	-0.7%	-0.4%
Oil	181.1	221.6	231.7	250.7	267.9	285.6	306.7	328.5	31.7%	30.6%	26.9%	1.6%	1.4%	1.4%
Natural Gas	105.4	137.5	155.9	173.1	193.0	212.7	240.9	268.0	19.7%	21.1%	22.0%	2.9%	2.4%	2.2%
Hydropower	4.7	19.5	23.9	26.9	29.0	28.9	28.1	31.2	2.8%	3.3%	2.6%	4.1%	1.7%	0.7%
Geothermal	14.2	23.3	31.3	43.9	61.8	72.1	86.9	104.3	3.3%	5.3%	8.6%	8.2%	5.5%	4.4%
Modern Biomass	23.2	61.6	77.9	99.1	122.9	142.9	174.0	204.4	8.8%	12.1%	16.8%	6.1%	4.4%	3.7%
Traditional Biomass	39.9	17.2	13.6	11.3	9.4	8.1	7.2	6.1	2.5%	1.4%	0.5%	-5.1%	-3.6%	-3.0%
Solar and Wind	0.0	4.8	11.8	23.0	41.7	67.8	100.7	124.4	0.7%	2.8%	10.2%	21.7%	12.3%	8.8%
Nuclear	0.0	0.0	0.0	0.0	6.3	9.2	11.2	13.8	0.0%	0.0%	1.1%	-	-	-
Electricity	-0.6	-0.1	0.3	0.1	-1.3	-9.8	-25.1	-37.4	0.0%	0.0%	-3.1%	-	23.0%	-
Total	421.2	698.1	739.6	820.4	904.4	992.3	1,101.6	1,219.5	100.0%	100.0%	100.0%	2.0%	2.0%	2.0%

Fuel	Historical		RAS						Share of TPES			CAGR		
	2005	2022	2025	2030	2035	2040	2045	2050	2022	2030	2050	2022-2030	2022-2050	2030-2050
Coal	53.3	212.8	194.8	205.4	188.3	179.7	163.5	148.3	30.5%	27.1%	14.7%	-0.4%	-1.3%	-1.6%
Oil	181.1	221.6	218.0	226.0	232.6	239.3	250.0	261.5	31.7%	29.8%	25.8%	0.2%	0.6%	0.7%
Natural Gas	105.4	137.5	151.7	147.1	150.6	155.0	162.2	166.6	19.7%	19.4%	16.5%	0.8%	0.7%	0.6%
Hydropower	4.7	19.5	23.9	26.1	31.6	35.9	37.1	39.7	2.8%	3.4%	3.9%	3.7%	2.6%	2.1%
Geothermal	14.2	23.3	30.6	40.1	39.9	55.8	68.7	100.5	3.3%	5.3%	9.9%	7.0%	5.4%	4.7%
Modern Biomass	23.2	61.6	70.3	90.1	113.5	133.3	166.5	201.7	8.8%	11.9%	19.9%	4.9%	4.3%	4.1%
Traditional Biomass	39.9	17.2	9.1	4.3	1.4	0.5	0.3	0.2	2.5%	0.6%	0.0%	-15.9%	-14.9%	-14.5%
Solar and Wind	0.0	4.8	13.4	33.3	54.2	83.4	127.9	168.3	0.7%	4.4%	16.6%	27.4%	13.5%	8.4%
Nuclear	0.0	0.0	0.0	0.0	2.0	4.6	1.6	1.6	0.0%	0.0%	0.2%	-	-	-
Electricity	-0.6	-0.1	-6.6	-14.2	-18.4	-31.2	-54.7	-76.3	0.0%	-1.9%	-7.5%	82.9%	26.2%	8.8%
Total	421.2	698.1	705.2	758.3	795.6	856.4	923.2	1,012.1	100.0%	100.0%	100.0%	1.0%	1.0%	1.1%

Fuel	Historical		CNS						Share of TPES			CAGR		
	2005	2022	2025	2030	2035	2040	2045	2050	2022	2030	2050	2022-2030	2022-2050	2030-2050
Coal	53.3	212.8	186.7	173.0	129.9	101.0	62.8	36.8	30.5%	22.6%	3.6%	-2.6%	-6.1%	-7.4%
Oil	181.1	221.6	200.2	178.1	161.0	139.5	119.5	99.1	31.7%	23.3%	9.7%	-2.7%	-2.8%	-2.9%
Natural Gas	105.4	137.5	151.1	154.5	168.6	181.6	192.7	203.4	19.7%	20.2%	20.0%	1.5%	1.4%	1.4%
Hydropower	4.7	19.5	26.2	32.3	43.2	49.7	53.6	56.4	2.8%	4.2%	5.5%	6.5%	3.9%	2.8%
Geothermal	14.2	23.3	45.6	74.5	109.8	174.0	232.7	263.1	3.3%	9.8%	25.8%	15.6%	9.0%	6.5%
Modern Biomass	23.2	61.6	80.9	112.9	143.0	166.9	188.8	193.7	8.8%	14.8%	19.0%	7.9%	4.2%	2.7%
Traditional Biomass	39.9	17.2	7.6	0.5	0.2	0.2	0.2	0.2	2.5%	0.1%	0.0%	-35.1%	-15.2%	-5.7%
Solar and Wind	0.0	4.8	17.7	44.8	67.3	95.8	139.4	184.2	0.7%	5.9%	18.1%	32.2%	13.9%	7.3%
Nuclear	0.0	0.0	0.0	0.0	2.1	6.8	5.0	5.4	0.0%	0.0%	0.5%	-	-	-
Tidal and Wave	0.0	0.0	0.0	0.0	2.0	4.4	10.1	18.0	0.0%	0.0%	1.8%	-	-	-
Electricity	-0.6	-0.1	-5.3	-6.6	-8.9	-15.0	-28.4	-41.9	0.0%	-0.9%	-4.1%	66.1%	23.5%	9.7%
Total	421.2	698.1	710.8	764.1	818.1	904.8	976.4	1,018.4	100.0%	100.0%	100.0%	1.1%	1.4%	1.4%



Replace table in Appendix C.6

Fuel	Historical		Baseline Scenario						Generation Share			CAGR		
	2005	2022	2025	2030	2035	2040	2045	2050	2022	2030	2050	2022-2030	2022-2050	2030-2050
Coal	139.8	532.5	509.3	563.0	635.2	720.2	825.3	946.3	41.9%	33.9%	31.2%	0.7%	2.1%	2.6%
Oil	34.9	24.5	43.9	42.9	44.1	44.7	46.4	47.5	1.9%	2.6%	1.6%	7.3%	2.4%	0.5%
Natural Gas	263.2	342.5	441.5	534.6	628.8	740.3	871.0	1,021.6	27.0%	32.2%	33.6%	5.7%	4.0%	3.3%
Hydro	55.0	248.0	269.1	329.4	383.4	445.9	512.8	585.8	19.5%	19.9%	19.3%	3.6%	3.1%	2.9%
Geothermal	16.5	27.1	27.1	30.6	35.4	41.2	47.8	54.7	2.1%	1.8%	1.8%	1.5%	2.5%	3.0%
Solar	0.0	39.4	46.3	59.1	74.0	89.3	105.3	110.6	3.1%	3.6%	3.6%	5.2%	3.8%	3.2%
Wind	0.0	13.4	22.4	29.8	39.7	52.1	63.8	71.3	1.1%	1.8%	2.3%	10.5%	6.1%	4.5%
Biomass, Biogas, Waste	3.7	42.9	41.8	69.4	99.6	130.7	162.5	198.5	3.4%	4.2%	6.5%	6.2%	5.6%	5.4%
<b>Total</b>	<b>513.1</b>	<b>1,270.3</b>	<b>1,401.4</b>	<b>1,658.8</b>	<b>1,940.2</b>	<b>2,264.6</b>	<b>2,635.0</b>	<b>3,036.3</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>3.4%</b>	<b>3.2%</b>	<b>3.1%</b>

Fuel	Historical		ATS						Generation Share			CAGR		
	2005	2022	2025	2030	2035	2040	2045	2050	2022	2030	2050	2022-2030	2022-2050	2030-2050
Coal	139.8	532.5	410.7	360.8	258.0	225.0	194.9	192.2	41.9%	24.5%	6.9%	-4.8%	-3.6%	-3.1%
Oil	34.9	24.5	43.4	39.1	29.6	23.5	18.6	17.1	1.9%	2.7%	0.6%	6.0%	-1.3%	-4.0%
Natural Gas	263.2	342.5	395.5	413.8	427.7	435.1	475.9	512.2	27.0%	28.1%	18.5%	2.4%	1.4%	1.1%
Hydro	55.0	248.0	291.5	328.4	357.9	360.9	354.7	393.0	19.5%	22.3%	14.2%	3.6%	1.7%	0.9%
Geothermal	16.5	27.1	36.7	51.9	72.9	84.9	101.7	121.9	2.1%	3.5%	4.4%	8.5%	5.5%	4.4%
Solar	0.0	39.4	67.1	98.9	207.9	315.4	442.0	567.3	3.1%	6.7%	20.5%	12.2%	10.0%	9.1%
Wind	0.0	13.4	53.5	129.9	218.5	406.5	649.1	781.7	1.1%	8.8%	28.2%	32.8%	15.6%	9.4%
Biomass, Biogas, Waste	3.7	42.9	43.6	49.1	72.4	89.4	107.0	127.2	3.4%	3.3%	4.6%	1.7%	4.0%	4.9%
Nuclear	0.0	0.0	0.0	0.0	26.2	37.7	45.2	56.2	0.0%	0.0%	2.0%	-	-	-
<b>Total</b>	<b>513.1</b>	<b>1,270.3</b>	<b>1,342.0</b>	<b>1,471.7</b>	<b>1,671.0</b>	<b>1,978.2</b>	<b>2,389.1</b>	<b>2,768.9</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>1.9%</b>	<b>2.8%</b>	<b>3.2%</b>

Fuel	Historical		RAS						Generation Share			CAGR		
	2005	2022	2025	2030	2035	2040	2045	2050	2022	2030	2050	2022-2030	2022-2050	2030-2050
Coal	139.8	532.5	456.9	457.1	376.4	334.7	297.0	251.8	41.9%	29.5%	8.6%	-1.9%	-2.6%	-2.9%
Oil	34.9	24.5	0.0	0.0	0.0	0.0	0.0	0.0	1.9%	0.0%	0.0%	-62.0%	-100.0%	-100.0%
Natural Gas	263.2	342.5	397.1	314.6	284.7	254.4	235.2	187.8	27.0%	20.3%	6.4%	-1.1%	-2.1%	-2.5%
Hydro	55.0	248.0	292.0	320.9	388.4	435.8	449.5	475.2	19.5%	20.7%	16.3%	3.3%	2.4%	2.0%
Geothermal	16.5	27.1	35.9	47.3	47.1	69.1	87.5	128.8	2.1%	3.1%	4.4%	7.2%	5.7%	5.1%
Solar	0.0	39.4	82.7	154.5	259.6	409.7	558.6	774.0	3.1%	10.0%	26.5%	18.6%	11.2%	8.4%
Wind	0.0	13.4	56.4	197.8	276.5	411.6	730.4	933.5	1.1%	12.8%	32.0%	40.0%	16.4%	8.1%
Biomass, Biogas, Waste	3.7	42.9	43.3	56.1	85.3	105.7	125.8	162.9	3.4%	3.6%	5.6%	3.4%	4.9%	5.5%
Nuclear	0.0	0.0	0.0	0.0	7.1	18.3	6.5	6.4	0.0%	0.0%	0.2%	-	-	-
<b>Total</b>	<b>513.1</b>	<b>1,270.3</b>	<b>1,364.4</b>	<b>1,548.3</b>	<b>1,725.2</b>	<b>2,039.3</b>	<b>2,490.4</b>	<b>2,920.5</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>2.5%</b>	<b>3.0%</b>	<b>3.2%</b>

Fuel	Historical		CNS						Generation Share			CAGR		
	2005	2022	2025	2030	2035	2040	2045	2050	2022	2030	2050	2022-2030	2022-2050	2030-2050
Coal	139.8	532.5	441.3	407.8	291.8	243.7	159.0	115.5	41.9%	24.5%	3.3%	-3.3%	-5.3%	-6.1%
Oil	34.9	24.5	2.4	0.8	0.0	0.0	0.0	0.0	1.9%	0.0%	0.0%	-34.6%	-100.0%	-100.0%
Natural Gas	263.2	342.5	399.1	337.6	312.3	268.4	224.6	183.7	27.0%	20.3%	5.2%	-0.2%	-2.2%	-3.0%
Hydro	55.0	248.0	319.0	391.0	519.9	595.0	638.3	663.5	19.5%	23.5%	18.8%	5.9%	3.6%	2.7%
Geothermal	16.5	27.1	53.8	89.1	133.5	216.4	296.5	342.5	2.1%	5.3%	9.7%	16.0%	9.5%	7.0%
Solar	0.0	39.4	86.8	162.7	287.5	419.9	590.1	833.2	3.1%	9.8%	23.6%	19.4%	11.5%	8.5%
Wind	0.0	13.4	66.0	223.2	302.0	444.2	771.2	1,063.4	1.1%	13.4%	30.1%	42.1%	16.9%	8.1%
Biomass, Biogas, Waste	3.7	42.9	44.2	52.6	75.0	91.8	103.1	93.7	3.4%	3.2%	2.7%	2.6%	2.8%	2.9%
Nuclear	0.0	0.0	0.0	0.0	8.0	28.3	20.2	23.3	0.0%	0.0%	0.7%	-	-	-
Tidal and Wave	0.0	0.0	0.0	0.0	23.6	51.2	117.6	209.4	0.0%	0.0%	5.9%	-	-	-
<b>Total</b>	<b>513.1</b>	<b>1,270.3</b>	<b>1,412.6</b>	<b>1,664.9</b>	<b>1,953.4</b>	<b>2,358.8</b>	<b>2,920.6</b>	<b>3,528.1</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>3.4%</b>	<b>3.7%</b>	<b>3.8%</b>





With updated table:

Fuel	Historical		Baseline Scenario						Emission Share			CAGR		
	2005	2022	2025	2030	2035	2040	2045	2050	2022	2030	2050	2022-2030	2022-2050	2030-2050
Industry	193.6	416.3	486.0	613.0	749.8	906.8	1,084.0	1,275.5	18.8%	21.5%	24.9%	5.0%	4.1%	3.7%
Transport	227.6	409.2	460.8	560.6	665.1	773.7	895.4	1,026.3	18.5%	19.7%	20.0%	4.0%	3.3%	3.1%
International Transport	113.2	169.2	171.8	177.5	184.2	191.9	200.4	209.6	7.6%	6.2%	4.1%	0.6%	0.8%	0.8%
Residential	58.2	51.9	52.5	54.3	55.8	57.1	58.1	58.8	2.3%	1.9%	1.1%	0.6%	0.4%	0.4%
Commercial	15.3	14.1	15.9	19.4	23.0	27.1	31.8	36.8	0.6%	0.7%	0.7%	4.1%	3.5%	3.3%
Agriculture and Others	26.5	19.9	22.7	28.7	35.3	42.9	51.7	61.1	0.9%	1.0%	1.2%	4.6%	4.1%	3.9%
Electricity Generation	321.7	769.7	811.1	898.7	1,012.2	1,148.2	1,310.6	1,498.2	34.8%	31.6%	29.2%	2.0%	2.4%	2.6%
Other Transformation	218.9	364.5	411.2	494.6	591.5	700.8	825.0	961.0	16.5%	17.4%	18.7%	3.9%	3.5%	3.4%
<b>Total</b>	<b>1,175.0</b>	<b>2,214.9</b>	<b>2,432.0</b>	<b>2,846.7</b>	<b>3,316.9</b>	<b>3,848.3</b>	<b>4,456.9</b>	<b>5,127.4</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>3.2%</b>	<b>3.0%</b>	<b>3.0%</b>

Fuel	Historical		ATS						Emission Share			CAGR		
	2005	2022	2025	2030	2035	2040	2045	2050	2022	2030	2050	2022-2030	2022-2050	2030-2050
Industry	193.6	416.3	465.2	545.6	621.1	699.7	780.2	857.6	18.8%	23.6%	30.8%	3.4%	2.6%	2.3%
Transport	227.6	409.2	413.8	444.4	464.7	480.4	500.1	518.3	18.5%	19.2%	18.6%	1.0%	0.8%	0.8%
International Transport	113.2	169.2	171.7	177.1	183.5	190.6	198.5	206.9	7.6%	7.7%	7.4%	0.6%	0.7%	0.8%
Residential	58.2	51.9	47.9	42.3	41.0	40.1	39.1	37.9	2.3%	1.8%	1.4%	-2.5%	-1.1%	-0.5%
Commercial	15.3	14.1	14.0	16.0	17.6	19.1	22.5	26.1	0.6%	0.7%	0.9%	1.6%	2.2%	2.5%
Agriculture and Others	26.5	19.9	22.7	28.6	35.1	42.6	51.1	60.3	0.9%	1.2%	2.2%	4.6%	4.0%	3.8%
Electricity Generation	321.7	769.7	688.8	633.3	505.2	457.8	405.1	389.1	34.8%	27.4%	14.0%	-2.4%	-2.4%	-2.4%
Other Transformation	218.9	364.5	383.1	427.3	480.6	541.6	614.0	689.2	16.5%	18.5%	24.7%	2.0%	2.3%	2.4%
<b>Total</b>	<b>1,175.0</b>	<b>2,214.9</b>	<b>2,207.3</b>	<b>2,314.5</b>	<b>2,348.8</b>	<b>2,472.1</b>	<b>2,610.7</b>	<b>2,785.4</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.6%</b>	<b>0.8%</b>	<b>0.9%</b>

Fuel	Historical		RAS						Emission Share			CAGR		
	2005	2022	2025	2030	2035	2040	2045	2050	2022	2030	2050	2022-2030	2022-2050	2030-2050
Industry	193.6	416.3	448.7	496.5	535.3	573.1	609.1	640.3	18.8%	22.5%	29.8%	2.2%	1.5%	1.3%
Transport	227.6	409.2	404.1	409.3	401.3	391.2	389.5	388.9	18.5%	18.5%	18.1%	0.0%	-0.2%	-0.3%
International Transport	113.2	169.2	171.7	177.1	183.5	190.6	198.5	206.9	7.6%	8.0%	9.6%	0.6%	0.7%	0.8%
Residential	58.2	51.9	46.3	37.8	33.3	28.7	24.2	19.8	2.3%	1.7%	0.9%	-3.9%	-3.4%	-3.2%
Commercial	15.3	14.1	12.0	10.3	11.1	11.8	13.1	14.2	0.6%	0.5%	0.7%	-3.8%	0.0%	1.6%
Agriculture and Others	26.5	19.9	22.7	28.6	35.1	42.6	51.1	60.3	0.9%	1.3%	2.8%	4.6%	4.0%	3.8%
Electricity Generation	321.7	769.7	672.9	651.2	539.2	462.9	361.6	258.3	34.8%	29.5%	12.0%	-2.1%	-3.8%	-4.5%
Other Transformation	218.9	364.5	377.8	400.1	432.2	469.4	510.9	557.1	16.5%	18.1%	26.0%	1.2%	1.5%	1.7%
<b>Total</b>	<b>1,175.0</b>	<b>2,214.9</b>	<b>2,156.2</b>	<b>2,211.0</b>	<b>2,170.9</b>	<b>2,170.3</b>	<b>2,158.0</b>	<b>2,145.8</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.0%</b>	<b>-0.1%</b>	<b>-0.1%</b>

Fuel	Historical		CNS						Emission Share			CAGR		
	2005	2022	2025	2030	2035	2040	2045	2050	2022	2030	2050	2022-2030	2022-2050	2030-2050
Industry	193.6	416.3	427.5	414.6	360.8	304.6	248.2	193.0	18.8%	21.6%	17.1%	-0.1%	-2.7%	-3.7%
Transport	227.6	409.2	352.8	296.6	266.8	220.3	168.5	110.7	18.5%	15.4%	9.8%	-3.9%	-4.6%	-4.8%
International Transport	113.2	169.2	165.8	140.8	106.0	72.9	44.2	20.2	7.6%	7.3%	1.8%	-2.3%	-7.3%	-9.3%
Residential	58.2	51.9	47.4	41.4	34.7	28.3	21.8	15.1	2.3%	2.2%	1.3%	-2.8%	-4.3%	-4.9%
Commercial	15.3	14.1	12.1	10.6	8.8	5.9	5.7	5.3	0.6%	0.5%	0.5%	-3.5%	-3.4%	-3.4%
Agriculture and Others	26.5	19.9	22.7	28.6	35.1	42.6	51.1	60.3	0.9%	1.5%	5.3%	4.6%	4.0%	3.8%
Electricity Generation	321.7	769.7	658.8	589.0	441.5	350.3	214.8	129.2	34.8%	30.7%	11.4%	-3.3%	-6.2%	-7.3%
Other Transformation	218.9	364.5	369.9	399.6	447.8	499.5	550.8	597.8	16.5%	20.8%	52.8%	1.2%	1.8%	2.0%
<b>Total</b>	<b>1,175.0</b>	<b>2,214.9</b>	<b>2,057.0</b>	<b>1,921.1</b>	<b>1,701.5</b>	<b>1,524.3</b>	<b>1,305.2</b>	<b>1,131.5</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>-1.8%</b>	<b>-2.4%</b>	<b>-2.6%</b>



**Page 186**

Replace table in Appendix C.7.3

Fuel	2030		2040		2050	
	BAU	OPT	BAU	OPT	BAU	OPT
Capital Costs	40.1	66.3	54.9	117.5	67.1	199.9
Feedstock Fuel Costs	57.2	33.7	75.2	23.5	100.3	12.7
Fixed O&M Costs	14.2	18.6	19.7	28.9	25.9	54.1
Total	556.9	417.6	723.5	343.5	945.7	332.5

With updated table:

Fuel	2030		2040		2050	
	BAU	OPT	BAU	OPT	BAU	OPT
Road Transport	349.9	348.2	534.9	523.9	764.2	744.6
Residential	7.4	7.0	8.1	7.0	9.6	7.8
Commercial	24.5	20.6	35.1	24.9	48.8	34.3
Total	381.9	375.8	578.1	555.8	822.6	786.8

**Page 195**

Replace text: D.4 Secondary Analysis

With text: D.4 Socio-Economic Analysis

**Page 196**

Replace number in Table D.16

EF	Wind	Solar	Hydro	Geothermal	Coal	Oil, Gas, Diesel, and Bioenergy	Battery Storage
Construction Time (years)	2	2	2	2	5	1	1
Manufacturing (Job-years/MW)	4.7	6.7	3.5	3.9	5.4	0.93	16.9
C&I (Job-years/MW)	3.2	13	7.4	6.8	11.2	1.3	10.8
O&M (Job/MW)	0.3	0.7	0.2	0.4	0.14	0.21	0.4
Fuel (Jobs/PJ)	-	-	-	-	39.7	15.1	-
Decommissioning (Job-years/MW)	0.72	0.8	2.22	0.21	1.65	0.44	0.8

Construction Time (years) – Wind, updated number: 2 → 1



**Page 197**

Replace hyperlink table note that mention: Table D.13 and Table D.14

With updated hyperlink table note: Table D.17 and Table D.18

**Page 198**

Replace hyperlink table note that mention: Table D.15 and Table D.16

With updated hyperlink table note: Table D.19 and Table D.20

**Page 199**

Replace hyperlink table note that mention: Table D.17

With updated hyperlink table note: Table D.21