

Analysis of a 10-Percent Renewable Portfolio Standard

Table 1. Cumulative Power Industry Cost¹ through 2025 and 2030, RPS Nominal Case and RPS Real Case (billions)

Valuation	Case	2025	2030²
2001 Dollars, Discounted at 7%	RPS Nominal Cap	3.9	5.1
	RPS Real Cap	4.9	6.2
2001 Dollars, not Discounted	RPS Nominal Cap	11.7	18.0
	RPS Real Cap	14.4	21.5
Nominal Dollars, not Discounted	RPS Nominal Cap	18.2	30.7
	RPS Real Cap	22.3	36.3
<p>1- Cost incurred by the power industry including fuel suppliers, equipment manufacturers, and Government RPS allowance costs. Does not include transfer payments within the industry, such as the purchase of RPS credits from private entities.</p> <p>2- NEMS calculates values through 2025. 2026-30 based on average costs from 2020 through 2025, and would vary from actual resource costs that would be calculated within NEMS if the forecast horizon of the model were extended.</p> <p>Source: EIA Office of Integrated Analysis and Forecasting. National Energy Modeling System (NEMS) runs mlbase.d050303a (Reference Case), ml_brpssm.d051203d (RPS Nominal case), and ml_brpssmr.d060403b (RPS Real case)</p>			

Table 2. Credit and Allowance Cost for RPS Nominal Case and RPS Real Case (billions)

Year	RPS Nominal Case				RPS Real Case			
	Nominal, undiscounted		2001 dollars, undiscounted		Nominal, undiscounted		2001 dollars undiscounted	
	Credit	Allowance	Credit	Allowance	Credit	Allowance	Credit	Allowance
2003	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2004	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2005	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008	0.9	0.0	0.8	0.0	0.9	0.0	0.8	0.0
2009	0.9	0.0	0.8	0.0	0.9	0.0	0.8	0.0
2010	1.0	0.0	0.8	0.0	1.0	0.0	0.8	0.0
2011	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2012	3.1	0.2	2.4	0.1	2.7	0.0	2.1	0.0
2013	3.3	0.2	2.5	0.1	2.5	0.0	2.0	0.0
2014	3.5	0.0	2.7	0.0	2.3	0.0	1.7	0.0
2015	3.1	0.0	2.3	0.0	4.5	0.0	3.3	0.0
2016	4.0	0.8	2.6	0.6	6.0	0.1	4.3	0.1
2017	4.2	0.6	2.7	0.4	5.6	0.0	3.9	0.0
2018	4.3	0.6	2.7	0.4	5.4	0.0	3.6	0.0
2019	4.5	0.5	2.8	0.3	6.6	0.0	4.4	0.0
2020	4.4	1.7	2.2	1.1	7.7	1.2	4.5	0.8
2021	4.5	1.8	2.1	1.1	8.0	1.2	4.5	0.7
2022	4.5	1.8	2.0	1.1	8.2	1.3	4.5	0.8
2023	4.5	1.9	1.8	1.1	8.4	1.5	4.3	0.9
2024	4.5	2.0	1.7	1.1	8.7	1.6	4.2	0.9
2025	4.5	2.1	1.5	1.2	8.9	1.9	4.1	1.0
2026	4.6	2.2	1.5	1.2	9.2	2.0	4.0	1.0
2027	4.5	2.3	1.2	1.2	9.4	2.1	3.9	1.1
2028	4.5	2.4	1.1	1.2	9.7	2.3	3.7	1.2
2029	4.4	2.5	0.9	1.2	9.9	2.5	3.6	1.2
2030	4.4	2.6	0.8	1.2	10.1	2.8	3.4	1.3
Total	81.9	25.8	40.0	14.6	136.7	20.5	72.4	11.1

Source: EIA Office of Integrated Analysis and Forecasting. NEMS runs ml_brpssm.d051203d (RPS Nominal case) and ml_brpssmr.d060403b (RPS Real case)

Table 3. Cumulative Power Industry Cost¹ through 2025 and 2030, No State Mandate Cases (billions)

Valuation	Case	2025	2030²
2001 Dollars, Discounted at 7%	RPS Nominal Cap	3.9	5.1
	Nominal Cap, no state mandate	5.1	6.0
	RPS Real Cap	4.9	6.2
	Real Cap, no state mandate	6.3	7.6
2001 Dollars, not Discounted	RPS Nominal Cap	11.7	18.0
	Nominal Cap, no state mandate	13.5	18.4
	RPS Real Cap	14.4	21.5
	Real Cap, no state mandate	17.5	24.7
Nominal Dollars, not Discounted	RPS Nominal Cap	18.2	30.7
	Nominal Cap, no state mandate	20.0	29.7
	RPS Real Cap	22.3	36.3
	Real Cap, no state mandate	26.6	40.7
<p>1- Cost incurred by the power industry including fuel suppliers, equipment manufacturers, and Government RPS allowance costs. Does not include transfer payments within the industry, such as the purchase of RPS credits from private entities.</p> <p>2- NEMS calculates values through 2025. 2026-30 based on average costs from 2020 through 2025, and would vary from actual resource costs that would be calculated within NEMS if the forecast horizon of the model were extended.</p> <p>Source: EIA Office of Integrated Analysis and Forecasting. National Energy Modeling System (NEMS) runs mlbase.d050303a (Reference Case), ml_brpssm.d051203d (RPS Nominal case), ml_brpssmr.d060403b (RPS Real case), ml_brpssmnst.d060703a (Nominal No State Mandate case), and ml_brpssmrmst.d060603b (Real No State Mandate case)</p>			

Table 4. Credit and Allowance Cost for Nominal No State Mandate Case and Real No State Mandate Case (billions)

Year	Nominal No State Mandate Case				Real No State Mandate Case			
	Nominal, undiscounted		2001 dollars, undiscounted		Nominal, undiscounted		2001 dollars, undiscounted	
	Credit	Allowance	Credit	Allowance	Credit	Allowance	Credit	Allowance
2003	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2004	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2005	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008	1.0	0.0	0.8	0.0	1.0	0.0	0.8	0.0
2009	1.0	0.0	0.9	0.0	1.0	0.0	0.9	0.0
2010	0.8	0.0	0.7	0.0	0.8	0.0	0.7	0.0
2011	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2012	3.1	0.2	2.4	0.2	3.0	0.0	2.4	0.0
2013	3.3	0.2	2.5	0.1	2.7	0.0	2.1	0.0
2014	3.5	0.0	2.6	0.0	2.3	0.0	1.8	0.0
2015	3.1	0.0	2.3	0.0	4.5	0.0	3.3	0.0
2016	3.9	0.9	2.5	0.6	6.0	0.2	4.3	0.1
2017	4.0	0.8	2.5	0.6	6.0	0.0	4.2	0.0
2018	4.1	0.7	2.5	0.5	5.2	0.0	3.5	0.0
2019	4.3	0.5	2.7	0.3	6.5	0.0	4.3	0.0
2020	4.3	1.8	2.1	1.1	7.8	1.1	4.6	0.2
2021	4.3	1.9	2.0	1.2	8.1	1.2	4.6	0.2
2022	4.3	1.9	1.8	1.2	8.3	1.3	4.5	0.2
2023	4.3	2.0	1.7	1.2	8.5	1.3	4.4	0.2
2024	4.3	2.1	1.6	1.2	8.7	1.5	4.3	0.2
2025	4.3	2.2	1.4	1.2	9.0	1.7	4.2	0.2
2026	4.3	2.3	1.3	1.2	9.2	1.8	4.1	0.2
2027	4.3	2.4	1.1	1.2	9.5	2.0	4.0	0.2
2028	4.3	2.5	1.0	1.2	9.7	2.2	3.8	0.2
2029	4.3	2.5	0.8	1.3	9.9	2.4	3.7	0.2
2030	4.3	2.6	0.7	1.3	10.2	2.6	3.5	0.2
Total	79.5	27.6	38.0	15.7	137.9	19.2	73.9	2.3

Source: EIA Office of Integrated Analysis and Forecasting. NEMS runs ml_brpssmnst.d060703a (Nominal No State Mandate case), and ml_brpssmnst.d060603b (Real No State Mandate case)

Table 5. Cumulative Power Industry Cost¹ through 2025 and 2030, No Co-firing Cases (billions)

Valuation	Case	2025	2030²
2001 Dollars, Discounted at 7%	RPS Nominal Cap	3.9	5.1
	Nominal Cap, no co-firing	5.8	7.0
	RPS Real Cap	4.9	6.2
	Real Cap, no co-firing	8.3	10.1
2001 Dollars, not Discounted	RPS Nominal Cap	11.7	18.0
	Nominal Cap, no co-firing	16.0	22.3
	RPS Real Cap	14.4	21.5
	Real Cap, no co-firing	23.2	33.0
Nominal Dollars, not Discounted	RPS Nominal Cap	18.2	30.7
	Nominal Cap, no co-firing	24.2	36.7
	RPS Real Cap	22.3	36.3
	Real Cap, no co-firing	35.4	54.7
<p>1- Cost incurred by the power industry including fuel suppliers, equipment manufacturers, and Government RPS allowance costs. Does not include transfer payments within the industry, such as the purchase of RPS credits from private entities.</p> <p>2- NEMS calculates values through 2025. 2026-30 based on average costs from 2020 through 2025, and would vary from actual resource costs that would be calculated within NEMS if the forecast horizon of the model were extended.</p> <p>Source: EIA Office of Integrated Analysis and Forecasting. National Energy Modeling System (NEMS) runs mlbase.d050303a (Reference Case), ml_brpssm.d051203d (RPS Nominal case), ml_brpssmr.d060403b (RPS Real case), ml_brpssmncfbw.d060703a (Nominal No Co-firing case), and ml_brpssmmcfbw.d060603a (Real No Co-firing case)</p>			

Table 6. Credit and Allowance Cost for Nominal No Co-firing Case and Real No Co-firing Case (billions)

Year	Nominal No Co-firing Case				Real Case No Co-firing Case			
	Nominal, no discounting		2001 dollars, undiscounted		Nominal, no discounting		2001 dollars, undiscounted	
	Credit	Allowance	Credit	Allowance	Credit	Allowance	Credit	Allowance
2003	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2004	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2005	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008	1.9	0.3	1.6	0.2	2.1	0.3	1.8	0.3
2009	2.1	0.2	1.7	0.2	2.4	0.2	2.0	0.2
2010	2.3	0.1	1.9	0.0	2.7	0.0	2.2	0.0
2011	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2012	2.8	0.7	2.1	0.6	3.5	0.7	2.7	0.6
2013	3.1	0.5	2.3	0.4	4.0	0.4	3.0	0.3
2014	3.5	0.2	2.6	0.2	4.6	0.1	3.5	0.1
2015	3.7	0.1	2.7	0.0	0.0	0.0	0.0	0.0
2016	4.0	1.0	2.6	0.7	6.1	0.5	4.2	0.4
2017	4.2	0.8	2.7	0.6	6.7	0.2	4.6	0.1
2018	4.5	0.6	2.8	0.4	6.9	0.0	4.6	0.0
2019	4.5	0.7	2.7	0.4	0.0	0.0	0.0	0.0
2020	4.5	1.8	2.2	1.2	8.0	1.6	4.6	1.0
2021	4.5	1.8	2.1	1.1	8.3	1.5	4.6	0.9
2022	4.6	1.9	2.0	1.2	8.6	1.7	4.6	1.0
2023	4.6	2.0	1.9	1.2	8.9	1.8	4.5	1.1
2024	4.6	2.1	1.8	1.2	9.3	2.0	4.4	1.1
2025	4.7	2.2	1.6	1.2	9.6	2.2	4.3	1.2
2026	4.7	2.2	1.5	1.2	9.9	2.3	4.3	1.3
2027	4.7	2.3	1.4	1.2	10.3	2.5	4.2	1.3
2028	4.7	2.4	1.2	1.2	10.6	2.7	4.0	1.4
2029	4.8	2.5	1.1	1.2	11.0	2.9	3.9	1.4
2030	4.8	2.5	0.9	1.2	11.4	3.2	3.8	1.5
Total	87.7	28.8	43.5	16.7	145.2	27.0	75.8	15.3

Source: EIA Office of Integrated Analysis and Forecasting. NEMS runs ml_brpssmncfbw.d060703a (Nominal No Co-firing case), and ml_brpssmncfbw.d060603a (Real No Co-firing case)

Table 7. Cost if All Credits Purchased as Government Allowance (billions)

Year	Nominal RPS Cap		Real RPS Cap	
	Nominal Dollars	Real 2001 Dollars	Nominal Dollars	Real 2001 Dollars
2003	0.0	0.0	0.0	0.0
2004	0.0	0.0	0.0	0.0
2005	0.0	0.0	0.0	0.0
2006	0.0	0.0	0.0	0.0
2007	0.0	0.0	0.0	0.0
2008	2.3	2.0	2.5	2.2
2009	2.4	2.0	2.6	2.2
2010	2.4	2.0	2.7	2.2
2011	2.4	2.0	2.8	2.3
2012	3.6	2.8	4.2	3.4
2013	3.6	2.8	4.4	3.4
2014	3.7	2.8	4.6	3.5
2015	3.7	2.8	4.8	3.5
2016	5.0	3.6	6.5	4.7
2017	5.0	3.5	6.8	4.7
2018	5.1	3.5	7.1	4.8
2019	5.2	3.4	7.4	4.9
2020	6.5	4.2	9.6	6.1
2021	6.6	4.1	10.0	6.2
2022	6.7	4.1	10.5	6.3
2023	6.8	4.0	11.0	6.4
2024	6.9	4.0	11.5	6.6
2025	7.1	3.9	12.0	6.7
2026	7.3	4.0	12.6	6.8
2027	7.4	4.0	13.2	6.9
2028	7.6	3.9	13.9	7.0
2029	7.7	3.9	14.6	7.2
2030	7.8	3.9	15.3	7.3
Total	122.8	77.1	190.8	115.4

Source: EIA Office of Integrated Analysis and Forecasting