

Clean Air-Clean Jobs Act (“CACJA”) Overall Project Summary

I. Background

On April 19, 2010, Colorado Governor Bill Ritter signed into law the Colorado Clean Air-Clean Jobs Act (“CACJA”). This Act required Public Service Company of Colorado (“Public Service” or the “Company”) to reduce nitrogen oxide and sulphur dioxide emissions from several Front Range coal plants by up to 80 percent by the end of 2017. The legislative declaration for this bill¹ set forth the three cornerstones that permit the CACJA to stand: 1) a coordinated plan to address multiple emissions requirements; 2) a plan that considers alternatives to coal-fired generation; and, 3) timely cost recovery for the utility charged with implementing the plan. The General Assembly understood that in order to implement the goals of the CACJA, there would be significant financial impacts on the utilities that would be primarily responsible for implementing it.

The Company worked with the Colorado Department of Public Health and Environment (“CDPHE”) to submit a plan to implement the CACJA to the Colorado Public Utilities Commission (“Commission”) on August 13, 2010. This plan provided detailed options for allowing the Company to significantly reduce Colorado coal-fired generation emissions through a combination of retirements, repowering and/or retrofitting of several power plants.

On December 15, 2010, the Commission issued Decision No. C10-1328 approving a CACJA compliance plan for the Company. Key elements of the plan² are to:

- Retire 903 megawatts (“MW”) of coal generation at the Valmont (186 MW) and Cherokee (717 MW) power plants by the end of 2017;
- Repower the Cherokee power plant with approximately 570 MW of natural gas generation;
- Switch Cherokee Unit 4 to natural gas generation; and
- Retrofit 952 MW of coal-fired generation at the Pawnee (505 MW) and Hayden (447 MW) power plants with additional emission control technology.

II. CPCNs and Semi-Annual Reports

While approving an overall compliance plan in Decision No. C10-1328, the Commission nonetheless required that Public Service obtain certificates of public convenience and necessity (“CPCN”) for the individual components of the plan. The Commission adopted modified procedures given that the need for the projects was already established. The purpose of the CPCN proceedings was to ensure that the

¹ See 40-3.2-201 *et seq.*

² The compliance plan also included, among other things, the conversion of Cherokee Unit 2 and Arapahoe Unit 3, to synchronous condensers.

costs and rate impacts of the plan remained reasonable. The Commission granted CPCNs for the projects included as part of the plan as follows:

<i>Proceeding</i>	<i>Project</i>	<i>Cost Estimate</i> ³	<i>Date Approved</i>
11A-325E	Pawnee Emission Controls	\$238.6 million ⁴	February 14, 2012 (Decision No. C12-0159)
11A-609E	Cherokee 2X1 CC	\$531.5 million	April 17, 2012 (Decision No. R12-0397) ⁵
11A-917E	Hayden Emission Controls	\$90 million	July 24, 2012 (Decision No. C12-0843)

While not required by the Commission, the Company filed semi-annual progress reports on all of these projects following their respective approvals. These semi-annual progress reports provided useful information and increased transparency with regard to the costs of these projects. This process assured that disclosures of cost information were not confined to rate review proceedings.

III. CACJA Rider

The CACJA Rider was designed to recover both the capital costs and operations and maintenance (“O&M”) expenses associated with eligible CACJA projects. The CACJA Rider was agreed to as part of the Settlement Agreement approved by the Commission by Decision No. C15-0292 in Proceeding No. 14AL-0660E (“2014 Phase I Electric Rate Case”).

The approved projects under the CACJA Rider are:

- Cherokee 2x1 Combined Cycle (“CC”) plant, including interconnection equipment,
- Pawnee Selective Catalytic Reduction (“SCR”) and particulate scrubber,
- Hayden 1 SCR; and
- Hayden 2 SCR.

³ All estimates were plus or minus 20 percent range of accuracy.

⁴ The estimate is in 2010 dollars.

⁵ Decision No. R12-0397 became a decision of the Commission on May 7, 2012 by operation of law.

IV. Summary of CACJA Projects Status

A. Overview

The Pawnee emission control project was completed and placed in service in August 2014.

The Cherokee 2x1 CC was completed and placed in service in July 2015, and declared Commercial on August 20, 2015. The plant is currently being dispatched by Commercial Operations.

The Hayden 1 SCR Project is complete, and the SCR was placed in service in October 2015. The Hayden 2 SCR Project is complete and the SCR was placed in service in July 2016.

B. Pawnee SCR and Scrubber

All design, procurement, construction and startup activities have been completed. The project was placed in service in August 2014. The equipment is performing as designed, and the plant is meeting air permit emission limits. The Project overview, scope, description and status are explained in more detail in Exhibit 5, "Summary of Pawnee Selective Catalytic Reduction ("SCR") and Scrubber Project".

The final project cost was \$272 million as compared to the CPCN estimate of \$252 million. The \$252 million estimate was derived from the budget approved with the Pawnee CPCN,⁶ plus a 2.5% escalation applied to the forecasted cash flows. The detailed comparison of total project spending as compared to the CPCN estimate is included as Attachment 1 to Exhibit 5. The cost increase was the result of higher than estimated construction costs and scope additions. A tubular air heater, steam coil air heaters and replacement of fabric filter dust collector bags were added to the scope to maintain the operating range of the unit. In addition, the Induced Draft Fans ("ID Fans") were replaced instead of installing booster fans. This was done in order to reduce the length of the outage required to complete construction of the project. These higher costs were partially offset by lower than estimated equipment costs. A detailed comparison of the spending to date, current projections of total capital expenditures and the projected total expenditures provided in the CPCN proceeding is provided in Attachment 1 to Exhibit 5.

C. Cherokee 2x1 CC (Units 5, 6, and 7)

All design, procurement, construction and startup activities have been completed. The plant was placed in service in July 2015 and declared Commercial on August 20, 2015. The plant is currently being dispatched by Commercial Operations. The plant is performing as designed and emissions are in compliance with air permit limits. The

⁶ The original CACJA estimates were based in 2010 dollars.

Project overview, scope, description and status are explained in more detail in Exhibit 4, “Summary of Cherokee 2x1 Combined Cycle (Units 5, 6, 7) Project”.

The final cost of the Project is \$525.3 million as compared to the CPCN estimate of \$531.5 million. Higher than estimated site development and construction costs were more than offset by lower than anticipated equipment and contingency costs. As of September 30, 2018, the Company has spent \$525.3 million, which is the final cost of the Project. A detailed comparison of the spending-to-date, current projections of total capital expenditures and the estimated total capital expenditures provided in the CPCN proceeding is included as Attachment 1 to Exhibit 4.

D. Hayden Unit 1 SCR

All design, procurement and construction activities have been completed. Startup and tuning of the ammonia system is complete. The Hayden 1 SCR Project was placed in service in October 2015. The equipment is performing as designed, and the plant is meeting air permit emission limits. The Project overview, scope, description and status are explained in more detail in Exhibit 6, “Summary of Hayden 1 and 2 Selective Catalytic Reduction (“SCR”) Project”.

The Company’s share of the Hayden 1 SCR Project, which is 75.5% of total costs, is \$45.1 million as compared to the CPCN estimate of \$56.5 million. Lower direct project costs, lower costs associated with the modification of existing systems and lower-than-estimated contingency costs, offset higher than estimated construction costs. As of September 30, 2018, the Company has spent \$45.1 million, which is the final cost of the Project. A detailed comparison of the spending to date, current projections of total capital expenditures and the projected total expenditures provided in the CPCN proceeding is provided in Attachment 1 to Exhibit 6.

E. Hayden Unit 2 SCR

All design, procurement and construction activities have been completed. Startup and tuning of the ammonia system is complete. The Hayden 2 SCR was placed in service July 29, 2016 and completed in 2017. For calendar year 2016, through September 30, 2018, the project incurred expenditures of \$14.8 million in final contractor payments. The Company share of this cost is \$5.7 million. The project overview, scope, description and status are explained in more detail in Exhibit 6, “Summary of Hayden 1 and 2 Selective Catalytic Reduction (“SCR”) Project”.

The Company’s share of the Hayden 2 estimate, which is 37.4 percent of the total cost, has been reduced from \$33.9 million in the CPCN to a final cost of \$25 million as of September 30, 2018. This reduction is attributable to lower equipment costs, lower direct project costs, and lower contingency costs. These reductions more than offset higher-than-estimated construction costs. A detailed comparison of the spending to date, current total cost estimate and CPCN total cost estimate are included as Attachment 1 to Exhibit 6.

V. O&M Expense

The forecasted or actual costs associated with Eligible CACJA Projects, as defined in the CACJA Rider tariff, include the variable non-fuel O&M expenses. These expenses include chemical and water expenses. The 2020 CACJA Rider calculation also reflects the variable O&M savings from Cherokee 3's retirement. The Company is utilizing the 2020 forecast for variable non-fuel O&M costs for the Eligible CACJA Projects for the 2020 CACJA Rider. The Company has prepared a summary of the non-fuel variable O&M expenses submitted as part of this filing as Exhibit 7, "Summary of Variable Non-Fuel Operation and Maintenance ("O&M") Costs".

VI. 2020 Revenue Requirement

The estimated 2020 revenue requirement of the Company's CACJA projects is \$78.9 million, which represents an increase of \$3.0 million from the 2019 estimated revenue requirement of \$75.9 million⁷. This comparison is reflected in Table 1 below. The 2019 estimated revenue requirement is currently being collected through the CACJA Rider that was implemented as a result of the 2014 Electric Rate Case.

Table 1 below presents a breakdown of the estimated 2019 revenue requirement that is currently recovered in the CACJA Rider prior to TCJA impact and the estimated 2020 revenue requirement by project and type of cost (O&M expense or capital cost). Several observations can be made with regard to Table 1 (note that values may not add exactly due to rounding):

- The 2020 estimated rates include the impact of implementing new depreciation rates approved by the Commission in the 2016 Depreciation Study Proceeding No. 16A-0231E which are proposed for implementation in the pending Electric Rate review (Proceeding No. 19AL-0268E) effective January 1, 2020. There is a \$4.9 million increase in the revenue requirement due to increased depreciation costs.
- There was a \$0.2 million increase in the revenue requirement due to increased O&M expenses as a result of an increase in the estimated cost of lime and ammonia for Pawnee.
- These two increases to the revenue requirement were offset by a decrease in capital costs of \$1.9 million, primarily due to the ongoing depreciation of CACJA plant.
- For purposes of calculating the return on rate base, the Company used the last approved return on equity ("ROE") of 9.83 percent (as approved in Proceeding No. 14AL-0660E), a long-term debt cost of 4.14 percent, and a capital structure consisting of 44.00 percent long-term debt and 56.00 percent equity. Other key

⁷ The 2019 revenue requirement estimate of \$75.9 million is based on Advice No. 1777-Electric filed November 1, 2018 to be effective January 1, 2019. This does not include true ups or associated interest.

inputs and assumptions are provided in Exhibit 2, "Total Revenue Requirements – Clean Air - Clean Jobs Act".

Table 1 – Financial Elements 2019 to 2020

Clean Air - Clean Jobs Rider Financial Elements				
2020 Revenue Requirement Estimate				
	<u>Hayden</u>	<u>Cherokee</u>	<u>Pawnee</u>	<u>Total</u>
Total Company Spend - Capital	\$0	\$0	\$0	\$0
Capital Revenue Requirement	6,428,496	46,312,344	23,628,286	76,369,126
Total Company Spend - O&M	439,034	(72,250)	2,160,238	2,527,023
Total Revenue Requirement	6,867,531	46,240,094	25,788,523	78,896,148
2019 Revenue Requirement Estimate				
	<u>Hayden</u>	<u>Cherokee</u>	<u>Pawnee</u>	<u>Total</u>
Total Company Spend - Capital	\$0	\$0	\$0	\$0
Capital Revenue Requirement	5,620,162	46,985,412	20,998,337	73,603,910
Total Company Spend - O&M	575,087	(158,350)	1,882,346	2,299,083
Total Revenue Requirement	6,195,249	46,827,062	22,880,683	75,902,993
Delta 2019 to 2020				
	<u>Hayden</u>	<u>Cherokee</u>	<u>Pawnee</u>	<u>Total</u>
Total Company Spend - Capital	\$0	\$0	\$0	\$0
Capital Revenue Requirement	808,334	(673,069)	2,629,949	2,765,216
Total Company Spend - O&M	(136,053)	86,100	277,892	227,940
Total Revenue Requirement	672,282	(586,968)	2,907,840	2,993,155

*Capital Revenue Requirement includes plant in service, CWIP, ADIT, Depreciation and Taxes.

**Total Company Spend – O&M is O&M after retail allocation.