



STATE OF WASHINGTON
UTILITIES AND TRANSPORTATION COMMISSION

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May 28, 2020

Mark L. Johnson, Executive Director and Secretary
Washington Utilities and Transportation Commission
P. O. Box 47250
Olympia, Washington 98504-7250

RE: UE-121373 - *In the Matter of the Petition of PUGET SOUND ENERGY, For Approval of a Power Purchase Agreement for Acquisition of Coal Transition Power, as Defined in RCW 80.80.010, and the Recovery of Related Acquisition Costs.*

Dear Mr. Johnson:

On March 11, 2020, Puget Sound Energy (PSE or company) filed its annual compliance report for the year 2019. In Order 03 (Order 03) of the above referenced docket, the Commission required PSE to monitor, and report annually, TransAlta's production levels at the Centralia Coal Transition Facility (CCTF). The report also includes the source of replacement power, amount of contributions by TransAlta to the community and total plant headcount. This is PSE's sixth annual compliance report since the company began taking deliveries of power from TransAlta in December of 2014 under the Coal Transition Power Purchase Agreement (PPA).

This memorandum provides Staff's assessment of PSE's compliance with the reporting requirements of Order 03, and identifies issues that Staff believes are of interest to the Commissioners.

DISCUSSION

Last year's report included a discussion around air permit violations recorded against the CCTF related to two specific emission issues: 1) NOx emissions remain above the level envisioned by the BART Order; and 2) Mercury emissions exceeded the Federal standard.¹

¹ On December 23, 2011, TransAlta entered into its Memorandum of Understanding (MOA) with the State which imposed several requirements on TransAlta, including the installation of selective non-catalytic reduction (SNCR) pollution control technology and the reduction of certain emissions. Once SNCR was installed at the CCTF, the BART order specified a thirty operating day rolling average NOx emission limit for the plant (both units) of 0.21 lb/MMBtu. The CCTF has been able to consistently meet the interim NOx limit of 0.21 lb/MMBtu. However, the BART Determination Support Document states that Ecology had established the 0.21 lb/MMBtu as an interim limit, and that during calendar years 2013 and 2014, TransAlta was required under Condition 5 of the BART order to

In mid-July 2019, Staff reached out to both Ecology and SWCAA in order to gather facts related to these numerous emission violations recorded against the CCTF. In August of 2019, Staff met with Phil Gent, Air Quality Engineer for the Department of Ecology (Ecology) and Clint Lamoreaux, Air Quality Engineer for Southwest Washington Clean Air Agency (SWCAA) to more fully understand the nature of the violations and, more importantly, whether these developments in any way upset the numerous agreements currently in effect for the CCTF.

NO_x Optimization Update

According to Ecology, the process to revise the BART Order to incorporate the 0.18 lb/MMBtu NO_x emission limit has commenced. The recent round of NO_x optimization efforts have been successful and were greatly aided by TransAlta's investment in neural networks which are used to identify the optimal combination of control actions for the plant to achieve the desired output parameter. In the case of CCTF, the output goal parameter is the NO_x emission level envisioned by the BART Order. SNCR optimization testing using the neural network commenced in earnest in October of 2019. Initial results were encouraging with a 30-day rolling average NO_x level of 0.0175 lb/MMBtu. An additional benefit of installing neural networks are lower Urea injection rates which reduce the level of Ammonia slip from the SNCR system. Lower Urea injection rates help prevent ammonia sulfide accumulation in the electrostatic precipitators and keep PM emissions within emission standards.

According to Ecology, TransAlta has asked that the revised BART Order not identify a specific unit for retirement at the end of the year.² While TransAlta has installed the neural network control technology on Unit 2 and optimized it to operate on PRB coal to meet the 0.18 lb/MMBtu NO_x emission limit, concerns over the possible failure of the unit's generator set may require this unit to retire by the end of the year.

Regardless of which unit TransAlta selects for retirement, the remaining unit will be required by Ecology to install the computer control technology and have it operational and meeting the revised BART limit by December 31, 2020.

Notice of Violation

Since Staff's compliance report from last year, there have been no new air emission violations recorded at the CCTF.

RECOMMENDATION

For 2019, PSE has complied fully with the reporting requirements contained in Order 3. Unless otherwise directed by the Commission, Staff will continue to monitor the Coal Transition PPA commensurate with the requirements contained in Order 03. For the 2020 report, Staff will summarize TransAlta's unit retirement decision and any issues which may arise as a result.

Sincerely,



David C. Gomez
Assistant Power Supply Manager, Energy Regulation

optimize the SNCR system to maximize NO_x reduction. Ecology had determined that optimization of the SNCR system installed at Centralia would allow for a 0.18 lb/MMBtu NO_x emission limit.

² RCW 80.80 does not identify a specific unit for retirement.

APPENDIX A; ANNUAL REPORTING REQUIREMENTS

CCTF's 2019 Generation and Resupply Power

Taking into account total generation for 2019, the CCTF experienced an increase to its capacity factor as compared to previous years.

CCTF Capacity Factor						
2013	2014	2015	2016	2017	2018	2019
57.2%	56.9%	42.8%	39.0%	46.6%	45.7%	70.0%

When the CCTF is not generating power, TransAlta satisfies delivery obligations under the PPA using other sources of power, referred to as “resupply power.” Figure 1 below compares the CCTF’s total generation with the amount and source of power provided by TransAlta to meet its contractual obligation under the terms of the PPA.

Staff analyzed the sources of replacement power provided by PSE and TransAlta. Hydro continues to be, by far, the largest source comprising over 96 percent of the replacement power in 2019. Natural gas was second, providing 2.5 percent. Wind, Biomass and Coal contributed small amounts also (individually under 1 percent). Resupply as a percentage of total power delivered under the PPA was 14.0 percent. In 2018 resupply power was 24.6 percent of the total MWh delivered under the PPA and 37.8 percent in 2017.

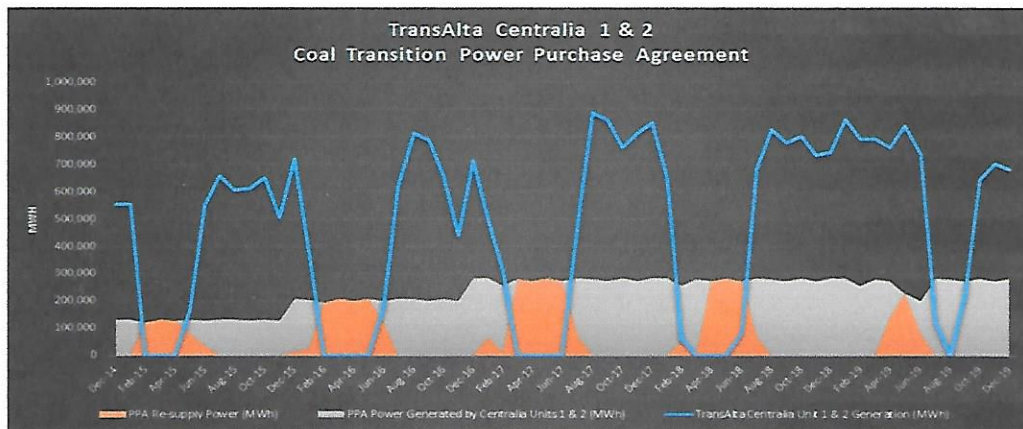


Figure 1 TransAlta Centralia Generation

Contributions of Financial Assistance

PSE is required to report on TransAlta’s “contributions of financial assistance” made pursuant to Section 3 of the Memorandum of Agreement (MOA) between TransAlta and the State of Washington. Under the MOA, each year, three payments are made which sum to \$4,583,333.³ PSE reports that TransAlta has made all of the payments required under the MOA for 2019.

FTEs Employed at the CCTF

TransAlta also reports annually the average number of full-time equivalent employees (FTEs) employed at the CCTF. For 2019, the number of FTEs employed at the CCTF is 188. Headcount at the CCTF was reduced by 17 FTEs from the amount reported in 2018.

³ The three separate annual payments are: \$833,333 to the Weatherization Fund; \$1,666,667 to the Economic and Community Development Fund; and \$2,083,333 to the Energy Technology Fund. Payments under the MOA began in 2012 and are scheduled until 2023.

Month	TransAlta Centralia Unit 1 & 2 Generation (MWh)	a PPA Re-supply Power (MWh)	b PPA Power Generated by Centralia Units 1 & 2 (MWh)	c=a+b Total Power Deliveries to PSE by TransAlta (MWh)	d PPA Price (\$/MWh) w/equity adder	PPA Price (\$/MWh) w/o equity adder	e=c*d Total Contract Deliveries @ PPA prices		f MidC Spot Market Price (\$/MWh)	g=(a*(d-f)) Resupply Power @ Difference of PPA & MidC Spot Price (\$/MWh)
Dec-14	554,742	0	133,020	133,020	\$47.66	\$46.17	\$6,339,733	\$6,141,533	\$28.12	\$0
Jan-15	554,454	0	133,920	133,920	\$47.66	\$46.17	\$6,382,627	\$6,183,086	\$21.39	\$0
Feb-15	68	120,959	0	120,959	\$47.66	\$46.17	\$5,764,906	\$5,584,677	\$13.26	\$4,161,191
Mar-15	0	133,739	0	133,739	\$47.66	\$46.17	\$6,374,001	\$6,174,730	\$16.72	\$4,137,315
Apr-15	0	129,560	0	129,560	\$47.66	\$46.17	\$6,174,830	\$5,981,785	\$13.06	\$4,482,448
May-15	166,959	79,927	53,971	133,898	\$47.66	\$46.17	\$6,381,579	\$6,182,071	\$26.03	\$1,728,627
Jun-15	550,606	35,975	93,600	129,575	\$47.66	\$46.17	\$6,175,545	\$5,982,478	\$31.71	\$573,892
Jul-15	657,969	0	133,920	133,920	\$47.66	\$46.17	\$6,382,627	\$6,183,086	\$30.80	\$0
Aug-15	605,176	0	133,920	133,920	\$47.66	\$46.17	\$6,382,627	\$6,183,086	\$27.53	\$0
Sep-15	612,886	0	129,600	129,600	\$47.66	\$46.17	\$6,176,736	\$5,983,632	\$27.49	\$0
Oct-15	650,671	0	133,920	133,920	\$47.66	\$46.17	\$6,382,627	\$6,183,086	\$22.75	\$0
Nov-15	505,152	0	129,780	129,780	\$47.66	\$46.17	\$6,185,315	\$5,991,943	\$19.50	\$0
Dec-15	719,736	15,329	192,991	208,320	\$48.81	\$47.32	\$10,168,985	\$9,858,588	\$19.82	\$444,415
Jan-16	372,134	26,369	179,746	206,115	\$48.81	\$47.32	\$10,061,349	\$9,754,238	\$22.96	\$681,751
Feb-16	0	194,879	0	194,879	\$48.81	\$47.32	\$9,512,872	\$9,222,503	\$17.08	\$6,184,339
Mar-16	0	207,665	0	207,665	\$48.81	\$47.32	\$10,137,011	\$9,827,590	\$13.25	\$7,385,450
Apr-16	0	201,600	0	201,600	\$48.81	\$47.32	\$9,840,953	\$9,540,569	\$12.53	\$7,314,905
May-16	0	208,303	0	208,303	\$48.81	\$47.32	\$10,168,155	\$9,857,783	\$14.66	\$7,114,433
Jun-16	178,020	121,926	79,674	201,600	\$48.81	\$47.32	\$9,840,953	\$9,540,569	\$22.12	\$3,254,723
Jul-16	616,784	1,400	206,920	208,320	\$48.81	\$47.32	\$10,168,985	\$9,858,588	\$30.44	\$25,724
Aug-16	811,096	0	208,320	208,320	\$48.81	\$47.32	\$10,168,985	\$9,858,588	\$35.49	\$0
Sep-16	789,020	0	201,600	201,600	\$48.81	\$47.32	\$9,840,953	\$9,540,569	\$28.39	\$0
Oct-16	655,933	0	208,320	208,320	\$48.81	\$47.32	\$10,168,099	\$9,857,702	\$23.16	\$0
Nov-16	440,097	0	201,880	201,880	\$48.81	\$47.32	\$9,853,763	\$9,552,962	\$19.28	\$0
Dec-16	713,751	375	282,345	282,720	\$50.00	\$48.51	\$14,136,000	\$13,714,747	\$34.25	\$5,906
Jan-17	498,913	65,879	216,841	282,720	\$50.00	\$48.51	\$14,136,000	\$13,714,747	\$25.33	\$1,625,235
Feb-17	313,578	9,846	245,511	255,357	\$50.00	\$48.51	\$12,767,850	\$12,387,368	\$17.69	\$318,124
Mar-17	0	281,790	0	281,790	\$50.00	\$48.51	\$14,089,500	\$13,669,633	\$8.62	\$11,660,470
Apr-17	0	273,600	0	273,600	\$50.00	\$48.51	\$13,680,000	\$13,272,336	\$5.62	\$12,142,368
May-17	0	282,720	0	282,720	\$50.00	\$48.51	\$14,136,000	\$13,714,747	\$3.01	\$13,285,013
Jun-17	0	273,600	0	273,600	\$50.00	\$48.51	\$13,680,000	\$13,272,336	\$1.81	\$13,184,784
Jul-17	486,973	68,639	214,265	282,904	\$50.00	\$48.51	\$14,145,200	\$13,723,673	\$22.54	\$1,884,827
Aug-17	888,159	0	282,305	282,305	\$50.00	\$48.51	\$14,115,250	\$13,694,616	\$23.76	\$0
Sep-17	860,708	0	273,600	273,600	\$50.00	\$48.51	\$13,680,000	\$13,272,336	\$30.25	\$0
Oct-17	760,189	294	282,216	282,510	\$50.00	\$48.51	\$14,125,500	\$13,704,560	\$24.38	\$7,532
Nov-17	812,144	0	273,684	273,684	\$50.00	\$48.51	\$13,684,200	\$13,276,411	\$22.57	\$0
Dec-17	851,050	0	282,720	282,720	\$51.21	\$49.72	\$14,478,091	\$14,056,838	\$22.57	\$0
Jan-18	654,698	0	282,720	282,720	\$51.21	\$49.72	\$14,478,091	\$14,056,838	\$21.58	\$0
Feb-18	63,155	48,575	206,785	255,360	\$51.21	\$49.72	\$13,076,986	\$12,696,499	\$16.33	\$1,694,296
Mar-18	0	0	282,340	282,340	\$51.21	\$49.72	\$14,458,631	\$14,037,945	\$17.60	\$0
Apr-18	0	273,600	0	273,600	\$51.21	\$49.72	\$14,011,056	\$13,603,392	\$15.04	\$9,896,112
May-18	0	282,720	0	282,720	\$51.21	\$49.72	\$14,478,091	\$14,056,838	\$9.85	\$11,693,299
Jun-18	84,252	273,600	0	273,600	\$51.21	\$49.72	\$14,011,056	\$13,603,392	\$12.43	\$10,610,208
Jul-18	681,421	68,639	214,265	282,904	\$51.21	\$49.72	\$14,487,514	\$14,065,987	\$37.29	\$955,455
Aug-18	825,129	0	282,305	282,305	\$51.21	\$49.72	\$14,456,839	\$14,036,205	\$44.46	\$0
Sep-18	778,360	0	273,600	273,600	\$51.21	\$49.72	\$14,011,056	\$13,603,392	\$26.07	\$0
Oct-18	801,921	294	282,216	282,510	\$51.21	\$49.72	\$14,467,337	\$14,046,397	\$39.40	\$3,472
Nov-18	734,403	0	273,684	273,684	\$51.21	\$49.72	\$14,015,358	\$13,607,568	\$45.50	\$0
Dec-18	744,044	0	282,720	282,720	\$52.45	\$50.96	\$14,828,664	\$14,407,411	\$45.56	\$0
Jan-19	863,283	0	282,650	282,650	\$52.45	\$50.96	\$14,824,993	\$14,403,844	\$34.68	\$0
Feb-19	790,743	0	255,360	255,360	\$52.45	\$50.96	\$13,393,632	\$13,013,146	\$34.38	\$0
Mar-19	793,543	0	281,968	281,968	\$52.45	\$50.96	\$14,789,222	\$14,369,089	\$35.60	\$0
Apr-19	759,844	138,536	134,664	273,200	\$52.45	\$50.96	\$14,329,340	\$13,922,272	\$29.69	\$3,153,772
May-19	841,088	229,516	0	229,516	\$52.45	\$50.96	\$12,038,114	\$11,696,135	\$28.93	\$5,398,216
Jun-19	735,897	78,992	122,226	201,218	\$52.45	\$50.96	\$10,553,884	\$10,254,069	\$27.95	\$1,935,304
Jul-19	124,493	0	282,720	282,720	\$52.45	\$50.96	\$14,828,664	\$14,407,411	\$19.09	\$0
Aug-19	0	0	282,067	282,067	\$52.45	\$50.96	\$14,794,414	\$14,374,134	\$11.73	\$0
Sep-19	219,669	0	273,244	273,244	\$52.45	\$50.96	\$14,331,648	\$13,924,514	\$16.43	\$0
Oct-19	643,217	0	282,673	282,673	\$52.45	\$50.96	\$14,826,199	\$14,405,016	\$43.87	\$0
Nov-19	701,653	0	273,980	273,980	\$52.45	\$50.96	\$14,370,251	\$13,962,021	\$81.61	\$0
Dec-19	681,477	0	282,720	282,720	\$53.73	\$52.24	\$15,190,546	\$14,769,293	\$33.61	\$0

Table 1; 2014 – 2018 Coal Transition PPA Results