

## **Appendix D**

## Appendix D: Supporting Workpapers and References

### Chapter 1 – Interim and Specific Targets

File name	Short Description	Tables	Figures
210829-PAC-WP-Figure 1.1 - P02-MM-CETA 2022-2045 Interim Targets-12-31-21.xlsx	<p>Annual summary of Washington-allocated energy from P02-MM-CETA portfolio of resources and projected interim targets for 2022-2045.</p> <p>Original source data: “210829-PAC-WP-P02-MM-CETA WA Allocation Target Development-12-31-21(C).xlsx”</p>	1.1 (workbook tab “Table – Interim Targets”)	1.1 (workbook tab “Interim Targets” sourced from data on tab “WA CETA Summary”)
210829-PAC-WP-LT 18609 21IRP 20yr P02-MM-CETA-12-31-21 (C).xlsx	<p><i>Confidential</i> Portfolio summary for Long-Term (LT) model run for the 2021 IRP preferred portfolio, P02-MM-CETA</p> <p>Used in: “210829-PAC-WP-P02-MM-CETA WA Allocation Target Development-12-31-21(C).xlsx”</p>	--	1.3 (workbook tab “Cumulative Changes Graph”)
210829-PAC-WP-P02-MM-CETA WA Allocation Target Development-12-31-21(C).xlsx	<p><i>Confidential</i> Detailed Washington-allocation of all portfolio resource generation for P02-MM-CETA.</p> <p>Original source data pulled from the LT (“210829-PAC-WP-LT 18609_21IRP 20yr_P02-MM-CETA-12-31-21 (C).xlsx”), ST (“210829-PAC-WP-ST Cost Summary -P02-MMGR-CETA ST Split Run Cost Data LT 18609 ST 19709 12-31-21 (C).xlsx”), and MT (“210829-PAC-WP-MT Cost Summary -P02-MMGR-CETA MT Split Run Cost Data LT 18609 MT 18631 12-31-21 (C).xlsx”) portfolio and cost summaries for P02-MM-CETA.</p>	--	1.1
210829-PAC-WP-Figures 1.4 - 1.5 - Resource Charts - IRP 12-31-21 (C).xlsx	<p><i>Confidential</i> Annual data and graphs depicting annual emissions and cumulative changes in resource capacity by type for P02-MM-CETA.</p>	--	1.4 (workbook tab “Port Graphs – emissions”) 1.5 (bottom of workbook tab “Port Graphs 2021 less 2019”)

210829-PAC-WP-Demand Response Targets 12.31.21 (C).xlsx	<i>Confidential</i> Demand response target development using with RFP bids and CPA resources	--	--
210829-PAC-WP-WA 2022-2023 EIA target development and adjustments 12-31-21 (C).xlsx	<i>Confidential</i> EIA target development for 2022-2023 extended for two more years to arrive at 4-year CEIP target	1.3	--

## Chapter 2 – Development of Customer Benefit Indicators

File name	Short Description	Tables	Figures
210829-PAC-WP-VulnerablePopulations 12.31.21 (C).xlsx	<i>Confidential</i> Provides demographic data and PAC service territory data used to estimate vulnerable populations and HIC status by census tracts and statewide	2.2	2.2 - 2.3
210829-PAC-WP-CBIWeights 12.31.21 (C).xlsx	<i>Confidential</i> Shows public and EAG weighting responses, aggregates them, and applies them to CBIs and benefit categories	2.4, 2.6 - 2.7	2.6 - 2.7
210829-PAC-WP-CBIWeightsEAG 12.31.21 (C).xlsx	<i>Confidential</i> Provides EAG scoring on CBIs	2.5	--
210829-PAC-WP-SpanishResponses 12.31.21 (C).xlsx	<i>Confidential</i> Shows Spanish responses by count and percentage for three most recent surveys	2.10	--
210829-PAC-WP-RenewableResources 12.31.21 (C).xlsx	<i>Confidential</i> Provides WA allocated renewable resources	--	2.10
210829-PAC-WP-Emissions 12.31.21 (C).xlsx	<i>Confidential</i> Shows WA allocated GHG emissions	--	2.11
210829-PAC-WP-PublicChargingStations 12.31.21.xlsx	Provides a list of public EV charging stations within the WA service territory	2.13	--
210829-PAC-WP-ProgramParticipationExpenditures 12.31.21 (C).xlsx	<i>Confidential</i> Shows participation rates and expenditures for energy, efficiency, DR, behavioral, low income, and billing assistance programs	2.14 - 2.16	--
210829-PAC-WP-SurveyOutputs 12.31.21 (C).xlsx	<i>Confidential</i> Provides the key CBI metrics and related summaries from the 2021 survey	2.17 - 2.21	--
210829-PAC-WP-SAIDIScores 12.31.21 (C).xlsx	<i>Confidential</i> Shows the reliability metrics by year for the WA service territory	--	2.12 - 2.17
210829-PAC-WP-Disconnects 12.31.21 (C)	<i>Confidential</i> Provides the list of 2019 customer disconnects within the service territory	2.23	--

Note that some tables and figures in Chapter 2 do not have distinct corresponding workpapers, as their sources are either the CEIP or an appendix. Those tables include 2.1, 2.3, 2.8, 2.9, 2.11, 2.12, 2.22, 2.24, and 2.25. Those figures include 2.1, 2.4, 2.5, 2.8, and 2.9.

### Chapter 3 – Specific Actions

File name	Short Description	Tables	Figures
210829-PAC-WP-BenCost PY2022-25 12.31.21 (C).xlsm	<i>Confidential</i> NEIs mapped to annual program forecasts to arrive at NPV of NEIs for the 4-year period.	3.7	3.1
210829-PAC WA _WSB HES Portfolio CE inputs_2022-2023_DLJ_090621_nmg_DLJ_092921+incr costs (C)	<i>Confidential</i> Program forecasts from 2022-2023 biennial target setting process extended for two years to arrive at 4-year CEIP forecast  Program budgets from 2022-2023 biennial target setting process extended for two years to arrive at 4-year CEIP budget	3.5 3.6	--
210829-PAC-WP-Demand Response Targets 12.31.21 (C).xlsx	<i>Confidential</i> Budget estimates for demand response with RFP bids and CPA resources	3.8	--

### Chapter 4 – Incremental Cost

File name	Short Description	Tables	Figures
210829-PAC-WP-P02-MM Initial WA Resource Alloc 12-31-21 (C).xlsx	<i>Confidential</i> Detailed Washington-allocation of all portfolio resource generation for P02-MM, the top performing portfolio the Company would have pursued without CETA legislation.  Original source data pulled from the LT (“210829-PAC-WP-LT 5230_21IRP 20yr_P02-MM 12-31-21 (C).xlsx” below), ST (“210829-PAC-WP-ST Cost Summary -P02-MMGR ST Split Run Cost Data LT 5230 ST 19667 12-31-21 (C).xlsx” below), and MT (“210829-PAC-WP-MT Cost Summary -P02-MMGR MT Split Run Cost Data LT 5230 MT 16232 (C).xlsx” below) portfolio and cost summaries for P02-MM.	--	--
210829-PAC-WP-Figure 4.1 - 21IRP 20yr P02-MM-CETA (18609) less 21IRP 20yr_P02-MM (5230)-12-31-21 (C).xlsx	<i>Confidential</i> Based on the LT model portfolio summaries for the P02-MM-CETA (ref in Chapter 1) portfolio the P02-MM portfolio (below) calculates the difference between	--	4.1 (workbook tab “Cumulative Changes Graph”)

	long-term resource planning decisions between the two portfolios to demonstrate changes in long-term investment decisions driven by CETA.		
210829-PAC-WP-LT 29923_21IRP 20yr P02-SC 12-31-21 (C).xlsx	<i>Confidential</i> Portfolio summary for Long-Term (LT) model run for the 2021 IRP portfolio P02-SCGHG developed with the social cost of greenhouse gas cost adder in the resource acquisition decision	--	--
210829-PAC-WP-LT 5230_21IRP 20yr P02-MM 12-31-21 (C).xlsx	<i>Confidential</i> Portfolio summary for Long-Term (LT) model run for the 2021 IRP portfolio P02-MM, developed under the medium gas medium carbon price scenario	--	--
210829-PAC-WP-ST Cost Summary -P02-MMGR-CETA ST Split Run Cost Data LT 18609 ST 19709 12-31-21 (C).xlsx	<p><i>Confidential</i> Cost Summary derived from the Short-Term (ST) model run for the 2021 IRP portfolio P02-MM-CETA. This file is used in calculating the incremental costs of CETA for all alternative incremental cost calculations.</p> <p>The ST Cost Summary hooks in investment costs from the LT fixed costs report ("210829-PAC-WP-18609 - P02-MMGR-CETA Fixed Costs 12-31-21 (C).xlsx" below) and a system-wide risk-adjustment from the MT model ("210829-PAC-WP-MT Cost Summary -P02-MMGR-CETA MT Split Run Cost Data LT 18609 MT 18631 12-31-21 (C).xlsx" below) for P02-MM-CETA.</p>	--	--
210829-PAC-WP-ST Cost Summary -P02-MMGR-CETA-SC ST Split Run Cost Data LT 18609 ST 20549 12-31-21 (C).xlsx	<p><i>Confidential</i> Cost Summary derived from the Short-Term (ST) model run for the 2021 IRP portfolio P02-MM-CETA-SCGHG. This file is used in calculating the incremental costs of CETA, but when the social cost of greenhouse gas is added as an operational cost.</p> <p>The ST Cost Summary hooks in investment costs from the LT fixed costs report ("210829-PAC-WP-18609 - P02-MMGR-CETA Fixed Costs 12-31-21 (C).xlsx" below) and a system-wide risk-adjustment from the MT model ("210829-PAC-WP-MT Cost Summary -P02-MMGR-CETA-SC MT Split Run Cost Data LT 18609 MT</p>	--	--

	18716 (C).xlsx" below) for P02-MM-CETA and P02-MM-CETA-SCGHG, respectively.		
210829-PAC-WP-ST Cost Summary -P02-MMGR ST Split Run Cost Data LT 5230 ST 19667 12-31-21 (C).xlsx	<p><i>Confidential</i> Cost Summary derived from the Short-Term (ST) model run for the 2021 IRP portfolio P02-MM. This file is used in calculating the incremental costs as an alternative lowest reasonable cost portfolio.</p> <p>The ST Cost Summary hooks in investment costs from the LT fixed costs report ("210829-PAC-WP-5230 - P02-MMGR Fixed Costs 12-31-21 (C).xlsx" below) and a system-wide risk-adjustment from the MT model ("210829-PAC-WP-MT Cost Summary -P02-MMGR MT Split Run Cost Data LT 5230 MT 16232 (C).xlsx" below) for P02-MM.</p>	--	--
210829-PAC-WP-ST Cost Summary -P02-MMGR-SC ST Split Run Cost Data LT 5230 ST 20633 12-31-21 (C).xlsx	<p><i>Confidential</i> Cost Summary derived from the Short-Term (ST) model run for the 2021 IRP portfolio P02-MM-SCGHG. This file is used in calculating the incremental costs as an alternative lowest reasonable cost portfolio when the social cost of greenhouse gas is added as an operational cost.</p> <p>The ST Cost Summary hooks in investment costs from the LT fixed costs report ("210829-PAC-WP-5230 - P02-MMGR Fixed Costs 12-31-21 (C).xlsx" below) and a system-wide risk-adjustment from the MT model ("210829-PAC-WP-MT Cost Summary -P02-MMGR-SC MT Split Run Cost Data LT 5230 MT 17644 12-31-21 (C).xlsx" below) for P02-MM and P02-MM-SCGHG, respectively.</p>	--	--
210829-PAC-WP-ST Cost Summary -P02-SCGHG-MM Split Run Cost Data LT 29923 ST 30180 12-31-21 (C).xlsx	<p><i>Confidential</i> Cost Summary derived from the Short-Term (ST) model run for the 2021 IRP portfolio P02-SCGHG-MM. This file is used in calculating the incremental costs as an alternative lowest reasonable cost portfolio as explicitly required by CETA and uses the social cost of greenhouse gas as a dispatch cost adder in the resource acquisition decision.</p>	--	--

	<p>The ST Cost Summary hooks in investment costs from the LT fixed costs report (“210829-PAC-WP-29923 - P02-SCGR Fixed Costs 12-31-21 (C).xlsx” below) and a system-wide risk-adjustment from the MT model (“210829-PAC-WP-MT Cost Summary -P02-SCGHG-MM MT Split Run Cost Data LT 29923 MT 30029 12-31-21 (C).xlsx” below) for P02-SCGHG and P02-SCGHG-MM, respectively.</p>		
<p>210829-PAC-WP-MT Cost Summary -P02-MMGR-CETA MT Split Run Cost Data LT 18609 MT 18631 12-31-21 (C).xlsx</p>	<p><i>Confidential</i> Cost Summary derived from the Medium-Term (MT) model run for the 2021 IRP portfolio P02-MM-CETA.</p> <p>This file is used to create the risk-adjustment value added in the ST Cost Summary file.</p>	--	--
<p>210829-PAC-WP-MT Cost Summary -P02-MMGR-CETA-SC MT Split Run Cost Data LT 18609 MT 18716 (C).xlsx</p>	<p><i>Confidential</i> Cost Summary derived from the Medium-Term (MT) model run for the 2021 IRP portfolio P02-MM-CETA-SCGHG.</p> <p>This file is used to create the risk-adjustment value added in the ST Cost Summary file.</p>	--	--
<p>210829-PAC-WP-MT Cost Summary -P02-MMGR MT Split Run Cost Data LT 5230 MT 16232 (C).xlsx</p>	<p><i>Confidential</i> Cost Summary derived from the Medium-Term (MT) model run for the 2021 IRP portfolio P02-MM.</p> <p>This file is used to create the risk-adjustment value added in the ST Cost Summary file.</p>	--	--
<p>210829-PAC-WP-MT Cost Summary -P02-MMGR-SC MT Split Run Cost Data LT 5230 MT 17644 12-31-21 (C).xlsx</p>	<p><i>Confidential</i> Cost Summary derived from the Medium-Term (MT) model run for the 2021 IRP portfolio P02-MM-SCGHG.</p> <p>This file is used to create the risk-adjustment value added in the ST Cost Summary file.</p>	--	--
<p>210829-PAC-WP-MT Cost Summary -P02-SCGHG-MM MT Split Run Cost Data LT 29923 MT 30029 12-31-21 (C).xlsx</p>	<p><i>Confidential</i> Cost Summary derived from the Medium-Term (MT) model run for the 2021 IRP portfolio P02-SCGHG-MM.</p>	--	--

	This file is used to create the risk-adjustment value added in the ST Cost Summary file.		
210829-PAC-WP-18609 - P02-MMGR-CETA Fixed Costs 12-31-21 (C).xlsx	<i>Confidential</i> Source data for LT portfolio fixed costs used in the ST Cost Summary for P02-MM-CETA.	--	--
210829-PAC-WP-5230 - P02-MMGR Fixed Costs 12-31-21 (C).xlsx	<i>Confidential</i> Source data for LT portfolio fixed costs used in the ST Cost Summary for P02-MM.	--	--
210829-PAC-WP-29923 - P02-SCGR Fixed Costs 12-31-21 (C).xlsx	<i>Confidential</i> Source data for LT portfolio fixed costs used in the ST Cost Summary for P02-SCGHG.	--	--
210829-PAC-WP-ST Cost Summary -P02-MMGR-CETA ST WA Alloc 12-31-21 (C).xlsx	<i>Confidential</i> A Washington-allocation view of the ST Cost Summary file for P02-MM-CETA specifically for the CEIP period of 2022-2025 used only for purposes of calculating the incremental cost of CETA.  Is the source data for the P02-MM-CETA less P02-SCGHG-MM compare file below.	--	--
210829-PAC-WP-ST Cost Summary -P02-SCGHG-MM ST WA Alloc 12-31-21 (C).xlsx	<i>Confidential</i> A Washington-allocation view of the ST Cost Summary file for P02-SCGHG-MM specifically for the CEIP period of 2022-2025 used only for purposes of calculating the incremental cost of CETA.  Is the source data for the P02-MM-CETA less P02-SCGHG-MM compare file below.	--	--
210829-PAC-WP-Cost Summary Compare P02-MMGR-CETA less P02-SCGHG-MM 12-31-21 (C).xlsx	<i>Confidential</i> Calculates the difference between total portfolio costs of the P02-MM-CETA portfolio (lowest reasonable cost portfolio) and the P02-SCGHG-MM (alternative lowest reasonable cost portfolio).  Original data pulled from the Washington-allocated ST Cost Summary files for P02-MM-CETA and P02-SCGHG-MM (costs are derived from both the LT plan PVRR costs and ST hourly generation costs, with a system-wide risk-adjustment value from the MT stochastic model).	--	--
210829-PAC-WP-Cost Summary Compare P02-MM-CETA less P02-MM 12-31-21 (C).xlsx	<i>Confidential</i> Calculates the difference between total portfolio costs of the P02-MM-CETA portfolio (lowest reasonable cost portfolio)	--	--



	<p>and the P02-MM (for information purposes).</p> <p>Original data pulled from the ST Cost Summary files for P02-MM-CETA and P02-MM (costs are derived from both the LT plan PVRR costs and ST hourly generation costs, with a system-wide risk-adjustment value from the MT stochastic model).</p>		
210829-PAC-WP-Cost Summary Compare P02-MM-CETA-SC less P02-MM-SC 12-31-21 (C).xlsx	<p><i>Confidential</i> Calculates the difference between total portfolio costs of the P02-MM-CETA-SGHH portfolio (lowest reasonable cost portfolio) and the P02-MM-SCGHH (for informational purposes).</p> <p>Original data pulled from the ST Cost Summary files for P02-MM-CETA-SCGHH and P02-MM-SCGHH (costs are derived from both the LT plan PVRR costs and ST hourly generation costs, with a system-wide risk-adjustment value from the MT stochastic model).</p>	--	--
210829-PAC-WP-Rev Req-12-31-21.xlsx	Revenue Requirement Calculations	4.1 – 4.4	--
210829-PAC-WP-Port Scenarios Costs-12-31-21.xlsx	Scenario analysis – Revenue Requirement of Alternative Portfolio Comparisons	4.5	--