



Portland General Electric

121 SW Salmon Street • Portland, OR 97204
portlandgeneral.com

March 31, 2023

Via Electronic Filing

Public Utility Commission of Oregon
Attention: Filing Center
201 High Street SE, Suite 100
Salem, OR 97301
P.O. Box 1088
Salem, OR 97308-1088

Re: LC 80 – Portland General Electric Company’s 2023 Clean Energy Plan Data Template

Dear Filing Center:

Enclosed for filing today in the above-referenced docket is Portland General Electric Company’s (PGE) 2023 Clean Energy Plan (CEP) data template. This addendum to PGE’s 2023 CEP and Integrated Resource Plan (IRP) filing contains the modeling results supporting PGE’s CEP/IRP. A digital version of these materials is available on PGE’s website at www.portlandgeneral.com/resourceplanning/; please note that some cell comments which provide context for data provided are only available in the digital version.

Our filing is responsive to Public Utility Commission of Oregon’s (OPUC or Commission) CEP data transparency and accessibility expectations, primarily adopted via Order No. 22-446. The format of this spreadsheet follows the template provided to PGE by OPUC Staff on February 24, 2023.

Kristen Sheeran, PGE’s Director of Sustainability and Resource Planning, leads PGE’s CEP and IRP work and will be representing PGE in the upcoming LC 80 OPUC process. Please direct communications, formal correspondence, and Commission Staff discovery requests regarding this filing to: pge.opuc.filings@pgn.com.

Sincerely,

/s/ Shay LaBray

Shay LaBray
Senior Director, Regulatory Affairs & Strategy
Resource & Regulatory Strategy

Enclosure



Purpose: This spreadsheet contains supporting data for PGE's portfolio analysis for the 2023 Clean Energy Plan (CEP) and Integrated Resource Plan (IRP). For accessibility and in compliance with OPUC Order 22-446, the data is provided in a standard format provided by Public Utility Commission of Oregon (OPUC) Staff.

Location: A Microsoft Excel version of this document is available on PGE's website at www.portlandgeneral.com/resourceplanning/
The Excel version contains cell comments and notes that provide context to data provided that may not be visible in the filed version.

Contents:

- 1... Data Template Description
- 2... Portfolios
- 3... Annual Goals for Actions
- 4... Annual Greenhouse Gas (GHG) Impacts of Actions
- 5... Annual Community Benefit Indicator (CBI) Impacts of Actions
- 6... Portfolio Scoring
- 7... Additional Transparency Items
- 8... GHG Emissions
- 9... Fossil Fuel Operations
- 10... Annual Costs
- 11... RECs

Contact: For general inquiries or accessibility questions, please contact CEP@pgn.com
For all formal correspondence or inquiries related to PGE's CEP/IRP filing, please contact pge.opuc.filings@pgn.com

Vintage: Updated 3/31/2023

Based on: DRAFT CEP/IRP Data Template
Received from OPUC Staff on 2/24/23

DRAFT CEP/IRP Data Template

Template vintage (OPUC Staff): 2/22/2023

Background

This spreadsheet provides a standard data sharing template for non-confidential information pertaining utility Clean Energy Plans (CEPs) and Integrated Resource Plans (IRPs), as described in OPUC Orders Orders No. 22-206, No. 22-390, and No. 22-446. This template accompanies a complete list of the requirements and expectations from Orders No. 22-206, No. 22-390, and No. 22-446 ("**UM 2225 Order Summary/Rubric**") and the information requested in this data template is cross-referenced to the items listed in the UM 2225 Order Summary/Rubric at the top of each tab.

Units

Information is requested in the following standard units to enable efficient review by OPUC Staf and stakeholders:

Data	Units
Capacity	MW
Energy	GWh, MWh, or MWa
GHG Emissions	metric tons CO _{2e}
Fuel burn	MMBtu
Costs	nominal \$ or million nominal \$

For some items, including Community Benefits Indicators (CBIs) and Scoring Metrics, the utility must provide the units that they use in their plans.

Legend

- Provide data on a forecasted or planning basis
- Provide historical data
- Provide units, metric, or resource name

Instructions

Fill in the requested information, with units if not already specified.
 If providing information for more than 30 portfolios (see Portfolios tab), copy or expand tables as needed
 Email questions to:
 Submission instructions:

Instructions

List the set of portfolios considered in developing the **Action Plan**, which test different paces of GHG reductions and different levels of community impact.

Identify the Preferred Portfolio in cell B5

Preferred Portfolio	Portfolio40	Preferred Portfolio
Index	Portfolio list	
1	Portfolio1	Linear decline
2	Portfolio2	Front-loaded decline
3	Portfolio3	Back-loaded decline
4	Portfolio4	100% emissions reduction by 2035
5	Portfolio5	2-yr forward shift in targets
6	Portfolio6	Optimize NCE
7	Portfolio7	Zero NCE
8	Portfolio8	60 MWa EE
9	Portfolio9	Default CBREs
10	Portfolio10	CBRE - 75%
11	Portfolio11	CBRE - zero
12	Portfolio12	CBRE - microgrid
13	Portfolio13	CBRE - optimize
14	Portfolio14	Unconstrained Tx
15	Portfolio15	No Upgrades
16	Portfolio16	Unconstrained SoA
17	Portfolio17	Unconstrained SoA Plus
18	Portfolio18	SoA in 2027
19	Portfolio19	SoA in 2029
20	Portfolio20	WY in 2026
21	Portfolio21	NV in 2026
22	Portfolio22	WY in 2028
23	Portfolio23	NV in 2028
24	Portfolio24	Oregon-only resources
25	Portfolio25	Physical RPS
26	Portfolio26	Hydrogen blending
27	Portfolio27	Hydrogen building
28	Portfolio28	Offshore wind
29	Portfolio29	Long Duration Storage
30	Portfolio30	Pumped hydro
31	Portfolio31	RTO
32	Portfolio32	Min Avg LT cost
33	Portfolio33	Min Avg ST cost
34	Portfolio34	Min Ref ST cost
35	Portfolio35	SoA in 2027 Plus
36	Portfolio36	50 Mwa EE
37	Portfolio37	25 Mwa EE
38	Portfolio38	70 Mwa EE
39	Portfolio39	Optimized
40	Portfolio40	Preferred

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual goals for actions over the study period
 UM 2225 Order Summary/Rubric references: C.2(a)-(i), C.3

2 Portfolio2		Front-loaded decline										CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes
Year	Clean energy resources (MWa) System resources	Clean energy resources (MWa) Voluntary programs	Energy Storage (MW) System resources	Energy Storage (MWh) System resources	Energy Storage (MW) Voluntary programs	Energy Storage (MWh) Voluntary programs	Energy Efficiency (MWa)	Demand Response (MW)	System resources	Voluntary programs	System resources	Voluntary programs						
2023	n/a	85.49	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2024	138.60	112.47	-	-	n/a	n/a	30.00	133.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2025	250.22	113.21	400.00	1,600.00	n/a	n/a	60.00	162.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2026	661.69	114.47	530.10	2,120.40	n/a	n/a	90.00	183.00	12.55	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2027	835.17	115.74	530.10	2,120.40	n/a	n/a	120.00	199.00	16.01	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2028	994.59	116.89	530.10	2,120.40	n/a	n/a	150.00	211.00	21.58	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2029	1,126.31	118.28	530.10	2,120.40	n/a	n/a	183.00	218.00	26.79	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2030	1,132.98	119.55	999.99	3,999.96	n/a	n/a	216.00	228.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2031	1,226.28	119.04	999.99	3,999.96	n/a	n/a	251.00	242.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2032	1,336.86	118.41	999.99	3,999.96	n/a	n/a	285.00	252.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2033	1,445.24	118.02	999.99	3,999.96	n/a	n/a	317.00	261.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2034	1,553.47	117.52	999.99	3,999.96	n/a	n/a	348.00	270.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2035	1,672.85	117.01	999.99	3,999.96	n/a	n/a	377.00	272.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2036	1,829.96	116.40	999.99	3,999.96	n/a	n/a	404.00	287.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2037	2,007.05	67.75	999.99	3,999.96	n/a	n/a	429.00	296.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2038	2,196.38	41.47	999.99	3,999.96	n/a	n/a	452.00	303.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2039	2,344.94	16.93	1,100.00	4,400.00	n/a	n/a	471.00	310.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2040	2,465.00	16.93	1,200.01	4,800.04	n/a	n/a	487.00	306.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2041	2,623.64	16.93	1,200.01	4,800.04	n/a	n/a	503.00	314.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2042	2,674.00	16.93	1,200.01	4,800.04	n/a	n/a	514.00	330.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2043	2,759.14	16.93	1,200.01	4,800.04	n/a	n/a	523.00	336.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a

3 Portfolio3		Back-loaded decline										CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes
Year	Clean energy resources (MWa) System resources	Clean energy resources (MWa) Voluntary programs	Energy Storage (MW) System resources	Energy Storage (MWh) System resources	Energy Storage (MW) Voluntary programs	Energy Storage (MWh) Voluntary programs	Energy Efficiency (MWa)	Demand Response (MW)	System resources	Voluntary programs	System resources	Voluntary programs						
2023	n/a	85.49	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2024	138.60	112.47	-	-	n/a	n/a	30.00	133.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2025	250.22	113.21	400.00	1,600.00	n/a	n/a	60.00	162.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2026	660.27	114.47	531.92	2,127.68	n/a	n/a	90.00	183.00	12.54	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2027	710.37	115.74	531.92	2,127.68	n/a	n/a	120.00	199.00	16.01	n/a	n/a	n/a	n/a	n/a	n/a	112.83	n/a	n/a
2028	793.40	116.89	531.92	2,127.68	n/a	n/a	150.00	211.00	21.56	n/a	n/a	n/a	n/a	n/a	n/a	306.06	n/a	n/a
2029	833.78	118.28	717.96	2,871.84	n/a	n/a	183.00	218.00	26.77	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2030	1,132.98	119.55	999.99	3,999.96	n/a	n/a	216.00	228.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2031	1,226.28	119.04	999.99	3,999.96	n/a	n/a	251.00	242.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2032	1,336.86	118.41	999.99	3,999.96	n/a	n/a	285.00	252.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2033	1,445.24	118.02	999.99	3,999.96	n/a	n/a	317.00	261.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2034	1,553.47	117.52	999.99	3,999.96	n/a	n/a	348.00	270.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2035	1,672.85	117.01	999.99	3,999.96	n/a	n/a	377.00	272.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2036	1,829.96	116.40	999.99	3,999.96	n/a	n/a	404.00	287.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2037	2,007.05	67.75	999.99	3,999.96	n/a	n/a	429.00	296.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2038	2,196.38	41.47	999.99	3,999.96	n/a	n/a	452.00	303.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2039	2,344.94	16.93	1,100.00	4,400.00	n/a	n/a	471.00	310.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2040	2,465.00	16.93	1,200.01	4,800.04	n/a	n/a	487.00	306.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2041	2,623.64	16.93	1,200.01	4,800.04	n/a	n/a	503.00	314.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2042	2,674.00	16.93	1,200.01	4,800.04	n/a	n/a	514.00	330.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2043	2,759.14	16.93	1,200.01	4,800.04	n/a	n/a	523.00	336.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual goals for actions over the study period

UM 2225 Order Summary/Rubric references: C.2(a)-(i), C.3

4 Portfolio4		100% emissions reduction by 2035													
Year	Clean energy resources (MWa)	Clean energy resources (MWa)	Energy Storage (MW)	Energy Storage (MWh)	Energy Storage (MW)	Energy Storage (MWh)	Energy Efficiency (MWa)	Demand Response (MW)	CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes
	System resources	Voluntary programs	System resources	System resources	Voluntary programs	Voluntary programs			System resources	Voluntary programs					
2023	n/a	85.49	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2024	138.60	112.47	-	-	n/a	n/a	30.00	133.00	-	n/a	n/a	n/a	n/a	-	n/a
2025	250.22	113.21	400.00	1,600.00	n/a	n/a	60.00	162.00	-	n/a	n/a	n/a	n/a	-	n/a
2026	660.27	114.47	531.91	2,127.64	n/a	n/a	90.00	183.00	12.55	n/a	n/a	n/a	n/a	-	n/a
2027	710.37	115.74	531.91	2,127.64	n/a	n/a	120.00	199.00	16.01	n/a	n/a	n/a	n/a	112.83	n/a
2028	793.41	116.89	531.91	2,127.64	n/a	n/a	150.00	211.00	21.57	n/a	n/a	n/a	n/a	306.08	n/a
2029	982.36	118.28	531.91	2,127.64	n/a	n/a	183.00	218.00	26.76	n/a	n/a	n/a	n/a	400.01	n/a
2030	1,132.99	119.55	999.99	3,999.96	n/a	n/a	216.00	228.00	30.79	n/a	n/a	n/a	n/a	400.01	n/a
2031	1,272.28	119.04	999.99	3,999.96	n/a	n/a	251.00	242.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2032	1,428.86	118.41	999.99	3,999.96	n/a	n/a	285.00	252.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2033	1,583.24	118.02	999.99	3,999.96	n/a	n/a	317.00	261.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2034	1,738.47	117.52	999.99	3,999.96	n/a	n/a	348.00	270.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2035	1,902.88	117.01	999.99	3,999.96	n/a	n/a	377.00	272.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2036	2,014.98	116.40	999.99	3,999.96	n/a	n/a	404.00	287.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2037	2,145.08	67.75	999.99	3,999.96	n/a	n/a	429.00	296.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2038	2,289.40	41.47	999.99	3,999.96	n/a	n/a	452.00	303.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2039	2,391.97	16.93	1,100.00	4,400.00	n/a	n/a	471.00	310.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2040	2,465.00	16.93	1,200.01	4,800.04	n/a	n/a	487.00	306.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2041	2,623.64	16.93	1,200.01	4,800.04	n/a	n/a	503.00	314.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2042	2,674.00	16.93	1,200.01	4,800.04	n/a	n/a	514.00	330.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2043	2,759.14	16.93	1,200.01	4,800.04	n/a	n/a	523.00	336.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a

5 Portfolio5		2-yr forward shift in targets													
Year	Clean energy resources (MWa)	Clean energy resources (MWa)	Energy Storage (MW)	Energy Storage (MWh)	Energy Storage (MW)	Energy Storage (MWh)	Energy Efficiency (MWa)	Demand Response (MW)	CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes
	System resources	Voluntary programs	System resources	System resources	Voluntary programs	Voluntary programs			System resources	Voluntary programs					
2023	n/a	85.49	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2024	138.60	112.47	-	-	n/a	n/a	30.00	133.00	-	n/a	n/a	n/a	n/a	-	n/a
2025	250.22	113.21	400.00	1,600.00	n/a	n/a	60.00	162.00	-	n/a	n/a	n/a	n/a	-	n/a
2026	660.27	114.47	531.93	2,127.72	n/a	n/a	90.00	183.00	12.55	n/a	n/a	n/a	n/a	-	n/a
2027	742.20	115.74	531.93	2,127.72	n/a	n/a	120.00	199.00	16.01	n/a	n/a	n/a	n/a	184.51	n/a
2028	1,077.61	116.89	531.93	2,127.72	n/a	n/a	150.00	211.00	21.58	n/a	n/a	n/a	n/a	400.01	n/a
2029	1,195.34	118.28	531.93	2,127.72	n/a	n/a	183.00	218.00	26.79	n/a	n/a	n/a	n/a	400.01	n/a
2030	1,224.98	119.55	999.99	3,999.96	n/a	n/a	216.00	228.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2031	1,318.28	119.04	999.99	3,999.96	n/a	n/a	251.00	242.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2032	1,428.86	118.41	999.99	3,999.96	n/a	n/a	285.00	252.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2033	1,537.24	118.02	999.99	3,999.96	n/a	n/a	317.00	261.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2034	1,645.47	117.52	999.99	3,999.96	n/a	n/a	348.00	270.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2035	1,764.85	117.01	999.99	3,999.96	n/a	n/a	377.00	272.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2036	1,921.96	116.40	999.99	3,999.96	n/a	n/a	404.00	287.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2037	2,099.41	67.75	999.99	3,999.96	n/a	n/a	429.00	296.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2038	2,289.40	41.47	999.99	3,999.96	n/a	n/a	452.00	303.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2039	2,391.97	16.93	1,100.00	4,400.00	n/a	n/a	471.00	310.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2040	2,465.00	16.93	1,200.01	4,800.04	n/a	n/a	487.00	306.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2041	2,623.64	16.93	1,200.01	4,800.04	n/a	n/a	503.00	314.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2042	2,674.00	16.93	1,200.01	4,800.04	n/a	n/a	514.00	330.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2043	2,759.14	16.93	1,200.01	4,800.04	n/a	n/a	523.00	336.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual goals for actions over the study period

UM 2225 Order Summary/Rubric references: C.2(a)-(i), C.3

6 Portfolio6		Optimize NCE													
Year	Clean energy resources (MWa)	Clean energy resources (MWa)	Energy Storage (MW)	Energy Storage (MWh)	Energy Storage (MW)	Energy Storage (MWh)	Energy Efficiency (MWa)	Demand Response (MW)	CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes
	System resources	Voluntary programs	System resources	System resources	Voluntary programs	Voluntary programs			System resources	Voluntary programs					
2023	n/a	85.49	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2024	138.60	112.47	-	-	n/a	n/a	30.00	133.00	-	n/a	n/a	n/a	n/a	-	n/a
2025	250.22	113.21	400.00	1,600.00	n/a	n/a	60.03	162.00	-	n/a	n/a	n/a	n/a	-	n/a
2026	545.26	114.47	560.80	2,243.20	n/a	n/a	102.06	183.00	12.54	n/a	n/a	n/a	n/a	-	n/a
2027	591.65	115.74	560.80	2,243.20	n/a	n/a	142.09	199.00	16.01	n/a	n/a	n/a	n/a	106.28	n/a
2028	707.01	116.89	560.80	2,243.20	n/a	n/a	182.12	211.00	21.56	n/a	n/a	n/a	n/a	192.00	n/a
2029	939.75	118.28	560.80	2,243.20	n/a	n/a	226.15	218.00	26.76	n/a	n/a	n/a	n/a	400.01	n/a
2030	1,079.99	119.55	999.99	3,999.96	n/a	n/a	269.18	228.00	30.79	n/a	n/a	n/a	n/a	400.01	n/a
2031	1,173.28	119.04	999.99	3,999.96	n/a	n/a	304.23	242.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2032	1,283.86	118.41	999.99	3,999.96	n/a	n/a	338.28	252.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2033	1,392.24	118.02	999.99	3,999.96	n/a	n/a	370.33	261.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2034	1,500.46	117.52	999.99	3,999.96	n/a	n/a	401.38	270.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2035	1,619.85	117.01	999.99	3,999.96	n/a	n/a	430.43	272.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2036	1,776.95	116.40	999.99	3,999.96	n/a	n/a	457.48	287.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2037	1,954.04	67.75	999.99	3,999.96	n/a	n/a	482.53	296.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2038	2,143.37	41.47	999.99	3,999.96	n/a	n/a	505.58	303.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2039	2,291.94	16.93	1,100.00	4,400.00	n/a	n/a	524.63	310.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2040	2,412.00	16.93	1,200.01	4,800.04	n/a	n/a	540.68	306.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2041	2,570.63	16.93	1,200.01	4,800.04	n/a	n/a	556.73	314.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2042	2,621.00	16.93	1,200.01	4,800.04	n/a	n/a	567.78	330.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2043	2,706.13	16.93	1,200.01	4,800.04	n/a	n/a	576.83	336.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a

7 Portfolio7		Zero NCE													
Year	Clean energy resources (MWa)	Clean energy resources (MWa)	Energy Storage (MW)	Energy Storage (MWh)	Energy Storage (MW)	Energy Storage (MWh)	Energy Efficiency (MWa)	Demand Response (MW)	CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes
	System resources	Voluntary programs	System resources	System resources	Voluntary programs	Voluntary programs			System resources	Voluntary programs					
2023	n/a	85.49	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2024	138.60	112.47	-	-	n/a	n/a	30.00	133.00	-	n/a	n/a	n/a	n/a	-	n/a
2025	250.22	113.21	400.00	1,600.00	n/a	n/a	60.00	162.00	-	n/a	n/a	n/a	n/a	-	n/a
2026	554.19	114.47	574.10	2,296.40	n/a	n/a	90.00	183.00	12.54	n/a	n/a	n/a	n/a	-	n/a
2027	613.82	115.74	574.10	2,296.40	n/a	n/a	120.00	199.00	16.01	n/a	n/a	n/a	n/a	137.17	n/a
2028	747.28	116.89	574.10	2,296.40	n/a	n/a	150.00	211.00	21.56	n/a	n/a	n/a	n/a	298.65	n/a
2029	982.91	118.28	574.10	2,296.40	n/a	n/a	183.00	218.00	26.77	n/a	n/a	n/a	n/a	400.01	n/a
2030	1,132.98	119.55	999.99	3,999.96	n/a	n/a	216.00	228.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2031	1,226.28	119.04	999.99	3,999.96	n/a	n/a	251.00	242.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2032	1,336.86	118.41	999.99	3,999.96	n/a	n/a	285.00	252.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2033	1,445.24	118.02	999.99	3,999.96	n/a	n/a	317.00	261.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2034	1,553.47	117.52	999.99	3,999.96	n/a	n/a	348.00	270.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2035	1,672.85	117.01	999.99	3,999.96	n/a	n/a	377.00	272.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2036	1,829.96	116.40	999.99	3,999.96	n/a	n/a	404.00	287.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2037	2,007.05	67.75	999.99	3,999.96	n/a	n/a	429.00	296.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2038	2,196.38	41.47	999.99	3,999.96	n/a	n/a	452.00	303.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2039	2,344.94	16.93	1,100.00	4,400.00	n/a	n/a	471.00	310.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2040	2,465.00	16.93	1,200.01	4,800.04	n/a	n/a	487.00	306.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2041	2,623.64	16.93	1,200.01	4,800.04	n/a	n/a	503.00	314.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2042	2,674.00	16.93	1,200.01	4,800.04	n/a	n/a	514.00	330.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2043	2,759.14	16.93	1,200.01	4,800.04	n/a	n/a	523.00	336.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual goals for actions over the study period

UM 2225 Order Summary/Rubric references: C.2(a)-(i), C.3

8 Portfolio8		60 MWa EE										CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes
Year	Clean energy resources (MWa) System resources	Clean energy resources (MWa) Voluntary programs	Energy Storage (MW) System resources	Energy Storage (MWh) System resources	Energy Storage (MW) Voluntary programs	Energy Storage (MWh) Voluntary programs	Energy Efficiency (MWa)	Demand Response (MW)	System resources	Voluntary programs	System resources	Voluntary programs						
2023	n/a	85.49	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2024	138.60	112.47	-	-	n/a	n/a	30.00	133.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2025	250.22	113.21	400.00	1,600.00	n/a	n/a	60.00	162.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2026	545.10	114.47	559.08	2,236.32	n/a	n/a	102.06	183.00	12.54	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2027	589.61	115.74	559.08	2,236.32	n/a	n/a	144.09	199.00	16.01	n/a	n/a	n/a	n/a	n/a	n/a	102.09	n/a	n/a
2028	702.99	116.89	559.08	2,236.32	n/a	n/a	186.12	211.00	21.56	n/a	n/a	n/a	n/a	n/a	n/a	186.30	n/a	n/a
2029	934.72	118.28	559.08	2,236.32	n/a	n/a	231.15	218.00	26.76	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2030	1,073.01	119.55	999.99	3,999.96	n/a	n/a	276.16	228.00	30.79	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2031	1,166.30	119.04	999.99	3,999.96	n/a	n/a	311.21	242.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2032	1,276.88	118.41	999.99	3,999.96	n/a	n/a	345.26	252.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2033	1,385.26	118.02	999.99	3,999.96	n/a	n/a	377.31	261.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2034	1,493.48	117.52	999.99	3,999.96	n/a	n/a	408.36	270.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2035	1,612.87	117.01	999.99	3,999.96	n/a	n/a	437.41	272.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2036	1,769.97	116.40	999.99	3,999.96	n/a	n/a	464.46	287.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2037	1,947.06	67.75	999.99	3,999.96	n/a	n/a	489.51	296.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2038	2,136.39	41.47	999.99	3,999.96	n/a	n/a	512.56	303.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2039	2,284.96	16.93	1,100.00	4,400.00	n/a	n/a	531.61	310.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2040	2,405.02	16.93	1,200.01	4,800.04	n/a	n/a	547.66	306.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2041	2,563.65	16.93	1,200.01	4,800.04	n/a	n/a	563.71	314.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2042	2,614.02	16.93	1,200.01	4,800.04	n/a	n/a	574.76	330.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2043	2,699.15	16.93	1,200.01	4,800.04	n/a	n/a	583.81	336.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a

9 Portfolio9		Default CBREs										CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes
Year	Clean energy resources (MWa) System resources	Clean energy resources (MWa) Voluntary programs	Energy Storage (MW) System resources	Energy Storage (MWh) System resources	Energy Storage (MW) Voluntary programs	Energy Storage (MWh) Voluntary programs	Energy Efficiency (MWa)	Demand Response (MW)	System resources	Voluntary programs	System resources	Voluntary programs						
2023	n/a	85.49	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2024	138.60	112.47	-	-	n/a	n/a	30.00	133.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2025	250.22	113.21	400.00	1,600.00	n/a	n/a	60.00	162.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2026	554.19	114.47	574.10	2,296.40	n/a	n/a	90.00	183.00	12.54	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2027	613.82	115.74	574.10	2,296.40	n/a	n/a	120.00	199.00	16.01	n/a	n/a	n/a	n/a	n/a	n/a	137.17	n/a	n/a
2028	747.28	116.89	574.10	2,296.40	n/a	n/a	150.00	211.00	21.56	n/a	n/a	n/a	n/a	n/a	n/a	298.65	n/a	n/a
2029	982.91	118.28	574.10	2,296.40	n/a	n/a	183.00	218.00	26.77	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2030	1,132.98	119.55	999.99	3,999.96	n/a	n/a	216.00	228.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2031	1,226.28	119.04	999.99	3,999.96	n/a	n/a	251.00	242.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2032	1,336.86	118.41	999.99	3,999.96	n/a	n/a	285.00	252.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2033	1,445.24	118.02	999.99	3,999.96	n/a	n/a	317.00	261.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2034	1,553.47	117.52	999.99	3,999.96	n/a	n/a	348.00	270.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2035	1,672.85	117.01	999.99	3,999.96	n/a	n/a	377.00	272.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2036	1,829.96	116.40	999.99	3,999.96	n/a	n/a	404.00	287.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2037	2,007.05	67.75	999.99	3,999.96	n/a	n/a	429.00	296.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2038	2,196.38	41.47	999.99	3,999.96	n/a	n/a	452.00	303.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2039	2,344.94	16.93	1,100.00	4,400.00	n/a	n/a	471.00	310.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2040	2,465.00	16.93	1,200.01	4,800.04	n/a	n/a	487.00	306.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2041	2,623.64	16.93	1,200.01	4,800.04	n/a	n/a	503.00	314.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2042	2,674.00	16.93	1,200.01	4,800.04	n/a	n/a	514.00	330.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2043	2,759.14	16.93	1,200.01	4,800.04	n/a	n/a	523.00	336.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual goals for actions over the study period

UM 2225 Order Summary/Rubric references: C.2(a)-(i), C.3

10 Portfolio10		CBRE - 75%													
Year	Clean energy resources (MWa)	Clean energy resources (MWa)	Energy Storage (MW)	Energy Storage (MWh)	Energy Storage (MW)	Energy Storage (MWh)	Energy Efficiency (MWa)	Demand Response (MW)	CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes
	System resources	Voluntary programs	System resources	System resources	Voluntary programs	Voluntary programs			System resources	Voluntary programs					
2023	n/a	85.49	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2024	138.60	112.47	-	-	n/a	n/a	30.00	133.00	-	n/a	n/a	n/a	n/a	-	n/a
2025	250.22	113.21	400.00	1,600.00	n/a	n/a	60.00	162.00	0.01	n/a	n/a	n/a	n/a	-	n/a
2026	557.27	114.47	583.88	2,335.52	n/a	n/a	90.00	183.00	9.48	n/a	n/a	n/a	n/a	-	n/a
2027	617.87	115.74	583.88	2,335.52	n/a	n/a	120.00	199.00	12.09	n/a	n/a	n/a	n/a	139.01	n/a
2028	751.81	116.89	583.88	2,335.52	n/a	n/a	150.00	211.00	16.29	n/a	n/a	n/a	n/a	299.98	n/a
2029	989.62	118.28	583.88	2,335.52	n/a	n/a	183.00	218.00	20.21	n/a	n/a	n/a	n/a	400.01	n/a
2030	1,140.54	119.55	999.99	3,999.96	n/a	n/a	216.00	228.00	23.24	n/a	n/a	n/a	n/a	400.01	n/a
2031	1,233.83	119.04	999.99	3,999.96	n/a	n/a	251.00	242.00	23.26	n/a	n/a	n/a	n/a	400.01	n/a
2032	1,344.40	118.41	999.99	3,999.96	n/a	n/a	285.00	252.00	23.27	n/a	n/a	n/a	n/a	400.01	n/a
2033	1,452.77	118.02	999.99	3,999.96	n/a	n/a	317.00	261.00	23.28	n/a	n/a	n/a	n/a	400.01	n/a
2034	1,560.98	117.52	999.99	3,999.96	n/a	n/a	348.00	270.00	23.29	n/a	n/a	n/a	n/a	400.01	n/a
2035	1,680.36	117.01	999.99	3,999.96	n/a	n/a	377.00	272.00	23.30	n/a	n/a	n/a	n/a	400.01	n/a
2036	1,837.45	116.40	999.99	3,999.96	n/a	n/a	404.00	287.00	23.32	n/a	n/a	n/a	n/a	400.01	n/a
2037	2,014.54	67.75	999.99	3,999.96	n/a	n/a	429.00	296.00	23.32	n/a	n/a	n/a	n/a	400.01	n/a
2038	2,203.85	41.47	999.99	3,999.96	n/a	n/a	452.00	303.00	23.33	n/a	n/a	n/a	n/a	400.01	n/a
2039	2,352.41	16.93	1,100.00	4,400.00	n/a	n/a	471.00	310.00	23.34	n/a	n/a	n/a	n/a	400.01	n/a
2040	2,472.46	16.93	1,200.01	4,800.04	n/a	n/a	487.00	306.00	23.35	n/a	n/a	n/a	n/a	400.01	n/a
2041	2,631.08	16.93	1,200.01	4,800.04	n/a	n/a	503.00	314.00	23.36	n/a	n/a	n/a	n/a	400.01	n/a
2042	2,681.43	16.93	1,200.01	4,800.04	n/a	n/a	514.00	330.00	23.38	n/a	n/a	n/a	n/a	400.01	n/a
2043	2,766.56	16.93	1,200.01	4,800.04	n/a	n/a	523.00	336.00	23.38	n/a	n/a	n/a	n/a	400.01	n/a

11 Portfolio11		CBRE - zero													
Year	Clean energy resources (MWa)	Clean energy resources (MWa)	Energy Storage (MW)	Energy Storage (MWh)	Energy Storage (MW)	Energy Storage (MWh)	Energy Efficiency (MWa)	Demand Response (MW)	CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes
	System resources	Voluntary programs	System resources	System resources	Voluntary programs	Voluntary programs			System resources	Voluntary programs					
2023	n/a	85.49	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2024	138.60	112.47	-	-	n/a	n/a	30.00	133.00	-	n/a	n/a	n/a	n/a	-	n/a
2025	250.22	113.21	400.00	1,600.00	n/a	n/a	60.00	162.00	0.01	n/a	n/a	n/a	n/a	-	n/a
2026	660.27	114.47	578.71	2,314.84	n/a	n/a	90.00	183.00	0.01	n/a	n/a	n/a	n/a	-	n/a
2027	719.53	115.74	578.71	2,314.84	n/a	n/a	120.00	199.00	0.04	n/a	n/a	n/a	n/a	133.45	n/a
2028	798.00	116.89	578.71	2,314.84	n/a	n/a	150.00	211.00	0.05	n/a	n/a	n/a	n/a	316.93	n/a
2029	1,010.17	118.28	613.08	2,452.32	n/a	n/a	183.00	218.00	0.05	n/a	n/a	n/a	n/a	400.01	n/a
2030	1,163.72	119.55	999.99	3,999.96	n/a	n/a	216.00	228.00	0.06	n/a	n/a	n/a	n/a	400.01	n/a
2031	1,257.01	119.04	999.99	3,999.96	n/a	n/a	251.00	242.00	0.07	n/a	n/a	n/a	n/a	400.01	n/a
2032	1,367.58	118.41	999.99	3,999.96	n/a	n/a	285.00	252.00	0.07	n/a	n/a	n/a	n/a	400.01	n/a
2033	1,475.95	118.02	999.99	3,999.96	n/a	n/a	317.00	261.00	0.10	n/a	n/a	n/a	n/a	400.01	n/a
2034	1,584.17	117.52	999.99	3,999.96	n/a	n/a	348.00	270.00	0.11	n/a	n/a	n/a	n/a	400.01	n/a
2035	1,703.54	117.01	999.99	3,999.96	n/a	n/a	377.00	272.00	0.11	n/a	n/a	n/a	n/a	400.01	n/a
2036	1,860.64	116.40	999.99	3,999.96	n/a	n/a	404.00	287.00	0.12	n/a	n/a	n/a	n/a	400.01	n/a
2037	2,037.72	67.75	999.99	3,999.96	n/a	n/a	429.00	296.00	0.13	n/a	n/a	n/a	n/a	400.01	n/a
2038	2,227.04	41.47	999.99	3,999.96	n/a	n/a	452.00	303.00	0.16	n/a	n/a	n/a	n/a	400.01	n/a
2039	2,375.59	16.93	1,100.00	4,400.00	n/a	n/a	471.00	310.00	0.16	n/a	n/a	n/a	n/a	400.01	n/a
2040	2,495.64	16.93	1,200.01	4,800.04	n/a	n/a	487.00	306.00	0.17	n/a	n/a	n/a	n/a	400.01	n/a
2041	2,654.27	16.93	1,200.01	4,800.04	n/a	n/a	503.00	314.00	0.18	n/a	n/a	n/a	n/a	400.01	n/a
2042	2,704.62	16.93	1,200.01	4,800.04	n/a	n/a	514.00	330.00	0.18	n/a	n/a	n/a	n/a	400.01	n/a
2043	2,789.74	16.93	1,200.01	4,800.04	n/a	n/a	523.00	336.00	0.19	n/a	n/a	n/a	n/a	400.01	n/a

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual goals for actions over the study period

UM 2225 Order Summary/Rubric references: C.2(a)-(i), C.3

12 Portfolio12		CBRE - microgrid													
Year	Clean energy resources (MWa)	Clean energy resources (MWa)	Energy Storage (MW)	Energy Storage (MWh)	Energy Storage (MW)	Energy Storage (MWh)	CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes		
	System resources	Voluntary programs	System resources	System resources	Voluntary programs	Voluntary programs	Energy Efficiency (MWa)	Demand Response (MW)	System resources	Voluntary programs					
2023	n/a	85.49	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		
2024	138.60	112.47	-	-	n/a	n/a	30.00	133.00	-	n/a	n/a	-	n/a		
2025	250.22	113.21	400.00	1,600.00	n/a	n/a	60.00	162.00	0.01	n/a	n/a	-	n/a		
2026	560.37	114.47	578.64	2,314.56	n/a	n/a	90.00	183.00	7.86	n/a	n/a	-	n/a		
2027	619.64	115.74	578.64	2,314.56	n/a	n/a	120.00	199.00	10.26	n/a	n/a	135.91	n/a		
2028	753.28	116.89	578.64	2,314.56	n/a	n/a	150.00	211.00	13.00	n/a	n/a	298.18	n/a		
2029	994.18	118.28	578.64	2,314.56	n/a	n/a	183.00	218.00	15.56	n/a	n/a	400.01	n/a		
2030	1,145.47	119.55	999.99	3,999.96	n/a	n/a	216.00	228.00	18.31	n/a	n/a	400.01	n/a		
2031	1,238.76	119.04	999.99	3,999.96	n/a	n/a	251.00	242.00	18.32	n/a	n/a	400.01	n/a		
2032	1,349.33	118.41	999.99	3,999.96	n/a	n/a	285.00	252.00	18.32	n/a	n/a	400.01	n/a		
2033	1,457.71	118.02	999.99	3,999.96	n/a	n/a	317.00	261.00	18.34	n/a	n/a	400.01	n/a		
2034	1,565.92	117.52	999.99	3,999.96	n/a	n/a	348.00	270.00	18.35	n/a	n/a	400.01	n/a		
2035	1,685.30	117.01	999.99	3,999.96	n/a	n/a	377.00	272.00	18.35	n/a	n/a	400.01	n/a		
2036	1,842.39	116.40	999.99	3,999.96	n/a	n/a	404.00	287.00	18.36	n/a	n/a	400.01	n/a		
2037	2,019.48	67.75	999.99	3,999.96	n/a	n/a	429.00	296.00	18.37	n/a	n/a	400.01	n/a		
2038	2,208.80	41.47	999.99	3,999.96	n/a	n/a	452.00	303.00	18.39	n/a	n/a	400.01	n/a		
2039	2,357.35	16.93	1,100.00	4,400.00	n/a	n/a	471.00	310.00	18.39	n/a	n/a	400.01	n/a		
2040	2,477.41	16.93	1,200.01	4,800.04	n/a	n/a	487.00	306.00	18.40	n/a	n/a	400.01	n/a		
2041	2,636.03	16.93	1,200.01	4,800.04	n/a	n/a	503.00	314.00	18.41	n/a	n/a	400.01	n/a		
2042	2,686.38	16.93	1,200.01	4,800.04	n/a	n/a	514.00	330.00	18.41	n/a	n/a	400.01	n/a		
2043	2,771.51	16.93	1,200.01	4,800.04	n/a	n/a	523.00	336.00	18.42	n/a	n/a	400.01	n/a		

13 Portfolio13		CBRE - optimize													
Year	Clean energy resources (MWa)	Clean energy resources (MWa)	Energy Storage (MW)	Energy Storage (MWh)	Energy Storage (MW)	Energy Storage (MWh)	CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes		
	System resources	Voluntary programs	System resources	System resources	Voluntary programs	Voluntary programs	Energy Efficiency (MWa)	Demand Response (MW)	System resources	Voluntary programs					
2023	n/a	85.49	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		
2024	138.60	112.47	-	-	n/a	n/a	30.00	133.00	-	n/a	n/a	-	n/a		
2025	250.22	113.21	400.00	1,600.00	n/a	n/a	60.00	162.00	-	n/a	n/a	-	n/a		
2026	554.21	114.47	574.13	2,296.52	n/a	n/a	90.00	183.00	12.51	n/a	n/a	-	n/a		
2027	613.84	115.74	574.13	2,296.52	n/a	n/a	120.00	199.00	15.98	n/a	n/a	137.18	n/a		
2028	735.24	116.89	574.13	2,296.52	n/a	n/a	150.00	211.00	21.55	n/a	n/a	273.46	n/a		
2029	982.93	118.28	574.13	2,296.52	n/a	n/a	183.00	218.00	26.75	n/a	n/a	400.01	n/a		
2030	1,133.00	119.55	999.99	3,999.96	n/a	n/a	216.00	228.00	30.78	n/a	n/a	400.01	n/a		
2031	1,226.29	119.04	999.99	3,999.96	n/a	n/a	251.00	242.00	30.80	n/a	n/a	400.01	n/a		
2032	1,336.87	118.41	999.99	3,999.96	n/a	n/a	285.00	252.00	30.80	n/a	n/a	400.01	n/a		
2033	1,445.25	118.02	999.99	3,999.96	n/a	n/a	317.00	261.00	30.80	n/a	n/a	400.01	n/a		
2034	1,553.47	117.52	999.99	3,999.96	n/a	n/a	348.00	270.00	30.80	n/a	n/a	400.01	n/a		
2035	1,672.85	117.01	999.99	3,999.96	n/a	n/a	377.00	272.00	30.80	n/a	n/a	400.01	n/a		
2036	1,829.96	116.40	999.99	3,999.96	n/a	n/a	404.00	287.00	30.80	n/a	n/a	400.01	n/a		
2037	2,007.05	67.75	999.99	3,999.96	n/a	n/a	429.00	296.00	30.80	n/a	n/a	400.01	n/a		
2038	2,196.38	41.47	999.99	3,999.96	n/a	n/a	452.00	303.00	30.80	n/a	n/a	400.01	n/a		
2039	2,344.94	16.93	1,100.00	4,400.00	n/a	n/a	471.00	310.00	30.80	n/a	n/a	400.01	n/a		
2040	2,465.00	16.93	1,200.01	4,800.04	n/a	n/a	487.00	306.00	30.80	n/a	n/a	400.01	n/a		
2041	2,623.64	16.93	1,200.01	4,800.04	n/a	n/a	503.00	314.00	30.80	n/a	n/a	400.01	n/a		
2042	2,674.00	16.93	1,200.01	4,800.04	n/a	n/a	514.00	330.00	30.80	n/a	n/a	400.01	n/a		
2043	2,759.14	16.93	1,200.01	4,800.04	n/a	n/a	523.00	336.00	30.80	n/a	n/a	400.01	n/a		

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual goals for actions over the study period

UM 2225 Order Summary/Rubric references: C.2(a)-(i), C.3

14 Portfolio14		Unconstrained Tx										CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes
Year	Clean energy resources (MWa) System resources	Clean energy resources (MWa) Voluntary programs	Energy Storage (MW) System resources	Energy Storage (MWh) System resources	Energy Storage (MW) Voluntary programs	Energy Storage (MWh) Voluntary programs	Energy Efficiency (MWa)	Demand Response (MW)	System resources	Voluntary programs	System resources	Voluntary programs						
2023	n/a	85.49	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2024	138.60	112.47	-	-	n/a	n/a	30.00	133.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2025	250.21	113.21	400.00	1,600.00	n/a	n/a	60.00	162.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2026	630.26	114.47	507.06	2,028.24	n/a	n/a	90.00	183.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2027	630.26	115.74	598.87	2,395.48	n/a	n/a	120.00	199.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2028	800.84	116.89	598.87	2,395.48	n/a	n/a	150.00	211.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2029	1,110.24	118.28	602.33	2,409.32	n/a	n/a	183.00	218.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2030	1,163.95	119.55	999.99	3,999.96	n/a	n/a	216.00	228.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2031	1,357.27	119.04	999.99	3,999.96	n/a	n/a	251.00	242.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2032	1,467.84	118.41	999.99	3,999.96	n/a	n/a	285.00	252.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2033	1,576.24	118.02	999.99	3,999.96	n/a	n/a	317.00	261.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2034	1,684.47	117.52	999.99	3,999.96	n/a	n/a	348.00	270.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2035	1,803.86	117.01	999.99	3,999.96	n/a	n/a	377.00	272.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2036	1,960.93	116.40	999.99	3,999.96	n/a	n/a	404.00	287.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2037	2,138.07	67.75	999.99	3,999.96	n/a	n/a	429.00	296.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2038	2,227.38	41.47	999.99	3,999.96	n/a	n/a	452.00	303.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2039	2,375.92	16.93	1,100.00	4,400.00	n/a	n/a	471.00	310.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2040	2,595.95	16.93	1,200.01	4,800.04	n/a	n/a	487.00	306.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2041	2,656.09	16.93	1,200.01	4,800.04	n/a	n/a	503.00	314.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2042	2,705.76	16.93	1,200.01	4,800.04	n/a	n/a	514.00	330.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2043	2,791.17	16.93	1,200.01	4,800.04	n/a	n/a	523.00	336.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a

15 Portfolio15		No Upgrades										CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes
Year	Clean energy resources (MWa) System resources	Clean energy resources (MWa) Voluntary programs	Energy Storage (MW) System resources	Energy Storage (MWh) System resources	Energy Storage (MW) Voluntary programs	Energy Storage (MWh) Voluntary programs	Energy Efficiency (MWa)	Demand Response (MW)	System resources	Voluntary programs	System resources	Voluntary programs						
2023	n/a	85.49	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2024	138.60	112.47	-	-	n/a	n/a	30.00	133.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2025	250.22	113.21	400.00	1,600.00	n/a	n/a	60.00	162.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2026	614.62	114.47	554.93	2,219.72	n/a	n/a	90.00	183.00	12.55	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2027	614.63	115.74	634.54	2,538.16	n/a	n/a	120.00	199.00	16.03	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2028	740.53	116.89	961.56	3,846.24	n/a	n/a	150.00	211.00	21.59	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2029	988.15	118.28	961.56	3,846.24	n/a	n/a	183.00	218.00	26.79	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2030	1,132.99	119.55	999.99	3,999.96	n/a	n/a	216.00	228.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2031	1,226.29	119.04	999.99	3,999.96	n/a	n/a	251.00	242.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2032	1,336.85	118.41	999.99	3,999.96	n/a	n/a	285.00	252.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2033	1,445.25	118.02	999.99	3,999.96	n/a	n/a	317.00	261.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2034	1,553.47	117.52	999.99	3,999.96	n/a	n/a	348.00	270.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2035	1,672.86	117.01	999.99	3,999.96	n/a	n/a	377.00	272.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2036	1,829.96	116.40	999.99	3,999.96	n/a	n/a	404.00	287.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2037	2,007.06	67.75	999.99	3,999.96	n/a	n/a	429.00	296.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2038	2,196.38	41.47	999.99	3,999.96	n/a	n/a	452.00	303.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2039	2,344.94	16.93	1,100.00	4,400.00	n/a	n/a	471.00	310.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2040	2,465.00	16.93	1,200.01	4,800.04	n/a	n/a	487.00	306.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2041	2,623.64	16.93	1,200.01	4,800.04	n/a	n/a	503.00	314.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2042	2,674.01	16.93	1,200.01	4,800.04	n/a	n/a	514.00	330.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2043	2,759.14	16.93	1,200.01	4,800.04	n/a	n/a	523.00	336.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual goals for actions over the study period

UM 2225 Order Summary/Rubric references: C.2(a)-(i), C.3

16 Portfolio16		Unconstrained SoA										CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes
Year	Clean energy resources (MWa) System resources	Clean energy resources (MWa) Voluntary programs	Energy Storage (MW) System resources	Energy Storage (MWh) System resources	Energy Storage (MW) Voluntary programs	Energy Storage (MWh) Voluntary programs	Energy Efficiency (MWa)	Demand Response (MW)	System resources	Voluntary programs	System resources	Voluntary programs						
2023	n/a	85.49	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2024	138.60	112.47	-	-	n/a	n/a	30.00	133.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2025	250.21	113.21	400.00	1,600.00	n/a	n/a	60.00	162.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2026	554.21	114.47	574.26	2,297.04	n/a	n/a	90.00	183.00	12.54	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2027	613.92	115.74	574.26	2,297.04	n/a	n/a	120.00	199.00	16.00	n/a	n/a	n/a	n/a	n/a	n/a	137.37	n/a	n/a
2028	760.44	116.89	574.26	2,297.04	n/a	n/a	150.00	211.00	21.56	n/a	n/a	n/a	n/a	n/a	n/a	321.59	n/a	n/a
2029	983.09	118.28	574.26	2,297.04	n/a	n/a	183.00	218.00	26.75	n/a	n/a	n/a	n/a	n/a	n/a	733.73	n/a	n/a
2030	1,167.49	119.55	806.55	3,226.20	n/a	n/a	216.00	228.00	30.75	n/a	n/a	n/a	n/a	n/a	n/a	1,144.85	n/a	n/a
2031	1,323.89	119.04	806.55	3,226.20	n/a	n/a	251.00	242.00	30.75	n/a	n/a	n/a	n/a	n/a	n/a	1,819.35	n/a	n/a
2032	1,434.32	118.41	809.77	3,239.08	n/a	n/a	285.00	252.00	30.75	n/a	n/a	n/a	n/a	n/a	n/a	2,170.83	n/a	n/a
2033	1,495.85	118.02	909.78	3,639.12	n/a	n/a	317.00	261.00	30.75	n/a	n/a	n/a	n/a	n/a	n/a	2,389.12	n/a	n/a
2034	1,557.01	117.52	1,009.79	4,039.16	n/a	n/a	348.00	270.00	30.75	n/a	n/a	n/a	n/a	n/a	n/a	2,491.92	n/a	n/a
2035	1,712.73	117.01	1,067.76	4,271.04	n/a	n/a	377.00	272.00	30.75	n/a	n/a	n/a	n/a	n/a	n/a	2,880.22	n/a	n/a
2036	1,831.05	116.40	1,067.76	4,271.04	n/a	n/a	404.00	287.00	30.76	n/a	n/a	n/a	n/a	n/a	n/a	3,257.93	n/a	n/a
2037	2,008.18	67.75	1,067.76	4,271.04	n/a	n/a	429.00	296.00	30.76	n/a	n/a	n/a	n/a	n/a	n/a	3,874.59	n/a	n/a
2038	2,197.56	41.47	1,067.76	4,271.04	n/a	n/a	452.00	303.00	30.76	n/a	n/a	n/a	n/a	n/a	n/a	4,598.78	n/a	n/a
2039	2,345.14	16.93	1,100.00	4,400.00	n/a	n/a	471.00	310.00	30.76	n/a	n/a	n/a	n/a	n/a	n/a	6,003.17	n/a	n/a
2040	2,565.19	16.93	1,200.01	4,800.04	n/a	n/a	487.00	306.00	30.76	n/a	n/a	n/a	n/a	n/a	n/a	8,254.95	n/a	n/a
2041	2,623.84	16.93	1,200.01	4,800.04	n/a	n/a	503.00	314.00	30.76	n/a	n/a	n/a	n/a	n/a	n/a	8,384.65	n/a	n/a
2042	2,674.99	16.93	1,200.01	4,800.04	n/a	n/a	514.00	330.00	30.76	n/a	n/a	n/a	n/a	n/a	n/a	8,506.60	n/a	n/a
2043	2,759.33	16.93	1,200.01	4,800.04	n/a	n/a	523.00	336.00	30.76	n/a	n/a	n/a	n/a	n/a	n/a	8,709.37	n/a	n/a

17 Portfolio17		Unconstrained SoA Plus										CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes
Year	Clean energy resources (MWa) System resources	Clean energy resources (MWa) Voluntary programs	Energy Storage (MW) System resources	Energy Storage (MWh) System resources	Energy Storage (MW) Voluntary programs	Energy Storage (MWh) Voluntary programs	Energy Efficiency (MWa)	Demand Response (MW)	System resources	Voluntary programs	System resources	Voluntary programs						
2023	n/a	85.49	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2024	138.60	112.47	-	-	n/a	n/a	30.00	133.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2025	250.21	113.21	400.00	1,600.00	n/a	n/a	60.00	162.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2026	554.21	114.47	574.26	2,297.04	n/a	n/a	90.00	183.00	12.54	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2027	613.92	115.74	574.26	2,297.04	n/a	n/a	120.00	199.00	16.00	n/a	n/a	n/a	n/a	n/a	n/a	137.38	n/a	n/a
2028	779.56	116.89	574.26	2,297.04	n/a	n/a	150.00	211.00	21.56	n/a	n/a	n/a	n/a	n/a	n/a	276.74	n/a	n/a
2029	983.09	118.28	574.26	2,297.04	n/a	n/a	183.00	218.00	26.75	n/a	n/a	n/a	n/a	n/a	n/a	733.76	n/a	n/a
2030	1,167.43	119.55	799.97	3,199.88	n/a	n/a	216.00	228.00	30.75	n/a	n/a	n/a	n/a	n/a	n/a	1,144.04	n/a	n/a
2031	1,323.81	119.04	799.97	3,199.88	n/a	n/a	251.00	242.00	30.75	n/a	n/a	n/a	n/a	n/a	n/a	1,821.31	n/a	n/a
2032	1,434.18	118.41	799.97	3,199.88	n/a	n/a	285.00	252.00	30.75	n/a	n/a	n/a	n/a	n/a	n/a	2,079.76	n/a	n/a
2033	1,504.95	118.02	899.98	3,599.92	n/a	n/a	317.00	261.00	30.75	n/a	n/a	n/a	n/a	n/a	n/a	2,300.00	n/a	n/a
2034	1,653.71	117.52	999.99	3,999.96	n/a	n/a	348.00	270.00	30.75	n/a	n/a	n/a	n/a	n/a	n/a	2,611.81	n/a	n/a
2035	1,727.66	117.01	999.99	3,999.96	n/a	n/a	377.00	272.00	30.75	n/a	n/a	n/a	n/a	n/a	n/a	2,884.57	n/a	n/a
2036	1,832.51	116.40	999.99	3,999.96	n/a	n/a	404.00	287.00	30.76	n/a	n/a	n/a	n/a	n/a	n/a	3,259.72	n/a	n/a
2037	2,007.24	67.75	999.99	3,999.96	n/a	n/a	429.00	296.00	30.76	n/a	n/a	n/a	n/a	n/a	n/a	3,679.85	n/a	n/a
2038	2,196.57	41.47	999.99	3,999.96	n/a	n/a	452.00	303.00	30.76	n/a	n/a	n/a	n/a	n/a	n/a	4,916.17	n/a	n/a
2039	2,345.13	16.93	1,100.00	4,400.00	n/a	n/a	471.00	310.00	30.76	n/a	n/a	n/a	n/a	n/a	n/a	6,088.95	n/a	n/a
2040	2,565.20	16.93	1,200.01	4,800.04	n/a	n/a	487.00	306.00	30.76	n/a	n/a	n/a	n/a	n/a	n/a	7,880.88	n/a	n/a
2041	2,624.93	16.93	1,200.01	4,800.04	n/a	n/a	503.00	314.00	30.76	n/a	n/a	n/a	n/a	n/a	n/a	8,013.55	n/a	n/a
2042	2,674.18	16.93	1,200.01	4,800.04	n/a	n/a	514.00	330.00	30.76	n/a	n/a	n/a	n/a	n/a	n/a	8,130.88	n/a	n/a
2043	2,759.34	16.93	1,200.01	4,800.04	n/a	n/a	523.00	336.00	30.76	n/a	n/a	n/a	n/a	n/a	n/a	8,335.44	n/a	n/a

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual goals for actions over the study period

UM 2225 Order Summary/Rubric references: C.2(a)-(i), C.3

18 Portfolio18		SoA in 2027													
Year	Clean energy resources (MWa)	Clean energy resources (MWa)	Energy Storage (MW)	Energy Storage (MWh)	Energy Storage (MW)	Energy Storage (MWh)	Energy Efficiency (MWa)	Demand Response (MW)	CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes
	System resources	Voluntary programs	System resources	System resources	Voluntary programs	Voluntary programs			System resources	Voluntary programs					
2023	n/a	85.49	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2024	138.60	112.47	-	-	n/a	n/a	30.00	133.00	-	n/a	n/a	n/a	n/a	-	n/a
2025	250.22	113.21	400.00	1,600.00	n/a	n/a	60.00	162.00	-	n/a	n/a	n/a	n/a	-	n/a
2026	639.83	114.47	537.61	2,150.44	n/a	n/a	90.00	183.00	12.55	n/a	n/a	n/a	n/a	-	n/a
2027	813.31	115.74	537.61	2,150.44	n/a	n/a	120.00	199.00	16.01	n/a	n/a	n/a	n/a	400.01	n/a
2028	812.75	116.89	537.61	2,150.44	n/a	n/a	150.00	211.00	21.57	n/a	n/a	n/a	n/a	400.01	n/a
2029	982.43	118.28	537.61	2,150.44	n/a	n/a	183.00	218.00	26.77	n/a	n/a	n/a	n/a	400.01	n/a
2030	1,132.98	119.55	999.99	3,999.96	n/a	n/a	216.00	228.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2031	1,226.28	119.04	999.99	3,999.96	n/a	n/a	251.00	242.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2032	1,336.86	118.41	999.99	3,999.96	n/a	n/a	285.00	252.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2033	1,445.24	118.02	999.99	3,999.96	n/a	n/a	317.00	261.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2034	1,553.47	117.52	999.99	3,999.96	n/a	n/a	348.00	270.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2035	1,672.85	117.01	999.99	3,999.96	n/a	n/a	377.00	272.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2036	1,829.96	116.40	999.99	3,999.96	n/a	n/a	404.00	287.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2037	2,007.05	67.75	999.99	3,999.96	n/a	n/a	429.00	296.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2038	2,196.38	41.47	999.99	3,999.96	n/a	n/a	452.00	303.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2039	2,344.94	16.93	1,100.00	4,400.00	n/a	n/a	471.00	310.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2040	2,465.00	16.93	1,200.01	4,800.04	n/a	n/a	487.00	306.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2041	2,623.64	16.93	1,200.01	4,800.04	n/a	n/a	503.00	314.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2042	2,674.00	16.93	1,200.01	4,800.04	n/a	n/a	514.00	330.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2043	2,759.14	16.93	1,200.01	4,800.04	n/a	n/a	523.00	336.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a

19 Portfolio19		SoA in 2029													
Year	Clean energy resources (MWa)	Clean energy resources (MWa)	Energy Storage (MW)	Energy Storage (MWh)	Energy Storage (MW)	Energy Storage (MWh)	Energy Efficiency (MWa)	Demand Response (MW)	CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes
	System resources	Voluntary programs	System resources	System resources	Voluntary programs	Voluntary programs			System resources	Voluntary programs					
2023	n/a	85.49	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2024	138.60	112.47	-	-	n/a	n/a	30.00	133.00	-	n/a	n/a	n/a	n/a	-	n/a
2025	250.22	113.21	400.00	1,600.00	n/a	n/a	60.00	162.00	-	n/a	n/a	n/a	n/a	-	n/a
2026	660.27	114.47	531.93	2,127.72	n/a	n/a	90.00	183.00	12.54	n/a	n/a	n/a	n/a	-	n/a
2027	660.28	115.74	610.01	2,440.04	n/a	n/a	120.00	199.00	16.02	n/a	n/a	n/a	n/a	-	n/a
2028	738.15	116.89	788.65	3,154.60	n/a	n/a	150.00	211.00	21.59	n/a	n/a	n/a	n/a	-	n/a
2029	985.81	118.28	788.65	3,154.60	n/a	n/a	183.00	218.00	26.78	n/a	n/a	n/a	n/a	400.01	n/a
2030	1,132.99	119.55	999.99	3,999.96	n/a	n/a	216.00	228.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2031	1,226.28	119.04	999.99	3,999.96	n/a	n/a	251.00	242.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2032	1,336.85	118.41	999.99	3,999.96	n/a	n/a	285.00	252.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2033	1,445.25	118.02	999.99	3,999.96	n/a	n/a	317.00	261.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2034	1,553.48	117.52	999.99	3,999.96	n/a	n/a	348.00	270.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2035	1,672.85	117.01	999.99	3,999.96	n/a	n/a	377.00	272.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2036	1,829.95	116.40	999.99	3,999.96	n/a	n/a	404.00	287.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2037	2,007.06	67.75	999.99	3,999.96	n/a	n/a	429.00	296.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2038	2,196.38	41.47	999.99	3,999.96	n/a	n/a	452.00	303.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2039	2,344.94	16.93	1,100.00	4,400.00	n/a	n/a	471.00	310.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2040	2,465.01	16.93	1,200.01	4,800.04	n/a	n/a	487.00	306.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2041	2,623.64	16.93	1,200.01	4,800.04	n/a	n/a	503.00	314.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2042	2,674.01	16.93	1,200.01	4,800.04	n/a	n/a	514.00	330.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2043	2,759.15	16.93	1,200.01	4,800.04	n/a	n/a	523.00	336.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual goals for actions over the study period

UM 2225 Order Summary/Rubric references: C.2(a)-(i), C.3

20 Portfolio20		WY in 2026													
Year	Clean energy resources (MWa)	Clean energy resources (MWa)	Energy Storage (MW)	Energy Storage (MWh)	Energy Storage (MW)	Energy Storage (MWh)	Energy Efficiency (MWa)	Demand Response (MW)	CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes
	System resources	Voluntary programs	System resources	System resources	Voluntary programs	Voluntary programs			System resources	Voluntary programs					
2023	n/a	85.49	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2024	138.60	112.47	-	-	n/a	n/a	30.00	133.00	-	n/a	n/a	n/a	n/a	-	n/a
2025	250.22	113.21	400.00	1,600.00	n/a	n/a	60.00	162.00	-	n/a	n/a	n/a	n/a	-	n/a
2026	773.53	114.47	400.00	1,600.00	n/a	n/a	90.00	183.00	12.54	n/a	n/a	n/a	n/a	399.99	n/a
2027	773.54	115.74	400.00	1,600.00	n/a	n/a	120.00	199.00	16.00	n/a	n/a	n/a	n/a	399.99	n/a
2028	773.02	116.89	400.00	1,600.00	n/a	n/a	150.00	211.00	21.56	n/a	n/a	n/a	n/a	399.99	n/a
2029	980.57	118.28	400.00	1,600.00	n/a	n/a	183.00	218.00	26.77	n/a	n/a	n/a	n/a	399.99	n/a
2030	1,131.92	119.55	924.86	3,699.44	n/a	n/a	216.00	228.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2031	1,226.02	119.04	980.66	3,922.64	n/a	n/a	251.00	242.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2032	1,336.56	118.41	980.66	3,922.64	n/a	n/a	285.00	252.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2033	1,444.98	118.02	980.66	3,922.64	n/a	n/a	317.00	261.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2034	1,553.20	117.52	980.66	3,922.64	n/a	n/a	348.00	270.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2035	1,672.60	117.01	980.66	3,922.64	n/a	n/a	377.00	272.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2036	1,829.69	116.40	980.66	3,922.64	n/a	n/a	404.00	287.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2037	2,006.79	67.75	980.66	3,922.64	n/a	n/a	429.00	296.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2038	2,196.38	41.47	999.99	3,999.96	n/a	n/a	452.00	303.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2039	2,344.93	16.93	1,100.00	4,400.00	n/a	n/a	471.00	310.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2040	2,465.00	16.93	1,200.01	4,800.04	n/a	n/a	487.00	306.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2041	2,623.64	16.93	1,200.01	4,800.04	n/a	n/a	503.00	314.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2042	2,674.00	16.93	1,200.01	4,800.04	n/a	n/a	514.00	330.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2043	2,759.14	16.93	1,200.01	4,800.04	n/a	n/a	523.00	336.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a

21 Portfolio21		NV in 2026													
Year	Clean energy resources (MWa)	Clean energy resources (MWa)	Energy Storage (MW)	Energy Storage (MWh)	Energy Storage (MW)	Energy Storage (MWh)	Energy Efficiency (MWa)	Demand Response (MW)	CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes
	System resources	Voluntary programs	System resources	System resources	Voluntary programs	Voluntary programs			System resources	Voluntary programs					
2023	n/a	85.49	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2024	138.60	112.47	-	-	n/a	n/a	30.00	133.00	-	n/a	n/a	n/a	n/a	-	n/a
2025	250.22	113.21	400.00	1,600.00	n/a	n/a	60.00	162.00	-	n/a	n/a	n/a	n/a	-	n/a
2026	733.45	114.47	400.00	1,600.00	n/a	n/a	90.00	183.00	12.54	n/a	n/a	n/a	n/a	399.99	n/a
2027	733.46	115.74	400.00	1,600.00	n/a	n/a	120.00	199.00	16.00	n/a	n/a	n/a	n/a	399.99	n/a
2028	732.82	116.89	400.00	1,600.00	n/a	n/a	150.00	211.00	21.56	n/a	n/a	n/a	n/a	399.99	n/a
2029	980.57	118.28	400.00	1,600.00	n/a	n/a	183.00	218.00	26.76	n/a	n/a	n/a	n/a	399.99	n/a
2030	1,127.02	119.55	577.31	2,309.24	n/a	n/a	216.00	228.00	30.79	n/a	n/a	n/a	n/a	400.01	n/a
2031	1,221.92	119.04	677.32	2,709.28	n/a	n/a	251.00	242.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2032	1,333.60	118.41	777.33	3,109.32	n/a	n/a	285.00	252.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2033	1,443.57	118.02	877.34	3,509.36	n/a	n/a	317.00	261.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2034	1,551.74	117.52	877.34	3,509.36	n/a	n/a	348.00	270.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2035	1,671.25	117.01	877.34	3,509.36	n/a	n/a	377.00	272.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2036	1,828.30	116.40	877.34	3,509.36	n/a	n/a	404.00	287.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2037	2,006.38	67.75	899.98	3,599.92	n/a	n/a	429.00	296.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2038	2,196.39	41.47	999.99	3,999.96	n/a	n/a	452.00	303.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2039	2,344.94	16.93	1,100.00	4,400.00	n/a	n/a	471.00	310.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2040	2,465.00	16.93	1,200.01	4,800.04	n/a	n/a	487.00	306.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2041	2,623.64	16.93	1,200.01	4,800.04	n/a	n/a	503.00	314.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2042	2,674.01	16.93	1,200.01	4,800.04	n/a	n/a	514.00	330.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2043	2,759.14	16.93	1,200.01	4,800.04	n/a	n/a	523.00	336.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual goals for actions over the study period

UM 2225 Order Summary/Rubric references: C.2(a)-(i), C.3

22 Portfolio22		WY in 2028													
Year	Clean energy resources (MWa)	Clean energy resources (MWa)	Energy Storage (MW)	Energy Storage (MWh)	Energy Storage (MW)	Energy Storage (MWh)	Energy Efficiency (MWa)	Demand Response (MW)	CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes
	System resources	Voluntary programs	System resources	System resources	Voluntary programs	Voluntary programs			System resources	Voluntary programs					
2023	n/a	85.49	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2024	138.60	112.47	-	-	n/a	n/a	30.00	133.00	-	n/a	n/a	n/a	n/a	-	n/a
2025	250.22	113.21	400.00	1,600.00	n/a	n/a	60.00	162.00	-	n/a	n/a	n/a	n/a	-	n/a
2026	659.98	114.47	532.03	2,128.12	n/a	n/a	90.00	183.00	12.54	n/a	n/a	n/a	n/a	-	n/a
2027	659.99	115.74	610.14	2,440.56	n/a	n/a	120.00	199.00	16.01	n/a	n/a	n/a	n/a	-	n/a
2028	835.72	116.89	610.14	2,440.56	n/a	n/a	150.00	211.00	21.57	n/a	n/a	n/a	n/a	399.99	n/a
2029	983.42	118.28	610.14	2,440.56	n/a	n/a	183.00	218.00	26.77	n/a	n/a	n/a	n/a	399.99	n/a
2030	1,131.92	119.55	924.79	3,699.16	n/a	n/a	216.00	228.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2031	1,226.02	119.04	980.59	3,922.36	n/a	n/a	251.00	242.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2032	1,336.56	118.41	980.59	3,922.36	n/a	n/a	285.00	252.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2033	1,444.98	118.02	980.59	3,922.36	n/a	n/a	317.00	261.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2034	1,553.20	117.52	980.59	3,922.36	n/a	n/a	348.00	270.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2035	1,672.60	117.01	980.59	3,922.36	n/a	n/a	377.00	272.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2036	1,829.69	116.40	980.59	3,922.36	n/a	n/a	404.00	287.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2037	2,006.79	67.75	980.59	3,922.36	n/a	n/a	429.00	296.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2038	2,196.38	41.47	999.99	3,999.96	n/a	n/a	452.00	303.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2039	2,344.93	16.93	1,100.00	4,400.00	n/a	n/a	471.00	310.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2040	2,465.00	16.93	1,200.01	4,800.04	n/a	n/a	487.00	306.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2041	2,623.64	16.93	1,200.01	4,800.04	n/a	n/a	503.00	314.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2042	2,674.00	16.93	1,200.01	4,800.04	n/a	n/a	514.00	330.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2043	2,759.14	16.93	1,200.01	4,800.04	n/a	n/a	523.00	336.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a

23 Portfolio23		NV in 2028													
Year	Clean energy resources (MWa)	Clean energy resources (MWa)	Energy Storage (MW)	Energy Storage (MWh)	Energy Storage (MW)	Energy Storage (MWh)	Energy Efficiency (MWa)	Demand Response (MW)	CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes
	System resources	Voluntary programs	System resources	System resources	Voluntary programs	Voluntary programs			System resources	Voluntary programs					
2023	n/a	85.49	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2024	138.60	112.47	-	-	n/a	n/a	30.00	133.00	-	n/a	n/a	n/a	n/a	-	n/a
2025	250.22	113.21	400.00	1,600.00	n/a	n/a	60.00	162.00	-	n/a	n/a	n/a	n/a	-	n/a
2026	660.26	114.47	531.96	2,127.84	n/a	n/a	90.00	183.00	12.55	n/a	n/a	n/a	n/a	-	n/a
2027	660.27	115.74	610.07	2,440.28	n/a	n/a	120.00	199.00	16.01	n/a	n/a	n/a	n/a	-	n/a
2028	785.82	116.89	610.07	2,440.28	n/a	n/a	150.00	211.00	21.57	n/a	n/a	n/a	n/a	399.99	n/a
2029	983.41	118.28	610.07	2,440.28	n/a	n/a	183.00	218.00	26.77	n/a	n/a	n/a	n/a	399.99	n/a
2030	1,127.49	119.55	610.07	2,440.28	n/a	n/a	216.00	228.00	30.79	n/a	n/a	n/a	n/a	400.01	n/a
2031	1,222.36	119.04	710.08	2,840.32	n/a	n/a	251.00	242.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2032	1,334.08	118.41	810.09	3,240.36	n/a	n/a	285.00	252.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2033	1,443.88	118.02	899.98	3,599.92	n/a	n/a	317.00	261.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2034	1,552.06	117.52	899.98	3,599.92	n/a	n/a	348.00	270.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2035	1,671.55	117.01	899.98	3,599.92	n/a	n/a	377.00	272.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2036	1,828.60	116.40	899.98	3,599.92	n/a	n/a	404.00	287.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2037	2,006.38	67.75	899.98	3,599.92	n/a	n/a	429.00	296.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2038	2,196.39	41.47	999.99	3,999.96	n/a	n/a	452.00	303.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2039	2,344.94	16.93	1,100.00	4,400.00	n/a	n/a	471.00	310.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2040	2,465.00	16.93	1,200.01	4,800.04	n/a	n/a	487.00	306.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2041	2,623.64	16.93	1,200.01	4,800.04	n/a	n/a	503.00	314.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2042	2,674.01	16.93	1,200.01	4,800.04	n/a	n/a	514.00	330.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a
2043	2,759.14	16.93	1,200.01	4,800.04	n/a	n/a	523.00	336.00	30.80	n/a	n/a	n/a	n/a	400.01	n/a

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual goals for actions over the study period

UM 2225 Order Summary/Rubric references: C.2(a)-(i), C.3

24 Portfolio24		Oregon-only resources										CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes
Year	Clean energy resources (MWa) System resources	Clean energy resources (MWa) Voluntary programs	Energy Storage (MW) System resources	Energy Storage (MWh) System resources	Energy Storage (MW) Voluntary programs	Energy Storage (MWh) Voluntary programs	Energy Efficiency (MWa)	Demand Response (MW)	System resources	Voluntary programs	System resources	Voluntary programs						
2023	n/a	85.49	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2024	138.60	112.47	-	-	n/a	n/a	30.00	133.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2025	250.22	113.21	400.00	1,600.00	n/a	n/a	60.00	162.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2026	555.75	114.47	582.90	2,331.60	n/a	n/a	90.00	183.00	12.54	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2027	613.97	115.74	584.73	2,338.92	n/a	n/a	120.00	199.00	16.00	n/a	n/a	n/a	n/a	n/a	n/a	132.86	n/a	n/a
2028	787.65	116.89	584.73	2,338.92	n/a	n/a	150.00	211.00	21.56	n/a	n/a	n/a	n/a	n/a	n/a	335.43	n/a	n/a
2029	983.05	118.28	584.73	2,338.92	n/a	n/a	183.00	218.00	26.77	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2030	1,132.96	119.55	999.99	3,999.96	n/a	n/a	216.00	228.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2031	1,226.27	119.04	999.99	3,999.96	n/a	n/a	251.00	242.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2032	1,336.84	118.41	999.99	3,999.96	n/a	n/a	285.00	252.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2033	1,445.22	118.02	999.99	3,999.96	n/a	n/a	317.00	261.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2034	1,553.46	117.52	999.99	3,999.96	n/a	n/a	348.00	270.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2035	1,672.84	117.01	999.99	3,999.96	n/a	n/a	377.00	272.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2036	1,829.94	116.40	999.99	3,999.96	n/a	n/a	404.00	287.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2037	2,007.03	67.75	999.99	3,999.96	n/a	n/a	429.00	296.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2038	2,196.36	41.47	999.99	3,999.96	n/a	n/a	452.00	303.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2039	2,344.91	16.93	1,100.00	4,400.00	n/a	n/a	471.00	310.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2040	2,464.99	16.93	1,200.01	4,800.04	n/a	n/a	487.00	306.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2041	2,623.62	16.93	1,200.01	4,800.04	n/a	n/a	503.00	314.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2042	2,673.97	16.93	1,200.01	4,800.04	n/a	n/a	514.00	330.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2043	2,759.12	16.93	1,200.01	4,800.04	n/a	n/a	523.00	336.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a

25 Portfolio25		Physical RPS										CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes
Year	Clean energy resources (MWa) System resources	Clean energy resources (MWa) Voluntary programs	Energy Storage (MW) System resources	Energy Storage (MWh) System resources	Energy Storage (MW) Voluntary programs	Energy Storage (MWh) Voluntary programs	Energy Efficiency (MWa)	Demand Response (MW)	System resources	Voluntary programs	System resources	Voluntary programs						
2023	n/a	85.49	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2024	138.60	112.47	-	-	n/a	n/a	30.00	133.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2025	250.22	113.21	400.00	1,600.00	n/a	n/a	60.00	162.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2026	554.19	114.47	574.10	2,296.40	n/a	n/a	90.00	183.00	12.54	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2027	613.82	115.74	574.10	2,296.40	n/a	n/a	120.00	199.00	16.01	n/a	n/a	n/a	n/a	n/a	n/a	137.17	n/a	n/a
2028	747.28	116.89	574.10	2,296.40	n/a	n/a	150.00	211.00	21.56	n/a	n/a	n/a	n/a	n/a	n/a	298.65	n/a	n/a
2029	982.91	118.28	574.10	2,296.40	n/a	n/a	183.00	218.00	26.77	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2030	1,132.98	119.55	999.99	3,999.96	n/a	n/a	216.00	228.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2031	1,226.28	119.04	999.99	3,999.96	n/a	n/a	251.00	242.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2032	1,336.86	118.41	999.99	3,999.96	n/a	n/a	285.00	252.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2033	1,445.24	118.02	999.99	3,999.96	n/a	n/a	317.00	261.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2034	1,553.47	117.52	999.99	3,999.96	n/a	n/a	348.00	270.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2035	1,672.85	117.01	999.99	3,999.96	n/a	n/a	377.00	272.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2036	1,829.96	116.40	999.99	3,999.96	n/a	n/a	404.00	287.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2037	2,007.05	67.75	999.99	3,999.96	n/a	n/a	429.00	296.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2038	2,196.38	41.47	999.99	3,999.96	n/a	n/a	452.00	303.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2039	2,344.94	16.93	1,100.00	4,400.00	n/a	n/a	471.00	310.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2040	2,465.00	16.93	1,200.01	4,800.04	n/a	n/a	487.00	306.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2041	2,623.64	16.93	1,200.01	4,800.04	n/a	n/a	503.00	314.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2042	2,674.00	16.93	1,200.01	4,800.04	n/a	n/a	514.00	330.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2043	2,759.14	16.93	1,200.01	4,800.04	n/a	n/a	523.00	336.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual goals for actions over the study period

UM 2225 Order Summary/Rubric references: C.2(a)-(i), C.3

26 Portfolio26		Hydrogen blending										CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes
Year	Clean energy resources (MWa) System resources	Clean energy resources (MWa) Voluntary programs	Energy Storage (MW) System resources	Energy Storage (MWh) System resources	Energy Storage (MW) Voluntary programs	Energy Storage (MWh) Voluntary programs	Energy Efficiency (MWa)	Demand Response (MW)	System resources	Voluntary programs	System resources	Voluntary programs						
2023	n/a	85.49	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2024	138.60	112.47	-	-	n/a	n/a	30.00	133.00	rush,	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2025	250.22	113.21	400.00	1,600.00	n/a	n/a	60.00	162.00		-	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2026	660.27	114.47	531.92	2,127.68	n/a	n/a	90.00	183.00		12.54	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2027	710.37	115.74	531.92	2,127.68	n/a	n/a	120.00	199.00		16.01	n/a	n/a	n/a	n/a	n/a	112.83	n/a	n/a
2028	793.41	116.89	531.92	2,127.68	n/a	n/a	150.00	211.00		21.56	n/a	n/a	n/a	n/a	n/a	306.08	n/a	n/a
2029	870.92	118.28	648.00	2,592.00	n/a	n/a	183.00	218.00		26.76	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2030	1,020.99	119.55	999.99	3,999.96	n/a	n/a	216.00	228.00		30.79	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2031	1,118.28	119.04	999.99	3,999.96	n/a	n/a	251.00	242.00		30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2032	1,234.86	118.41	999.99	3,999.96	n/a	n/a	285.00	252.00		30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2033	1,344.24	118.02	999.99	3,999.96	n/a	n/a	317.00	261.00		30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2034	1,457.46	117.52	999.99	3,999.96	n/a	n/a	348.00	270.00		30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2035	1,576.85	117.01	999.99	3,999.96	n/a	n/a	377.00	272.00		30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2036	1,737.95	116.40	999.99	3,999.96	n/a	n/a	404.00	287.00		30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2037	1,922.41	67.75	999.99	3,999.96	n/a	n/a	429.00	296.00		30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2038	2,112.37	41.47	999.99	3,999.96	n/a	n/a	452.00	303.00		30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2039	2,275.96	16.93	1,100.00	4,400.00	n/a	n/a	471.00	310.00		30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2040	2,465.00	16.93	1,200.01	4,800.04	n/a	n/a	487.00	306.00		30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2041	2,623.63	16.93	1,200.01	4,800.04	n/a	n/a	503.00	314.00		30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2042	2,674.00	16.93	1,200.01	4,800.04	n/a	n/a	514.00	330.00		30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2043	2,759.13	16.93	1,200.01	4,800.04	n/a	n/a	523.00	336.00		30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a

27 Portfolio27		Hydrogen building										CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes
Year	Clean energy resources (MWa) System resources	Clean energy resources (MWa) Voluntary programs	Energy Storage (MW) System resources	Energy Storage (MWh) System resources	Energy Storage (MW) Voluntary programs	Energy Storage (MWh) Voluntary programs	Energy Efficiency (MWa)	Demand Response (MW)	System resources	Voluntary programs	System resources	Voluntary programs						
2023	n/a	85.49	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2024	138.60	112.47	-	-	n/a	n/a	30.00	133.00		-	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2025	250.22	113.21	400.00	1,600.00	n/a	n/a	60.00	162.00		-	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2026	554.18	114.47	574.12	2,296.48	n/a	n/a	90.00	183.00		12.54	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2027	613.82	115.74	574.12	2,296.48	n/a	n/a	120.00	199.00		16.01	n/a	n/a	n/a	n/a	n/a	137.20	n/a	n/a
2028	779.66	116.89	574.12	2,296.48	n/a	n/a	150.00	211.00		21.56	n/a	n/a	n/a	n/a	n/a	273.59	n/a	n/a
2029	982.92	118.28	574.12	2,296.48	n/a	n/a	183.00	218.00		26.77	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2030	1,132.98	119.55	999.99	3,999.96	n/a	n/a	216.00	228.00		30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2031	1,226.28	119.04	999.99	3,999.96	n/a	n/a	251.00	242.00		30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2032	1,336.86	118.41	999.99	3,999.96	n/a	n/a	285.00	252.00		30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2033	1,445.25	118.02	999.99	3,999.96	n/a	n/a	317.00	261.00		30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2034	1,553.47	117.52	999.99	3,999.96	n/a	n/a	348.00	270.00		30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2035	1,672.86	117.01	999.99	3,999.96	n/a	n/a	377.00	272.00		30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2036	1,829.97	116.40	999.99	3,999.96	n/a	n/a	404.00	287.00		30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2037	2,007.54	67.75	999.99	3,999.96	n/a	n/a	429.00	296.00		30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2038	2,196.38	41.47	999.99	3,999.96	n/a	n/a	452.00	303.00		30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2039	2,344.95	16.93	1,100.00	4,400.00	n/a	n/a	471.00	310.00		30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2040	2,465.00	16.93	1,200.01	4,800.04	n/a	n/a	487.00	306.00		30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2041	2,623.64	16.93	1,200.01	4,800.04	n/a	n/a	503.00	314.00		30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2042	2,674.00	16.93	1,200.01	4,800.04	n/a	n/a	514.00	330.00		30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2043	2,759.14	16.93	1,200.01	4,800.04	n/a	n/a	523.00	336.00		30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual goals for actions over the study period

UM 2225 Order Summary/Rubric references: C.2(a)-(i), C.3

28 Portfolio28		Offshore wind										CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes
Year	Clean energy resources (MWa) System resources	Clean energy resources (MWa) Voluntary programs	Energy Storage (MW) System resources	Energy Storage (MWh) System resources	Energy Storage (MW) Voluntary programs	Energy Storage (MWh) Voluntary programs	Energy Efficiency (MWa)	Demand Response (MW)	System resources	Voluntary programs	System resources	Voluntary programs						
2023	n/a	85.49	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2024	138.60	112.47	-	-	n/a	n/a	30.00	133.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2025	250.21	113.21	400.00	1,600.00	n/a	n/a	60.00	162.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2026	554.19	114.47	574.13	2,296.52	n/a	n/a	90.00	183.00	12.54	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2027	613.82	115.74	574.13	2,296.52	n/a	n/a	120.00	199.00	16.01	n/a	n/a	n/a	n/a	n/a	n/a	137.19	n/a	n/a
2028	735.20	116.89	574.13	2,296.52	n/a	n/a	150.00	211.00	21.56	n/a	n/a	n/a	n/a	n/a	n/a	273.46	n/a	n/a
2029	982.92	118.28	574.13	2,296.52	n/a	n/a	183.00	218.00	26.77	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2030	1,134.39	119.55	1,100.00	4,400.00	n/a	n/a	216.00	228.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2031	1,165.48	119.04	1,100.00	4,400.00	n/a	n/a	251.00	242.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2032	1,439.84	118.41	1,200.01	4,800.04	n/a	n/a	285.00	252.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2033	1,448.03	118.02	1,200.01	4,800.04	n/a	n/a	317.00	261.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2034	1,556.34	117.52	1,200.01	4,800.04	n/a	n/a	348.00	270.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2035	1,675.54	117.01	1,200.01	4,800.04	n/a	n/a	377.00	272.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2036	1,832.68	116.40	1,200.01	4,800.04	n/a	n/a	404.00	287.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2037	2,009.84	67.75	1,200.01	4,800.04	n/a	n/a	429.00	296.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2038	2,199.29	41.47	1,200.01	4,800.04	n/a	n/a	452.00	303.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2039	2,346.44	16.93	1,200.01	4,800.04	n/a	n/a	471.00	310.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2040	2,465.06	16.93	1,200.01	4,800.04	n/a	n/a	487.00	306.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2041	2,623.70	16.93	1,200.01	4,800.04	n/a	n/a	503.00	314.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2042	2,674.04	16.93	1,200.01	4,800.04	n/a	n/a	514.00	330.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2043	2,759.20	16.93	1,200.01	4,800.04	n/a	n/a	523.00	336.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a

29 Portfolio29		Long Duration Storage										CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes
Year	Clean energy resources (MWa) System resources	Clean energy resources (MWa) Voluntary programs	Energy Storage (MW) System resources	Energy Storage (MWh) System resources	Energy Storage (MW) Voluntary programs	Energy Storage (MWh) Voluntary programs	Energy Efficiency (MWa)	Demand Response (MW)	System resources	Voluntary programs	System resources	Voluntary programs						
2023	n/a	85.49	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2024	138.60	112.47	-	-	n/a	n/a	30.00	133.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2025	250.22	113.21	400.00	1,600.00	n/a	n/a	60.00	162.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2026	554.15	114.47	574.26	2,297.04	n/a	n/a	90.00	183.00	12.54	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2027	613.82	115.74	574.26	2,297.04	n/a	n/a	120.00	199.00	16.01	n/a	n/a	n/a	n/a	n/a	n/a	137.27	n/a	n/a
2028	740.77	116.89	713.25	5,632.80	n/a	n/a	150.00	211.00	21.56	n/a	n/a	n/a	n/a	n/a	n/a	185.36	n/a	n/a
2029	988.64	118.28	713.25	5,632.80	n/a	n/a	183.00	218.00	26.77	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2030	1,138.86	119.55	1,125.01	7,279.84	n/a	n/a	216.00	228.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2031	1,231.94	119.04	1,125.01	7,279.84	n/a	n/a	251.00	242.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2032	1,342.73	118.41	1,125.01	7,279.84	n/a	n/a	285.00	252.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2033	1,451.21	118.02	1,125.01	7,279.84	n/a	n/a	317.00	261.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2034	1,559.69	117.52	1,125.01	7,279.84	n/a	n/a	348.00	270.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2035	1,678.39	117.01	1,125.01	7,279.84	n/a	n/a	377.00	272.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2036	1,835.24	116.40	1,125.01	7,279.84	n/a	n/a	404.00	287.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2037	2,012.61	67.75	1,125.01	7,279.84	n/a	n/a	429.00	296.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2038	2,201.96	41.47	1,138.98	7,335.72	n/a	n/a	452.00	303.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2039	2,350.76	16.93	1,239.00	7,736.00	n/a	n/a	471.00	310.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2040	2,471.21	16.93	1,339.02	8,136.28	n/a	n/a	487.00	306.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2041	2,629.68	16.93	1,339.02	8,136.28	n/a	n/a	503.00	314.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2042	2,680.46	16.93	1,339.02	8,136.28	n/a	n/a	514.00	330.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2043	2,765.50	16.93	1,339.02	8,136.28	n/a	n/a	523.00	336.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual goals for actions over the study period

UM 2225 Order Summary/Rubric references: C.2(a)-(i), C.3

30 Portfolio30		Pumped hydro										CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes
Year	Clean energy resources (MWa) System resources	Clean energy resources (MWa) Voluntary programs	Energy Storage (MW) System resources	Energy Storage (MWh) System resources	Energy Storage (MW) Voluntary programs	Energy Storage (MWh) Voluntary programs	Energy Efficiency (MWa)	Demand Response (MW)	System resources	Voluntary programs	System resources	Voluntary programs						
2023	n/a	85.49	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2024	138.60	112.47	-	-	n/a	n/a	30.00	133.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2025	250.22	113.21	400.00	1,600.00	n/a	n/a	60.00	162.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2026	554.14	114.47	574.31	2,297.24	n/a	n/a	90.00	183.00	12.54	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2027	613.82	115.74	574.31	2,297.24	n/a	n/a	120.00	199.00	16.01	n/a	n/a	n/a	n/a	n/a	n/a	137.30	n/a	n/a
2028	746.81	116.89	907.30	5,627.14	n/a	n/a	150.00	211.00	21.56	n/a	n/a	n/a	n/a	n/a	n/a	198.98	n/a	n/a
2029	994.76	118.28	907.30	5,627.14	n/a	n/a	183.00	218.00	26.76	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2030	1,140.56	119.55	923.68	5,692.66	n/a	n/a	216.00	228.00	30.79	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2031	1,234.88	119.04	1,023.69	6,092.70	n/a	n/a	251.00	242.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2032	1,347.41	118.41	1,123.70	6,492.74	n/a	n/a	285.00	252.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2033	1,458.27	118.02	1,223.71	6,892.78	n/a	n/a	317.00	261.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2034	1,567.31	117.52	1,223.71	6,892.78	n/a	n/a	348.00	270.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2035	1,684.60	117.01	1,223.71	6,892.78	n/a	n/a	377.00	272.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2036	1,841.21	116.40	1,223.71	6,892.78	n/a	n/a	404.00	287.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2037	2,019.46	67.75	1,232.97	6,929.82	n/a	n/a	429.00	296.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2038	2,209.46	41.47	1,332.98	7,329.86	n/a	n/a	452.00	303.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2039	2,358.23	16.93	1,433.00	7,730.00	n/a	n/a	471.00	310.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2040	2,479.46	16.93	1,533.02	8,130.14	n/a	n/a	487.00	306.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2041	2,638.14	16.93	1,533.02	8,130.14	n/a	n/a	503.00	314.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2042	2,690.09	16.93	1,533.02	8,130.14	n/a	n/a	514.00	330.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2043	2,774.69	16.93	1,533.02	8,130.14	n/a	n/a	523.00	336.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a

31 Portfolio31		RTO										CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes
Year	Clean energy resources (MWa) System resources	Clean energy resources (MWa) Voluntary programs	Energy Storage (MW) System resources	Energy Storage (MWh) System resources	Energy Storage (MW) Voluntary programs	Energy Storage (MWh) Voluntary programs	Energy Efficiency (MWa)	Demand Response (MW)	System resources	Voluntary programs	System resources	Voluntary programs						
2023	n/a	85.49	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2024	138.60	112.47	-	-	n/a	n/a	30.00	133.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2025	250.22	113.21	400.00	1,600.00	n/a	n/a	60.00	162.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2026	554.19	114.47	574.10	2,296.40	n/a	n/a	90.00	183.00	12.54	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2027	613.82	115.74	574.10	2,296.40	n/a	n/a	120.00	199.00	16.01	n/a	n/a	n/a	n/a	n/a	n/a	137.17	n/a	n/a
2028	747.30	116.89	574.10	2,296.40	n/a	n/a	150.00	211.00	21.56	n/a	n/a	n/a	n/a	n/a	n/a	298.69	n/a	n/a
2029	982.92	118.28	574.10	2,296.40	n/a	n/a	183.00	218.00	26.77	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2030	1,132.98	119.55	999.99	3,999.96	n/a	n/a	216.00	228.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2031	1,226.28	119.04	999.99	3,999.96	n/a	n/a	251.00	242.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2032	1,336.86	118.41	999.99	3,999.96	n/a	n/a	285.00	252.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2033	1,445.24	118.02	999.99	3,999.96	n/a	n/a	317.00	261.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2034	1,553.47	117.52	999.99	3,999.96	n/a	n/a	348.00	270.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2035	1,672.85	117.01	999.99	3,999.96	n/a	n/a	377.00	272.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2036	1,829.96	116.40	999.99	3,999.96	n/a	n/a	404.00	287.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2037	2,007.05	67.75	999.99	3,999.96	n/a	n/a	429.00	296.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2038	2,196.38	41.47	999.99	3,999.96	n/a	n/a	452.00	303.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2039	2,344.94	16.93	1,100.00	4,400.00	n/a	n/a	471.00	310.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2040	2,465.00	16.93	1,200.01	4,800.04	n/a	n/a	487.00	306.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2041	2,623.64	16.93	1,200.01	4,800.04	n/a	n/a	503.00	314.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2042	2,674.00	16.93	1,200.01	4,800.04	n/a	n/a	514.00	330.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a
2043	2,759.14	16.93	1,200.01	4,800.04	n/a	n/a	523.00	336.00	30.80	n/a	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual goals for actions over the study period
 UM 2225 Order Summary/Rubric references: C.2(a)-(i), C.3

32 Portfolio32		Min Avg LT cost		Energy Storage (MW)		Energy Storage (MWh)		Energy Storage (MW)		Energy Storage (MWh)		CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes
Year	Clean energy resources (MWa) System resources	Clean energy resources (MWa) Voluntary programs	System resources	System resources	Voluntary programs	Voluntary programs	Voluntary programs	Energy Efficiency (MWa)	Demand Response (MW)	System resources	Voluntary programs	System resources	Voluntary programs					
2023	n/a	85.49	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2024	138.60	112.47	-	-	n/a	n/a	n/a	30.00	n/a	133.00	-	n/a	n/a	n/a	n/a	n/a	-	n/a
2025	250.22	113.21	400.00	1,600.00	n/a	n/a	n/a	60.00	n/a	162.00	-	n/a	n/a	n/a	n/a	n/a	-	n/a
2026	554.19	114.47	574.10	2,296.40	n/a	n/a	n/a	90.00	n/a	183.00	12.54	n/a	n/a	n/a	n/a	n/a	-	n/a
2027	613.82	115.74	574.10	2,296.40	n/a	n/a	n/a	120.00	n/a	199.00	16.01	n/a	n/a	n/a	n/a	n/a	137.17	n/a
2028	747.28	116.89	574.10	2,296.40	n/a	n/a	n/a	150.00	n/a	211.00	21.56	n/a	n/a	n/a	n/a	n/a	298.65	n/a
2029	982.91	118.28	574.10	2,296.40	n/a	n/a	n/a	183.00	n/a	218.00	26.77	n/a	n/a	n/a	n/a	n/a	400.01	n/a
2030	1,132.98	119.55	999.99	3,999.96	n/a	n/a	n/a	216.00	n/a	228.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a
2031	1,226.28	119.04	999.99	3,999.96	n/a	n/a	n/a	251.00	n/a	242.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a
2032	1,336.86	118.41	999.99	3,999.96	n/a	n/a	n/a	285.00	n/a	252.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a
2033	1,445.24	118.02	999.99	3,999.96	n/a	n/a	n/a	317.00	n/a	261.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a
2034	1,553.47	117.52	999.99	3,999.96	n/a	n/a	n/a	348.00	n/a	270.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a
2035	1,672.85	117.01	999.99	3,999.96	n/a	n/a	n/a	377.00	n/a	272.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a
2036	1,829.96	116.40	999.99	3,999.96	n/a	n/a	n/a	404.00	n/a	287.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a
2037	2,007.05	67.75	999.99	3,999.96	n/a	n/a	n/a	429.00	n/a	296.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a
2038	2,196.38	41.47	999.99	3,999.96	n/a	n/a	n/a	452.00	n/a	303.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a
2039	2,344.94	16.93	1,100.00	4,400.00	n/a	n/a	n/a	471.00	n/a	310.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a
2040	2,465.00	16.93	1,200.01	4,800.04	n/a	n/a	n/a	487.00	n/a	306.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a
2041	2,623.64	16.93	1,200.01	4,800.04	n/a	n/a	n/a	503.00	n/a	314.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a
2042	2,674.00	16.93	1,200.01	4,800.04	n/a	n/a	n/a	514.00	n/a	330.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a
2043	2,759.14	16.93	1,200.01	4,800.04	n/a	n/a	n/a	523.00	n/a	336.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a

33 Portfolio33		Min Avg ST cost		Energy Storage (MW)		Energy Storage (MWh)		Energy Storage (MW)		Energy Storage (MWh)		CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes
Year	Clean energy resources (MWa) System resources	Clean energy resources (MWa) Voluntary programs	System resources	System resources	Voluntary programs	Voluntary programs	Voluntary programs	Energy Efficiency (MWa)	Demand Response (MW)	System resources	Voluntary programs	System resources	Voluntary programs					
2023	n/a	85.49	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2024	138.60	112.47	-	-	n/a	n/a	n/a	30.00	n/a	133.00	-	n/a	n/a	n/a	n/a	n/a	-	n/a
2025	250.22	113.21	400.00	1,600.00	n/a	n/a	n/a	60.00	n/a	162.00	-	n/a	n/a	n/a	n/a	n/a	-	n/a
2026	554.16	114.47	574.23	2,296.92	n/a	n/a	n/a	90.00	n/a	183.00	12.54	n/a	n/a	n/a	n/a	n/a	-	n/a
2027	613.90	115.74	574.23	2,296.92	n/a	n/a	n/a	120.00	n/a	199.00	16.00	n/a	n/a	n/a	n/a	n/a	137.42	n/a
2028	739.27	116.89	574.23	2,296.92	n/a	n/a	n/a	150.00	n/a	211.00	21.56	n/a	n/a	n/a	n/a	n/a	253.00	n/a
2029	983.02	118.28	574.23	2,296.92	n/a	n/a	n/a	183.00	n/a	218.00	26.77	n/a	n/a	n/a	n/a	n/a	400.01	n/a
2030	1,135.91	119.55	1,200.01	4,800.04	n/a	n/a	n/a	216.00	n/a	228.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a
2031	1,229.11	119.04	1,200.01	4,800.04	n/a	n/a	n/a	251.00	n/a	242.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a
2032	1,418.13	118.41	1,200.01	4,800.04	n/a	n/a	n/a	285.00	n/a	252.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a
2033	1,448.16	118.02	1,200.01	4,800.04	n/a	n/a	n/a	317.00	n/a	261.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a
2034	1,638.11	117.52	1,200.01	4,800.04	n/a	n/a	n/a	348.00	n/a	270.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a
2035	1,678.16	117.01	1,200.01	4,800.04	n/a	n/a	n/a	377.00	n/a	272.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a
2036	1,832.90	116.40	1,200.01	4,800.04	n/a	n/a	n/a	404.00	n/a	287.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a
2037	2,023.81	67.75	1,200.01	4,800.04	n/a	n/a	n/a	429.00	n/a	296.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a
2038	2,199.54	41.47	1,200.01	4,800.04	n/a	n/a	n/a	452.00	n/a	303.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a
2039	2,389.57	16.93	1,200.01	4,800.04	n/a	n/a	n/a	471.00	n/a	310.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a
2040	2,565.32	16.93	1,200.01	4,800.04	n/a	n/a	n/a	487.00	n/a	306.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a
2041	2,623.96	16.93	1,200.01	4,800.04	n/a	n/a	n/a	503.00	n/a	314.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a
2042	2,759.49	16.93	1,200.01	4,800.04	n/a	n/a	n/a	514.00	n/a	330.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a
2043	2,759.47	16.93	1,200.01	4,800.04	n/a	n/a	n/a	523.00	n/a	336.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual goals for actions over the study period
 UM 2225 Order Summary/Rubric references: C.2(a)-(i), C.3

34 Portfolio34		Min Ref ST cost													
Year	Clean energy resources (MWa)	Clean energy resources (MWa)	Energy Storage (MW)	Energy Storage (MWh)	Energy Storage (MW)	Energy Storage (MWh)	CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes		
	System resources	Voluntary programs	System resources	System resources	Voluntary programs	Voluntary programs	System resources	Voluntary programs	System resources	Voluntary programs					
2023	n/a	85.49	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		
2024	138.60	112.47	-	-	n/a	n/a	30.00	133.00	-	n/a	n/a	-	n/a		
2025	250.22	113.21	400.00	1,600.00	n/a	n/a	60.00	162.00	-	n/a	n/a	-	n/a		
2026	554.16	114.47	574.23	2,296.92	n/a	n/a	90.00	183.00	12.54	n/a	n/a	-	n/a		
2027	613.90	115.74	574.23	2,296.92	n/a	n/a	120.00	199.00	16.00	n/a	n/a	137.42	n/a		
2028	735.32	116.89	574.23	2,296.92	n/a	n/a	150.00	211.00	21.56	n/a	n/a	257.20	n/a		
2029	983.02	118.28	574.23	2,296.92	n/a	n/a	183.00	218.00	26.77	n/a	n/a	400.01	n/a		
2030	1,135.91	119.55	1,200.01	4,800.04	n/a	n/a	216.00	228.00	30.80	n/a	n/a	400.01	n/a		
2031	1,229.15	119.04	1,200.01	4,800.04	n/a	n/a	251.00	242.00	30.80	n/a	n/a	400.01	n/a		
2032	1,339.89	118.41	1,200.01	4,800.04	n/a	n/a	285.00	252.00	30.80	n/a	n/a	400.01	n/a		
2033	1,448.17	118.02	1,200.01	4,800.04	n/a	n/a	317.00	261.00	30.80	n/a	n/a	400.01	n/a		
2034	1,638.13	117.52	1,200.01	4,800.04	n/a	n/a	348.00	270.00	30.80	n/a	n/a	400.01	n/a		
2035	1,675.71	117.01	1,200.01	4,800.04	n/a	n/a	377.00	272.00	30.80	n/a	n/a	400.01	n/a		
2036	1,832.85	116.40	1,200.01	4,800.04	n/a	n/a	404.00	287.00	30.80	n/a	n/a	400.01	n/a		
2037	2,023.74	67.75	1,200.01	4,800.04	n/a	n/a	429.00	296.00	30.80	n/a	n/a	400.01	n/a		
2038	2,199.50	41.47	1,200.01	4,800.04	n/a	n/a	452.00	303.00	30.80	n/a	n/a	400.01	n/a		
2039	2,346.65	16.93	1,200.01	4,800.04	n/a	n/a	471.00	310.00	30.80	n/a	n/a	400.01	n/a		
2040	2,465.29	16.93	1,200.01	4,800.04	n/a	n/a	487.00	306.00	30.80	n/a	n/a	400.01	n/a		
2041	2,656.28	16.93	1,200.01	4,800.04	n/a	n/a	503.00	314.00	30.80	n/a	n/a	400.01	n/a		
2042	2,674.31	16.93	1,200.01	4,800.04	n/a	n/a	514.00	330.00	30.80	n/a	n/a	400.01	n/a		
2043	2,759.46	16.93	1,200.01	4,800.04	n/a	n/a	523.00	336.00	30.80	n/a	n/a	400.01	n/a		

35 Portfolio35		SoA in 2027 Plus													
Year	Clean energy resources (MWa)	Clean energy resources (MWa)	Energy Storage (MW)	Energy Storage (MWh)	Energy Storage (MW)	Energy Storage (MWh)	CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes		
	System resources	Voluntary programs	System resources	System resources	Voluntary programs	Voluntary programs	System resources	Voluntary programs	System resources	Voluntary programs					
2023	n/a	85.49	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		
2024	138.60	112.47	-	-	n/a	n/a	30.00	133.00	-	n/a	n/a	-	n/a		
2025	250.22	113.21	400.00	1,600.00	n/a	n/a	60.00	162.00	-	n/a	n/a	-	n/a		
2026	441.15	114.47	632.39	2,529.56	n/a	n/a	90.00	183.00	12.55	n/a	n/a	44.07	n/a		
2027	614.63	115.74	632.39	2,529.56	n/a	n/a	120.00	199.00	16.01	n/a	n/a	444.08	n/a		
2028	736.00	116.89	632.39	2,529.56	n/a	n/a	150.00	211.00	21.57	n/a	n/a	444.08	n/a		
2029	983.72	118.28	632.39	2,529.56	n/a	n/a	183.00	218.00	26.76	n/a	n/a	444.08	n/a		
2030	1,127.80	119.55	632.39	2,529.56	n/a	n/a	216.00	228.00	30.78	n/a	n/a	654.64	n/a		
2031	1,221.31	119.04	632.39	2,529.56	n/a	n/a	251.00	242.00	30.79	n/a	n/a	947.67	n/a		
2032	1,331.48	118.41	632.39	2,529.56	n/a	n/a	285.00	252.00	30.80	n/a	n/a	1,200.03	n/a		
2033	1,440.21	118.02	632.39	2,529.56	n/a	n/a	317.00	261.00	30.80	n/a	n/a	1,200.03	n/a		
2034	1,548.28	117.52	632.39	2,529.56	n/a	n/a	348.00	270.00	30.80	n/a	n/a	1,200.03	n/a		
2035	1,669.32	117.01	732.40	2,929.60	n/a	n/a	377.00	272.00	30.80	n/a	n/a	1,200.03	n/a		
2036	1,827.26	116.40	799.97	3,199.88	n/a	n/a	404.00	287.00	30.80	n/a	n/a	1,200.03	n/a		
2037	2,006.38	67.75	899.98	3,599.92	n/a	n/a	429.00	296.00	30.80	n/a	n/a	1,200.03	n/a		
2038	2,196.38	41.47	999.99	3,999.96	n/a	n/a	452.00	303.00	30.80	n/a	n/a	1,200.03	n/a		
2039	2,344.93	16.93	1,100.00	4,400.00	n/a	n/a	471.00	310.00	30.80	n/a	n/a	1,200.03	n/a		
2040	2,464.99	16.93	1,200.01	4,800.04	n/a	n/a	487.00	306.00	30.80	n/a	n/a	1,200.03	n/a		
2041	2,623.64	16.93	1,200.01	4,800.04	n/a	n/a	503.00	314.00	30.80	n/a	n/a	1,200.03	n/a		
2042	2,673.99	16.93	1,200.01	4,800.04	n/a	n/a	514.00	330.00	30.80	n/a	n/a	1,200.03	n/a		
2043	2,759.14	16.93	1,200.01	4,800.04	n/a	n/a	523.00	336.00	30.80	n/a	n/a	1,200.03	n/a		

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual goals for actions over the study period

UM 2225 Order Summary/Rubric references: C.2(a)-(i), C.3

36 Portfolio36		50 Mwa EE										CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes
Year	Clean energy resources (MWa) System resources	Clean energy resources (MWa) Voluntary programs	Energy Storage (MW) System resources	Energy Storage (MWh) System resources	Energy Storage (MW) Voluntary programs	Energy Storage (MWh) Voluntary programs	Energy Efficiency (MWa)	Demand Response (MW)	System resources	Voluntary programs	System resources	Voluntary programs						
2023	n/a	85.49	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
2024	138.60	112.47	-	-	n/a	n/a	30.00	133.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	
2025	250.22	113.21	400.00	1,600.00	n/a	n/a	60.00	162.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	
2026	660.27	114.47	515.01	2,060.04	n/a	n/a	100.06	183.00	12.55	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	
2027	699.87	115.74	515.01	2,060.04	n/a	n/a	140.09	199.00	16.01	n/a	n/a	n/a	n/a	n/a	89.19	n/a	n/a	
2028	754.16	116.89	515.01	2,060.04	n/a	n/a	180.12	211.00	21.57	n/a	n/a	n/a	n/a	n/a	217.28	n/a	n/a	
2029	942.13	118.28	515.01	2,060.04	n/a	n/a	223.15	218.00	26.76	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	
2030	1,082.99	119.55	999.99	3,999.96	n/a	n/a	266.18	228.00	30.79	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	
2031	1,176.27	119.04	999.99	3,999.96	n/a	n/a	301.23	242.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	
2032	1,286.86	118.41	999.99	3,999.96	n/a	n/a	335.28	252.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	
2033	1,395.24	118.02	999.99	3,999.96	n/a	n/a	367.33	261.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	
2034	1,503.46	117.52	999.99	3,999.96	n/a	n/a	398.38	270.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	
2035	1,622.85	117.01	999.99	3,999.96	n/a	n/a	427.43	272.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	
2036	1,779.95	116.40	999.99	3,999.96	n/a	n/a	454.48	287.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	
2037	1,957.04	67.75	999.99	3,999.96	n/a	n/a	479.53	296.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	
2038	2,146.37	41.47	999.99	3,999.96	n/a	n/a	502.58	303.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	
2039	2,294.94	16.93	1,100.00	4,400.00	n/a	n/a	521.63	310.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	
2040	2,415.00	16.93	1,200.01	4,800.04	n/a	n/a	537.68	306.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	
2041	2,573.63	16.93	1,200.01	4,800.04	n/a	n/a	553.73	314.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	
2042	2,623.99	16.93	1,200.01	4,800.04	n/a	n/a	564.78	330.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	
2043	2,709.13	16.93	1,200.01	4,800.04	n/a	n/a	573.83	336.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	

37 Portfolio37		25 Mwa EE										CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes
Year	Clean energy resources (MWa) System resources	Clean energy resources (MWa) Voluntary programs	Energy Storage (MW) System resources	Energy Storage (MWh) System resources	Energy Storage (MW) Voluntary programs	Energy Storage (MWh) Voluntary programs	Energy Efficiency (MWa)	Demand Response (MW)	System resources	Voluntary programs	System resources	Voluntary programs						
2023	n/a	85.49	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
2024	138.60	112.47	-	-	n/a	n/a	30.00	133.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	
2025	250.22	113.21	400.00	1,600.00	n/a	n/a	60.00	162.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	
2026	660.27	114.47	523.46	2,093.84	n/a	n/a	95.06	183.00	12.55	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a	
2027	704.68	115.74	523.46	2,093.84	n/a	n/a	130.09	199.00	16.01	n/a	n/a	n/a	n/a	n/a	100.01	n/a	n/a	
2028	782.96	116.89	523.46	2,093.84	n/a	n/a	165.12	211.00	21.57	n/a	n/a	n/a	n/a	n/a	281.40	n/a	n/a	
2029	962.23	118.28	523.46	2,093.84	n/a	n/a	203.15	218.00	26.77	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	
2030	1,107.98	119.55	999.99	3,999.96	n/a	n/a	241.18	228.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	
2031	1,201.28	119.04	999.99	3,999.96	n/a	n/a	276.23	242.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	
2032	1,311.86	118.41	999.99	3,999.96	n/a	n/a	310.28	252.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	
2033	1,420.24	118.02	999.99	3,999.96	n/a	n/a	342.33	261.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	
2034	1,528.47	117.52	999.99	3,999.96	n/a	n/a	373.38	270.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	
2035	1,647.85	117.01	999.99	3,999.96	n/a	n/a	402.43	272.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	
2036	1,804.96	116.40	999.99	3,999.96	n/a	n/a	429.48	287.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	
2037	1,982.05	67.75	999.99	3,999.96	n/a	n/a	454.53	296.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	
2038	2,171.38	41.47	999.99	3,999.96	n/a	n/a	477.58	303.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	
2039	2,319.94	16.93	1,100.00	4,400.00	n/a	n/a	496.63	310.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	
2040	2,440.00	16.93	1,200.01	4,800.04	n/a	n/a	512.68	306.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	
2041	2,598.64	16.93	1,200.01	4,800.04	n/a	n/a	528.73	314.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	
2042	2,649.00	16.93	1,200.01	4,800.04	n/a	n/a	539.78	330.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	
2043	2,734.14	16.93	1,200.01	4,800.04	n/a	n/a	548.83	336.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual goals for actions over the study period

UM 2225 Order Summary/Rubric references: C.2(a)-(i), C.3

38 Portfolio38		70 Mwa EE										CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes
Year	Clean energy resources (MWa) System resources	Clean energy resources (MWa) Voluntary programs	Energy Storage (MW) System resources	Energy Storage (MWh) System resources	Energy Storage (MW) Voluntary programs	Energy Storage (MWh) Voluntary programs	Energy Efficiency (MWa)	Demand Response (MW)	System resources	Voluntary programs	System resources	Voluntary programs						
2023	n/a	85.49			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2024	138.60	112.47	-	-	n/a	n/a	30.00	133.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2025	250.22	113.21	400.00	1,600.00	n/a	n/a	60.00	162.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2026	660.27	114.47	506.92	2,027.68	n/a	n/a	106.04	183.00	12.55	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2027	697.39	115.74	506.92	2,027.68	n/a	n/a	149.05	199.00	16.01	n/a	n/a	n/a	n/a	n/a	83.60	n/a	n/a	n/a
2028	765.20	116.89	506.92	2,027.68	n/a	n/a	192.06	211.00	21.57	n/a	n/a	n/a	n/a	n/a	239.42	n/a	n/a	n/a
2029	925.10	118.28	506.92	2,027.68	n/a	n/a	240.07	218.00	26.76	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	n/a
2030	1,063.09	119.55	999.99	3,999.96	n/a	n/a	286.08	228.00	30.79	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	n/a
2031	1,156.37	119.04	999.99	3,999.96	n/a	n/a	321.13	242.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	n/a
2032	1,266.96	118.41	999.99	3,999.96	n/a	n/a	355.18	252.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	n/a
2033	1,375.34	118.02	999.99	3,999.96	n/a	n/a	387.23	261.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	n/a
2034	1,483.56	117.52	999.99	3,999.96	n/a	n/a	418.28	270.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	n/a
2035	1,602.95	117.01	999.99	3,999.96	n/a	n/a	447.33	272.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	n/a
2036	1,760.05	116.40	999.99	3,999.96	n/a	n/a	474.38	287.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	n/a
2037	1,937.14	67.75	999.99	3,999.96	n/a	n/a	499.43	296.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	n/a
2038	2,126.47	41.47	999.99	3,999.96	n/a	n/a	522.48	303.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	n/a
2039	2,275.04	16.93	1,100.00	4,400.00	n/a	n/a	541.53	310.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	n/a
2040	2,395.10	16.93	1,200.01	4,800.04	n/a	n/a	557.58	306.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	n/a
2041	2,553.73	16.93	1,200.01	4,800.04	n/a	n/a	573.63	314.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	n/a
2042	2,604.09	16.93	1,200.01	4,800.04	n/a	n/a	584.68	330.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	n/a
2043	2,689.23	16.93	1,200.01	4,800.04	n/a	n/a	593.73	336.00	30.80	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	n/a

39 Portfolio39		Optimized										CBREs (MWa)		CBREs (MW or MWa)		Retirements (list unit)	Transmission Projects	Operational Changes
Year	Clean energy resources (MWa) System resources	Clean energy resources (MWa) Voluntary programs	Energy Storage (MW) System resources	Energy Storage (MWh) System resources	Energy Storage (MW) Voluntary programs	Energy Storage (MWh) Voluntary programs	Energy Efficiency (MWa)	Demand Response (MW)	System resources	Voluntary programs	System resources	Voluntary programs						
2023	n/a	85.49			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2024	138.60	112.47	-	-	n/a	n/a	30.00	133.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2025	250.22	113.21	400.00	1,600.00	n/a	n/a	60.00	162.00	-	n/a	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a
2026	660.25	114.47	513.60	2,054.40	n/a	n/a	90.00	183.00	12.50	n/a	n/a	n/a	n/a	n/a	-	n/a	n/a	n/a
2027	700.48	115.74	513.60	2,054.40	n/a	n/a	120.00	199.00	15.96	n/a	n/a	n/a	n/a	n/a	90.61	n/a	n/a	n/a
2028	751.63	116.89	513.60	2,054.40	n/a	n/a	150.00	211.00	21.53	n/a	n/a	n/a	n/a	n/a	211.65	n/a	n/a	n/a
2029	939.16	118.28	513.60	2,054.40	n/a	n/a	183.00	218.00	26.73	n/a	n/a	n/a	n/a	n/a	400.01	n/a	n/a	n/a
2030	1,074.90	119.55	637.40	2,549.60	n/a	n/a	216.00	228.00	30.76	n/a	n/a	n/a	n/a	n/a	608.18	n/a	n/a	n/a
2031	1,168.43	119.04	637.40	2,549.60	n/a	n/a	251.00	242.00	30.77	n/a	n/a	n/a	n/a	n/a	886.05	n/a	n/a	n/a
2032	1,278.57	118.41	637.40	2,549.60	n/a	n/a	285.00	252.00	30.77	n/a	n/a	n/a	n/a	n/a	1,090.14	n/a	n/a	n/a
2033	1,387.30	118.02	637.40	2,549.60	n/a	n/a	317.00	261.00	30.78	n/a	n/a	n/a	n/a	n/a	1,197.91	n/a	n/a	n/a
2034	1,495.36	117.52	637.40	2,549.60	n/a	n/a	348.00	270.00	30.80	n/a	n/a	n/a	n/a	n/a	1,197.91	n/a	n/a	n/a
2035	1,615.90	117.01	699.96	2,799.84	n/a	n/a	377.00	272.00	30.80	n/a	n/a	n/a	n/a	n/a	1,197.91	n/a	n/a	n/a
2036	1,774.26	116.40	799.97	3,199.88	n/a	n/a	404.00	287.00	30.80	n/a	n/a	n/a	n/a	n/a	1,197.91	n/a	n/a	n/a
2037	1,952.70	67.75	899.98	3,599.92	n/a	n/a	429.00	296.00	30.80	n/a	n/a	n/a	n/a	n/a	1,197.91	n/a	n/a	n/a
2038	2,143.38	41.47	999.99	3,999.96	n/a	n/a	452.00	303.00	30.80	n/a	n/a	n/a	n/a	n/a	1,200.03	n/a	n/a	n/a
2039	2,291.93	16.93	1,100.00	4,400.00	n/a	n/a	471.00	310.00	30.80	n/a	n/a	n/a	n/a	n/a	1,200.03	n/a	n/a	n/a
2040	2,411.99	16.93	1,200.01	4,800.04	n/a	n/a	487.00	306.00	30.80	n/a	n/a	n/a	n/a	n/a	1,200.03	n/a	n/a	n/a
2041	2,570.64	16.93	1,200.01	4,800.04	n/a	n/a	503.00	314.00	30.80	n/a	n/a	n/a	n/a	n/a	1,200.03	n/a	n/a	n/a
2042	2,620.99	16.93	1,200.01	4,800.04	n/a	n/a	514.00	330.00	30.80	n/a	n/a	n/a	n/a	n/a	1,200.03	n/a	n/a	n/a
2043	2,706.14	16.93	1,200.01	4,800.04	n/a	n/a	523.00	336.00	30.80	n/a	n/a	n/a	n/a	n/a	1,200.03	n/a	n/a	n/a

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual GHG emissions based on the DEQ methodology over the study period under Reference Case assumptions
 For each year, break out the contributions of individual fossil fuel resources, market purchases, and market sales to the total GHG emissions per the DEQ methodology
 UM 2225 Order Summary/Rubric references: C.4(a)

PGE note: Forecasts of generation from existing thermal output are based on economic dispatch using prices forecasted in this CEP/IRP. Forecasts of unspecified and other emitting market purchases are a function of historical purchases and a linear decline emission reduction glidepath. Neither reflect operational realities.

40 Portfolio40		Preferred			PGE owned GHG emitting generation (retail)					
Year	Total Retail GHG Emissions (metric tons)	Included in retail total	Not included in retail total		Beaver	Carty	Coyote	PW1	PW2	Colstrip
		Market Purchases (metric tons)	Market sales (metric tons)		Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)	Fossil fuel resource 3 (metric tons)	Fossil fuel resource 4 (metric tons)	Fossil fuel resource 5 (metric tons)	Fossil fuel resource 6 (metric tons)
2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430	
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585	
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344	
2026	4,363,686	1,357,560	2,381,499	252,077	703,336	380,506	507,272	151,982	1,010,952	
2027	3,677,764	1,088,518	3,027,879	274,796	568,162	310,248	471,988	163,412	800,641	
2028	2,991,843	838,318	3,723,138	310,987	441,991	242,423	389,304	189,935	578,887	
2029	2,305,921	648,018	4,123,480	246,446	342,398	188,152	298,484	145,680	436,744	
2030	1,620,000	567,419	2,804,681	206,768	297,614	165,256	259,630	123,314	-	
2031	1,458,000	516,013	2,840,232	180,396	266,759	148,235	235,413	111,183	-	
2032	1,296,000	478,246	2,724,006	160,075	230,300	128,332	203,351	95,696	-	
2033	1,134,000	421,935	2,767,324	140,394	203,727	110,188	173,857	83,898	-	
2034	972,000	375,089	2,677,292	116,453	168,444	94,037	146,748	71,230	-	
2035	810,000	311,826	2,767,644	98,653	141,545	77,960	121,678	58,339	-	
2036	648,000	259,476	2,662,348	73,785	113,189	62,002	95,616	43,932	-	
2037	486,000	197,927	2,660,037	59,191	81,110	44,453	69,212	34,107	-	
2038	324,000	137,125	2,558,583	35,547	53,393	29,883	46,765	21,288	-	
2039	162,000	69,146	2,591,050	17,789	26,621	14,745	23,255	10,443	-	
2040	-	-	2,411,226	-	-	-	-	-	-	
2041	-	-	2,374,334	-	-	-	-	-	-	
2042	-	-	2,185,187	-	-	-	-	-	-	
2043	-	-	2,222,696	-	-	-	-	-	-	

sources: GHG model_linear decline: retail CO2 GHG model_linear decline: market gas, market landfill, market waste, market wood, market ACS, market unspecified GHG model_linear decline: wholesale carbon of thermal plants, market gas, market landfill, market waste, market wood, market ACS, market unspecified GHG model_linear decline: retail carbon GHG model_linear decline: retail carbon GHG model_linear decline: retail carbon GHG model_linear decline: retail carbon GHG model_linear decline: retail carbon GHG model_linear decline: retail carbon

1 Portfolio1		Linear decline			PGE owned GHG emitting generation (retail)					
Year	Total Retail GHG Emissions (metric tons)	Included in retail total	Not included in retail total		Beaver	Carty	Coyote	PW1	PW2	Colstrip
		Market Purchases (metric tons)	Market sales (metric tons)		Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)	Fossil fuel resource 3 (metric tons)	Fossil fuel resource 4 (metric tons)	Fossil fuel resource 5 (metric tons)	Fossil fuel resource 6 (metric tons)
2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430	
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585	
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344	
2026	4,363,686	1,357,560	2,381,499	252,077	703,336	380,506	507,272	151,982	1,010,952	
2027	3,677,764	1,088,518	3,027,879	274,796	568,162	310,248	471,988	163,412	800,641	
2028	2,991,843	838,318	3,723,138	310,987	441,991	242,423	389,304	189,935	578,887	
2029	2,305,921	648,018	4,123,480	246,446	342,398	188,152	298,484	145,680	436,744	
2030	1,620,000	567,419	2,804,681	206,768	297,614	165,256	259,630	123,314	-	
2031	1,458,000	516,013	2,840,232	180,396	266,759	148,235	235,413	111,183	-	
2032	1,296,000	478,246	2,724,006	160,075	230,300	128,332	203,351	95,696	-	
2033	1,134,000	421,935	2,767,324	140,394	203,727	110,188	173,857	83,898	-	
2034	972,000	375,089	2,677,292	116,453	168,444	94,037	146,748	71,230	-	
2035	810,000	311,826	2,767,644	98,653	141,545	77,960	121,678	58,339	-	
2036	648,000	259,476	2,662,348	73,785	113,189	62,002	95,616	43,932	-	
2037	486,000	197,927	2,660,037	59,191	81,110	44,453	69,212	34,107	-	
2038	324,000	137,125	2,558,583	35,547	53,393	29,883	46,765	21,288	-	
2039	162,000	69,146	2,591,050	17,789	26,621	14,745	23,255	10,443	-	
2040	-	-	2,411,226	-	-	-	-	-	-	
2041	-	-	2,374,334	-	-	-	-	-	-	
2042	-	-	2,185,187	-	-	-	-	-	-	
2043	-	-	2,222,696	-	-	-	-	-	-	

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual GHG emissions based on the DEQ methodology over the study period under Reference Case assumptions
 For each year, break out the contributions of individual fossil fuel resources, market purchases, and market sales to the total GHG emissions per the DEQ methodology
 UM 2225 Order Summary/Rubric references: C.4(a)

PGE note: Forecasts of generation from existing thermal output are based on economic dispatch using prices forecasted in this CEP/IRP. Forecasts of unspecified and other emitting market purchases are a function of historical purchases and a linear decline emission reduction glidepath. Neither reflect operational realities.

2 Portfolio2		Front-loaded decline		PGE owned GHG emitting generation (retail)								
Year	Total Retail GHG Emissions (metric tons)	<i>Included in retail total</i>	<i>Not included in retail total</i>	Beaver	Carty	Coyote	PW1	PW2	Colstrip			
		Market Purchases (metric tons)	Market sales (metric tons)	Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)	Fossil fuel resource 3 (metric tons)	Fossil fuel resource 4 (metric tons)	Fossil fuel resource 5 (metric tons)	Fossil fuel resource 6 (metric tons)			
2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430			
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585			
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344			
2026	3,279,487	1,020,262	3,018,259	189,446	528,586	285,965	381,236	114,221	759,771			
2027	2,394,427	708,685	3,807,355	178,907	369,905	201,988	307,290	106,390	521,261			
2028	1,951,897	546,924	4,376,540	202,890	288,358	158,158	253,984	123,915	377,670			
2029	1,730,632	486,348	4,484,309	184,962	256,975	141,211	224,017	109,335	327,784			
2030	1,620,000	567,419	2,804,681	206,768	297,614	165,256	259,630	123,314	-			
2031	1,458,000	516,013	2,840,232	180,396	266,759	148,235	235,413	111,183	-			
2032	1,296,000	478,246	2,724,006	160,075	230,300	128,332	203,351	95,696	-			
2033	1,134,000	421,935	2,767,324	140,394	203,727	110,188	173,857	83,898	-			
2034	972,000	375,089	2,677,292	116,453	168,444	94,037	146,748	71,230	-			
2035	810,000	311,826	2,767,644	98,653	141,545	77,960	121,678	58,339	-			
2036	648,000	259,476	2,662,348	73,785	113,189	62,002	95,616	43,932	-			
2037	486,000	197,927	2,660,037	59,191	81,110	44,453	69,212	34,107	-			
2038	324,000	137,125	2,558,583	35,547	53,393	29,883	46,765	21,288	-			
2039	162,000	69,146	2,591,050	17,789	26,621	14,745	23,255	10,443	-			
2040	-	-	2,411,226	-	-	-	-	-	-			
2041	-	-	2,374,334	-	-	-	-	-	-			
2042	-	-	2,185,187	-	-	-	-	-	-			
2043	-	-	2,222,696	-	-	-	-	-	-			

3 Portfolio3		Back-loaded decline		PGE owned GHG emitting generation (retail)								
Year	Total Retail GHG Emissions (metric tons)	<i>Included in retail total</i>	<i>Not included in retail total</i>	Beaver	Carty	Coyote	PW1	PW2	Colstrip			
		Market Purchases (metric tons)	Market sales (metric tons)	Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)	Fossil fuel resource 3 (metric tons)	Fossil fuel resource 4 (metric tons)	Fossil fuel resource 5 (metric tons)	Fossil fuel resource 6 (metric tons)			
2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430			
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585			
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344			
2026	4,938,974	1,536,535	2,043,626	285,310	796,061	430,670	574,149	172,019	1,144,231			
2027	4,717,710	1,396,314	2,396,235	352,499	728,819	397,975	605,450	209,619	1,027,034			
2028	4,275,180	1,197,910	2,916,813	444,383	631,581	346,409	556,294	271,406	827,198			
2029	3,390,120	952,703	3,443,457	362,320	503,386	276,617	438,825	214,176	642,092			
2030	1,620,000	567,419	2,804,681	206,768	297,614	165,256	259,630	123,314	-			
2031	1,458,000	516,013	2,840,232	180,396	266,759	148,235	235,413	111,183	-			
2032	1,296,000	478,246	2,724,006	160,075	230,300	128,332	203,351	95,696	-			
2033	1,134,000	421,935	2,767,324	140,394	203,727	110,188	173,857	83,898	-			
2034	972,000	375,089	2,677,292	116,453	168,444	94,037	146,748	71,230	-			
2035	810,000	311,826	2,767,644	98,653	141,545	77,960	121,678	58,339	-			
2036	648,000	259,476	2,662,348	73,785	113,189	62,002	95,616	43,932	-			
2037	486,000	197,927	2,660,037	59,191	81,110	44,453	69,212	34,107	-			
2038	324,000	137,125	2,558,583	35,547	53,393	29,883	46,765	21,288	-			
2039	162,000	69,146	2,591,050	17,789	26,621	14,745	23,255	10,443	-			
2040	-	-	2,411,226	-	-	-	-	-	-			
2041	-	-	2,374,334	-	-	-	-	-	-			
2042	-	-	2,185,187	-	-	-	-	-	-			
2043	-	-	2,222,696	-	-	-	-	-	-			

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual GHG emissions based on the DEQ methodology over the study period under Reference Case assumptions
 For each year, break out the contributions of individual fossil fuel resources, market purchases, and market sales to the total GHG emissions per the DEQ methodology
 UM 2225 Order Summary/Rubric references: C.4(a)

PGE note: Forecasts of generation from existing thermal output are based on economic dispatch using prices forecasted in this CEP/IRP. Forecasts of unspecified and other emitting market purchases are a function of historical purchases and a linear decline emission reduction glidepath. Neither reflect operational realities.

4 Portfolio4				PGE owned GHG emitting generation (retail)												
100% emissions reduction by 2035				Beaver			Carty		Coyote		PW1		PW2		Colstrip	
Year	Total Retail GHG Emissions (metric tons)	Included in retail total Market Purchases (metric tons)	Not included in retail total Market sales (metric tons)	Fossil fuel resource 1 (metric tons)		Fossil fuel resource 2 (metric tons)		Fossil fuel resource 3 (metric tons)		Fossil fuel resource 4 (metric tons)		Fossil fuel resource 5 (metric tons)		Fossil fuel resource 6 (metric tons)		
	2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430						
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585							
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344							
2026	4,363,686	1,357,560	2,381,499	252,077	703,336	380,506	507,272	151,982	1,010,952							
2027	3,677,764	1,088,518	3,027,879	274,796	568,162	310,248	471,988	163,412	800,641							
2028	2,991,843	838,318	3,723,138	310,987	441,991	242,423	389,304	189,935	578,887							
2029	2,305,921	648,018	4,123,480	246,446	342,398	188,152	298,484	145,680	436,744							
2030	1,620,000	567,419	2,804,681	206,768	297,614	165,256	259,630	123,314	-							
2031	1,296,000	458,678	2,926,176	160,352	237,119	131,765	209,256	98,830	-							
2032	972,000	358,684	2,889,404	120,056	172,725	96,249	152,513	71,772	-							
2033	648,000	241,106	3,013,447	80,225	116,415	62,965	99,347	47,942	-							
2034	324,000	125,030	2,993,580	38,818	56,148	31,346	48,916	23,743	-							
2035	-	-	3,152,555	-	-	-	-	-	-							
2036	-	-	2,954,702	-	-	-	-	-	-							
2037	-	-	2,872,038	-	-	-	-	-	-							
2038	-	-	2,689,240	-	-	-	-	-	-							
2039	-	-	2,649,883	-	-	-	-	-	-							
2040	-	-	2,411,226	-	-	-	-	-	-							
2041	-	-	2,374,334	-	-	-	-	-	-							
2042	-	-	2,185,187	-	-	-	-	-	-							
2043	-	-	2,222,696	-	-	-	-	-	-							

5 Portfolio5				PGE owned GHG emitting generation (retail)												
2-yr forward shift in targets				Beaver			Carty		Coyote		PW1		PW2		Colstrip	
Year	Total Retail GHG Emissions (metric tons)	Included in retail total Market Purchases (metric tons)	Not included in retail total Market sales (metric tons)	Fossil fuel resource 1 (metric tons)		Fossil fuel resource 2 (metric tons)		Fossil fuel resource 3 (metric tons)		Fossil fuel resource 4 (metric tons)		Fossil fuel resource 5 (metric tons)		Fossil fuel resource 6 (metric tons)		
	2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430						
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585							
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344							
2026	3,906,405	1,215,298	2,650,065	225,661	629,632	340,631	454,114	136,055	905,012							
2027	2,763,202	817,833	3,583,368	206,461	426,875	233,097	354,617	122,776	601,543							
2028	1,620,000	453,926	4,585,073	168,391	239,326	131,265	210,797	102,844	313,451							
2029	1,458,000	409,732	4,655,307	155,824	216,493	118,966	188,727	92,111	276,147							
2030	1,296,000	453,935	2,978,141	165,414	238,091	132,205	207,704	98,651	-							
2031	1,134,000	401,343	3,012,120	140,308	207,479	115,294	183,099	86,476	-							
2032	972,000	358,684	2,889,404	120,056	172,725	96,249	152,513	71,772	-							
2033	810,000	301,382	2,931,406	100,281	145,519	78,706	124,184	59,927	-							
2034	648,000	250,059	2,835,436	77,635	112,296	62,691	97,832	47,487	-							
2035	486,000	187,095	2,926,186	59,192	84,927	46,776	73,007	35,004	-							
2036	324,000	129,738	2,814,246	36,893	56,594	31,001	47,808	21,966	-							
2037	162,000	65,976	2,808,999	19,730	27,037	14,818	23,071	11,369	-							
2038	-	-	2,689,240	-	-	-	-	-	-							
2039	-	-	2,649,883	-	-	-	-	-	-							
2040	-	-	2,411,226	-	-	-	-	-	-							
2041	-	-	2,374,334	-	-	-	-	-	-							
2042	-	-	2,185,187	-	-	-	-	-	-							
2043	-	-	2,222,696	-	-	-	-	-	-							

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual GHG emissions based on the DEQ methodology over the study period under Reference Case assumptions
 For each year, break out the contributions of individual fossil fuel resources, market purchases, and market sales to the total GHG emissions per the DEQ methodology
 UM 2225 Order Summary/Rubric references: C.4(a)

PGE note: Forecasts of generation from existing thermal output are based on economic dispatch using prices forecasted in this CEP/IRP. Forecasts of unspecified and other emitting market purchases are a function of historical purchases and a linear decline emission reduction glidepath. Neither reflect operational realities.

6 Portfolio6		Optimize NCE		PGE owned GHG emitting generation (retail)								
Year	Total Retail GHG Emissions (metric tons)	<i>Included in retail total</i>	<i>Not included in retail total</i>	Beaver	Carty	Coyote	PW1	PW2	Colstrip			
		Market Purchases (metric tons)	Market sales (metric tons)	Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)	Fossil fuel resource 3 (metric tons)	Fossil fuel resource 4 (metric tons)	Fossil fuel resource 5 (metric tons)	Fossil fuel resource 6 (metric tons)			
2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430			
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585			
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344			
2026	4,363,686	1,357,560	2,381,499	252,077	703,336	380,506	507,272	151,982	1,010,952			
2027	3,677,764	1,088,518	3,027,879	274,796	568,162	310,248	471,988	163,412	800,641			
2028	2,991,843	838,318	3,723,138	310,987	441,991	242,423	389,304	189,935	578,887			
2029	2,305,921	648,018	4,123,480	246,446	342,398	188,152	298,484	145,680	436,744			
2030	1,620,000	567,419	2,804,681	206,768	297,614	165,256	259,630	123,314	-			
2031	1,458,000	516,013	2,840,232	180,396	266,759	148,235	235,413	111,183	-			
2032	1,296,000	478,246	2,724,006	160,075	230,300	128,332	203,351	95,696	-			
2033	1,134,000	421,935	2,767,324	140,394	203,727	110,188	173,857	83,898	-			
2034	972,000	375,089	2,677,292	116,453	168,444	94,037	146,748	71,230	-			
2035	810,000	311,826	2,767,644	98,653	141,545	77,960	121,678	58,339	-			
2036	648,000	259,476	2,662,348	73,785	113,189	62,002	95,616	43,932	-			
2037	486,000	197,927	2,660,037	59,191	81,110	44,453	69,212	34,107	-			
2038	324,000	137,125	2,558,583	35,547	53,393	29,883	46,765	21,288	-			
2039	162,000	69,146	2,591,050	17,789	26,621	14,745	23,255	10,443	-			
2040	-	-	2,411,226	-	-	-	-	-	-			
2041	-	-	2,374,334	-	-	-	-	-	-			
2042	-	-	2,185,187	-	-	-	-	-	-			
2043	-	-	2,222,696	-	-	-	-	-	-			

7 Portfolio7		Zero NCE		PGE owned GHG emitting generation (retail)								
Year	Total Retail GHG Emissions (metric tons)	<i>Included in retail total</i>	<i>Not included in retail total</i>	Beaver	Carty	Coyote	PW1	PW2	Colstrip			
		Market Purchases (metric tons)	Market sales (metric tons)	Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)	Fossil fuel resource 3 (metric tons)	Fossil fuel resource 4 (metric tons)	Fossil fuel resource 5 (metric tons)	Fossil fuel resource 6 (metric tons)			
2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430			
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585			
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344			
2026	4,363,686	1,357,560	2,381,499	252,077	703,336	380,506	507,272	151,982	1,010,952			
2027	3,677,764	1,088,518	3,027,879	274,796	568,162	310,248	471,988	163,412	800,641			
2028	2,991,843	838,318	3,723,138	310,987	441,991	242,423	389,304	189,935	578,887			
2029	2,305,921	648,018	4,123,480	246,446	342,398	188,152	298,484	145,680	436,744			
2030	1,620,000	567,419	2,804,681	206,768	297,614	165,256	259,630	123,314	-			
2031	1,458,000	516,013	2,840,232	180,396	266,759	148,235	235,413	111,183	-			
2032	1,296,000	478,246	2,724,006	160,075	230,300	128,332	203,351	95,696	-			
2033	1,134,000	421,935	2,767,324	140,394	203,727	110,188	173,857	83,898	-			
2034	972,000	375,089	2,677,292	116,453	168,444	94,037	146,748	71,230	-			
2035	810,000	311,826	2,767,644	98,653	141,545	77,960	121,678	58,339	-			
2036	648,000	259,476	2,662,348	73,785	113,189	62,002	95,616	43,932	-			
2037	486,000	197,927	2,660,037	59,191	81,110	44,453	69,212	34,107	-			
2038	324,000	137,125	2,558,583	35,547	53,393	29,883	46,765	21,288	-			
2039	162,000	69,146	2,591,050	17,789	26,621	14,745	23,255	10,443	-			
2040	-	-	2,411,226	-	-	-	-	-	-			
2041	-	-	2,374,334	-	-	-	-	-	-			
2042	-	-	2,185,187	-	-	-	-	-	-			
2043	-	-	2,222,696	-	-	-	-	-	-			

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual GHG emissions based on the DEQ methodology over the study period under Reference Case assumptions
 For each year, break out the contributions of individual fossil fuel resources, market purchases, and market sales to the total GHG emissions per the DEQ methodology
 UM 2225 Order Summary/Rubric references: C.4(a)

PGE note: Forecasts of generation from existing thermal output are based on economic dispatch using prices forecasted in this CEP/IRP. Forecasts of unspecified and other emitting market purchases are a function of historical purchases and a linear decline emission reduction glidepath. Neither reflect operational realities.

8 Portfolio8		60 MWa EE		PGE owned GHG emitting generation (retail)								
Year	Total Retail GHG Emissions (metric tons)	<i>Included in retail total</i>	<i>Not included in retail total</i>	Beaver	Carty	Coyote	PW1	PW2	Colstrip			
		Market Purchases (metric tons)	Market sales (metric tons)	Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)	Fossil fuel resource 3 (metric tons)	Fossil fuel resource 4 (metric tons)	Fossil fuel resource 5 (metric tons)	Fossil fuel resource 6 (metric tons)			
2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430			
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585			
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344			
2026	4,363,686	1,357,560	2,381,499	252,077	703,336	380,506	507,272	151,982	1,010,952			
2027	3,677,764	1,088,518	3,027,879	274,796	568,162	310,248	471,988	163,412	800,641			
2028	2,991,843	838,318	3,723,138	310,987	441,991	242,423	389,304	189,935	578,887			
2029	2,305,921	648,018	4,123,480	246,446	342,398	188,152	298,484	145,680	436,744			
2030	1,620,000	567,419	2,804,681	206,768	297,614	165,256	259,630	123,314	-			
2031	1,458,000	516,013	2,840,232	180,396	266,759	148,235	235,413	111,183	-			
2032	1,296,000	478,246	2,724,006	160,075	230,300	128,332	203,351	95,696	-			
2033	1,134,000	421,935	2,767,324	140,394	203,727	110,188	173,857	83,898	-			
2034	972,000	375,089	2,677,292	116,453	168,444	94,037	146,748	71,230	-			
2035	810,000	311,826	2,767,644	98,653	141,545	77,960	121,678	58,339	-			
2036	648,000	259,476	2,662,348	73,785	113,189	62,002	95,616	43,932	-			
2037	486,000	197,927	2,660,037	59,191	81,110	44,453	69,212	34,107	-			
2038	324,000	137,125	2,558,583	35,547	53,393	29,883	46,765	21,288	-			
2039	162,000	69,146	2,591,050	17,789	26,621	14,745	23,255	10,443	-			
2040	-	-	2,411,226	-	-	-	-	-	-			
2041	-	-	2,374,334	-	-	-	-	-	-			
2042	-	-	2,185,187	-	-	-	-	-	-			
2043	-	-	2,222,696	-	-	-	-	-	-			

9 Portfolio9		Default CBRES		PGE owned GHG emitting generation (retail)								
Year	Total Retail GHG Emissions (metric tons)	<i>Included in retail total</i>	<i>Not included in retail total</i>	Beaver	Carty	Coyote	PW1	PW2	Colstrip			
		Market Purchases (metric tons)	Market sales (metric tons)	Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)	Fossil fuel resource 3 (metric tons)	Fossil fuel resource 4 (metric tons)	Fossil fuel resource 5 (metric tons)	Fossil fuel resource 6 (metric tons)			
2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430			
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585			
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344			
2026	4,363,686	1,357,560	2,381,499	252,077	703,336	380,506	507,272	151,982	1,010,952			
2027	3,677,764	1,088,518	3,027,879	274,796	568,162	310,248	471,988	163,412	800,641			
2028	2,991,843	838,318	3,723,138	310,987	441,991	242,423	389,304	189,935	578,887			
2029	2,305,921	648,018	4,123,480	246,446	342,398	188,152	298,484	145,680	436,744			
2030	1,620,000	567,419	2,804,681	206,768	297,614	165,256	259,630	123,314	-			
2031	1,458,000	516,013	2,840,232	180,396	266,759	148,235	235,413	111,183	-			
2032	1,296,000	478,246	2,724,006	160,075	230,300	128,332	203,351	95,696	-			
2033	1,134,000	421,935	2,767,324	140,394	203,727	110,188	173,857	83,898	-			
2034	972,000	375,089	2,677,292	116,453	168,444	94,037	146,748	71,230	-			
2035	810,000	311,826	2,767,644	98,653	141,545	77,960	121,678	58,339	-			
2036	648,000	259,476	2,662,348	73,785	113,189	62,002	95,616	43,932	-			
2037	486,000	197,927	2,660,037	59,191	81,110	44,453	69,212	34,107	-			
2038	324,000	137,125	2,558,583	35,547	53,393	29,883	46,765	21,288	-			
2039	162,000	69,146	2,591,050	17,789	26,621	14,745	23,255	10,443	-			
2040	-	-	2,411,226	-	-	-	-	-	-			
2041	-	-	2,374,334	-	-	-	-	-	-			
2042	-	-	2,185,187	-	-	-	-	-	-			
2043	-	-	2,222,696	-	-	-	-	-	-			

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual GHG emissions based on the DEQ methodology over the study period under Reference Case assumptions
 For each year, break out the contributions of individual fossil fuel resources, market purchases, and market sales to the total GHG emissions per the DEQ methodology
 UM 2225 Order Summary/Rubric references: C.4(a)

PGE note: Forecasts of generation from existing thermal output are based on economic dispatch using prices forecasted in this CEP/IRP. Forecasts of unspecified and other emitting market purchases are a function of historical purchases and a linear decline emission reduction glidepath. Neither reflect operational realities.

10 Portfolio10		CBRE - 75%		PGE owned GHG emitting generation (retail)								
Year	Total Retail GHG Emissions (metric tons)	<i>Included in retail total</i>	<i>Not included in retail total</i>	Beaver	Carty	Coyote	PW1	PW2	Colstrip			
		Market Purchases (metric tons)	Market sales (metric tons)	Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)	Fossil fuel resource 3 (metric tons)	Fossil fuel resource 4 (metric tons)	Fossil fuel resource 5 (metric tons)	Fossil fuel resource 6 (metric tons)			
2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430			
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585			
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344			
2026	4,363,686	1,357,560	2,381,499	252,077	703,336	380,506	507,272	151,982	1,010,952			
2027	3,677,764	1,088,518	3,027,879	274,796	568,162	310,248	471,988	163,412	800,641			
2028	2,991,843	838,318	3,723,138	310,987	441,991	242,423	389,304	189,935	578,887			
2029	2,305,921	648,018	4,123,480	246,446	342,398	188,152	298,484	145,680	436,744			
2030	1,620,000	567,419	2,804,681	206,768	297,614	165,256	259,630	123,314	-			
2031	1,458,000	516,013	2,840,232	180,396	266,759	148,235	235,413	111,183	-			
2032	1,296,000	478,246	2,724,006	160,075	230,300	128,332	203,351	95,696	-			
2033	1,134,000	421,935	2,767,324	140,394	203,727	110,188	173,857	83,898	-			
2034	972,000	375,089	2,677,292	116,453	168,444	94,037	146,748	71,230	-			
2035	810,000	311,826	2,767,644	98,653	141,545	77,960	121,678	58,339	-			
2036	648,000	259,476	2,662,348	73,785	113,189	62,002	95,616	43,932	-			
2037	486,000	197,927	2,660,037	59,191	81,110	44,453	69,212	34,107	-			
2038	324,000	137,125	2,558,583	35,547	53,393	29,883	46,765	21,288	-			
2039	162,000	69,146	2,591,050	17,789	26,621	14,745	23,255	10,443	-			
2040	-	-	2,411,226	-	-	-	-	-	-			
2041	-	-	2,374,334	-	-	-	-	-	-			
2042	-	-	2,185,187	-	-	-	-	-	-			
2043	-	-	2,222,696	-	-	-	-	-	-			

11 Portfolio11		CBRE - zero		PGE owned GHG emitting generation (retail)								
Year	Total Retail GHG Emissions (metric tons)	<i>Included in retail total</i>	<i>Not included in retail total</i>	Beaver	Carty	Coyote	PW1	PW2	Colstrip			
		Market Purchases (metric tons)	Market sales (metric tons)	Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)	Fossil fuel resource 3 (metric tons)	Fossil fuel resource 4 (metric tons)	Fossil fuel resource 5 (metric tons)	Fossil fuel resource 6 (metric tons)			
2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430			
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585			
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344			
2026	4,363,686	1,357,560	2,381,499	252,077	703,336	380,506	507,272	151,982	1,010,952			
2027	3,677,764	1,088,518	3,027,879	274,796	568,162	310,248	471,988	163,412	800,641			
2028	2,991,843	838,318	3,723,138	310,987	441,991	242,423	389,304	189,935	578,887			
2029	2,305,921	648,018	4,123,480	246,446	342,398	188,152	298,484	145,680	436,744			
2030	1,620,000	567,419	2,804,681	206,768	297,614	165,256	259,630	123,314	-			
2031	1,458,000	516,013	2,840,232	180,396	266,759	148,235	235,413	111,183	-			
2032	1,296,000	478,246	2,724,006	160,075	230,300	128,332	203,351	95,696	-			
2033	1,134,000	421,935	2,767,324	140,394	203,727	110,188	173,857	83,898	-			
2034	972,000	375,089	2,677,292	116,453	168,444	94,037	146,748	71,230	-			
2035	810,000	311,826	2,767,644	98,653	141,545	77,960	121,678	58,339	-			
2036	648,000	259,476	2,662,348	73,785	113,189	62,002	95,616	43,932	-			
2037	486,000	197,927	2,660,037	59,191	81,110	44,453	69,212	34,107	-			
2038	324,000	137,125	2,558,583	35,547	53,393	29,883	46,765	21,288	-			
2039	162,000	69,146	2,591,050	17,789	26,621	14,745	23,255	10,443	-			
2040	-	-	2,411,226	-	-	-	-	-	-			
2041	-	-	2,374,334	-	-	-	-	-	-			
2042	-	-	2,185,187	-	-	-	-	-	-			
2043	-	-	2,222,696	-	-	-	-	-	-			

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual GHG emissions based on the DEQ methodology over the study period under Reference Case assumptions
 For each year, break out the contributions of individual fossil fuel resources, market purchases, and market sales to the total GHG emissions per the DEQ methodology
 UM 2225 Order Summary/Rubric references: C.4(a)

PGE note: Forecasts of generation from existing thermal output are based on economic dispatch using prices forecasted in this CEP/IRP. Forecasts of unspecified and other emitting market purchases are a function of historical purchases and a linear decline emission reduction glidepath. Neither reflect operational realities.

12 Portfolio12		CBRE - microgrid		PGE owned GHG emitting generation (retail)								
Year	Total Retail GHG Emissions (metric tons)	<i>Included in retail total</i>	<i>Not included in retail total</i>	Beaver	Carty	Coyote	PW1	PW2	Colstrip			
		Market Purchases (metric tons)	Market sales (metric tons)	Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)	Fossil fuel resource 3 (metric tons)	Fossil fuel resource 4 (metric tons)	Fossil fuel resource 5 (metric tons)	Fossil fuel resource 6 (metric tons)			
2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430			
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585			
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344			
2026	4,363,686	1,357,560	2,381,499	252,077	703,336	380,506	507,272	151,982	1,010,952			
2027	3,677,764	1,088,518	3,027,879	274,796	568,162	310,248	471,988	163,412	800,641			
2028	2,991,843	838,318	3,723,138	310,987	441,991	242,423	389,304	189,935	578,887			
2029	2,305,921	648,018	4,123,480	246,446	342,398	188,152	298,484	145,680	436,744			
2030	1,620,000	567,419	2,804,681	206,768	297,614	165,256	259,630	123,314	-			
2031	1,458,000	516,013	2,840,232	180,396	266,759	148,235	235,413	111,183	-			
2032	1,296,000	478,246	2,724,006	160,075	230,300	128,332	203,351	95,696	-			
2033	1,134,000	421,935	2,767,324	140,394	203,727	110,188	173,857	83,898	-			
2034	972,000	375,089	2,677,292	116,453	168,444	94,037	146,748	71,230	-			
2035	810,000	311,826	2,767,644	98,653	141,545	77,960	121,678	58,339	-			
2036	648,000	259,476	2,662,348	73,785	113,189	62,002	95,616	43,932	-			
2037	486,000	197,927	2,660,037	59,191	81,110	44,453	69,212	34,107	-			
2038	324,000	137,125	2,558,583	35,547	53,393	29,883	46,765	21,288	-			
2039	162,000	69,146	2,591,050	17,789	26,621	14,745	23,255	10,443	-			
2040	-	-	2,411,226	-	-	-	-	-	-			
2041	-	-	2,374,334	-	-	-	-	-	-			
2042	-	-	2,185,187	-	-	-	-	-	-			
2043	-	-	2,222,696	-	-	-	-	-	-			

13 Portfolio13		CBRE - optimize		PGE owned GHG emitting generation (retail)								
Year	Total Retail GHG Emissions (metric tons)	<i>Included in retail total</i>	<i>Not included in retail total</i>	Beaver	Carty	Coyote	PW1	PW2	Colstrip			
		Market Purchases (metric tons)	Market sales (metric tons)	Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)	Fossil fuel resource 3 (metric tons)	Fossil fuel resource 4 (metric tons)	Fossil fuel resource 5 (metric tons)	Fossil fuel resource 6 (metric tons)			
2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430			
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585			
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344			
2026	4,363,686	1,357,560	2,381,499	252,077	703,336	380,506	507,272	151,982	1,010,952			
2027	3,677,764	1,088,518	3,027,879	274,796	568,162	310,248	471,988	163,412	800,641			
2028	2,991,843	838,318	3,723,138	310,987	441,991	242,423	389,304	189,935	578,887			
2029	2,305,921	648,018	4,123,480	246,446	342,398	188,152	298,484	145,680	436,744			
2030	1,620,000	567,419	2,804,681	206,768	297,614	165,256	259,630	123,314	-			
2031	1,458,000	516,013	2,840,232	180,396	266,759	148,235	235,413	111,183	-			
2032	1,296,000	478,246	2,724,006	160,075	230,300	128,332	203,351	95,696	-			
2033	1,134,000	421,935	2,767,324	140,394	203,727	110,188	173,857	83,898	-			
2034	972,000	375,089	2,677,292	116,453	168,444	94,037	146,748	71,230	-			
2035	810,000	311,826	2,767,644	98,653	141,545	77,960	121,678	58,339	-			
2036	648,000	259,476	2,662,348	73,785	113,189	62,002	95,616	43,932	-			
2037	486,000	197,927	2,660,037	59,191	81,110	44,453	69,212	34,107	-			
2038	324,000	137,125	2,558,583	35,547	53,393	29,883	46,765	21,288	-			
2039	162,000	69,146	2,591,050	17,789	26,621	14,745	23,255	10,443	-			
2040	-	-	2,411,226	-	-	-	-	-	-			
2041	-	-	2,374,334	-	-	-	-	-	-			
2042	-	-	2,185,187	-	-	-	-	-	-			
2043	-	-	2,222,696	-	-	-	-	-	-			

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual GHG emissions based on the DEQ methodology over the study period under Reference Case assumptions
 For each year, break out the contributions of individual fossil fuel resources, market purchases, and market sales to the total GHG emissions per the DEQ methodology
 UM 2225 Order Summary/Rubric references: C.4(a)

PGE note: Forecasts of generation from existing thermal output are based on economic dispatch using prices forecasted in this CEP/IRP. Forecasts of unspecified and other emitting market purchases are a function of historical purchases and a linear decline emission reduction glidepath. Neither reflect operational realities.

14 Portfolio14		Unconstrained Tx		PGE owned GHG emitting generation (retail)								
Year	Total Retail GHG Emissions (metric tons)	<i>Included in retail total</i>	<i>Not included in retail total</i>	Beaver	Carty	Coyote	PW1	PW2	Colstrip			
		Market Purchases (metric tons)	Market sales (metric tons)	Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)	Fossil fuel resource 3 (metric tons)	Fossil fuel resource 4 (metric tons)	Fossil fuel resource 5 (metric tons)	Fossil fuel resource 6 (metric tons)			
2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430			
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585			
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344			
2026	4,363,686	1,357,560	2,381,499	252,077	703,336	380,506	507,272	151,982	1,010,952			
2027	3,677,764	1,088,518	3,027,879	274,796	568,162	310,248	471,988	163,412	800,641			
2028	2,991,843	838,318	3,723,138	310,987	441,991	242,423	389,304	189,935	578,887			
2029	2,305,921	648,018	4,123,480	246,446	342,398	188,152	298,484	145,680	436,744			
2030	1,620,000	567,419	2,804,681	206,768	297,614	165,256	259,630	123,314	-			
2031	1,458,000	516,013	2,840,232	180,396	266,759	148,235	235,413	111,183	-			
2032	1,296,000	478,246	2,724,006	160,075	230,300	128,332	203,351	95,696	-			
2033	1,134,000	421,935	2,767,324	140,394	203,727	110,188	173,857	83,898	-			
2034	972,000	375,089	2,677,292	116,453	168,444	94,037	146,748	71,230	-			
2035	810,000	311,826	2,767,644	98,653	141,545	77,960	121,678	58,339	-			
2036	648,000	259,476	2,662,348	73,785	113,189	62,002	95,616	43,932	-			
2037	486,000	197,927	2,660,037	59,191	81,110	44,453	69,212	34,107	-			
2038	324,000	137,125	2,558,583	35,547	53,393	29,883	46,765	21,288	-			
2039	162,000	69,146	2,591,050	17,789	26,621	14,745	23,255	10,443	-			
2040	-	-	2,411,226	-	-	-	-	-	-			
2041	-	-	2,374,334	-	-	-	-	-	-			
2042	-	-	2,185,187	-	-	-	-	-	-			
2043	-	-	2,222,696	-	-	-	-	-	-			

15 Portfolio15		No Upgrades		PGE owned GHG emitting generation (retail)								
Year	Total Retail GHG Emissions (metric tons)	<i>Included in retail total</i>	<i>Not included in retail total</i>	Beaver	Carty	Coyote	PW1	PW2	Colstrip			
		Market Purchases (metric tons)	Market sales (metric tons)	Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)	Fossil fuel resource 3 (metric tons)	Fossil fuel resource 4 (metric tons)	Fossil fuel resource 5 (metric tons)	Fossil fuel resource 6 (metric tons)			
2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430			
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585			
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344			
2026	4,363,686	1,357,560	2,381,499	252,077	703,336	380,506	507,272	151,982	1,010,952			
2027	3,677,764	1,088,518	3,027,879	274,796	568,162	310,248	471,988	163,412	800,641			
2028	2,991,843	838,318	3,723,138	310,987	441,991	242,423	389,304	189,935	578,887			
2029	2,305,921	648,018	4,123,480	246,446	342,398	188,152	298,484	145,680	436,744			
2030	1,620,000	567,419	2,804,681	206,768	297,614	165,256	259,630	123,314	-			
2031	1,458,000	516,013	2,840,232	180,396	266,759	148,235	235,413	111,183	-			
2032	1,296,000	478,246	2,724,006	160,075	230,300	128,332	203,351	95,696	-			
2033	1,134,000	421,935	2,767,324	140,394	203,727	110,188	173,857	83,898	-			
2034	972,000	375,089	2,677,292	116,453	168,444	94,037	146,748	71,230	-			
2035	810,000	311,826	2,767,644	98,653	141,545	77,960	121,678	58,339	-			
2036	648,000	259,476	2,662,348	73,785	113,189	62,002	95,616	43,932	-			
2037	486,000	197,927	2,660,037	59,191	81,110	44,453	69,212	34,107	-			
2038	324,000	137,125	2,558,583	35,547	53,393	29,883	46,765	21,288	-			
2039	162,000	69,146	2,591,050	17,789	26,621	14,745	23,255	10,443	-			
2040	-	-	2,411,226	-	-	-	-	-	-			
2041	-	-	2,374,334	-	-	-	-	-	-			
2042	-	-	2,185,187	-	-	-	-	-	-			
2043	-	-	2,222,696	-	-	-	-	-	-			

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual GHG emissions based on the DEQ methodology over the study period under Reference Case assumptions
 For each year, break out the contributions of individual fossil fuel resources, market purchases, and market sales to the total GHG emissions per the DEQ methodology
 UM 2225 Order Summary/Rubric references: C.4(a)

PGE note: Forecasts of generation from existing thermal output are based on economic dispatch using prices forecasted in this CEP/IRP. Forecasts of unspecified and other emitting market purchases are a function of historical purchases and a linear decline emission reduction glidepath. Neither reflect operational realities.

16 Portfolio16		Unconstrained SoA		PGE owned GHG emitting generation (retail)								
Year	Total Retail GHG Emissions (metric tons)	<i>Included in retail total</i>	<i>Not included in retail total</i>	Beaver	Carty	Coyote	PW1	PW2	Colstrip			
		Market Purchases (metric tons)	Market sales (metric tons)	Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)	Fossil fuel resource 3 (metric tons)	Fossil fuel resource 4 (metric tons)	Fossil fuel resource 5 (metric tons)	Fossil fuel resource 6 (metric tons)			
2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430			
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585			
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344			
2026	4,363,686	1,357,560	2,381,499	252,077	703,336	380,506	507,272	151,982	1,010,952			
2027	3,677,764	1,088,518	3,027,879	274,796	568,162	310,248	471,988	163,412	800,641			
2028	2,991,843	838,318	3,723,138	310,987	441,991	242,423	389,304	189,935	578,887			
2029	2,305,921	648,018	4,123,480	246,446	342,398	188,152	298,484	145,680	436,744			
2030	1,620,000	567,419	2,804,681	206,768	297,614	165,256	259,630	123,314	-			
2031	1,458,000	516,013	2,840,232	180,396	266,759	148,235	235,413	111,183	-			
2032	1,296,000	478,246	2,724,006	160,075	230,300	128,332	203,351	95,696	-			
2033	1,134,000	421,935	2,767,324	140,394	203,727	110,188	173,857	83,898	-			
2034	972,000	375,089	2,677,292	116,453	168,444	94,037	146,748	71,230	-			
2035	810,000	311,826	2,767,644	98,653	141,545	77,960	121,678	58,339	-			
2036	648,000	259,476	2,662,348	73,785	113,189	62,002	95,616	43,932	-			
2037	486,000	197,927	2,660,037	59,191	81,110	44,453	69,212	34,107	-			
2038	324,000	137,125	2,558,583	35,547	53,393	29,883	46,765	21,288	-			
2039	162,000	69,146	2,591,050	17,789	26,621	14,745	23,255	10,443	-			
2040	-	-	2,411,226	-	-	-	-	-	-			
2041	-	-	2,374,334	-	-	-	-	-	-			
2042	-	-	2,185,187	-	-	-	-	-	-			
2043	-	-	2,222,696	-	-	-	-	-	-			

17 Portfolio17		Unconstrained SoA Plus		PGE owned GHG emitting generation (retail)								
Year	Total Retail GHG Emissions (metric tons)	<i>Included in retail total</i>	<i>Not included in retail total</i>	Beaver	Carty	Coyote	PW1	PW2	Colstrip			
		Market Purchases (metric tons)	Market sales (metric tons)	Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)	Fossil fuel resource 3 (metric tons)	Fossil fuel resource 4 (metric tons)	Fossil fuel resource 5 (metric tons)	Fossil fuel resource 6 (metric tons)			
2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430			
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585			
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344			
2026	4,363,686	1,357,560	2,381,499	252,077	703,336	380,506	507,272	151,982	1,010,952			
2027	3,677,764	1,088,518	3,027,879	274,796	568,162	310,248	471,988	163,412	800,641			
2028	2,991,843	838,318	3,723,138	310,987	441,991	242,423	389,304	189,935	578,887			
2029	2,305,921	648,018	4,123,480	246,446	342,398	188,152	298,484	145,680	436,744			
2030	1,620,000	567,419	2,804,681	206,768	297,614	165,256	259,630	123,314	-			
2031	1,458,000	516,013	2,840,232	180,396	266,759	148,235	235,413	111,183	-			
2032	1,296,000	478,246	2,724,006	160,075	230,300	128,332	203,351	95,696	-			
2033	1,134,000	421,935	2,767,324	140,394	203,727	110,188	173,857	83,898	-			
2034	972,000	375,089	2,677,292	116,453	168,444	94,037	146,748	71,230	-			
2035	810,000	311,826	2,767,644	98,653	141,545	77,960	121,678	58,339	-			
2036	648,000	259,476	2,662,348	73,785	113,189	62,002	95,616	43,932	-			
2037	486,000	197,927	2,660,037	59,191	81,110	44,453	69,212	34,107	-			
2038	324,000	137,125	2,558,583	35,547	53,393	29,883	46,765	21,288	-			
2039	162,000	69,146	2,591,050	17,789	26,621	14,745	23,255	10,443	-			
2040	-	-	2,411,226	-	-	-	-	-	-			
2041	-	-	2,374,334	-	-	-	-	-	-			
2042	-	-	2,185,187	-	-	-	-	-	-			
2043	-	-	2,222,696	-	-	-	-	-	-			

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual GHG emissions based on the DEQ methodology over the study period under Reference Case assumptions
 For each year, break out the contributions of individual fossil fuel resources, market purchases, and market sales to the total GHG emissions per the DEQ methodology
 UM 2225 Order Summary/Rubric references: C.4(a)

PGE note: Forecasts of generation from existing thermal output are based on economic dispatch using prices forecasted in this CEP/IRP. Forecasts of unspecified and other emitting market purchases are a function of historical purchases and a linear decline emission reduction glidepath. Neither reflect operational realities.

18 Portfolio18		SoA in 2027		PGE owned GHG emitting generation (retail)								
Year	Total Retail GHG Emissions (metric tons)	Included in retail total	Not included in retail total	Beaver	Carty	Coyote	PW1	PW2	Colstrip			
		Market Purchases (metric tons)	Market sales (metric tons)	Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)	Fossil fuel resource 3 (metric tons)	Fossil fuel resource 4 (metric tons)	Fossil fuel resource 5 (metric tons)	Fossil fuel resource 6 (metric tons)			
2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430			
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585			
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344			
2026	4,363,686	1,357,560	2,381,499	252,077	703,336	380,506	507,272	151,982	1,010,952			
2027	3,677,764	1,088,518	3,027,879	274,796	568,162	310,248	471,988	163,412	800,641			
2028	2,991,843	838,318	3,723,138	310,987	441,991	242,423	389,304	189,935	578,887			
2029	2,305,921	648,018	4,123,480	246,446	342,398	188,152	298,484	145,680	436,744			
2030	1,620,000	567,419	2,804,681	206,768	297,614	165,256	259,630	123,314	-			
2031	1,458,000	516,013	2,840,232	180,396	266,759	148,235	235,413	111,183	-			
2032	1,296,000	478,246	2,724,006	160,075	230,300	128,332	203,351	95,696	-			
2033	1,134,000	421,935	2,767,324	140,394	203,727	110,188	173,857	83,898	-			
2034	972,000	375,089	2,677,292	116,453	168,444	94,037	146,748	71,230	-			
2035	810,000	311,826	2,767,644	98,653	141,545	77,960	121,678	58,339	-			
2036	648,000	259,476	2,662,348	73,785	113,189	62,002	95,616	43,932	-			
2037	486,000	197,927	2,660,037	59,191	81,110	44,453	69,212	34,107	-			
2038	324,000	137,125	2,558,583	35,547	53,393	29,883	46,765	21,288	-			
2039	162,000	69,146	2,591,050	17,789	26,621	14,745	23,255	10,443	-			
2040	-	-	2,411,226	-	-	-	-	-	-			
2041	-	-	2,374,334	-	-	-	-	-	-			
2042	-	-	2,185,187	-	-	-	-	-	-			
2043	-	-	2,222,696	-	-	-	-	-	-			

19 Portfolio19		SoA in 2029		PGE owned GHG emitting generation (retail)								
Year	Total Retail GHG Emissions (metric tons)	Included in retail total	Not included in retail total	Beaver	Carty	Coyote	PW1	PW2	Colstrip			
		Market Purchases (metric tons)	Market sales (metric tons)	Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)	Fossil fuel resource 3 (metric tons)	Fossil fuel resource 4 (metric tons)	Fossil fuel resource 5 (metric tons)	Fossil fuel resource 6 (metric tons)			
2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430			
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585			
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344			
2026	4,363,686	1,357,560	2,381,499	252,077	703,336	380,506	507,272	151,982	1,010,952			
2027	3,677,764	1,088,518	3,027,879	274,796	568,162	310,248	471,988	163,412	800,641			
2028	2,991,843	838,318	3,723,138	310,987	441,991	242,423	389,304	189,935	578,887			
2029	2,305,921	648,018	4,123,480	246,446	342,398	188,152	298,484	145,680	436,744			
2030	1,620,000	567,419	2,804,681	206,768	297,614	165,256	259,630	123,314	-			
2031	1,458,000	516,013	2,840,232	180,396	266,759	148,235	235,413	111,183	-			
2032	1,296,000	478,246	2,724,006	160,075	230,300	128,332	203,351	95,696	-			
2033	1,134,000	421,935	2,767,324	140,394	203,727	110,188	173,857	83,898	-			
2034	972,000	375,089	2,677,292	116,453	168,444	94,037	146,748	71,230	-			
2035	810,000	311,826	2,767,644	98,653	141,545	77,960	121,678	58,339	-			
2036	648,000	259,476	2,662,348	73,785	113,189	62,002	95,616	43,932	-			
2037	486,000	197,927	2,660,037	59,191	81,110	44,453	69,212	34,107	-			
2038	324,000	137,125	2,558,583	35,547	53,393	29,883	46,765	21,288	-			
2039	162,000	69,146	2,591,050	17,789	26,621	14,745	23,255	10,443	-			
2040	-	-	2,411,226	-	-	-	-	-	-			
2041	-	-	2,374,334	-	-	-	-	-	-			
2042	-	-	2,185,187	-	-	-	-	-	-			
2043	-	-	2,222,696	-	-	-	-	-	-			

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual GHG emissions based on the DEQ methodology over the study period under Reference Case assumptions
 For each year, break out the contributions of individual fossil fuel resources, market purchases, and market sales to the total GHG emissions per the DEQ methodology
 UM 2225 Order Summary/Rubric references: C.4(a)

PGE note: Forecasts of generation from existing thermal output are based on economic dispatch using prices forecasted in this CEP/IRP. Forecasts of unspecified and other emitting market purchases are a function of historical purchases and a linear decline emission reduction glidepath. Neither reflect operational realities.

20 Portfolio20		WY in 2026		PGE owned GHG emitting generation (retail)								
Year	Total Retail GHG Emissions (metric tons)	Included in retail total	Not included in retail total	Beaver	Carty	Coyote	PW1	PW2	Colstrip			
		Market Purchases (metric tons)	Market sales (metric tons)	Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)	Fossil fuel resource 3 (metric tons)	Fossil fuel resource 4 (metric tons)	Fossil fuel resource 5 (metric tons)	Fossil fuel resource 6 (metric tons)			
2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430			
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585			
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344			
2026	4,363,686	1,357,560	2,381,499	252,077	703,336	380,506	507,272	151,982	1,010,952			
2027	3,677,764	1,088,518	3,027,879	274,796	568,162	310,248	471,988	163,412	800,641			
2028	2,991,843	838,318	3,723,138	310,987	441,991	242,423	389,304	189,935	578,887			
2029	2,305,921	648,018	4,123,480	246,446	342,398	188,152	298,484	145,680	436,744			
2030	1,620,000	567,419	2,804,681	206,768	297,614	165,256	259,630	123,314	-			
2031	1,458,000	516,013	2,840,232	180,396	266,759	148,235	235,413	111,183	-			
2032	1,296,000	478,246	2,724,006	160,075	230,300	128,332	203,351	95,696	-			
2033	1,134,000	421,935	2,767,324	140,394	203,727	110,188	173,857	83,898	-			
2034	972,000	375,089	2,677,292	116,453	168,444	94,037	146,748	71,230	-			
2035	810,000	311,826	2,767,644	98,653	141,545	77,960	121,678	58,339	-			
2036	648,000	259,476	2,662,348	73,785	113,189	62,002	95,616	43,932	-			
2037	486,000	197,927	2,660,037	59,191	81,110	44,453	69,212	34,107	-			
2038	324,000	137,125	2,558,583	35,547	53,393	29,883	46,765	21,288	-			
2039	162,000	69,146	2,591,050	17,789	26,621	14,745	23,255	10,443	-			
2040	-	-	2,411,226	-	-	-	-	-	-			
2041	-	-	2,374,334	-	-	-	-	-	-			
2042	-	-	2,185,187	-	-	-	-	-	-			
2043	-	-	2,222,696	-	-	-	-	-	-			

21 Portfolio21		NV in 2026		PGE owned GHG emitting generation (retail)								
Year	Total Retail GHG Emissions (metric tons)	Included in retail total	Not included in retail total	Beaver	Carty	Coyote	PW1	PW2	Colstrip			
		Market Purchases (metric tons)	Market sales (metric tons)	Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)	Fossil fuel resource 3 (metric tons)	Fossil fuel resource 4 (metric tons)	Fossil fuel resource 5 (metric tons)	Fossil fuel resource 6 (metric tons)			
2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430			
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585			
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344			
2026	4,363,686	1,357,560	2,381,499	252,077	703,336	380,506	507,272	151,982	1,010,952			
2027	3,677,764	1,088,518	3,027,879	274,796	568,162	310,248	471,988	163,412	800,641			
2028	2,991,843	838,318	3,723,138	310,987	441,991	242,423	389,304	189,935	578,887			
2029	2,305,921	648,018	4,123,480	246,446	342,398	188,152	298,484	145,680	436,744			
2030	1,620,000	567,419	2,804,681	206,768	297,614	165,256	259,630	123,314	-			
2031	1,458,000	516,013	2,840,232	180,396	266,759	148,235	235,413	111,183	-			
2032	1,296,000	478,246	2,724,006	160,075	230,300	128,332	203,351	95,696	-			
2033	1,134,000	421,935	2,767,324	140,394	203,727	110,188	173,857	83,898	-			
2034	972,000	375,089	2,677,292	116,453	168,444	94,037	146,748	71,230	-			
2035	810,000	311,826	2,767,644	98,653	141,545	77,960	121,678	58,339	-			
2036	648,000	259,476	2,662,348	73,785	113,189	62,002	95,616	43,932	-			
2037	486,000	197,927	2,660,037	59,191	81,110	44,453	69,212	34,107	-			
2038	324,000	137,125	2,558,583	35,547	53,393	29,883	46,765	21,288	-			
2039	162,000	69,146	2,591,050	17,789	26,621	14,745	23,255	10,443	-			
2040	-	-	2,411,226	-	-	-	-	-	-			
2041	-	-	2,374,334	-	-	-	-	-	-			
2042	-	-	2,185,187	-	-	-	-	-	-			
2043	-	-	2,222,696	-	-	-	-	-	-			

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual GHG emissions based on the DEQ methodology over the study period under Reference Case assumptions
 For each year, break out the contributions of individual fossil fuel resources, market purchases, and market sales to the total GHG emissions per the DEQ methodology
 UM 2225 Order Summary/Rubric references: C.4(a)

PGE note: Forecasts of generation from existing thermal output are based on economic dispatch using prices forecasted in this CEP/IRP. Forecasts of unspecified and other emitting market purchases are a function of historical purchases and a linear decline emission reduction glidepath. Neither reflect operational realities.

22 Portfolio22		WY in 2028		PGE owned GHG emitting generation (retail)								
Year	Total Retail GHG Emissions (metric tons)	Included in retail total	Not included in retail total	Beaver	Carty	Coyote	PW1	PW2	Colstrip			
		Market Purchases (metric tons)	Market sales (metric tons)	Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)	Fossil fuel resource 3 (metric tons)	Fossil fuel resource 4 (metric tons)	Fossil fuel resource 5 (metric tons)	Fossil fuel resource 6 (metric tons)			
2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430			
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585			
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344			
2026	4,363,686	1,357,560	2,381,499	252,077	703,336	380,506	507,272	151,982	1,010,952			
2027	3,677,764	1,088,518	3,027,879	274,796	568,162	310,248	471,988	163,412	800,641			
2028	2,991,843	838,318	3,723,138	310,987	441,991	242,423	389,304	189,935	578,887			
2029	2,305,921	648,018	4,123,480	246,446	342,398	188,152	298,484	145,680	436,744			
2030	1,620,000	567,419	2,804,681	206,768	297,614	165,256	259,630	123,314	-			
2031	1,458,000	516,013	2,840,232	180,396	266,759	148,235	235,413	111,183	-			
2032	1,296,000	478,246	2,724,006	160,075	230,300	128,332	203,351	95,696	-			
2033	1,134,000	421,935	2,767,324	140,394	203,727	110,188	173,857	83,898	-			
2034	972,000	375,089	2,677,292	116,453	168,444	94,037	146,748	71,230	-			
2035	810,000	311,826	2,767,644	98,653	141,545	77,960	121,678	58,339	-			
2036	648,000	259,476	2,662,348	73,785	113,189	62,002	95,616	43,932	-			
2037	486,000	197,927	2,660,037	59,191	81,110	44,453	69,212	34,107	-			
2038	324,000	137,125	2,558,583	35,547	53,393	29,883	46,765	21,288	-			
2039	162,000	69,146	2,591,050	17,789	26,621	14,745	23,255	10,443	-			
2040	-	-	2,411,226	-	-	-	-	-	-			
2041	-	-	2,374,334	-	-	-	-	-	-			
2042	-	-	2,185,187	-	-	-	-	-	-			
2043	-	-	2,222,696	-	-	-	-	-	-			

23 Portfolio23		NV in 2028		PGE owned GHG emitting generation (retail)								
Year	Total Retail GHG Emissions (metric tons)	Included in retail total	Not included in retail total	Beaver	Carty	Coyote	PW1	PW2	Colstrip			
		Market Purchases (metric tons)	Market sales (metric tons)	Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)	Fossil fuel resource 3 (metric tons)	Fossil fuel resource 4 (metric tons)	Fossil fuel resource 5 (metric tons)	Fossil fuel resource 6 (metric tons)			
2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430			
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585			
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344			
2026	4,363,686	1,357,560	2,381,499	252,077	703,336	380,506	507,272	151,982	1,010,952			
2027	3,677,764	1,088,518	3,027,879	274,796	568,162	310,248	471,988	163,412	800,641			
2028	2,991,843	838,318	3,723,138	310,987	441,991	242,423	389,304	189,935	578,887			
2029	2,305,921	648,018	4,123,480	246,446	342,398	188,152	298,484	145,680	436,744			
2030	1,620,000	567,419	2,804,681	206,768	297,614	165,256	259,630	123,314	-			
2031	1,458,000	516,013	2,840,232	180,396	266,759	148,235	235,413	111,183	-			
2032	1,296,000	478,246	2,724,006	160,075	230,300	128,332	203,351	95,696	-			
2033	1,134,000	421,935	2,767,324	140,394	203,727	110,188	173,857	83,898	-			
2034	972,000	375,089	2,677,292	116,453	168,444	94,037	146,748	71,230	-			
2035	810,000	311,826	2,767,644	98,653	141,545	77,960	121,678	58,339	-			
2036	648,000	259,476	2,662,348	73,785	113,189	62,002	95,616	43,932	-			
2037	486,000	197,927	2,660,037	59,191	81,110	44,453	69,212	34,107	-			
2038	324,000	137,125	2,558,583	35,547	53,393	29,883	46,765	21,288	-			
2039	162,000	69,146	2,591,050	17,789	26,621	14,745	23,255	10,443	-			
2040	-	-	2,411,226	-	-	-	-	-	-			
2041	-	-	2,374,334	-	-	-	-	-	-			
2042	-	-	2,185,187	-	-	-	-	-	-			
2043	-	-	2,222,696	-	-	-	-	-	-			

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual GHG emissions based on the DEQ methodology over the study period under Reference Case assumptions
 For each year, break out the contributions of individual fossil fuel resources, market purchases, and market sales to the total GHG emissions per the DEQ methodology
 UM 2225 Order Summary/Rubric references: C.4(a)

PGE note: Forecasts of generation from existing thermal output are based on economic dispatch using prices forecasted in this CEP/IRP. Forecasts of unspecified and other emitting market purchases are a function of historical purchases and a linear decline emission reduction glidepath. Neither reflect operational realities.

24 Portfolio24		Oregon-only resources		PGE owned GHG emitting generation (retail)								
Year	Total Retail GHG Emissions (metric tons)	Included in retail total	Not included in retail total	Beaver	Carty	Coyote	PW1	PW2	Colstrip			
		Market Purchases (metric tons)	Market sales (metric tons)	Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)	Fossil fuel resource 3 (metric tons)	Fossil fuel resource 4 (metric tons)	Fossil fuel resource 5 (metric tons)	Fossil fuel resource 6 (metric tons)			
2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430			
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585			
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344			
2026	4,363,686	1,357,560	2,381,499	252,077	703,336	380,506	507,272	151,982	1,010,952			
2027	3,677,764	1,088,518	3,027,879	274,796	568,162	310,248	471,988	163,412	800,641			
2028	2,991,843	838,318	3,723,138	310,987	441,991	242,423	389,304	189,935	578,887			
2029	2,305,921	648,018	4,123,480	246,446	342,398	188,152	298,484	145,680	436,744			
2030	1,620,000	567,419	2,804,681	206,768	297,614	165,256	259,630	123,314	-			
2031	1,458,000	516,013	2,840,232	180,396	266,759	148,235	235,413	111,183	-			
2032	1,296,000	478,246	2,724,006	160,075	230,300	128,332	203,351	95,696	-			
2033	1,134,000	421,935	2,767,324	140,394	203,727	110,188	173,857	83,898	-			
2034	972,000	375,089	2,677,292	116,453	168,444	94,037	146,748	71,230	-			
2035	810,000	311,826	2,767,644	98,653	141,545	77,960	121,678	58,339	-			
2036	648,000	259,476	2,662,348	73,785	113,189	62,002	95,616	43,932	-			
2037	486,000	197,927	2,660,037	59,191	81,110	44,453	69,212	34,107	-			
2038	324,000	137,125	2,558,583	35,547	53,393	29,883	46,765	21,288	-			
2039	162,000	69,146	2,591,050	17,789	26,621	14,745	23,255	10,443	-			
2040	-	-	2,411,226	-	-	-	-	-	-			
2041	-	-	2,374,334	-	-	-	-	-	-			
2042	-	-	2,185,187	-	-	-	-	-	-			
2043	-	-	2,222,696	-	-	-	-	-	-			

25 Portfolio25		Physical RPS		PGE owned GHG emitting generation (retail)								
Year	Total Retail GHG Emissions (metric tons)	Included in retail total	Not included in retail total	Beaver	Carty	Coyote	PW1	PW2	Colstrip			
		Market Purchases (metric tons)	Market sales (metric tons)	Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)	Fossil fuel resource 3 (metric tons)	Fossil fuel resource 4 (metric tons)	Fossil fuel resource 5 (metric tons)	Fossil fuel resource 6 (metric tons)			
2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430			
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585			
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344			
2026	4,363,686	1,357,560	2,381,499	252,077	703,336	380,506	507,272	151,982	1,010,952			
2027	3,677,764	1,088,518	3,027,879	274,796	568,162	310,248	471,988	163,412	800,641			
2028	2,991,843	838,318	3,723,138	310,987	441,991	242,423	389,304	189,935	578,887			
2029	2,305,921	648,018	4,123,480	246,446	342,398	188,152	298,484	145,680	436,744			
2030	1,620,000	567,419	2,804,681	206,768	297,614	165,256	259,630	123,314	-			
2031	1,458,000	516,013	2,840,232	180,396	266,759	148,235	235,413	111,183	-			
2032	1,296,000	478,246	2,724,006	160,075	230,300	128,332	203,351	95,696	-			
2033	1,134,000	421,935	2,767,324	140,394	203,727	110,188	173,857	83,898	-			
2034	972,000	375,089	2,677,292	116,453	168,444	94,037	146,748	71,230	-			
2035	810,000	311,826	2,767,644	98,653	141,545	77,960	121,678	58,339	-			
2036	648,000	259,476	2,662,348	73,785	113,189	62,002	95,616	43,932	-			
2037	486,000	197,927	2,660,037	59,191	81,110	44,453	69,212	34,107	-			
2038	324,000	137,125	2,558,583	35,547	53,393	29,883	46,765	21,288	-			
2039	162,000	69,146	2,591,050	17,789	26,621	14,745	23,255	10,443	-			
2040	-	-	2,411,226	-	-	-	-	-	-			
2041	-	-	2,374,334	-	-	-	-	-	-			
2042	-	-	2,185,187	-	-	-	-	-	-			
2043	-	-	2,222,696	-	-	-	-	-	-			

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual GHG emissions based on the DEQ methodology over the study period under Reference Case assumptions
 For each year, break out the contributions of individual fossil fuel resources, market purchases, and market sales to the total GHG emissions per the DEQ methodology
 UM 2225 Order Summary/Rubric references: C.4(a)

PGE note: Forecasts of generation from existing thermal output are based on economic dispatch using prices forecasted in this CEP/IRP. Forecasts of unspecified and other emitting market purchases are a function of historical purchases and a linear decline emission reduction glidepath. Neither reflect operational realities.

26 Portfolio26				PGE owned GHG emitting generation (retail)								
Year	Total Retail GHG Emissions (metric tons)	Hydrogen blending		Beaver	Carty	Coyote	PW1	PW2	Colstrip			
		Included in retail total	Not included in retail total	Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)	Fossil fuel resource 3 (metric tons)	Fossil fuel resource 4 (metric tons)	Fossil fuel resource 5 (metric tons)	Fossil fuel resource 6 (metric tons)			
		Market Purchases (metric tons)	Market sales (metric tons)									
2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430			
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585			
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344			
2026	4,363,686	1,357,560	2,381,499	252,077	703,336	380,506	507,272	151,982	1,010,952			
2027	3,677,764	1,088,518	3,027,879	274,796	568,162	310,248	471,988	163,412	800,641			
2028	2,991,843	838,318	3,723,138	310,987	441,991	242,423	389,304	189,935	578,887			
2029	2,305,921	648,018	4,123,480	246,446	342,398	188,152	298,484	145,680	436,744			
2030	1,620,000	567,419	2,804,681	206,768	297,614	165,256	259,630	123,314	-			
2031	1,458,000	516,013	2,840,232	180,396	266,759	148,235	235,413	111,183	-			
2032	1,296,000	478,246	2,724,006	160,075	230,300	128,332	203,351	95,696	-			
2033	1,134,000	421,935	2,767,324	140,394	203,727	110,188	173,857	83,898	-			
2034	972,000	375,089	2,677,292	116,453	168,444	94,037	146,748	71,230	-			
2035	810,000	311,826	2,767,644	98,653	141,545	77,960	121,678	58,339	-			
2036	648,000	259,476	2,662,348	73,785	113,189	62,002	95,616	43,932	-			
2037	486,000	197,927	2,660,037	59,191	81,110	44,453	69,212	34,107	-			
2038	324,000	137,125	2,558,583	35,547	53,393	29,883	46,765	21,288	-			
2039	162,000	69,146	2,591,050	17,789	26,621	14,745	23,255	10,443	-			
2040	-	-	2,411,226	-	-	-	-	-	-			
2041	-	-	2,374,334	-	-	-	-	-	-			
2042	-	-	2,185,187	-	-	-	-	-	-			
2043	-	-	2,222,696	-	-	-	-	-	-			

27 Portfolio27				PGE owned GHG emitting generation (retail)								
Year	Total Retail GHG Emissions (metric tons)	Hydrogen blending		Beaver	Carty	Coyote	PW1	PW2	Colstrip			
		Included in retail total	Not included in retail total	Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)	Fossil fuel resource 3 (metric tons)	Fossil fuel resource 4 (metric tons)	Fossil fuel resource 5 (metric tons)	Fossil fuel resource 6 (metric tons)			
		Market Purchases (metric tons)	Market sales (metric tons)									
2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430			
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585			
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344			
2026	4,363,686	1,357,560	2,381,499	252,077	703,336	380,506	507,272	151,982	1,010,952			
2027	3,677,764	1,088,518	3,027,879	274,796	568,162	310,248	471,988	163,412	800,641			
2028	2,991,843	838,318	3,723,138	310,987	441,991	242,423	389,304	189,935	578,887			
2029	2,305,921	648,018	4,123,480	246,446	342,398	188,152	298,484	145,680	436,744			
2030	1,620,000	567,419	2,804,681	206,768	297,614	165,256	259,630	123,314	-			
2031	1,458,000	516,013	2,840,232	180,396	266,759	148,235	235,413	111,183	-			
2032	1,296,000	478,246	2,724,006	160,075	230,300	128,332	203,351	95,696	-			
2033	1,134,000	421,935	2,767,324	140,394	203,727	110,188	173,857	83,898	-			
2034	972,000	375,089	2,677,292	116,453	168,444	94,037	146,748	71,230	-			
2035	810,000	311,826	2,767,644	98,653	141,545	77,960	121,678	58,339	-			
2036	648,000	259,476	2,662,348	73,785	113,189	62,002	95,616	43,932	-			
2037	486,000	197,927	2,660,037	59,191	81,110	44,453	69,212	34,107	-			
2038	324,000	137,125	2,558,583	35,547	53,393	29,883	46,765	21,288	-			
2039	162,000	69,146	2,591,050	17,789	26,621	14,745	23,255	10,443	-			
2040	-	-	2,411,226	-	-	-	-	-	-			
2041	-	-	2,374,334	-	-	-	-	-	-			
2042	-	-	2,185,187	-	-	-	-	-	-			
2043	-	-	2,222,696	-	-	-	-	-	-			

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual GHG emissions based on the DEQ methodology over the study period under Reference Case assumptions
 For each year, break out the contributions of individual fossil fuel resources, market purchases, and market sales to the total GHG emissions per the DEQ methodology
 UM 2225 Order Summary/Rubric references: C.4(a)

PGE note: Forecasts of generation from existing thermal output are based on economic dispatch using prices forecasted in this CEP/IRP. Forecasts of unspecified and other emitting market purchases are a function of historical purchases and a linear decline emission reduction glidepath. Neither reflect operational realities.

28 Portfolio28				PGE owned GHG emitting generation (retail)								
Year	Total Retail GHG Emissions (metric tons)	Included in retail total	Not included in retail total	Beaver	Carty	Coyote	PW1	PW2	Colstrip			
		Market Purchases (metric tons)	Market sales (metric tons)	Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)	Fossil fuel resource 3 (metric tons)	Fossil fuel resource 4 (metric tons)	Fossil fuel resource 5 (metric tons)	Fossil fuel resource 6 (metric tons)	Fossil fuel resource 6 (metric tons)		
2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430			
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585			
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344			
2026	4,363,686	1,357,560	2,381,499	252,077	703,336	380,506	507,272	151,982	1,010,952			
2027	3,677,764	1,088,518	3,027,879	274,796	568,162	310,248	471,988	163,412	800,641			
2028	2,991,843	838,318	3,723,138	310,987	441,991	242,423	389,304	189,935	578,887			
2029	2,305,921	648,018	4,123,480	246,446	342,398	188,152	298,484	145,680	436,744			
2030	1,620,000	567,419	2,804,681	206,768	297,614	165,256	259,630	123,314	-			
2031	1,458,000	516,013	2,840,232	180,396	266,759	148,235	235,413	111,183	-			
2032	1,296,000	478,246	2,724,006	160,075	230,300	128,332	203,351	95,696	-			
2033	1,134,000	421,935	2,767,324	140,394	203,727	110,188	173,857	83,898	-			
2034	972,000	375,089	2,677,292	116,453	168,444	94,037	146,748	71,230	-			
2035	810,000	311,826	2,767,644	98,653	141,545	77,960	121,678	58,339	-			
2036	648,000	259,476	2,662,348	73,785	113,189	62,002	95,616	43,932	-			
2037	486,000	197,927	2,660,037	59,191	81,110	44,453	69,212	34,107	-			
2038	324,000	137,125	2,558,583	35,547	53,393	29,883	46,765	21,288	-			
2039	162,000	69,146	2,591,050	17,789	26,621	14,745	23,255	10,443	-			
2040	-	-	2,411,226	-	-	-	-	-	-			
2041	-	-	2,374,334	-	-	-	-	-	-			
2042	-	-	2,185,187	-	-	-	-	-	-			
2043	-	-	2,222,696	-	-	-	-	-	-			

29 Portfolio29				PGE owned GHG emitting generation (retail)								
Year	Total Retail GHG Emissions (metric tons)	Included in retail total	Not included in retail total	Beaver	Carty	Coyote	PW1	PW2	Colstrip			
		Market Purchases (metric tons)	Market sales (metric tons)	Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)	Fossil fuel resource 3 (metric tons)	Fossil fuel resource 4 (metric tons)	Fossil fuel resource 5 (metric tons)	Fossil fuel resource 6 (metric tons)	Fossil fuel resource 6 (metric tons)		
2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430			
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585			
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344			
2026	4,363,686	1,357,560	2,381,499	252,077	703,336	380,506	507,272	151,982	1,010,952			
2027	3,677,764	1,088,518	3,027,879	274,796	568,162	310,248	471,988	163,412	800,641			
2028	2,991,843	838,318	3,723,138	310,987	441,991	242,423	389,304	189,935	578,887			
2029	2,305,921	648,018	4,123,480	246,446	342,398	188,152	298,484	145,680	436,744			
2030	1,620,000	567,419	2,804,681	206,768	297,614	165,256	259,630	123,314	-			
2031	1,458,000	516,013	2,840,232	180,396	266,759	148,235	235,413	111,183	-			
2032	1,296,000	478,246	2,724,006	160,075	230,300	128,332	203,351	95,696	-			
2033	1,134,000	421,935	2,767,324	140,394	203,727	110,188	173,857	83,898	-			
2034	972,000	375,089	2,677,292	116,453	168,444	94,037	146,748	71,230	-			
2035	810,000	311,826	2,767,644	98,653	141,545	77,960	121,678	58,339	-			
2036	648,000	259,476	2,662,348	73,785	113,189	62,002	95,616	43,932	-			
2037	486,000	197,927	2,660,037	59,191	81,110	44,453	69,212	34,107	-			
2038	324,000	137,125	2,558,583	35,547	53,393	29,883	46,765	21,288	-			
2039	162,000	69,146	2,591,050	17,789	26,621	14,745	23,255	10,443	-			
2040	-	-	2,411,226	-	-	-	-	-	-			
2041	-	-	2,374,334	-	-	-	-	-	-			
2042	-	-	2,185,187	-	-	-	-	-	-			
2043	-	-	2,222,696	-	-	-	-	-	-			

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual GHG emissions based on the DEQ methodology over the study period under Reference Case assumptions
 For each year, break out the contributions of individual fossil fuel resources, market purchases, and market sales to the total GHG emissions per the DEQ methodology
 UM 2225 Order Summary/Rubric references: C.4(a)

PGE note: Forecasts of generation from existing thermal output are based on economic dispatch using prices forecasted in this CEP/IRP. Forecasts of unspecified and other emitting market purchases are a function of historical purchases and a linear decline emission reduction glidepath. Neither reflect operational realities.

30 Portfolio30				PGE owned GHG emitting generation (retail)								
Year	Total Retail GHG Emissions (metric tons)	Included in retail total Market Purchases (metric tons)	Not included in retail total Market sales (metric tons)	Beaver	Carty	Coyote	PW1	PW2	Colstrip			
				Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)	Fossil fuel resource 3 (metric tons)	Fossil fuel resource 4 (metric tons)	Fossil fuel resource 5 (metric tons)	Fossil fuel resource 6 (metric tons)			
2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430			
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585			
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344			
2026	4,363,686	1,357,560	2,381,499	252,077	703,336	380,506	507,272	151,982	1,010,952			
2027	3,677,764	1,088,518	3,027,879	274,796	568,162	310,248	471,988	163,412	800,641			
2028	2,991,843	838,318	3,723,138	310,987	441,991	242,423	389,304	189,935	578,887			
2029	2,305,921	648,018	4,123,480	246,446	342,398	188,152	298,484	145,680	436,744			
2030	1,620,000	567,419	2,804,681	206,768	297,614	165,256	259,630	123,314	-			
2031	1,458,000	516,013	2,840,232	180,396	266,759	148,235	235,413	111,183	-			
2032	1,296,000	478,246	2,724,006	160,075	230,300	128,332	203,351	95,696	-			
2033	1,134,000	421,935	2,767,324	140,394	203,727	110,188	173,857	83,898	-			
2034	972,000	375,089	2,677,292	116,453	168,444	94,037	146,748	71,230	-			
2035	810,000	311,826	2,767,644	98,653	141,545	77,960	121,678	58,339	-			
2036	648,000	259,476	2,662,348	73,785	113,189	62,002	95,616	43,932	-			
2037	486,000	197,927	2,660,037	59,191	81,110	44,453	69,212	34,107	-			
2038	324,000	137,125	2,558,583	35,547	53,393	29,883	46,765	21,288	-			
2039	162,000	69,146	2,591,050	17,789	26,621	14,745	23,255	10,443	-			
2040	-	-	2,411,226	-	-	-	-	-	-			
2041	-	-	2,374,334	-	-	-	-	-	-			
2042	-	-	2,185,187	-	-	-	-	-	-			
2043	-	-	2,222,696	-	-	-	-	-	-			

31 Portfolio31				PGE owned GHG emitting generation (retail)								
Year	Total Retail GHG Emissions (metric tons)	Included in retail total Market Purchases (metric tons)	Not included in retail total Market sales (metric tons)	Beaver	Carty	Coyote	PW1	PW2	Colstrip			
				Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)	Fossil fuel resource 3 (metric tons)	Fossil fuel resource 4 (metric tons)	Fossil fuel resource 5 (metric tons)	Fossil fuel resource 6 (metric tons)			
2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430			
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585			
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344			
2026	4,363,686	1,357,560	2,381,499	252,077	703,336	380,506	507,272	151,982	1,010,952			
2027	3,677,764	1,088,518	3,027,879	274,796	568,162	310,248	471,988	163,412	800,641			
2028	2,991,843	838,318	3,723,138	310,987	441,991	242,423	389,304	189,935	578,887			
2029	2,305,921	648,018	4,123,480	246,446	342,398	188,152	298,484	145,680	436,744			
2030	1,620,000	567,419	2,804,681	206,768	297,614	165,256	259,630	123,314	-			
2031	1,458,000	516,013	2,840,232	180,396	266,759	148,235	235,413	111,183	-			
2032	1,296,000	478,246	2,724,006	160,075	230,300	128,332	203,351	95,696	-			
2033	1,134,000	421,935	2,767,324	140,394	203,727	110,188	173,857	83,898	-			
2034	972,000	375,089	2,677,292	116,453	168,444	94,037	146,748	71,230	-			
2035	810,000	311,826	2,767,644	98,653	141,545	77,960	121,678	58,339	-			
2036	648,000	259,476	2,662,348	73,785	113,189	62,002	95,616	43,932	-			
2037	486,000	197,927	2,660,037	59,191	81,110	44,453	69,212	34,107	-			
2038	324,000	137,125	2,558,583	35,547	53,393	29,883	46,765	21,288	-			
2039	162,000	69,146	2,591,050	17,789	26,621	14,745	23,255	10,443	-			
2040	-	-	2,411,226	-	-	-	-	-	-			
2041	-	-	2,374,334	-	-	-	-	-	-			
2042	-	-	2,185,187	-	-	-	-	-	-			
2043	-	-	2,222,696	-	-	-	-	-	-			

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual GHG emissions based on the DEQ methodology over the study period under Reference Case assumptions
 For each year, break out the contributions of individual fossil fuel resources, market purchases, and market sales to the total GHG emissions per the DEQ methodology
 UM 2225 Order Summary/Rubric references: C.4(a)

PGE note: Forecasts of generation from existing thermal output are based on economic dispatch using prices forecasted in this CEP/IRP. Forecasts of unspecified and other emitting market purchases are a function of historical purchases and a linear decline emission reduction glidepath. Neither reflect operational realities.

32 Portfolio32				PGE owned GHG emitting generation (retail)								
Year	Total Retail GHG Emissions (metric tons)	Included in retail total		Not included in retail total Market sales (metric tons)	Beaver	Carty	Coyote	PW1	PW2	Colstrip		
		Market Purchases (metric tons)			Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)	Fossil fuel resource 3 (metric tons)	Fossil fuel resource 4 (metric tons)	Fossil fuel resource 5 (metric tons)	Fossil fuel resource 6 (metric tons)		
2023	5,887,117		2,146,155	2,070,454	249,107		920,248	506,696	642,263	130,219	1,292,430	
2024	5,308,316		1,653,955	1,861,913	297,253		877,639	483,591	637,855	174,438	1,183,585	
2025	5,049,607		1,611,309	1,857,268	289,640		825,331	451,819	558,933	173,231	1,139,344	
2026	4,363,686		1,357,560	2,381,499	252,077		703,336	380,506	507,272	151,982	1,010,952	
2027	3,677,764		1,088,518	3,027,879	274,796		568,162	310,248	471,988	163,412	800,641	
2028	2,991,843		838,318	3,723,138	310,987		441,991	242,423	389,304	189,935	578,887	
2029	2,305,921		648,018	4,123,480	246,446		342,398	188,152	298,484	145,680	436,744	
2030	1,620,000		567,419	2,804,681	206,768		297,614	165,256	259,630	123,314	-	
2031	1,458,000		516,013	2,840,232	180,396		266,759	148,235	235,413	111,183	-	
2032	1,296,000		478,246	2,724,006	160,075		230,300	128,332	203,351	95,696	-	
2033	1,134,000		421,935	2,767,324	140,394		203,727	110,188	173,857	83,898	-	
2034	972,000		375,089	2,677,292	116,453		168,444	94,037	146,748	71,230	-	
2035	810,000		311,826	2,767,644	98,653		141,545	77,960	121,678	58,339	-	
2036	648,000		259,476	2,662,348	73,785		113,189	62,002	95,616	43,932	-	
2037	486,000		197,927	2,660,037	59,191		81,110	44,453	69,212	34,107	-	
2038	324,000		137,125	2,558,583	35,547		53,393	29,883	46,765	21,288	-	
2039	162,000		69,146	2,591,050	17,789		26,621	14,745	23,255	10,443	-	
2040	-		-	2,411,226	-		-	-	-	-	-	
2041	-		-	2,374,334	-		-	-	-	-	-	
2042	-		-	2,185,187	-		-	-	-	-	-	
2043	-		-	2,222,696	-		-	-	-	-	-	

33 Portfolio33				PGE owned GHG emitting generation (retail)								
Year	Total Retail GHG Emissions (metric tons)	Included in retail total		Not included in retail total Market sales (metric tons)	Beaver	Carty	Coyote	PW1	PW2	Colstrip		
		Market Purchases (metric tons)			Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)	Fossil fuel resource 3 (metric tons)	Fossil fuel resource 4 (metric tons)	Fossil fuel resource 5 (metric tons)	Fossil fuel resource 6 (metric tons)		
2023	5,887,117		2,146,155	2,070,454	249,107		920,248	506,696	642,263	130,219	1,292,430	
2024	5,308,316		1,653,955	1,861,913	297,253		877,639	483,591	637,855	174,438	1,183,585	
2025	5,049,607		1,611,309	1,857,268	289,640		825,331	451,819	558,933	173,231	1,139,344	
2026	4,363,686		1,357,560	2,381,499	252,077		703,336	380,506	507,272	151,982	1,010,952	
2027	3,677,764		1,088,518	3,027,879	274,796		568,162	310,248	471,988	163,412	800,641	
2028	2,991,843		838,318	3,723,138	310,987		441,991	242,423	389,304	189,935	578,887	
2029	2,305,921		648,018	4,123,480	246,446		342,398	188,152	298,484	145,680	436,744	
2030	1,620,000		567,419	2,804,681	206,768		297,614	165,256	259,630	123,314	-	
2031	1,458,000		516,013	2,840,232	180,396		266,759	148,235	235,413	111,183	-	
2032	1,296,000		478,246	2,724,006	160,075		230,300	128,332	203,351	95,696	-	
2033	1,134,000		421,935	2,767,324	140,394		203,727	110,188	173,857	83,898	-	
2034	972,000		375,089	2,677,292	116,453		168,444	94,037	146,748	71,230	-	
2035	810,000		311,826	2,767,644	98,653		141,545	77,960	121,678	58,339	-	
2036	648,000		259,476	2,662,348	73,785		113,189	62,002	95,616	43,932	-	
2037	486,000		197,927	2,660,037	59,191		81,110	44,453	69,212	34,107	-	
2038	324,000		137,125	2,558,583	35,547		53,393	29,883	46,765	21,288	-	
2039	162,000		69,146	2,591,050	17,789		26,621	14,745	23,255	10,443	-	
2040	-		-	2,411,226	-		-	-	-	-	-	
2041	-		-	2,374,334	-		-	-	-	-	-	
2042	-		-	2,185,187	-		-	-	-	-	-	
2043	-		-	2,222,696	-		-	-	-	-	-	

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual GHG emissions based on the DEQ methodology over the study period under Reference Case assumptions
 For each year, break out the contributions of individual fossil fuel resources, market purchases, and market sales to the total GHG emissions per the DEQ methodology
 UM 2225 Order Summary/Rubric references: C.4(a)

PGE note: Forecasts of generation from existing thermal output are based on economic dispatch using prices forecasted in this CEP/IRP. Forecasts of unspecified and other emitting market purchases are a function of historical purchases and a linear decline emission reduction glidepath. Neither reflect operational realities.

34 Portfolio34				PGE owned GHG emitting generation (retail)								
Year	Total Retail GHG Emissions (metric tons)	Included in retail total	Not included in retail total	Beaver	Carty	Coyote	PW1	PW2	Colstrip			
		Market Purchases (metric tons)	Market sales (metric tons)	Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)	Fossil fuel resource 3 (metric tons)	Fossil fuel resource 4 (metric tons)	Fossil fuel resource 5 (metric tons)	Fossil fuel resource 6 (metric tons)	Fossil fuel resource 6 (metric tons)		
2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430			
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585			
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344			
2026	4,363,686	1,357,560	2,381,499	252,077	703,336	380,506	507,272	151,982	1,010,952			
2027	3,677,764	1,088,518	3,027,879	274,796	568,162	310,248	471,988	163,412	800,641			
2028	2,991,843	838,318	3,723,138	310,987	441,991	242,423	389,304	189,935	578,887			
2029	2,305,921	648,018	4,123,480	246,446	342,398	188,152	298,484	145,680	436,744			
2030	1,620,000	567,419	2,804,681	206,768	297,614	165,256	259,630	123,314	-			
2031	1,458,000	516,013	2,840,232	180,396	266,759	148,235	235,413	111,183	-			
2032	1,296,000	478,246	2,724,006	160,075	230,300	128,332	203,351	95,696	-			
2033	1,134,000	421,935	2,767,324	140,394	203,727	110,188	173,857	83,898	-			
2034	972,000	375,089	2,677,292	116,453	168,444	94,037	146,748	71,230	-			
2035	810,000	311,826	2,767,644	98,653	141,545	77,960	121,678	58,339	-			
2036	648,000	259,476	2,662,348	73,785	113,189	62,002	95,616	43,932	-			
2037	486,000	197,927	2,660,037	59,191	81,110	44,453	69,212	34,107	-			
2038	324,000	137,125	2,558,583	35,547	53,393	29,883	46,765	21,288	-			
2039	162,000	69,146	2,591,050	17,789	26,621	14,745	23,255	10,443	-			
2040	-	-	2,411,226	-	-	-	-	-	-			
2041	-	-	2,374,334	-	-	-	-	-	-			
2042	-	-	2,185,187	-	-	-	-	-	-			
2043	-	-	2,222,696	-	-	-	-	-	-			

35 Portfolio35				PGE owned GHG emitting generation (retail)								
Year	Total Retail GHG Emissions (metric tons)	Included in retail total	Not included in retail total	Beaver	Carty	Coyote	PW1	PW2	Colstrip			
		Market Purchases (metric tons)	Market sales (metric tons)	Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)	Fossil fuel resource 3 (metric tons)	Fossil fuel resource 4 (metric tons)	Fossil fuel resource 5 (metric tons)	Fossil fuel resource 6 (metric tons)	Fossil fuel resource 6 (metric tons)		
2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430			
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585			
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344			
2026	4,363,686	1,357,560	2,381,499	252,077	703,336	380,506	507,272	151,982	1,010,952			
2027	3,677,764	1,088,518	3,027,879	274,796	568,162	310,248	471,988	163,412	800,641			
2028	2,991,843	838,318	3,723,138	310,987	441,991	242,423	389,304	189,935	578,887			
2029	2,305,921	648,018	4,123,480	246,446	342,398	188,152	298,484	145,680	436,744			
2030	1,620,000	567,419	2,804,681	206,768	297,614	165,256	259,630	123,314	-			
2031	1,458,000	516,013	2,840,232	180,396	266,759	148,235	235,413	111,183	-			
2032	1,296,000	478,246	2,724,006	160,075	230,300	128,332	203,351	95,696	-			
2033	1,134,000	421,935	2,767,324	140,394	203,727	110,188	173,857	83,898	-			
2034	972,000	375,089	2,677,292	116,453	168,444	94,037	146,748	71,230	-			
2035	810,000	311,826	2,767,644	98,653	141,545	77,960	121,678	58,339	-			
2036	648,000	259,476	2,662,348	73,785	113,189	62,002	95,616	43,932	-			
2037	486,000	197,927	2,660,037	59,191	81,110	44,453	69,212	34,107	-			
2038	324,000	137,125	2,558,583	35,547	53,393	29,883	46,765	21,288	-			
2039	162,000	69,146	2,591,050	17,789	26,621	14,745	23,255	10,443	-			
2040	-	-	2,411,226	-	-	-	-	-	-			
2041	-	-	2,374,334	-	-	-	-	-	-			
2042	-	-	2,185,187	-	-	-	-	-	-			
2043	-	-	2,222,696	-	-	-	-	-	-			

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual GHG emissions based on the DEQ methodology over the study period under Reference Case assumptions
 For each year, break out the contributions of individual fossil fuel resources, market purchases, and market sales to the total GHG emissions per the DEQ methodology
 UM 2225 Order Summary/Rubric references: C.4(a)

PGE note: Forecasts of generation from existing thermal output are based on economic dispatch using prices forecasted in this CEP/IRP. Forecasts of unspecified and other emitting market purchases are a function of historical purchases and a linear decline emission reduction glidepath. Neither reflect operational realities.

36 Portfolio36				PGE owned GHG emitting generation (retail)							
Year	Total Retail GHG Emissions (metric tons)	Included in retail total		Beaver	Carty	Coyote	PW1	PW2	Colstrip		
		Market Purchases (metric tons)	Not included in retail total Market sales (metric tons)							Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)
2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430		
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585		
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344		
2026	4,363,686	1,357,560	2,381,499	252,077	703,336	380,506	507,272	151,982	1,010,952		
2027	3,677,764	1,088,518	3,027,879	274,796	568,162	310,248	471,988	163,412	800,641		
2028	2,991,843	838,318	3,723,138	310,987	441,991	242,423	389,304	189,935	578,887		
2029	2,305,921	648,018	4,123,480	246,446	342,398	188,152	298,484	145,680	436,744		
2030	1,620,000	567,419	2,804,681	206,768	297,614	165,256	259,630	123,314	-		
2031	1,458,000	516,013	2,840,232	180,396	266,759	148,235	235,413	111,183	-		
2032	1,296,000	478,246	2,724,006	160,075	230,300	128,332	203,351	95,696	-		
2033	1,134,000	421,935	2,767,324	140,394	203,727	110,188	173,857	83,898	-		
2034	972,000	375,089	2,677,292	116,453	168,444	94,037	146,748	71,230	-		
2035	810,000	311,826	2,767,644	98,653	141,545	77,960	121,678	58,339	-		
2036	648,000	259,476	2,662,348	73,785	113,189	62,002	95,616	43,932	-		
2037	486,000	197,927	2,660,037	59,191	81,110	44,453	69,212	34,107	-		
2038	324,000	137,125	2,558,583	35,547	53,393	29,883	46,765	21,288	-		
2039	162,000	69,146	2,591,050	17,789	26,621	14,745	23,255	10,443	-		
2040	-	-	2,411,226	-	-	-	-	-	-		
2041	-	-	2,374,334	-	-	-	-	-	-		
2042	-	-	2,185,187	-	-	-	-	-	-		
2043	-	-	2,222,696	-	-	-	-	-	-		

37 Portfolio37				PGE owned GHG emitting generation (retail)							
Year	Total Retail GHG Emissions (metric tons)	Included in retail total		Beaver	Carty	Coyote	PW1	PW2	Colstrip		
		Market Purchases (metric tons)	Not included in retail total Market sales (metric tons)							Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)
2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430		
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585		
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344		
2026	4,363,686	1,357,560	2,381,499	252,077	703,336	380,506	507,272	151,982	1,010,952		
2027	3,677,764	1,088,518	3,027,879	274,796	568,162	310,248	471,988	163,412	800,641		
2028	2,991,843	838,318	3,723,138	310,987	441,991	242,423	389,304	189,935	578,887		
2029	2,305,921	648,018	4,123,480	246,446	342,398	188,152	298,484	145,680	436,744		
2030	1,620,000	567,419	2,804,681	206,768	297,614	165,256	259,630	123,314	-		
2031	1,458,000	516,013	2,840,232	180,396	266,759	148,235	235,413	111,183	-		
2032	1,296,000	478,246	2,724,006	160,075	230,300	128,332	203,351	95,696	-		
2033	1,134,000	421,935	2,767,324	140,394	203,727	110,188	173,857	83,898	-		
2034	972,000	375,089	2,677,292	116,453	168,444	94,037	146,748	71,230	-		
2035	810,000	311,826	2,767,644	98,653	141,545	77,960	121,678	58,339	-		
2036	648,000	259,476	2,662,348	73,785	113,189	62,002	95,616	43,932	-		
2037	486,000	197,927	2,660,037	59,191	81,110	44,453	69,212	34,107	-		
2038	324,000	137,125	2,558,583	35,547	53,393	29,883	46,765	21,288	-		
2039	162,000	69,146	2,591,050	17,789	26,621	14,745	23,255	10,443	-		
2040	-	-	2,411,226	-	-	-	-	-	-		
2041	-	-	2,374,334	-	-	-	-	-	-		
2042	-	-	2,185,187	-	-	-	-	-	-		
2043	-	-	2,222,696	-	-	-	-	-	-		

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual GHG emissions based on the DEQ methodology over the study period under Reference Case assumptions
 For each year, break out the contributions of individual fossil fuel resources, market purchases, and market sales to the total GHG emissions per the DEQ methodology
 UM 2225 Order Summary/Rubric references: C.4(a)

PGE note: Forecasts of generation from existing thermal output are based on economic dispatch using prices forecasted in this CEP/IRP. Forecasts of unspecified and other emitting market purchases are a function of historical purchases and a linear decline emission reduction glidepath. Neither reflect operational realities.

38 Portfolio38				PGE owned GHG emitting generation (retail)								
Year	Total Retail GHG Emissions (metric tons)	Included in retail total Market Purchases (metric tons)	Not included in retail total Market sales (metric tons)	Beaver	Carty	Coyote	PW1	PW2	Colstrip			
				Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)	Fossil fuel resource 3 (metric tons)	Fossil fuel resource 4 (metric tons)	Fossil fuel resource 5 (metric tons)	Fossil fuel resource 6 (metric tons)			
2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430			
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585			
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344			
2026	4,363,686	1,357,560	2,381,499	252,077	703,336	380,506	507,272	151,982	1,010,952			
2027	3,677,764	1,088,518	3,027,879	274,796	568,162	310,248	471,988	163,412	800,641			
2028	2,991,843	838,318	3,723,138	310,987	441,991	242,423	389,304	189,935	578,887			
2029	2,305,921	648,018	4,123,480	246,446	342,398	188,152	298,484	145,680	436,744			
2030	1,620,000	567,419	2,804,681	206,768	297,614	165,256	259,630	123,314	-			
2031	1,458,000	516,013	2,840,232	180,396	266,759	148,235	235,413	111,183	-			
2032	1,296,000	478,246	2,724,006	160,075	230,300	128,332	203,351	95,696	-			
2033	1,134,000	421,935	2,767,324	140,394	203,727	110,188	173,857	83,898	-			
2034	972,000	375,089	2,677,292	116,453	168,444	94,037	146,748	71,230	-			
2035	810,000	311,826	2,767,644	98,653	141,545	77,960	121,678	58,339	-			
2036	648,000	259,476	2,662,348	73,785	113,189	62,002	95,616	43,932	-			
2037	486,000	197,927	2,660,037	59,191	81,110	44,453	69,212	34,107	-			
2038	324,000	137,125	2,558,583	35,547	53,393	29,883	46,765	21,288	-			
2039	162,000	69,146	2,591,050	17,789	26,621	14,745	23,255	10,443	-			
2040	-	-	2,411,226	-	-	-	-	-	-			
2041	-	-	2,374,334	-	-	-	-	-	-			
2042	-	-	2,185,187	-	-	-	-	-	-			
2043	-	-	2,222,696	-	-	-	-	-	-			

39 Portfolio39				PGE owned GHG emitting generation (retail)								
Year	Total Retail GHG Emissions (metric tons)	Included in retail total Market Purchases (metric tons)	Not included in retail total Market sales (metric tons)	Beaver	Carty	Coyote	PW1	PW2	Colstrip			
				Fossil fuel resource 1 (metric tons)	Fossil fuel resource 2 (metric tons)	Fossil fuel resource 3 (metric tons)	Fossil fuel resource 4 (metric tons)	Fossil fuel resource 5 (metric tons)	Fossil fuel resource 6 (metric tons)			
2023	5,887,117	2,146,155	2,070,454	249,107	920,248	506,696	642,263	130,219	1,292,430			
2024	5,308,316	1,653,955	1,861,913	297,253	877,639	483,591	637,855	174,438	1,183,585			
2025	5,049,607	1,611,309	1,857,268	289,640	825,331	451,819	558,933	173,231	1,139,344			
2026	4,363,686	1,357,560	2,381,499	252,077	703,336	380,506	507,272	151,982	1,010,952			
2027	3,677,764	1,088,518	3,027,879	274,796	568,162	310,248	471,988	163,412	800,641			
2028	2,991,843	838,318	3,723,138	310,987	441,991	242,423	389,304	189,935	578,887			
2029	2,305,921	648,018	4,123,480	246,446	342,398	188,152	298,484	145,680	436,744			
2030	1,620,000	567,419	2,804,681	206,768	297,614	165,256	259,630	123,314	-			
2031	1,458,000	516,013	2,840,232	180,396	266,759	148,235	235,413	111,183	-			
2032	1,296,000	478,246	2,724,006	160,075	230,300	128,332	203,351	95,696	-			
2033	1,134,000	421,935	2,767,324	140,394	203,727	110,188	173,857	83,898	-			
2034	972,000	375,089	2,677,292	116,453	168,444	94,037	146,748	71,230	-			
2035	810,000	311,826	2,767,644	98,653	141,545	77,960	121,678	58,339	-			
2036	648,000	259,476	2,662,348	73,785	113,189	62,002	95,616	43,932	-			
2037	486,000	197,927	2,660,037	59,191	81,110	44,453	69,212	34,107	-			
2038	324,000	137,125	2,558,583	35,547	53,393	29,883	46,765	21,288	-			
2039	162,000	69,146	2,591,050	17,789	26,621	14,745	23,255	10,443	-			
2040	-	-	2,411,226	-	-	-	-	-	-			
2041	-	-	2,374,334	-	-	-	-	-	-			
2042	-	-	2,185,187	-	-	-	-	-	-			
2043	-	-	2,222,696	-	-	-	-	-	-			

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual Customer Benefits Indicators (CBIs) over the study period under Reference Case assumptions
 UM 2225 Order Summary/Rubric references: C.4(b)

40 Portfolio40 Preferred Portfolio											
Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr rCBI (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	22	43	0	1,410,717							
2026	28	56	0	1,822,583							
2027	36	71	3	2,385,915							
2028	43	85	5	2,885,015							
2029	50	100	5	3,363,066							
2030	50	100	5	3,363,500							
2031	50	100	5	3,363,934							
2032	50	100	5	3,364,151							
2033	50	100	5	3,364,151							
2034	50	100	5	3,364,151							
2035	50	100	5	3,364,151							
2036	50	100	5	3,364,151							
2037	50	100	5	3,364,151							
2038	50	100	5	3,364,151							
2039	50	100	5	3,364,151							
2040	50	100	5	3,364,151							
2041	50	100	5	3,364,151							
2042	50	100	5	3,364,151							
2043	50	100	5	3,364,151							

1 Portfolio1											
Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr rCBI (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	22	43	0	1,410,717							
2027	28	56	0	1,822,583							
2028	36	71	3	2,386,132							
2029	43	85	5	2,885,666							
2030	50	100	5	3,363,717							
2031	50	100	5	3,363,934							
2032	50	100	5	3,364,151							
2033	50	100	5	3,364,151							
2034	50	100	5	3,364,151							
2035	50	100	5	3,364,151							
2036	50	100	5	3,364,151							
2037	50	100	5	3,364,151							
2038	50	100	5	3,364,151							
2039	50	100	5	3,364,151							
2040	50	100	5	3,364,151							
2041	50	100	5	3,364,151							
2042	50	100	5	3,364,151							
2043	50	100	5	3,364,151							

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual Customer Benefits Indicators (CBIs) over the study period under Reference Case assumptions
 UM 2225 Order Summary/Rubric references: C.4(b)

2 Portfolio2

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	22	43	0	1,410,717							
2027	28	56	0	1,822,583							
2028	36	71	3	2,387,000							
2029	43	85	5	2,886,751							
2030	50	100	5	3,364,151							
2031	50	100	5	3,364,151							
2032	50	100	5	3,364,151							
2033	50	100	5	3,364,151							
2034	50	100	5	3,364,151							
2035	50	100	5	3,364,151							
2036	50	100	5	3,364,151							
2037	50	100	5	3,364,151							
2038	50	100	5	3,364,151							
2039	50	100	5	3,364,151							
2040	50	100	5	3,364,151							
2041	50	100	5	3,364,151							
2042	50	100	5	3,364,151							
2043	50	100	5	3,364,151							

3 Portfolio3

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	22	43	0	1,410,500							
2027	28	56	0	1,822,366							
2028	36	71	3	2,385,915							
2029	43	85	5	2,885,666							
2030	50	100	5	3,363,717							
2031	50	100	5	3,363,934							
2032	50	100	5	3,364,151							
2033	50	100	5	3,364,151							
2034	50	100	5	3,364,151							
2035	50	100	5	3,364,151							
2036	50	100	5	3,364,151							
2037	50	100	5	3,364,151							
2038	50	100	5	3,364,151							
2039	50	100	5	3,364,151							
2040	50	100	5	3,364,151							
2041	50	100	5	3,364,151							
2042	50	100	5	3,364,151							
2043	50	100	5	3,364,151							

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual Customer Benefits Indicators (CBIs) over the study period under Reference Case assumptions
 UM 2225 Order Summary/Rubric references: C.4(b)

4 Portfolio4

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	22	43	0	1,410,717							
2027	28	56	0	1,822,583							
2028	36	71	3	2,385,915							
2029	43	85	5	2,885,232							
2030	50	100	5	3,363,283							
2031	50	100	5	3,363,934							
2032	50	100	5	3,364,151							
2033	50	100	5	3,364,151							
2034	50	100	5	3,364,151							
2035	50	100	5	3,364,151							
2036	50	100	5	3,364,151							
2037	50	100	5	3,364,151							
2038	50	100	5	3,364,151							
2039	50	100	5	3,364,151							
2040	50	100	5	3,364,151							
2041	50	100	5	3,364,151							
2042	50	100	5	3,364,151							
2043	50	100	5	3,364,151							

5 Portfolio5

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	22	43	0	1,410,717							
2027	28	56	0	1,822,583							
2028	36	71	3	2,387,000							
2029	43	85	5	2,886,751							
2030	50	100	5	3,364,151							
2031	50	100	5	3,364,151							
2032	50	100	5	3,364,151							
2033	50	100	5	3,364,151							
2034	50	100	5	3,364,151							
2035	50	100	5	3,364,151							
2036	50	100	5	3,364,151							
2037	50	100	5	3,364,151							
2038	50	100	5	3,364,151							
2039	50	100	5	3,364,151							
2040	50	100	5	3,364,151							
2041	50	100	5	3,364,151							
2042	50	100	5	3,364,151							
2043	50	100	5	3,364,151							

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual Customer Benefits Indicators (CBIs) over the study period under Reference Case assumptions
 UM 2225 Order Summary/Rubric references: C.4(b)

6 Portfolio6

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	22	43	0	1,410,283							
2027	28	56	0	1,822,149							
2028	36	71	3	2,385,481							
2029	43	85	5	2,885,232							
2030	50	100	5	3,363,283							
2031	50	100	5	3,363,934							
2032	50	100	5	3,364,151							
2033	50	100	5	3,364,151							
2034	50	100	5	3,364,151							
2035	50	100	5	3,364,151							
2036	50	100	5	3,364,151							
2037	50	100	5	3,364,151							
2038	50	100	5	3,364,151							
2039	50	100	5	3,364,151							
2040	50	100	5	3,364,151							
2041	50	100	5	3,364,151							
2042	50	100	5	3,364,151							
2043	50	100	5	3,364,151							

7 Portfolio7

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	22	43	0	1,410,500							
2027	28	56	0	1,822,366							
2028	36	71	3	2,385,915							
2029	43	85	5	2,885,666							
2030	50	100	5	3,363,717							
2031	50	100	5	3,363,934							
2032	50	100	5	3,364,151							
2033	50	100	5	3,364,151							
2034	50	100	5	3,364,151							
2035	50	100	5	3,364,151							
2036	50	100	5	3,364,151							
2037	50	100	5	3,364,151							
2038	50	100	5	3,364,151							
2039	50	100	5	3,364,151							
2040	50	100	5	3,364,151							
2041	50	100	5	3,364,151							
2042	50	100	5	3,364,151							
2043	50	100	5	3,364,151							

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual Customer Benefits Indicators (CBIs) over the study period under Reference Case assumptions
 UM 2225 Order Summary/Rubric references: C.4(b)

8 Portfolio8

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	22	43	0	1,410,283							
2027	28	56	0	1,822,149							
2028	36	71	3	2,385,481							
2029	43	85	5	2,885,232							
2030	50	100	5	3,363,283							
2031	50	100	5	3,363,934							
2032	50	100	5	3,364,151							
2033	50	100	5	3,364,151							
2034	50	100	5	3,364,151							
2035	50	100	5	3,364,151							
2036	50	100	5	3,364,151							
2037	50	100	5	3,364,151							
2038	50	100	5	3,364,151							
2039	50	100	5	3,364,151							
2040	50	100	5	3,364,151							
2041	50	100	5	3,364,151							
2042	50	100	5	3,364,151							
2043	50	100	5	3,364,151							

9 Portfolio9

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	22	43	0	1,410,500							
2027	28	56	0	1,822,366							
2028	36	71	3	2,385,915							
2029	43	85	5	2,885,666							
2030	50	100	5	3,363,717							
2031	50	100	5	3,363,934							
2032	50	100	5	3,364,151							
2033	50	100	5	3,364,151							
2034	50	100	5	3,364,151							
2035	50	100	5	3,364,151							
2036	50	100	5	3,364,151							
2037	50	100	5	3,364,151							
2038	50	100	5	3,364,151							
2039	50	100	5	3,364,151							
2040	50	100	5	3,364,151							
2041	50	100	5	3,364,151							
2042	50	100	5	3,364,151							
2043	50	100	5	3,364,151							

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual Customer Benefits Indicators (CBIs) over the study period under Reference Case assumptions
 UM 2225 Order Summary/Rubric references: C.4(b)

10 Portfolio10

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	17	32	0	1,059,828							
2027	21	42	0	1,370,572							
2028	27	53	2	1,797,194							
2029	32	64	4	2,173,255							
2030	38	75	4	2,534,126							
2031	38	75	4	2,534,777							
2032	38	75	4	2,535,428							
2033	38	75	4	2,536,079							
2034	38	75	4	2,536,730							
2035	38	75	4	2,537,381							
2036	38	75	4	2,538,032							
2037	38	75	4	2,538,683							
2038	38	75	4	2,539,334							
2039	38	75	4	2,539,985							
2040	38	75	4	2,540,636							
2041	38	75	4	2,541,287							
2042	38	75	4	2,541,938							
2043	38	75	4	2,542,589							

11 Portfolio11

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	0	0	0	-							
2027	0	0	0	-							
2028	0	0	0	-							
2029	0	0	0	-							
2030	0	0	0	-							
2031	0	0	0	-							
2032	0	0	0	-							
2033	0	0	0	-							
2034	0	0	0	-							
2035	0	0	0	-							
2036	0	0	0	-							
2037	0	0	0	-							
2038	0	0	0	-							
2039	0	0	0	-							
2040	0	0	0	-							
2041	0	0	0	-							
2042	0	0	0	-							
2043	0	0	0	-							

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual Customer Benefits Indicators (CBIs) over the study period under Reference Case assumptions
 UM 2225 Order Summary/Rubric references: C.4(b)

12 Portfolio12

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	0	43	0	933,317							
2027	0	56	0	1,215,200							
2028	0	71	0	1,540,483							
2029	0	85	0	1,844,500							
2030	0	100	0	2,170,217							
2031	0	100	0	2,170,217							
2032	0	100	0	2,170,217							
2033	0	100	0	2,170,217							
2034	0	100	0	2,170,217							
2035	0	100	0	2,170,217							
2036	0	100	0	2,170,217							
2037	0	100	0	2,170,217							
2038	0	100	0	2,170,217							
2039	0	100	0	2,170,217							
2040	0	100	0	2,170,217							
2041	0	100	0	2,170,217							
2042	0	100	0	2,170,217							
2043	0	100	0	2,170,217							

13 Portfolio13

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	22	43	0	1,409,198							
2027	28	56	0	1,820,847							
2028	36	71	3	2,385,047							
2029	43	85	5	2,884,798							
2030	50	100	5	3,362,849							
2031	50	100	5	3,363,283							
2032	50	100	5	3,363,500							
2033	50	100	5	3,363,717							
2034	50	100	5	3,363,934							
2035	50	100	5	3,364,151							
2036	50	100	5	3,364,151							
2037	50	100	5	3,364,151							
2038	50	100	5	3,364,151							
2039	50	100	5	3,364,151							
2040	50	100	5	3,364,151							
2041	50	100	5	3,364,151							
2042	50	100	5	3,364,151							
2043	50	100	5	3,364,151							

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual Customer Benefits Indicators (CBIs) over the study period under Reference Case assumptions
 UM 2225 Order Summary/Rubric references: C.4(b)

14 Portfolio14

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	0	0	0	-							
2027	0	0	0	-							
2028	0	0	0	-							
2029	0	0	0	-							
2030	0	0	0	-							
2031	0	0	0	-							
2032	0	0	0	-							
2033	0	0	0	-							
2034	0	0	0	-							
2035	0	0	0	-							
2036	0	0	0	-							
2037	0	0	0	-							
2038	0	0	0	-							
2039	0	0	0	-							
2040	0	0	0	-							
2041	0	0	0	-							
2042	0	0	0	-							
2043	0	0	0	-							

15 Portfolio15

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	22	43	1	1,432,200							
2027	28	56	1	1,844,717							
2028	36	71	3	2,387,868							
2029	43	85	5	2,886,751							
2030	50	100	5	3,364,151							
2031	50	100	5	3,364,151							
2032	50	100	5	3,364,151							
2033	50	100	5	3,364,151							
2034	50	100	5	3,364,151							
2035	50	100	5	3,364,151							
2036	50	100	5	3,364,151							
2037	50	100	5	3,364,151							
2038	50	100	5	3,364,151							
2039	50	100	5	3,364,151							
2040	50	100	5	3,364,151							
2041	50	100	5	3,364,151							
2042	50	100	5	3,364,151							
2043	50	100	5	3,364,151							

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual Customer Benefits Indicators (CBIs) over the study period under Reference Case assumptions
 UM 2225 Order Summary/Rubric references: C.4(b)

16 Portfolio16

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	22	43	0	1,410,066							
2027	28	56	0	1,821,932							
2028	36	71	3	2,385,264							
2029	43	85	5	2,883,713							
2030	50	100	5	3,360,679							
2031	50	100	5	3,360,679							
2032	50	100	5	3,360,679							
2033	50	100	5	3,360,679							
2034	50	100	5	3,360,679							
2035	50	100	5	3,360,679							
2036	50	100	5	3,360,896							
2037	50	100	5	3,361,113							
2038	50	100	5	3,361,330							
2039	50	100	5	3,361,547							
2040	50	100	5	3,361,764							
2041	50	100	5	3,361,764							
2042	50	100	5	3,361,764							
2043	50	100	5	3,361,764							

17 Portfolio17

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	22	43	0	1,410,066							
2027	28	56	0	1,821,932							
2028	36	71	3	2,385,264							
2029	43	85	5	2,883,713							
2030	50	100	5	3,360,679							
2031	50	100	5	3,360,679							
2032	50	100	5	3,360,679							
2033	50	100	5	3,360,679							
2034	50	100	5	3,360,679							
2035	50	100	5	3,360,679							
2036	50	100	5	3,360,896							
2037	50	100	5	3,361,113							
2038	50	100	5	3,361,330							
2039	50	100	5	3,361,547							
2040	50	100	5	3,361,547							
2041	50	100	5	3,361,547							
2042	50	100	5	3,361,547							
2043	50	100	5	3,361,547							

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual Customer Benefits Indicators (CBIs) over the study period under Reference Case assumptions
 UM 2225 Order Summary/Rubric references: C.4(b)

18 Portfolio18

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	22	43	0	1,410,717							
2027	28	56	0	1,822,583							
2028	36	71	3	2,386,132							
2029	43	85	5	2,885,666							
2030	50	100	5	3,363,717							
2031	50	100	5	3,363,934							
2032	50	100	5	3,364,151							
2033	50	100	5	3,364,151							
2034	50	100	5	3,364,151							
2035	50	100	5	3,364,151							
2036	50	100	5	3,364,151							
2037	50	100	5	3,364,151							
2038	50	100	5	3,364,151							
2039	50	100	5	3,364,151							
2040	50	100	5	3,364,151							
2041	50	100	5	3,364,151							
2042	50	100	5	3,364,151							
2043	50	100	5	3,364,151							

19 Portfolio19

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	22	43	0	1,410,500							
2027	28	56	1	1,844,500							
2028	36	71	3	2,387,217							
2029	43	85	5	2,886,100							
2030	50	100	5	3,363,717							
2031	50	100	5	3,363,934							
2032	50	100	5	3,364,151							
2033	50	100	5	3,364,151							
2034	50	100	5	3,364,151							
2035	50	100	5	3,364,151							
2036	50	100	5	3,364,151							
2037	50	100	5	3,364,151							
2038	50	100	5	3,364,151							
2039	50	100	5	3,364,151							
2040	50	100	5	3,364,151							
2041	50	100	5	3,364,151							
2042	50	100	5	3,364,151							
2043	50	100	5	3,364,151							

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual Customer Benefits Indicators (CBIs) over the study period under Reference Case assumptions
 UM 2225 Order Summary/Rubric references: C.4(b)

20 Portfolio20

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	22	43	0	1,410,066							
2027	28	56	0	1,821,932							
2028	36	71	3	2,385,915							
2029	43	85	5	2,885,666							
2030	50	100	5	3,363,717							
2031	50	100	5	3,363,934							
2032	50	100	5	3,364,151							
2033	50	100	5	3,364,151							
2034	50	100	5	3,364,151							
2035	50	100	5	3,364,151							
2036	50	100	5	3,364,151							
2037	50	100	5	3,364,151							
2038	50	100	5	3,364,151							
2039	50	100	5	3,364,151							
2040	50	100	5	3,364,151							
2041	50	100	5	3,364,151							
2042	50	100	5	3,364,151							
2043	50	100	5	3,364,151							

21 Portfolio21

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	22	43	0	1,410,066							
2027	28	56	0	1,821,932							
2028	36	71	3	2,385,481							
2029	43	85	5	2,885,232							
2030	50	100	5	3,363,283							
2031	50	100	5	3,363,934							
2032	50	100	5	3,364,151							
2033	50	100	5	3,364,151							
2034	50	100	5	3,364,151							
2035	50	100	5	3,364,151							
2036	50	100	5	3,364,151							
2037	50	100	5	3,364,151							
2038	50	100	5	3,364,151							
2039	50	100	5	3,364,151							
2040	50	100	5	3,364,151							
2041	50	100	5	3,364,151							
2042	50	100	5	3,364,151							
2043	50	100	5	3,364,151							

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual Customer Benefits Indicators (CBIs) over the study period under Reference Case assumptions
 UM 2225 Order Summary/Rubric references: C.4(b)

22 Portfolio22

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	22	43	0	1,410,500							
2027	28	56	0	1,822,800							
2028	36	71	3	2,386,349							
2029	43	85	5	2,885,666							
2030	50	100	5	3,363,717							
2031	50	100	5	3,363,934							
2032	50	100	5	3,364,151							
2033	50	100	5	3,364,151							
2034	50	100	5	3,364,151							
2035	50	100	5	3,364,151							
2036	50	100	5	3,364,151							
2037	50	100	5	3,364,151							
2038	50	100	5	3,364,151							
2039	50	100	5	3,364,151							
2040	50	100	5	3,364,151							
2041	50	100	5	3,364,151							
2042	50	100	5	3,364,151							
2043	50	100	5	3,364,151							

23 Portfolio23

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	22	43	0	1,410,717							
2027	28	56	0	1,823,017							
2028	36	71	3	2,386,349							
2029	43	85	5	2,885,666							
2030	50	100	5	3,363,500							
2031	50	100	5	3,363,934							
2032	50	100	5	3,364,151							
2033	50	100	5	3,364,151							
2034	50	100	5	3,364,151							
2035	50	100	5	3,364,151							
2036	50	100	5	3,364,151							
2037	50	100	5	3,364,151							
2038	50	100	5	3,364,151							
2039	50	100	5	3,364,151							
2040	50	100	5	3,364,151							
2041	50	100	5	3,364,151							
2042	50	100	5	3,364,151							
2043	50	100	5	3,364,151							

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual Customer Benefits Indicators (CBIs) over the study period under Reference Case assumptions
 UM 2225 Order Summary/Rubric references: C.4(b)

24 Portfolio24

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	22	43	0	1,410,066							
2027	28	56	0	1,821,932							
2028	36	71	3	2,385,915							
2029	43	85	5	2,885,666							
2030	50	100	5	3,363,717							
2031	50	100	5	3,363,934							
2032	50	100	5	3,364,151							
2033	50	100	5	3,364,151							
2034	50	100	5	3,364,151							
2035	50	100	5	3,364,151							
2036	50	100	5	3,364,151							
2037	50	100	5	3,364,151							
2038	50	100	5	3,364,151							
2039	50	100	5	3,364,151							
2040	50	100	5	3,364,151							
2041	50	100	5	3,364,151							
2042	50	100	5	3,364,151							
2043	50	100	5	3,364,151							

25 Portfolio25

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	22	43	0	1,410,500							
2027	28	56	0	1,822,366							
2028	36	71	3	2,385,915							
2029	43	85	5	2,885,666							
2030	50	100	5	3,363,717							
2031	50	100	5	3,363,934							
2032	50	100	5	3,364,151							
2033	50	100	5	3,364,151							
2034	50	100	5	3,364,151							
2035	50	100	5	3,364,151							
2036	50	100	5	3,364,151							
2037	50	100	5	3,364,151							
2038	50	100	5	3,364,151							
2039	50	100	5	3,364,151							
2040	50	100	5	3,364,151							
2041	50	100	5	3,364,151							
2042	50	100	5	3,364,151							
2043	50	100	5	3,364,151							

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual Customer Benefits Indicators (CBIs) over the study period under Reference Case assumptions
 UM 2225 Order Summary/Rubric references: C.4(b)

26 Portfolio26

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	22	43	0	1,410,500							
2027	28	56	0	1,822,366							
2028	36	71	3	2,385,698							
2029	43	85	5	2,885,449							
2030	50	100	5	3,363,500							
2031	50	100	5	3,363,934							
2032	50	100	5	3,364,151							
2033	50	100	5	3,364,151							
2034	50	100	5	3,364,151							
2035	50	100	5	3,364,151							
2036	50	100	5	3,364,151							
2037	50	100	5	3,364,151							
2038	50	100	5	3,364,151							
2039	50	100	5	3,364,151							
2040	50	100	5	3,364,151							
2041	50	100	5	3,364,151							
2042	50	100	5	3,364,151							
2043	50	100	5	3,364,151							

27 Portfolio27

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	22	43	0	1,410,500							
2027	28	56	0	1,822,366							
2028	36	71	3	2,385,915							
2029	43	85	5	2,885,666							
2030	50	100	5	3,363,717							
2031	50	100	5	3,363,934							
2032	50	100	5	3,364,151							
2033	50	100	5	3,364,151							
2034	50	100	5	3,364,151							
2035	50	100	5	3,364,151							
2036	50	100	5	3,364,151							
2037	50	100	5	3,364,151							
2038	50	100	5	3,364,151							
2039	50	100	5	3,364,151							
2040	50	100	5	3,364,151							
2041	50	100	5	3,364,151							
2042	50	100	5	3,364,151							
2043	50	100	5	3,364,151							

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual Customer Benefits Indicators (CBIs) over the study period under Reference Case assumptions
 UM 2225 Order Summary/Rubric references: C.4(b)

28 Portfolio28

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	22	43	0	1,410,500							
2027	28	56	0	1,822,366							
2028	36	71	3	2,386,132							
2029	43	85	5	2,885,883							
2030	50	100	5	3,363,934							
2031	50	100	5	3,364,151							
2032	50	100	5	3,364,151							
2033	50	100	5	3,364,151							
2034	50	100	5	3,364,151							
2035	50	100	5	3,364,151							
2036	50	100	5	3,364,151							
2037	50	100	5	3,364,151							
2038	50	100	5	3,364,151							
2039	50	100	5	3,364,151							
2040	50	100	5	3,364,151							
2041	50	100	5	3,364,151							
2042	50	100	5	3,364,151							
2043	50	100	5	3,364,151							

29 Portfolio29

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	22	43	0	1,410,500							
2027	28	56	0	1,822,366							
2028	36	71	3	2,385,915							
2029	43	85	5	2,885,666							
2030	50	100	5	3,363,717							
2031	50	100	5	3,363,934							
2032	50	100	5	3,364,151							
2033	50	100	5	3,364,151							
2034	50	100	5	3,364,151							
2035	50	100	5	3,364,151							
2036	50	100	5	3,364,151							
2037	50	100	5	3,364,151							
2038	50	100	5	3,364,151							
2039	50	100	5	3,364,151							
2040	50	100	5	3,364,151							
2041	50	100	5	3,364,151							
2042	50	100	5	3,364,151							
2043	50	100	5	3,364,151							

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual Customer Benefits Indicators (CBIs) over the study period under Reference Case assumptions
 UM 2225 Order Summary/Rubric references: C.4(b)

30 Portfolio30

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	22	43	0	1,410,500							
2027	28	56	0	1,822,366							
2028	36	71	3	2,385,698							
2029	43	85	5	2,885,449							
2030	50	100	5	3,363,500							
2031	50	100	5	3,363,934							
2032	50	100	5	3,364,151							
2033	50	100	5	3,364,151							
2034	50	100	5	3,364,151							
2035	50	100	5	3,364,151							
2036	50	100	5	3,364,151							
2037	50	100	5	3,364,151							
2038	50	100	5	3,364,151							
2039	50	100	5	3,364,151							
2040	50	100	5	3,364,151							
2041	50	100	5	3,364,151							
2042	50	100	5	3,364,151							
2043	50	100	5	3,364,151							

31 Portfolio31

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	21.99	43.01	0	1,410,500							
2027	27.98	56	0	1,822,366							
2028	35.97	70.99	2.99	2,385,915							
2029	42.98	85	5	2,885,666							
2030	49.99	100.01	5.01	3,363,717							
2031	50	100.01	5.01	3,363,934							
2032	50.01	100.01	5.01	3,364,151							
2033	50.01	100.01	5.01	3,364,151							
2034	50.01	100.01	5.01	3,364,151							
2035	50.01	100.01	5.01	3,364,151							
2036	50.01	100.01	5.01	3,364,151							
2037	50.01	100.01	5.01	3,364,151							
2038	50.01	100.01	5.01	3,364,151							
2039	50.01	100.01	5.01	3,364,151							
2040	50.01	100.01	5.01	3,364,151							
2041	50.01	100.01	5.01	3,364,151							
2042	50.01	100.01	5.01	3,364,151							
2043	50.01	100.01	5.01	3,364,151							

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual Customer Benefits Indicators (CBIs) over the study period under Reference Case assumptions
 UM 2225 Order Summary/Rubric references: C.4(b)

32 Portfolio32

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr rCBI (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	21.99	43.01	0	1,410,500							
2027	27.98	56	0	1,822,366							
2028	35.97	70.99	2.99	2,385,915							
2029	42.98	85	5	2,885,666							
2030	49.99	100.01	5.01	3,363,717							
2031	50	100.01	5.01	3,363,934							
2032	50.01	100.01	5.01	3,364,151							
2033	50.01	100.01	5.01	3,364,151							
2034	50.01	100.01	5.01	3,364,151							
2035	50.01	100.01	5.01	3,364,151							
2036	50.01	100.01	5.01	3,364,151							
2037	50.01	100.01	5.01	3,364,151							
2038	50.01	100.01	5.01	3,364,151							
2039	50.01	100.01	5.01	3,364,151							
2040	50.01	100.01	5.01	3,364,151							
2041	50.01	100.01	5.01	3,364,151							
2042	50.01	100.01	5.01	3,364,151							
2043	50.01	100.01	5.01	3,364,151							

33 Portfolio33

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr rCBI (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	21.99	42.99	0	1,410,066							
2027	27.98	55.98	0	1,821,932							
2028	35.97	70.99	2.99	2,385,915							
2029	42.98	85	5	2,885,666							
2030	49.99	100.01	5.01	3,363,717							
2031	49.99	100.01	5.01	3,363,717							
2032	49.99	100.01	5.01	3,363,717							
2033	49.99	100.01	5.01	3,363,717							
2034	49.99	100.01	5.01	3,363,717							
2035	49.99	100.01	5.01	3,363,717							
2036	49.99	100.01	5.01	3,363,717							
2037	49.99	100.01	5.01	3,363,717							
2038	49.99	100.01	5.01	3,363,717							
2039	49.99	100.01	5.01	3,363,717							
2040	49.99	100.01	5.01	3,363,717							
2041	50	100.01	5.01	3,363,934							
2042	50	100.01	5.01	3,363,934							
2043	50.01	100.01	5.01	3,364,151							

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual Customer Benefits Indicators (CBIs) over the study period under Reference Case assumptions
 UM 2225 Order Summary/Rubric references: C.4(b)

34 Portfolio34

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	21.99	42.99	0	1,410,066							
2027	27.98	55.98	0	1,821,932							
2028	35.97	70.99	2.99	2,385,915							
2029	42.98	85	5	2,885,666							
2030	49.99	100.01	5.01	3,363,717							
2031	49.99	100.01	5.01	3,363,717							
2032	49.99	100.01	5.01	3,363,717							
2033	49.99	100.01	5.01	3,363,717							
2034	49.99	100.01	5.01	3,363,717							
2035	49.99	100.01	5.01	3,363,717							
2036	49.99	100.01	5.01	3,363,717							
2037	50	100.01	5.01	3,363,934							
2038	50	100.01	5.01	3,363,934							
2039	50	100.01	5.01	3,363,934							
2040	50	100.01	5.01	3,363,934							
2041	50	100.01	5.01	3,363,934							
2042	50	100.01	5.01	3,363,934							
2043	50.01	100.01	5.01	3,364,151							

35 Portfolio35

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	21.99	43.02	0	1,410,717							
2027	27.98	56.01	0	1,822,583							
2028	35.97	71	2.98	2,385,915							
2029	42.97	85	4.98	2,885,015							
2030	49.98	100.01	4.99	3,363,066							
2031	49.99	100.01	5	3,363,500							
2032	50	100.01	5.01	3,363,934							
2033	50.01	100.01	5.01	3,364,151							
2034	50.01	100.01	5.01	3,364,151							
2035	50.01	100.01	5.01	3,364,151							
2036	50.01	100.01	5.01	3,364,151							
2037	50.01	100.01	5.01	3,364,151							
2038	50.01	100.01	5.01	3,364,151							
2039	50.01	100.01	5.01	3,364,151							
2040	50.01	100.01	5.01	3,364,151							
2041	50.01	100.01	5.01	3,364,151							
2042	50.01	100.01	5.01	3,364,151							
2043	50.01	100.01	5.01	3,364,151							

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual Customer Benefits Indicators (CBIs) over the study period under Reference Case assumptions
 UM 2225 Order Summary/Rubric references: C.4(b)

36 Portfolio36

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	21.99	43.02	0	1,410,717							
2027	27.98	56.01	0	1,822,583							
2028	35.97	71	2.98	2,385,915							
2029	42.98	84.99	4.99	2,885,232							
2030	49.99	100	5	3,363,283							
2031	50	100.01	5.01	3,363,934							
2032	50.01	100.01	5.01	3,364,151							
2033	50.01	100.01	5.01	3,364,151							
2034	50.01	100.01	5.01	3,364,151							
2035	50.01	100.01	5.01	3,364,151							
2036	50.01	100.01	5.01	3,364,151							
2037	50.01	100.01	5.01	3,364,151							
2038	50.01	100.01	5.01	3,364,151							
2039	50.01	100.01	5.01	3,364,151							
2040	50.01	100.01	5.01	3,364,151							
2041	50.01	100.01	5.01	3,364,151							
2042	50.01	100.01	5.01	3,364,151							
2043	50.01	100.01	5.01	3,364,151							

37 Portfolio37

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	21.99	43.02	0	1,410,717							
2027	27.98	56.01	0	1,822,583							
2028	35.97	71	2.99	2,386,132							
2029	42.98	85	5	2,885,666							
2030	49.99	100.01	5.01	3,363,717							
2031	50	100.01	5.01	3,363,934							
2032	50.01	100.01	5.01	3,364,151							
2033	50.01	100.01	5.01	3,364,151							
2034	50.01	100.01	5.01	3,364,151							
2035	50.01	100.01	5.01	3,364,151							
2036	50.01	100.01	5.01	3,364,151							
2037	50.01	100.01	5.01	3,364,151							
2038	50.01	100.01	5.01	3,364,151							
2039	50.01	100.01	5.01	3,364,151							
2040	50.01	100.01	5.01	3,364,151							
2041	50.01	100.01	5.01	3,364,151							
2042	50.01	100.01	5.01	3,364,151							
2043	50.01	100.01	5.01	3,364,151							

Instructions

For each of the portfolios listed on the "Portfolios" tab, list the annual Customer Benefits Indicators (CBIs) over the study period under Reference Case assumptions
 UM 2225 Order Summary/Rubric references: C.4(b)

38 Portfolio38

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	21.99	43.02	0	1,410,717							
2027	27.98	56.01	0	1,822,583							
2028	35.97	71	2.98	2,385,915							
2029	42.98	84.99	4.99	2,885,232							
2030	49.99	100	5	3,363,283							
2031	50	100.01	5.01	3,363,934							
2032	50.01	100.01	5.01	3,364,151							
2033	50.01	100.01	5.01	3,364,151							
2034	50.01	100.01	5.01	3,364,151							
2035	50.01	100.01	5.01	3,364,151							
2036	50.01	100.01	5.01	3,364,151							
2037	50.01	100.01	5.01	3,364,151							
2038	50.01	100.01	5.01	3,364,151							
2039	50.01	100.01	5.01	3,364,151							
2040	50.01	100.01	5.01	3,364,151							
2041	50.01	100.01	5.01	3,364,151							
2042	50.01	100.01	5.01	3,364,151							
2043	50.01	100.01	5.01	3,364,151							

39 Portfolio39

Year	CBRE Solar (pCBI)	CBRE Micro (pCBI)	CBRE Hydr (pCBI)	rCBI (2023\$)	CBI 5 (units)	CBI 6 (units)	CBI 7 (units)	CBI 8 (units)	CBI 9 (units)	CBI 10 (units)	...
2023	0	0	0	-							
2024	0	0	0	-							
2025	0	0	0	-							
2026	21.89	43.02	0	1,408,547							
2027	27.9	55.96	0	1,819,762							
2028	35.91	70.97	2.95	2,383,311							
2029	42.92	84.98	4.96	2,883,062							
2030	49.93	99.99	4.97	3,361,113							
2031	49.94	100	4.98	3,361,764							
2032	49.95	100.01	4.99	3,362,415							
2033	49.96	100.01	5	3,362,849							
2034	49.97	100.01	5.01	3,363,283							
2035	49.98	100.01	5.01	3,363,500							
2036	49.99	100.01	5.01	3,363,717							
2037	50	100.01	5.01	3,363,934							
2038	50.01	100.01	5.01	3,364,151							
2039	50.01	100.01	5.01	3,364,151							
2040	50.01	100.01	5.01	3,364,151							
2041	50.01	100.01	5.01	3,364,151							
2042	50.01	100.01	5.01	3,364,151							
2043	50.01	100.01	5.01	3,364,151							

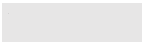
Instructions

For each of the portfolios listed on the "Portfolios" tab, list the scoring metrics for cost, risk, GHG emissions reductions, and community benefits and impacts used to select the Preferred Portfolio and design the Action Plan UM 2225 Order Summary/Rubric references: B.1

Portfolio	Cost - NPVRR (million 2023\$)	Risk metric - Variability (million 2023\$)	Risk metric - Severity (million 2023\$)	GHG Reductions Metric(s) (metric ton)	Community Impacts Metric(s) (CBRE MW)	...
1 Portfolio1	\$ 34,583.50	\$ 6,136.50	\$ 43,685.55	38,494,254		155
2 Portfolio2	\$ 34,721.90	\$ 6,229.41	\$ 43,969.43	34,511,484		155
3 Portfolio3	\$ 34,549.41	\$ 6,124.80	\$ 43,611.36	42,477,023		155
4 Portfolio4	\$ 35,727.46	\$ 6,143.74	\$ 44,824.69	34,444,254		155
5 Portfolio5	\$ 35,689.30	\$ 6,322.82	\$ 45,045.78	31,824,647		155
6 Portfolio6	\$ 34,129.78	\$ 6,098.42	\$ 43,428.27	38,494,254		155
7 Portfolio7	\$ 34,601.06	\$ 6,138.53	\$ 43,722.27	38,494,254		155
8 Portfolio8	\$ 34,320.22	\$ 6,158.98	\$ 43,824.77	38,494,254		155
9 Portfolio9	\$ 34,601.06	\$ 6,138.53	\$ 43,722.27	38,494,254		155
10 Portfolio10	\$ 34,697.28	\$ 6,128.19	\$ 43,770.56	38,494,254		117
11 Portfolio11	\$ 34,984.62	\$ 6,115.83	\$ 43,901.49	38,494,254		0
12 Portfolio12	\$ 34,703.42	\$ 6,145.12	\$ 43,807.32	38,494,254		100
13 Portfolio13	\$ 34,601.18	\$ 6,140.56	\$ 43,722.74	38,494,254		155
14 Portfolio14	\$ 19,405.61	\$ 3,320.64	\$ 24,872.68	38,494,254		0
15 Portfolio15	\$ 37,789.44	\$ 6,436.36	\$ 47,198.41	38,494,254		155
16 Portfolio16	\$ 19,912.92	\$ 3,508.90	\$ 25,811.05	38,494,254		155
17 Portfolio17	\$ 19,709.88	\$ 3,533.96	\$ 25,639.84	38,494,254		155
18 Portfolio18	\$ 34,591.44	\$ 6,132.54	\$ 43,689.98	38,494,254		155
19 Portfolio19	\$ 34,683.13	\$ 6,279.66	\$ 43,960.45	38,494,254		155
20 Portfolio20	\$ 35,507.88	\$ 6,092.19	\$ 44,861.74	38,494,254		155
21 Portfolio21	\$ 36,144.91	\$ 6,119.49	\$ 45,535.82	38,494,254		155
22 Portfolio22	\$ 35,245.30	\$ 6,384.93	\$ 44,989.71	38,494,254		155
23 Portfolio23	\$ 35,815.97	\$ 6,464.04	\$ 45,668.65	38,494,254		155
24 Portfolio24	\$ 34,809.04	\$ 6,201.27	\$ 44,005.58	38,494,254		155
25 Portfolio25	\$ 34,601.06	\$ 6,138.53	\$ 43,722.27	38,494,254		155
26 Portfolio26	\$ 33,721.00	\$ 6,125.26	\$ 42,811.89	38,494,254		155
27 Portfolio27	\$ 34,233.68	\$ 6,183.61	\$ 43,470.23	38,494,254		155
28 Portfolio28	\$ 31,684.56	\$ 6,160.45	\$ 41,182.59	38,494,254		155
29 Portfolio29	\$ 34,530.93	\$ 6,275.11	\$ 44,098.02	38,494,254		155
30 Portfolio30	\$ 34,175.63	\$ 6,202.69	\$ 43,494.54	38,494,254		155
31 Portfolio31	\$ 34,506.34	\$ 6,214.50	\$ 43,723.28	38,494,254		155
32 Portfolio32	\$ 34,601.06	\$ 6,138.53	\$ 43,722.27	38,494,254		155
33 Portfolio33	-	-	-	38,494,254		155
34 Portfolio34	-	-	-	38,494,254		155
35 Portfolio35	\$ 30,595.99	\$ 5,916.08	\$ 40,161.34	38,494,254		155
36 Portfolio36	\$ 34,125.54	\$ 6,064.10	\$ 43,393.98	38,494,254		155
37 Portfolio37	\$ 34,283.29	\$ 6,106.56	\$ 43,430.96	38,494,254		155
38 Portfolio38	\$ 34,864.59	\$ 6,167.24	\$ 44,662.95	38,494,254		155
39 Portfolio39	\$ 30,208.38	\$ 5,807.93	\$ 39,738.51	38,494,254		155
40 Portfolio40	\$ 30,595.99	\$ 5,916.08	\$ 40,161.34	38,494,254		155

sources: Preferred portfolio summary: NPVRR Preferred portfolio summary: Preferred portfolio summary: semi-deviation Preferred portfolio summary: tail VAR90 Sum of retail carbon from 2023-2043 Max of CBRE capacity between 2023-2043

Note: the cost and risk metrics for near-term optimization portfolios are not comparable to other portfolios and accordingly have been omitted



Instructions
 For each of the portfolios listed in the "Portfolios" tab, provide the following information under the Reference Case over the study period and for at least three historical years
 - Total forecasted annual revenue requirement to serve Oregon customers
 - Total forecasted annual revenue requirement to serve Oregon customers, divided by the total forecasted retail sales in Oregon
 UM 2225 Order Summary/Rubric references: J.5(a)-(b)

40 Portfolio40

Year	Total revenue requirement to serve Oregon customers (energy supply costs only) (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (not projections of actual prices or rates) (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,815,992	\$ 83
2026	1,649	20,213,483	\$ 82
2027	1,744	20,580,395	\$ 85
2028	1,721	20,925,422	\$ 82
2029	1,798	21,136,076	\$ 85
2030	1,954	21,444,012	\$ 91
2031	2,218	21,817,479	\$ 102
2032	2,429	22,256,257	\$ 109
2033	2,610	22,614,238	\$ 115
2034	2,967	23,086,262	\$ 129
2035	3,353	23,547,350	\$ 142
2036	3,979	24,203,244	\$ 164
2037	5,194	24,625,674	\$ 211
2038	6,724	25,124,627	\$ 268
2039	8,262	25,683,188	\$ 322
2040	9,703	26,345,704	\$ 368
2041	10,742	26,821,098	\$ 401
2042	11,221	27,198,497	\$ 413
2043	11,589	27,861,007	\$ 416

PGE note:
 All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.
 Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

sources: ART results - 100% tax incentive, 50% ownership.xlsx (updated Mar13 10:05am): Total Cost \$k/1000 ART results - 100% tax incentive, 50% ownership.xlsx (updated Mar13 10:05am): Total Load MWh ART results - 100% tax incentive, 50% ownership.xlsx (updated Mar13 10:05am): Total Cost/MWh

Year	1 Portfolio1 Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,815,992	\$ 83
2026	1,634	20,213,483	\$ 81
2027	1,700	20,580,395	\$ 83
2028	1,677	20,925,422	\$ 80
2029	1,755	21,136,076	\$ 83
2030	1,862	21,444,012	\$ 87
2031	2,545	21,817,479	\$ 117
2032	3,244	22,256,257	\$ 146
2033	3,684	22,614,238	\$ 163
2034	4,145	23,086,262	\$ 180
2035	4,652	23,547,350	\$ 198
2036	5,399	24,203,244	\$ 223
2037	6,613	24,625,674	\$ 269
2038	8,096	25,124,627	\$ 322
2039	9,574	25,683,188	\$ 373
2040	11,009	26,345,704	\$ 418
2041	12,053	26,821,098	\$ 449
2042	12,578	27,198,497	\$ 462
2043	12,990	27,861,007	\$ 466

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

2 Portfolio2

Year	Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,815,992	\$ 83
2026	1,639	20,213,483	\$ 81
2027	1,714	20,580,395	\$ 83
2028	1,717	20,925,422	\$ 82
2029	1,808	21,136,076	\$ 86
2030	1,907	21,444,012	\$ 89
2031	2,548	21,817,479	\$ 117
2032	3,246	22,256,257	\$ 146
2033	3,682	22,614,238	\$ 163
2034	4,142	23,086,262	\$ 179
2035	4,650	23,547,350	\$ 197
2036	5,398	24,203,244	\$ 223
2037	6,640	24,625,674	\$ 270
2038	8,141	25,124,627	\$ 324
2039	9,606	25,683,188	\$ 374
2040	11,008	26,345,704	\$ 418
2041	12,052	26,821,098	\$ 449
2042	12,576	27,198,497	\$ 462
2043	12,988	27,861,007	\$ 466

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

3 Portfolio3

Year	Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,815,992	\$ 83
2026	1,632	20,213,483	\$ 81
2027	1,696	20,580,395	\$ 82
2028	1,673	20,925,422	\$ 80
2029	1,706	21,136,076	\$ 81
2030	1,906	21,444,012	\$ 89
2031	2,543	21,817,479	\$ 117
2032	3,237	22,256,257	\$ 145
2033	3,685	22,614,238	\$ 163
2034	4,144	23,086,262	\$ 179
2035	4,650	23,547,350	\$ 197
2036	5,397	24,203,244	\$ 223
2037	6,611	24,625,674	\$ 268
2038	8,094	25,124,627	\$ 322
2039	9,537	25,683,188	\$ 371
2040	11,008	26,345,704	\$ 418
2041	12,052	26,821,098	\$ 449
2042	12,576	27,198,497	\$ 462
2043	12,988	27,861,007	\$ 466

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

4 Portfolio4

Year	Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,815,992	\$ 83
2026	1,634	20,213,483	\$ 81
2027	1,700	20,580,395	\$ 83
2028	1,677	20,925,422	\$ 80
2029	1,755	21,136,076	\$ 83
2030	1,893	21,444,012	\$ 88
2031	2,658	21,817,479	\$ 122
2032	3,433	22,256,257	\$ 154
2033	4,021	22,614,238	\$ 178
2034	4,640	23,086,262	\$ 201
2035	5,329	23,547,350	\$ 226
2036	6,110	24,203,244	\$ 252
2037	7,151	24,625,674	\$ 290
2038	8,449	25,124,627	\$ 336
2039	9,740	25,683,188	\$ 379
2040	10,950	26,345,704	\$ 416
2041	11,888	26,821,098	\$ 443
2042	12,425	27,198,497	\$ 457
2043	12,850	27,861,007	\$ 461

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

5 Portfolio5

Year	Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,815,992	\$ 83
2026	1,636	20,213,483	\$ 81
2027	1,704	20,580,395	\$ 83
2028	1,736	20,925,422	\$ 83
2029	1,895	21,136,076	\$ 90
2030	2,118	21,444,012	\$ 99
2031	2,780	21,817,479	\$ 127
2032	3,501	22,256,257	\$ 157
2033	3,941	22,614,238	\$ 174
2034	4,403	23,086,262	\$ 191
2035	4,910	23,547,350	\$ 209
2036	5,662	24,203,244	\$ 234
2037	6,885	24,625,674	\$ 280
2038	8,451	25,124,627	\$ 336
2039	9,832	25,683,188	\$ 383
2040	11,013	26,345,704	\$ 418
2041	11,943	26,821,098	\$ 445
2042	12,471	27,198,497	\$ 459
2043	12,884	27,861,007	\$ 462

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

6 Portfolio6

Year	Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,815,992	\$ 83
2026	1,756	20,108,363	\$ 87
2027	1,810	20,387,675	\$ 89
2028	1,788	20,644,334	\$ 87
2029	1,884	20,759,396	\$ 91
2030	1,900	20,979,732	\$ 91
2031	2,330	21,353,199	\$ 109
2032	3,006	21,790,705	\$ 138
2033	3,445	22,149,958	\$ 156
2034	3,905	22,621,982	\$ 173
2035	4,412	23,083,070	\$ 191
2036	5,134	23,737,692	\$ 216
2037	6,348	24,161,394	\$ 263
2038	7,841	24,660,347	\$ 318
2039	9,331	25,218,908	\$ 370
2040	10,764	25,880,152	\$ 416
2041	11,796	26,356,818	\$ 448
2042	12,304	26,734,217	\$ 460
2043	12,717	27,396,727	\$ 464

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

7 Portfolio7

Year	Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,815,992	\$ 83
2026	1,629	20,213,483	\$ 81
2027	1,705	20,580,395	\$ 83
2028	1,684	20,925,422	\$ 80
2029	1,766	21,136,076	\$ 84
2030	1,877	21,444,012	\$ 88
2031	2,550	21,817,479	\$ 117
2032	3,249	22,256,257	\$ 146
2033	3,688	22,614,238	\$ 163
2034	4,148	23,086,262	\$ 180
2035	4,654	23,547,350	\$ 198
2036	5,379	24,203,244	\$ 222
2037	6,595	24,625,674	\$ 268
2038	8,089	25,124,627	\$ 322
2039	9,577	25,683,188	\$ 373
2040	11,012	26,345,704	\$ 418
2041	12,056	26,821,098	\$ 450
2042	12,580	27,198,497	\$ 463
2043	12,993	27,861,007	\$ 466

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

8 Portfolio8

Year	Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,815,992	\$ 83
2026	1,699	20,108,363	\$ 84
2027	1,814	20,370,155	\$ 89
2028	1,818	20,609,198	\$ 88
2029	2,012	20,715,596	\$ 97
2030	2,198	20,918,587	\$ 105
2031	2,415	21,292,055	\$ 113
2032	2,973	21,729,393	\$ 137
2033	3,412	22,088,813	\$ 154
2034	3,871	22,560,838	\$ 172
2035	4,379	23,021,926	\$ 190
2036	5,102	23,676,380	\$ 216
2037	6,315	24,100,249	\$ 262
2038	7,807	24,599,202	\$ 317
2039	9,298	25,157,763	\$ 370
2040	10,730	25,818,839	\$ 416
2041	11,764	26,295,674	\$ 447
2042	12,272	26,673,072	\$ 460
2043	12,685	27,335,583	\$ 464

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

9 Portfolio9

Year	Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,815,992	\$ 83
2026	1,629	20,213,483	\$ 81
2027	1,705	20,580,395	\$ 83
2028	1,684	20,925,422	\$ 80
2029	1,766	21,136,076	\$ 84
2030	1,877	21,444,012	\$ 88
2031	2,550	21,817,479	\$ 117
2032	3,249	22,256,257	\$ 146
2033	3,688	22,614,238	\$ 163
2034	4,148	23,086,262	\$ 180
2035	4,654	23,547,350	\$ 198
2036	5,379	24,203,244	\$ 222
2037	6,595	24,625,674	\$ 268
2038	8,089	25,124,627	\$ 322
2039	9,577	25,683,188	\$ 373
2040	11,012	26,345,704	\$ 418
2041	12,056	26,821,098	\$ 450
2042	12,580	27,198,497	\$ 463
2043	12,993	27,861,007	\$ 466

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

10 Portfolio10

Year	Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,815,992	\$ 83
2026	1,625	20,213,483	\$ 80
2027	1,702	20,580,395	\$ 83
2028	1,680	20,925,422	\$ 80
2029	1,762	21,136,076	\$ 83
2030	1,884	21,444,012	\$ 88
2031	2,573	21,817,479	\$ 118
2032	3,274	22,256,257	\$ 147
2033	3,713	22,614,238	\$ 164
2034	4,172	23,086,262	\$ 181
2035	4,679	23,547,350	\$ 199
2036	5,404	24,203,244	\$ 223
2037	6,619	24,625,674	\$ 269
2038	8,113	25,124,627	\$ 323
2039	9,602	25,683,188	\$ 374
2040	11,036	26,345,704	\$ 419
2041	12,088	26,821,098	\$ 451
2042	12,620	27,198,497	\$ 464
2043	13,031	27,861,007	\$ 468

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

11 Portfolio11

Year	Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,815,992	\$ 83
2026	1,618	20,213,483	\$ 80
2027	1,692	20,580,395	\$ 82
2028	1,662	20,925,422	\$ 79
2029	1,736	21,136,076	\$ 82
2030	1,897	21,444,012	\$ 88
2031	2,638	21,817,479	\$ 121
2032	3,346	22,256,257	\$ 150
2033	3,786	22,614,238	\$ 167
2034	4,246	23,086,262	\$ 184
2035	4,752	23,547,350	\$ 202
2036	5,499	24,203,244	\$ 227
2037	6,712	24,625,674	\$ 273
2038	8,192	25,124,627	\$ 326
2039	9,674	25,683,188	\$ 377
2040	11,108	26,345,704	\$ 422
2041	12,182	26,821,098	\$ 454
2042	12,740	27,198,497	\$ 468
2043	13,148	27,861,007	\$ 472

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

12 Portfolio12

Year	Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,815,992	\$ 83
2026	1,626	20,213,483	\$ 80
2027	1,701	20,580,395	\$ 83
2028	1,677	20,925,422	\$ 80
2029	1,758	21,136,076	\$ 83
2030	1,881	21,444,012	\$ 88
2031	2,577	21,817,479	\$ 118
2032	3,279	22,256,257	\$ 147
2033	3,718	22,614,238	\$ 164
2034	4,178	23,086,262	\$ 181
2035	4,685	23,547,350	\$ 199
2036	5,410	24,203,244	\$ 224
2037	6,625	24,625,674	\$ 269
2038	8,118	25,124,627	\$ 323
2039	9,608	25,683,188	\$ 374
2040	11,042	26,345,704	\$ 419
2041	12,093	26,821,098	\$ 451
2042	12,624	27,198,497	\$ 464
2043	13,035	27,861,007	\$ 468

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

13 Portfolio13

Year	Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,815,992	\$ 83
2026	1,629	20,213,483	\$ 81
2027	1,705	20,580,395	\$ 83
2028	1,685	20,925,422	\$ 81
2029	1,766	21,136,076	\$ 84
2030	1,878	21,444,012	\$ 88
2031	2,550	21,817,479	\$ 117
2032	3,249	22,256,257	\$ 146
2033	3,688	22,614,238	\$ 163
2034	4,148	23,086,262	\$ 180
2035	4,655	23,547,350	\$ 198
2036	5,379	24,203,244	\$ 222
2037	6,595	24,625,674	\$ 268
2038	8,086	25,124,627	\$ 322
2039	9,577	25,683,188	\$ 373
2040	11,012	26,345,704	\$ 418
2041	12,057	26,821,098	\$ 450
2042	12,581	27,198,497	\$ 463
2043	12,993	27,861,007	\$ 466

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

14 Portfolio14

Year	Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,816,255	\$ 83
2026	1,627	20,214,009	\$ 80
2027	1,670	20,581,184	\$ 81
2028	1,663	20,926,477	\$ 79
2029	1,729	21,137,390	\$ 82
2030	1,720	21,445,501	\$ 80
2031	1,944	21,818,969	\$ 89
2032	2,016	22,257,750	\$ 91
2033	2,037	22,615,727	\$ 90
2034	2,062	23,087,752	\$ 89
2035	2,088	23,548,840	\$ 89
2036	2,073	24,204,737	\$ 86
2037	2,056	24,627,163	\$ 83
2038	2,160	25,126,116	\$ 86
2039	2,666	25,684,677	\$ 104
2040	3,748	26,347,197	\$ 142
2041	4,707	26,822,588	\$ 175
2042	4,688	27,199,986	\$ 172
2043	4,702	27,862,497	\$ 169

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

15 Portfolio15

Year	Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,815,992	\$ 83
2026	1,633	20,213,483	\$ 81
2027	1,693	20,580,395	\$ 82
2028	1,668	20,925,422	\$ 80
2029	1,904	21,136,076	\$ 90
2030	2,338	21,444,012	\$ 109
2031	3,226	21,817,479	\$ 148
2032	3,961	22,256,257	\$ 178
2033	4,404	22,614,238	\$ 195
2034	4,862	23,086,262	\$ 211
2035	5,366	23,547,350	\$ 228
2036	6,101	24,203,244	\$ 252
2037	7,296	24,625,674	\$ 296
2038	8,783	25,124,627	\$ 350
2039	10,267	25,683,188	\$ 400
2040	11,699	26,345,704	\$ 444
2041	12,729	26,821,098	\$ 475
2042	13,216	27,198,497	\$ 486
2043	13,603	27,861,007	\$ 488

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

16 Portfolio16

Year	Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,816,255	\$ 83
2026	1,629	20,214,009	\$ 81
2027	1,705	20,581,184	\$ 83
2028	1,685	20,926,477	\$ 81
2029	1,747	21,137,303	\$ 83
2030	1,775	21,445,414	\$ 83
2031	1,961	21,818,881	\$ 90
2032	2,064	22,257,662	\$ 93
2033	2,076	22,615,640	\$ 92
2034	2,108	23,087,664	\$ 91
2035	2,152	23,548,752	\$ 91
2036	2,134	24,204,649	\$ 88
2037	2,149	24,627,075	\$ 87
2038	2,259	25,126,029	\$ 90
2039	2,824	25,684,590	\$ 110
2040	4,067	26,347,109	\$ 154
2041	4,966	26,822,500	\$ 185
2042	4,951	27,199,899	\$ 182
2043	4,952	27,862,409	\$ 178

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

17 Portfolio17

Year	Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,816,255	\$ 83
2026	1,629	20,214,009	\$ 81
2027	1,705	20,581,184	\$ 83
2028	1,685	20,926,477	\$ 81
2029	1,747	21,137,303	\$ 83
2030	1,775	21,445,414	\$ 83
2031	1,960	21,818,881	\$ 90
2032	2,063	22,257,662	\$ 93
2033	2,073	22,615,640	\$ 92
2034	2,107	23,087,664	\$ 91
2035	2,155	23,548,752	\$ 91
2036	2,133	24,204,649	\$ 88
2037	2,182	24,627,075	\$ 89
2038	2,373	25,126,029	\$ 94
2039	2,743	25,684,590	\$ 107
2040	3,756	26,347,109	\$ 143
2041	4,559	26,822,500	\$ 170
2042	4,553	27,199,899	\$ 167
2043	4,559	27,862,409	\$ 164

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

18 Portfolio18			
Year	Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,815,992	\$ 83
2026	1,633	20,213,483	\$ 81
2027	1,710	20,580,395	\$ 83
2028	1,682	20,925,422	\$ 80
2029	1,754	21,136,076	\$ 83
2030	1,861	21,444,012	\$ 87
2031	2,544	21,817,479	\$ 117
2032	3,243	22,256,257	\$ 146
2033	3,683	22,614,238	\$ 163
2034	4,144	23,086,262	\$ 179
2035	4,650	23,547,350	\$ 197
2036	5,394	24,203,244	\$ 223
2037	6,635	24,625,674	\$ 269
2038	8,099	25,124,627	\$ 322
2039	9,573	25,683,188	\$ 373
2040	11,008	26,345,704	\$ 418
2041	12,052	26,821,098	\$ 449
2042	12,576	27,198,497	\$ 462
2043	12,989	27,861,007	\$ 466

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

19 Portfolio19			
Year	Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,815,992	\$ 83
2026	1,634	20,213,483	\$ 81
2027	1,691	20,580,395	\$ 82
2028	1,680	20,925,422	\$ 80
2029	1,811	21,136,076	\$ 86
2030	1,933	21,444,012	\$ 90
2031	2,550	21,817,479	\$ 117
2032	3,253	22,256,257	\$ 146
2033	3,693	22,614,238	\$ 163
2034	4,150	23,086,262	\$ 180
2035	4,656	23,547,350	\$ 198
2036	5,405	24,203,244	\$ 223
2037	6,607	24,625,674	\$ 268
2038	8,091	25,124,627	\$ 322
2039	9,583	25,683,188	\$ 373
2040	11,014	26,345,704	\$ 418
2041	12,046	26,821,098	\$ 449
2042	12,551	27,198,497	\$ 461
2043	12,959	27,861,007	\$ 465

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

20 Portfolio20			
Year	Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,815,992	\$ 83
2026	1,862	20,213,483	\$ 92
2027	1,895	20,580,395	\$ 92
2028	1,863	20,925,422	\$ 89
2029	1,939	21,136,076	\$ 92
2030	1,962	21,444,012	\$ 91
2031	2,548	21,817,479	\$ 117
2032	3,256	22,256,257	\$ 146
2033	3,697	22,614,238	\$ 164
2034	4,159	23,086,262	\$ 180
2035	4,670	23,547,350	\$ 198
2036	5,443	24,203,244	\$ 225
2037	6,643	24,625,674	\$ 270
2038	8,107	25,124,627	\$ 323
2039	9,597	25,683,188	\$ 374
2040	11,024	26,345,704	\$ 418
2041	12,057	26,821,098	\$ 450
2042	12,500	27,198,497	\$ 460
2043	12,831	27,861,007	\$ 461

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

21 Portfolio21			
Year	Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,815,992	\$ 83
2026	1,894	20,213,483	\$ 94
2027	1,923	20,580,395	\$ 93
2028	1,892	20,925,422	\$ 90
2029	1,981	21,136,076	\$ 94
2030	2,083	21,444,012	\$ 97
2031	2,657	21,817,479	\$ 122
2032	3,353	22,256,257	\$ 151
2033	3,792	22,614,238	\$ 168
2034	4,266	23,086,262	\$ 185
2035	4,776	23,547,350	\$ 203
2036	5,532	24,203,244	\$ 229
2037	6,717	24,625,674	\$ 273
2038	8,180	25,124,627	\$ 326
2039	9,702	25,683,188	\$ 378
2040	11,126	26,345,704	\$ 422
2041	12,158	26,821,098	\$ 453
2042	12,645	27,198,497	\$ 465
2043	13,029	27,861,007	\$ 468

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

22 Portfolio22			
Year	Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,815,992	\$ 83
2026	1,634	20,213,483	\$ 81
2027	1,690	20,580,395	\$ 82
2028	1,905	20,925,422	\$ 91
2029	1,979	21,136,076	\$ 94
2030	2,020	21,444,012	\$ 94
2031	2,556	21,817,479	\$ 117
2032	3,265	22,256,257	\$ 147
2033	3,705	22,614,238	\$ 164
2034	4,164	23,086,262	\$ 180
2035	4,675	23,547,350	\$ 199
2036	5,423	24,203,244	\$ 224
2037	6,623	24,625,674	\$ 269
2038	8,127	25,124,627	\$ 323
2039	9,603	25,683,188	\$ 374
2040	11,029	26,345,704	\$ 419
2041	12,062	26,821,098	\$ 450
2042	12,505	27,198,497	\$ 460
2043	12,836	27,861,007	\$ 461

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

23 Portfolio23			
Year	Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,815,992	\$ 83
2026	1,634	20,213,483	\$ 81
2027	1,690	20,580,395	\$ 82
2028	1,929	20,925,422	\$ 92
2029	2,009	21,136,076	\$ 95
2030	2,129	21,444,012	\$ 99
2031	2,662	21,817,479	\$ 122
2032	3,355	22,256,257	\$ 151
2033	3,794	22,614,238	\$ 168
2034	4,265	23,086,262	\$ 185
2035	4,775	23,547,350	\$ 203
2036	5,517	24,203,244	\$ 228
2037	6,708	24,625,674	\$ 272
2038	8,193	25,124,627	\$ 326
2039	9,703	25,683,188	\$ 378
2040	11,126	26,345,704	\$ 422
2041	12,159	26,821,098	\$ 453
2042	12,645	27,198,497	\$ 465
2043	13,029	27,861,007	\$ 468

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

24 Portfolio24			
Year	Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,815,992	\$ 83
2026	1,630	20,213,483	\$ 81
2027	1,706	20,580,395	\$ 83
2028	1,687	20,925,422	\$ 81
2029	1,765	21,136,076	\$ 83
2030	1,903	21,444,012	\$ 89
2031	2,607	21,817,479	\$ 119
2032	3,303	22,256,257	\$ 148
2033	3,742	22,614,238	\$ 165
2034	4,201	23,086,262	\$ 182
2035	4,708	23,547,350	\$ 200
2036	5,431	24,203,244	\$ 224
2037	6,645	24,625,674	\$ 270
2038	8,147	25,124,627	\$ 324
2039	9,627	25,683,188	\$ 375
2040	11,066	26,345,704	\$ 420
2041	12,097	26,821,098	\$ 451
2042	12,587	27,198,497	\$ 463
2043	12,978	27,861,007	\$ 466

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

25 Portfolio25			
Year	Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,815,992	\$ 83
2026	1,629	20,213,483	\$ 81
2027	1,705	20,580,395	\$ 83
2028	1,684	20,925,422	\$ 80
2029	1,766	21,136,076	\$ 84
2030	1,877	21,444,012	\$ 88
2031	2,550	21,817,479	\$ 117
2032	3,249	22,256,257	\$ 146
2033	3,688	22,614,238	\$ 163
2034	4,148	23,086,262	\$ 180
2035	4,654	23,547,350	\$ 198
2036	5,379	24,203,244	\$ 222
2037	6,595	24,625,674	\$ 268
2038	8,089	25,124,627	\$ 322
2039	9,577	25,683,188	\$ 373
2040	11,012	26,345,704	\$ 418
2041	12,056	26,821,098	\$ 450
2042	12,580	27,198,497	\$ 463
2043	12,993	27,861,007	\$ 466

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

26 Portfolio26

Year	Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,815,992	\$ 83
2026	1,634	20,213,483	\$ 81
2027	1,700	20,580,395	\$ 83
2028	1,677	20,925,422	\$ 80
2029	1,722	21,136,076	\$ 81
2030	1,833	21,444,012	\$ 86
2031	2,369	21,817,479	\$ 109
2032	2,945	22,256,257	\$ 132
2033	3,393	22,614,238	\$ 150
2034	3,859	23,086,262	\$ 167
2035	4,375	23,547,350	\$ 186
2036	5,124	24,203,244	\$ 212
2037	6,354	24,625,674	\$ 258
2038	7,858	25,124,627	\$ 313
2039	9,340	25,683,188	\$ 364
2040	10,938	26,345,704	\$ 415
2041	12,146	26,821,098	\$ 453
2042	12,638	27,198,497	\$ 465
	13,036	27,861,007	\$ 468

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

27 Portfolio27

Year	Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,815,992	\$ 83
2026	1,629	20,213,483	\$ 81
2027	1,705	20,580,395	\$ 83
2028	1,685	20,925,422	\$ 81
2029	1,742	21,136,076	\$ 82
2030	1,829	21,444,012	\$ 85
2031	2,446	21,817,479	\$ 112
2032	3,149	22,256,257	\$ 141
2033	3,592	22,614,238	\$ 159
2034	4,050	23,086,262	\$ 175
2035	4,554	23,547,350	\$ 193
2036	5,279	24,203,244	\$ 218
2037	6,494	24,625,674	\$ 264
2038	7,997	25,124,627	\$ 318
2039	9,513	25,683,188	\$ 370
2040	10,941	26,345,704	\$ 415
2041	11,974	26,821,098	\$ 446
2042	12,481	27,198,497	\$ 459
	12,890	27,861,007	\$ 463

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

28 Portfolio28			
Year	Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,815,992	\$ 83
2026	1,629	20,213,483	\$ 81
2027	1,705	20,580,395	\$ 83
2028	1,685	20,925,422	\$ 81
2029	1,766	21,136,076	\$ 84
2030	1,860	21,444,012	\$ 87
2031	2,479	21,817,479	\$ 114
2032	3,009	22,256,696	\$ 135
2033	3,023	22,614,676	\$ 134
2034	3,185	23,086,700	\$ 138
2035	3,648	23,547,788	\$ 155
2036	4,381	24,203,683	\$ 181
2037	5,616	24,626,112	\$ 228
2038	7,116	25,125,065	\$ 283
2039	8,626	25,683,626	\$ 336
2040	10,048	26,346,143	\$ 381
2041	11,046	26,821,536	\$ 412
2042	11,584	27,198,935	\$ 426
2043	11,951	27,861,445	\$ 429

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

29 Portfolio29			
Year	Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,815,992	\$ 83
2026	1,629	20,213,483	\$ 81
2027	1,705	20,580,395	\$ 83
2028	1,632	20,925,422	\$ 78
2029	1,870	21,136,076	\$ 88
2030	1,912	21,444,012	\$ 89
2031	2,499	21,817,479	\$ 115
2032	3,202	22,256,257	\$ 144
2033	3,641	22,614,238	\$ 161
2034	4,100	23,086,262	\$ 178
2035	4,606	23,547,350	\$ 196
2036	5,328	24,203,244	\$ 220
2037	6,541	24,625,674	\$ 266
2038	8,033	25,124,627	\$ 320
2039	9,529	25,683,188	\$ 371
2040	10,955	26,345,704	\$ 416
2041	11,987	26,821,098	\$ 447
2042	12,488	27,198,497	\$ 459
2043	12,893	27,861,007	\$ 463

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

30 Portfolio30			
Year	Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,815,992	\$ 83
2026	1,629	20,213,483	\$ 81
2027	1,705	20,580,395	\$ 83
2028	1,563	20,925,422	\$ 75
2029	1,911	21,136,076	\$ 90
2030	1,990	21,444,012	\$ 93
2031	2,448	21,817,479	\$ 112
2032	3,132	22,256,257	\$ 141
2033	3,570	22,614,238	\$ 158
2034	4,042	23,086,262	\$ 175
2035	4,548	23,547,350	\$ 193
2036	5,257	24,203,244	\$ 217
2037	6,459	24,625,674	\$ 262
2038	7,951	25,124,627	\$ 316
2039	9,471	25,683,188	\$ 369
2040	10,898	26,345,704	\$ 414
2041	11,931	26,821,098	\$ 445
2042	12,361	27,198,497	\$ 454
2043	12,653	27,861,007	\$ 454

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

31 Portfolio31			
Year	Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,815,992	\$ 83
2026	1,629	20,213,483	\$ 81
2027	1,705	20,580,395	\$ 83
2028	1,684	20,925,422	\$ 80
2029	1,766	21,136,076	\$ 84
2030	1,877	21,444,012	\$ 88
2031	2,551	21,817,479	\$ 117
2032	3,249	22,256,257	\$ 146
2033	3,688	22,614,238	\$ 163
2034	4,148	23,086,262	\$ 180
2035	4,654	23,547,350	\$ 198
2036	5,378	24,203,244	\$ 222
2037	6,594	24,625,674	\$ 268
2038	8,088	25,124,627	\$ 322
2039	9,577	25,683,188	\$ 373
2040	11,012	26,345,704	\$ 418
2041	12,044	26,821,098	\$ 449
2042	12,470	27,198,497	\$ 458
2043	12,712	27,861,007	\$ 456

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

32 Portfolio32			
Year	Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,815,992	\$ 83
2026	1,629	20,213,483	\$ 81
2027	1,705	20,580,395	\$ 83
2028	1,684	20,925,422	\$ 80
2029	1,766	21,136,076	\$ 84
2030	1,877	21,444,012	\$ 88
2031	2,550	21,817,479	\$ 117
2032	3,249	22,256,257	\$ 146
2033	3,688	22,614,238	\$ 163
2034	4,148	23,086,262	\$ 180
2035	4,654	23,547,350	\$ 198
2036	5,379	24,203,244	\$ 222
2037	6,595	24,625,674	\$ 268
2038	8,089	25,124,627	\$ 322
2039	9,577	25,683,188	\$ 373
2040	11,012	26,345,704	\$ 418
2041	12,056	26,821,098	\$ 450
2042	12,580	27,198,497	\$ 463
2043	12,993	27,861,007	\$ 466

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

33 Portfolio33			
Year	Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,816,255	\$ 83
2026	1,629	20,213,921	\$ 81
2027	1,705	20,581,008	\$ 83
2028	1,685	20,926,213	\$ 81
2029	1,768	21,137,040	\$ 84
2030	1,829	21,444,976	\$ 85
2031	2,716	21,818,443	\$ 124
2032	3,736	22,257,399	\$ 168
2033	4,178	22,615,815	\$ 185
2034	4,747	23,088,190	\$ 206
2035	5,542	23,549,540	\$ 235
2036	6,094	24,205,616	\$ 252
2037	7,359	24,628,302	\$ 299
2038	8,855	25,127,255	\$ 352
2039	10,383	25,685,904	\$ 404
2040	11,989	26,348,427	\$ 455
2041	13,279	26,823,814	\$ 495
2042	13,996	27,201,300	\$ 515
2043	14,338	27,863,986	\$ 515

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

34 Portfolio34			
Year	Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,816,255	\$ 83
2026	1,629	20,213,921	\$ 81
2027	1,705	20,581,008	\$ 83
2028	1,685	20,926,213	\$ 81
2029	1,768	21,137,040	\$ 84
2030	1,829	21,444,976	\$ 85
2031	2,639	21,818,531	\$ 121
2032	3,538	22,257,311	\$ 159
2033	4,185	22,615,727	\$ 185
2034	5,024	23,087,752	\$ 218
2035	5,976	23,548,840	\$ 254
2036	6,623	24,205,001	\$ 274
2037	7,579	24,627,776	\$ 308
2038	9,076	25,126,817	\$ 361
2039	10,532	25,685,378	\$ 410
2040	11,929	26,348,251	\$ 453
2041	13,387	26,823,726	\$ 499
2042	14,326	27,201,213	\$ 527
2043	14,457	27,863,723	\$ 519

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

35 Portfolio35			
Year	Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,815,992	\$ 83
2026	1,649	20,213,483	\$ 82
2027	1,744	20,580,395	\$ 85
2028	1,721	20,925,422	\$ 82
2029	1,798	21,136,076	\$ 85
2030	1,954	21,444,012	\$ 91
2031	2,218	21,817,479	\$ 102
2032	2,429	22,256,257	\$ 109
2033	2,610	22,614,238	\$ 115
2034	2,967	23,086,262	\$ 129
2035	3,353	23,547,350	\$ 142
2036	3,979	24,203,244	\$ 164
2037	5,194	24,625,674	\$ 211
2038	6,724	25,124,627	\$ 268
2039	8,262	25,683,188	\$ 322
2040	9,703	26,345,704	\$ 368
2041	10,742	26,821,098	\$ 401
2042	11,221	27,198,497	\$ 413
2043	11,589	27,861,007	\$ 416

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

36 Portfolio36			
Year	Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,815,992	\$ 83
2026	1,692	20,125,883	\$ 84
2027	1,773	20,405,195	\$ 87
2028	1,787	20,661,902	\$ 86
2029	1,856	20,785,676	\$ 89
2030	2,002	21,006,012	\$ 95
2031	2,332	21,379,479	\$ 109
2032	3,015	21,817,057	\$ 138
2033	3,456	22,176,238	\$ 156
2034	3,915	22,648,262	\$ 173
2035	4,423	23,109,350	\$ 191
2036	5,172	23,764,044	\$ 218
2037	6,384	24,187,674	\$ 264
2038	7,862	24,686,627	\$ 318
2039	9,343	25,245,188	\$ 370
2040	10,776	25,906,504	\$ 416
2041	11,808	26,383,098	\$ 448
2042	12,315	26,760,497	\$ 460
2043	12,726	27,423,007	\$ 464

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

37 Portfolio37			
Year	Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,815,992	\$ 83
2026	1,663	20,169,683	\$ 82
2027	1,727	20,492,795	\$ 84
2028	1,706	20,793,662	\$ 82
2029	1,786	20,960,876	\$ 85
2030	1,875	21,225,012	\$ 88
2031	2,441	21,598,479	\$ 113
2032	3,130	22,036,657	\$ 142
2033	3,569	22,395,238	\$ 159
2034	4,029	22,867,262	\$ 176
2035	4,536	23,328,350	\$ 194
2036	5,285	23,983,644	\$ 220
2037	6,498	24,406,674	\$ 266
2038	7,980	24,905,627	\$ 320
2039	9,457	25,464,188	\$ 371
2040	10,893	26,126,104	\$ 417
2041	11,939	26,602,098	\$ 449
2042	12,467	26,979,497	\$ 462
2043	12,881	27,642,007	\$ 466

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

Year	38 Portfolio38 Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,815,992	\$ 83
2026	2,042	20,073,498	\$ 102
2027	1,993	20,326,706	\$ 98
2028	1,966	20,557,022	\$ 96
2029	2,160	20,637,457	\$ 105
2030	2,061	20,831,688	\$ 99
2031	2,277	21,205,155	\$ 107
2032	2,922	21,642,255	\$ 135
2033	3,360	22,001,914	\$ 153
2034	3,821	22,473,938	\$ 170
2035	4,329	22,935,026	\$ 189
2036	5,079	23,589,242	\$ 215
2037	6,291	24,013,350	\$ 262
2038	7,773	24,512,303	\$ 317
2039	9,247	25,070,864	\$ 369
2040	10,679	25,731,702	\$ 415
2041	11,714	26,208,774	\$ 447
2042	12,223	26,586,173	\$ 460
2043	12,637	27,248,683	\$ 464

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

Year	39 Portfolio39 Total revenue requirement to serve Oregon customers (million nominal \$)	Total Oregon retail sales (MWh)	Total revenue requirement to serve Oregon customers, divided by the total retail sales in Oregon (nominal \$/MWh)
2019			
2020			
2021			
2022			
2023			
2024	1,566	19,544,372	\$ 80
2025	1,648	19,815,992	\$ 83
2026	1,761	20,108,363	\$ 88
2027	1,805	20,387,675	\$ 89
2028	1,779	20,644,334	\$ 86
2029	1,872	20,759,396	\$ 90
2030	1,995	20,979,732	\$ 95
2031	2,156	21,353,199	\$ 101
2032	2,318	21,790,705	\$ 106
2033	2,488	22,149,958	\$ 112
2034	2,779	22,621,982	\$ 123
2035	3,163	23,083,070	\$ 137
2036	3,783	23,737,692	\$ 159
2037	4,938	24,161,394	\$ 204
2038	6,456	24,660,347	\$ 262
2039	7,983	25,218,908	\$ 317
2040	9,423	25,880,152	\$ 364
2041	10,464	26,356,818	\$ 397
2042	10,956	26,734,217	\$ 410
2043	11,340	27,396,727	\$ 414

PGE note:

All cost figures do not include costs from the rest of the company such as grid modernization, A&G, wildfire mitigation, or T&D costs. Yearly cost impacts do not reflect actual customer prices because they do include proxy resource generation costs and do not incorporate cost changes across PGE.

Yearly costs are highly sensitive to assumptions of generic resources costs, especially after 2030. All 2030-2040 costs are modeling outputs only and should not be interpreted as projections of actual costs to serve customers due to uncertainty about actual technology availability and costs in that timeframe.

Instructions

Provide, for renewable energy generated by or contracted to the utility in the Preferred Portfolio under the Reference Case over the entire analysis horizon (at least 20 years), the following information.:

- RECs that are expected to be retired on behalf of Oregon customer load for RPS compliance in Oregon
- RECs that are expected to be retired on behalf of Oregon customer load for voluntary sales
- RECs that are expected to be retired on behalf of customer load in a different state where the utility serves customers (for either compliance or voluntary sales)
- RECs that are expected to be banked for future Oregon compliance
- RECs that are expected to be banked for compliance in a different state
- The approximate number of MWhs not associated with RECs reported above that are generated from renewable energy technologies

UM 2225 Order Summary/Rubric references: J.6(a)-(b)

Year	Portfolio40						Additional renewable generation (MWh)
	Renewable Energy Credits (MWh) Retired for Oregon RPS compliance	Renewable Energy Credits (MWh) Retired for Oregon customer voluntary sales	Renewable Energy Credits (MWh) Retired in another state	Renewable Energy Credits (MWh) Banked for future Oregon RPS compliance	Renewable Energy Credits (MWh) Banked for future compliance in another state		
2023	3,067,230	748,892	n/a	n/a	n/a	n/a	
2024	3,136,962	2,030,532	n/a	37,239	n/a	n/a	
2025	4,297,936	2,031,486	n/a	339,606	n/a	n/a	
2026	4,383,851	2,042,553	n/a	1,241,610	n/a	n/a	
2027	4,463,161	2,053,642	n/a	2,717,669	n/a	n/a	
2028	4,537,773	2,069,373	n/a	3,768,717	n/a	n/a	
2029	4,583,302	2,075,891	n/a	5,858,432	n/a	n/a	
2030	6,050,460	2,087,049	n/a	5,693,497	n/a	n/a	
2031	6,155,154	2,082,554	n/a	7,195,240	n/a	n/a	
2032	6,278,210	2,082,757	n/a	7,959,636	n/a	n/a	
2033	6,378,492	2,073,631	n/a	8,706,720	n/a	n/a	
2034	6,510,781	2,069,203	n/a	9,490,862	n/a	n/a	
2035	8,537,154	2,064,798	n/a	8,372,051	n/a	n/a	
2036	8,773,531	2,065,061	n/a	9,232,514	n/a	n/a	
2037	8,925,665	1,633,236	n/a	10,729,055	n/a	n/a	
2038	9,105,446	1,403,058	n/a	11,787,377	n/a	n/a	
2039	9,306,686	1,188,049	n/a	12,813,803	n/a	n/a	
2040	10,606,055	1,191,304	n/a	12,629,997	n/a	n/a	
2041	10,796,277	1,188,049	n/a	13,766,588	n/a	n/a	
2042	10,931,872	1,188,049	n/a	14,063,737	n/a	n/a	
2043	11,187,974	1,188,049	n/a	14,545,227	n/a	n/a	

sources: ligations by year from Portfolio Summary*hours in year

RECs of Community Solar PPA, GFI, GFI Phase II (Voluntary RECs)

n/a ted + Infinite RECs - retired RECs for Oregon RPS compliance - GFIs

n/a

n/a