



Portland City Council Work Session

Hydroelectric Power Contracting

Portland Hydroelectric Bureau
August 8, 2017



Presentation Outline

- I. Background
- II. Current Agreement
- III. New Agreement
- IV. Risks and Risk Mitigation
- V. Financial Analysis

Background

- City developed hydroelectric generating facilities—Portland Hydroelectric Project (PHP)—in early 1980s
- Power Sales Agreement with Portland General Electric (PGE), started generating power in 1982
- Operating under that agreement for 35 years
- City has invested a total of \$55 million in facility; \$14 million net revenue generated to general fund
- \$1.8 million positive fund balance

Background

Hydroelectric Bureau

- Separate Bureau, not the Water Bureau
- Has reported to the Water Bureau since 1989, but *not* ratepayer funded
- PHP construction financed by City revenue bonds, secured solely by PGE
- Bonds were paid off in Oct 2016, currently debt free
- Net revenue from power sales went to General Fund

Background

PHP Facilities

- Dam 1: 24 megawatt powerhouse



Background

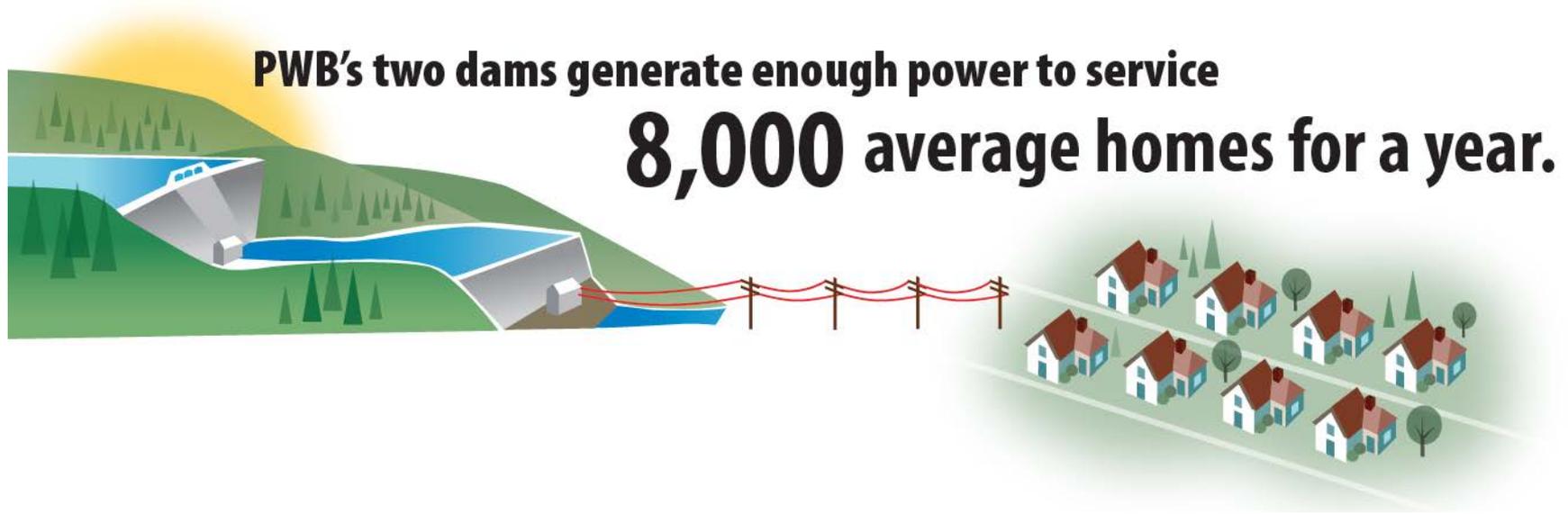
PHP Facilities

- Dam 2: 12 megawatt powerhouse



Background

PHP Facilities



Background

Water & Hydro Nexus

1. Water Supply

2. Fish

3. Power



Current Agreement

- Power Sales Agreement: 1982–2017
- PGE agreement covered all elements
- Proceeds paid debt service, admin costs, and net revenue
- PGE bore all of risk

Current Agreement

- Expenses were \$4.0M–\$6.0M per year
- Net revenues averaged ~\$400,000 per year
- ~\$14.0M returned to General Fund over 35 years

New Agreement

- PGE to continue to purchase power from the project
- PGE no longer to operate or maintain power plant
- PGE to maintain powerlines

New Agreement

Council Considerations

- Surrender Generation License?

—OR—

- Continue to generate and sell power?

New Agreement

Council Considerations

- City and PGE have entered into non-disclosure agreement
- City is receiving favorable competitive rates as an energy market participant
- Non-disclosure agreements exempt under Oregon public records law (ORS 192.502(26))
- PGE has similar non-disclosure agreements with other public entities (e.g. Grant County PUD, Puget Sound Energy, Chelan County PUD, EWEB, PacificCorp.)

New Agreement

Proposed Power Generation Agreements

- Four agreements needed to generate, sell, and deliver power
 - 1) O&M Agreement (Expense) *APPROVED, 7/20/2017*

2) Power Purchase Agreement (Revenue)

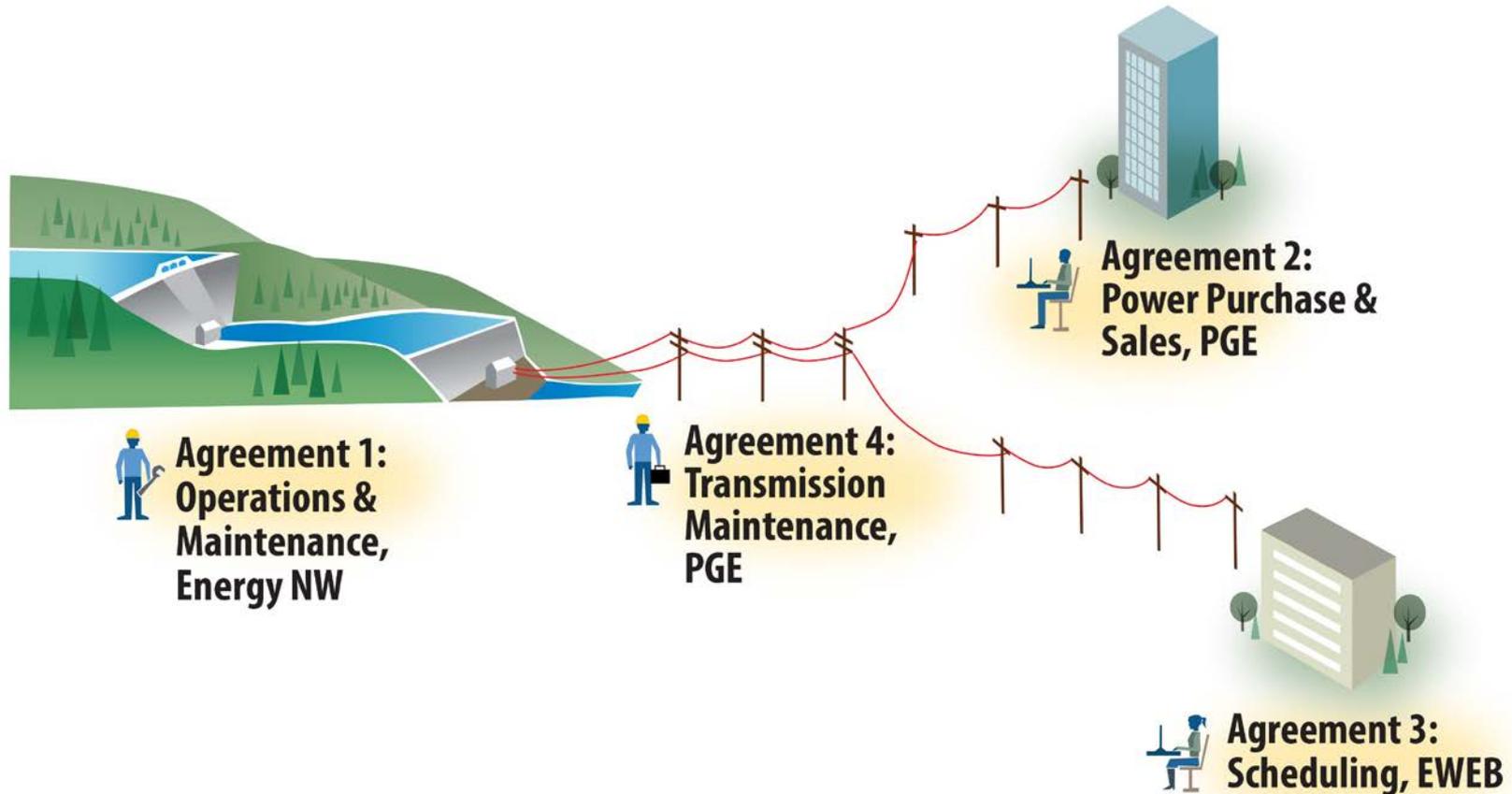
3) Scheduling Agreement (Expense)

4) Transmission Maintenance Agreement (Expense)

August 16
Council
Decision

New Agreement

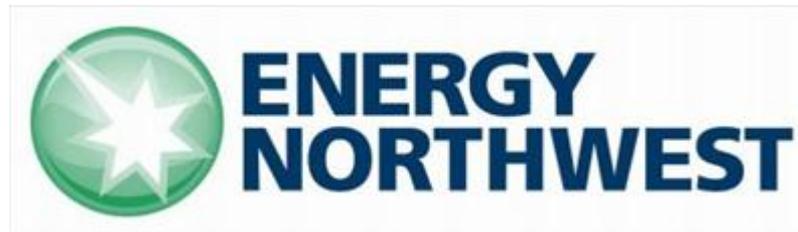
Proposed Power Generation Agreements



New Agreement 1

O&M Agreement

- **Approved by Council July 20, 2017**
- With: Energy Northwest
- Length: 5 years, then annual renewals
- Value: \$8,000,000



New Agreement 2

Power Purchase Agreement

- With: Portland General Electric
- Length: 15 years
- Value: Variable
 - Annual revenue varies with generation, market conditions



New Agreement 3

Scheduling Agreement

- With: Eugene Water and Electric Board
- Length: 5 years, then annual renewals
- Value: \$420,000



New Agreement 4

Transmission Maintenance Agreement

- With: Portland General Electric / PGDS
- Length: 5 years, plus two 5-yr renewals
- Value: \$1,000,000



Risks and Financial Analysis

- Types of risks
- Financial analysis
- Stress test evaluations

Risks and Financial Analysis

Types of Risks

1. Weather
2. Water
3. Price
4. Operational
5. Regulatory

Financial Analysis

Revenue

- Maximize revenue
- Revenue will be variable
- Contract price will average above market price

Financial Analysis

Expenses

- Expenses will start at \$2.2M–2.8M/year
- With inflation they grow to \$4.2M/year in the last year of the PPA
- Excess net revenue would be used for repair, rehabilitation and “sunny day” funds
- Over the life of the agreement, revenues expected to exceed expenses by \$3.0M–\$8.5M

Financial Analysis

Mitigation

- Greatest risk would be when prices are high during a low-water year
- Risk offset by selling extra (“as-available”) energy into the market at the higher market price. Creates safety net.
- “Under delivery” damages only apply when wholesale prices exceed contract prices and promised amount is not delivered

Financial Analysis

“Under Delivery” Damages

	Low Price	Average Price	High Price
High Water	No risk	Extremely Low risk	Low risk
Average Water	Extremely Low risk	Low risk	Moderate risk
Low water	Low risk	Moderate risk	Moderate to High risk

Financial Analysis

Low Net Revenue

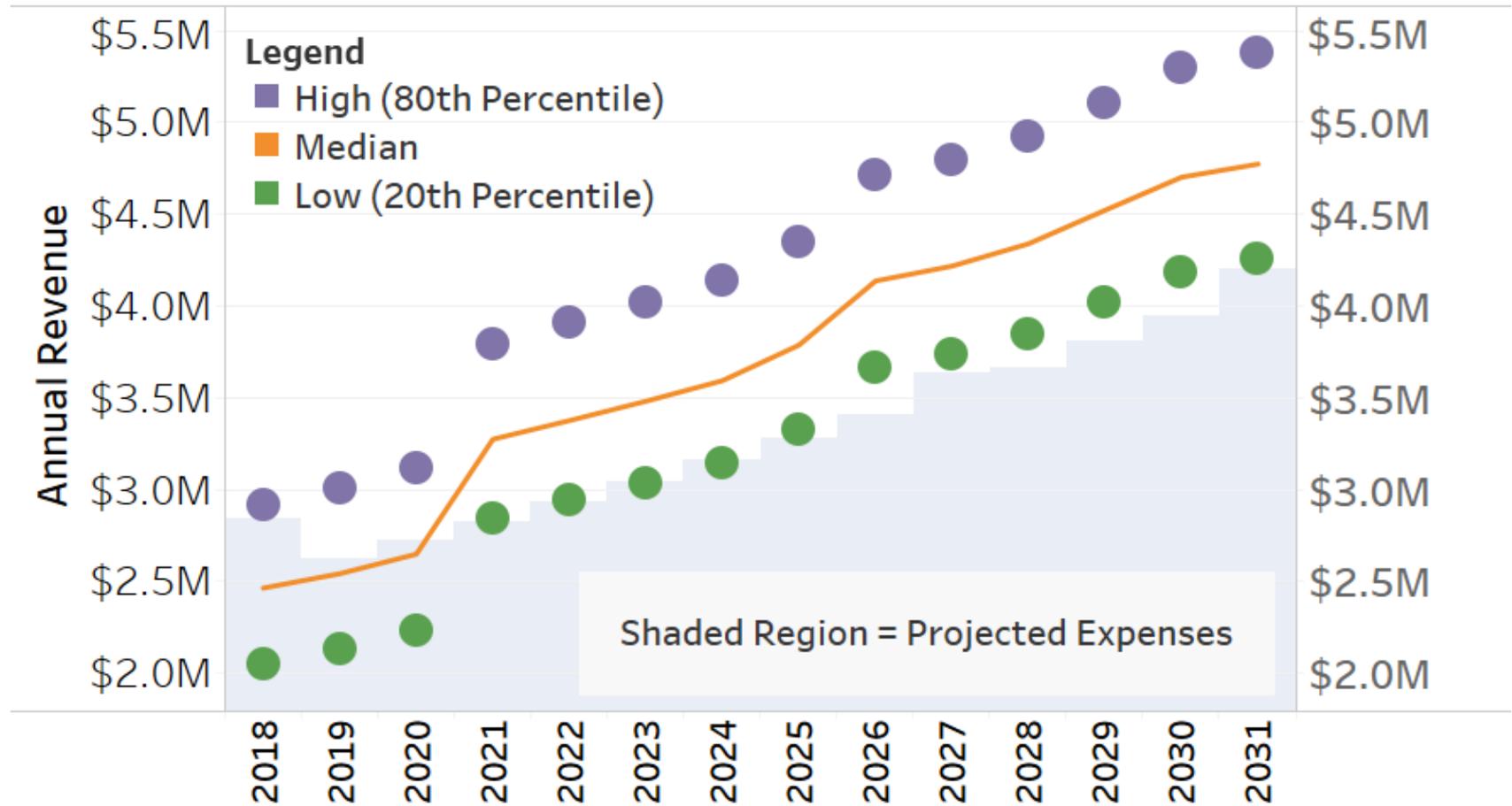
	Low Price	Average Price	High Price
High Water	Extremely Low risk	Extremely Low risk	No risk
Average Water	Moderate risk	Low risk	Low risk
Low water	High risk	High risk	High risk

Net Revenue = Power Sales Revenue – Expenses – “Under Delivery” Damages

Note: Low Net Revenue risk is different than “Under Delivery” Damages risk

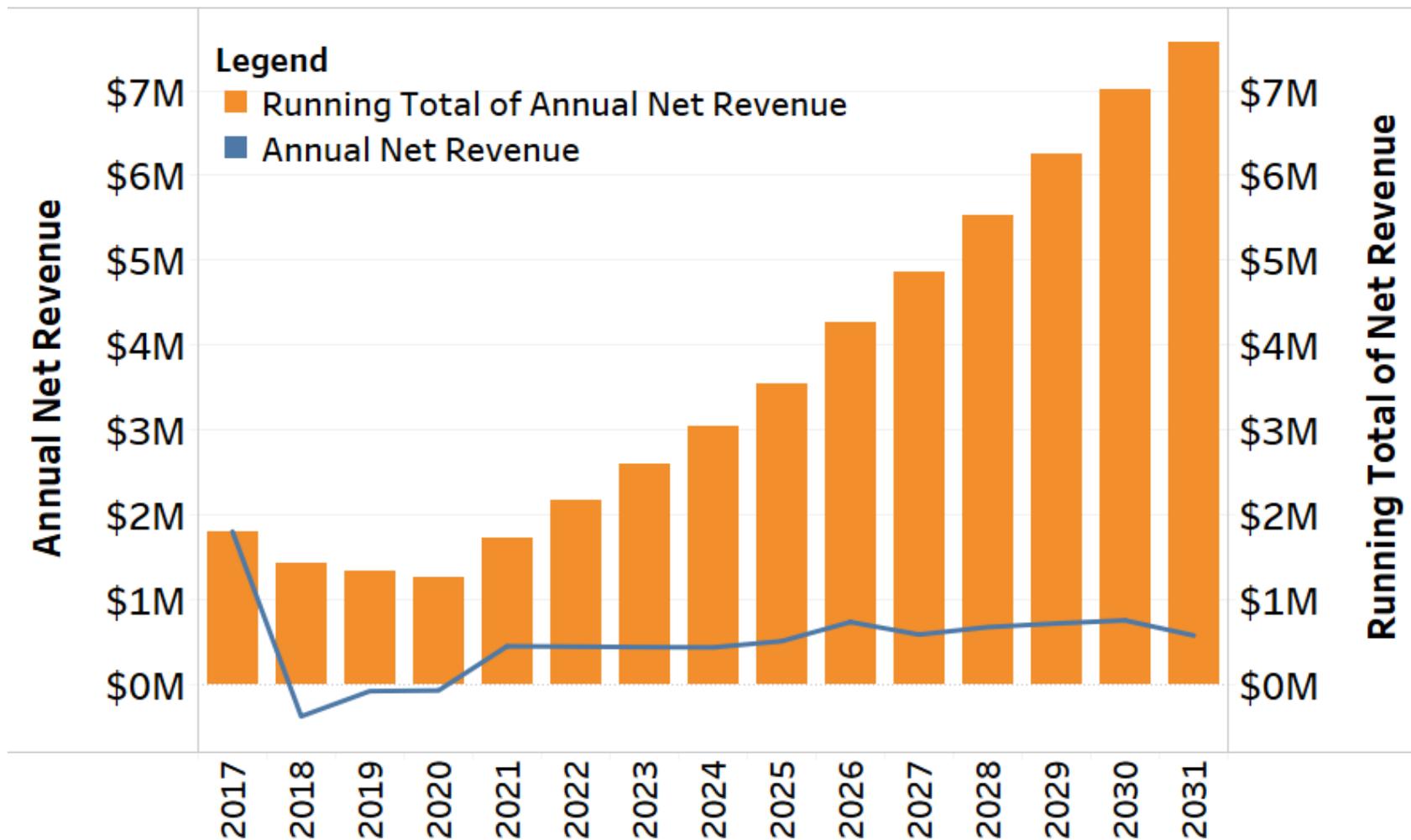
Financial Analysis

Annual Revenue & Expenses



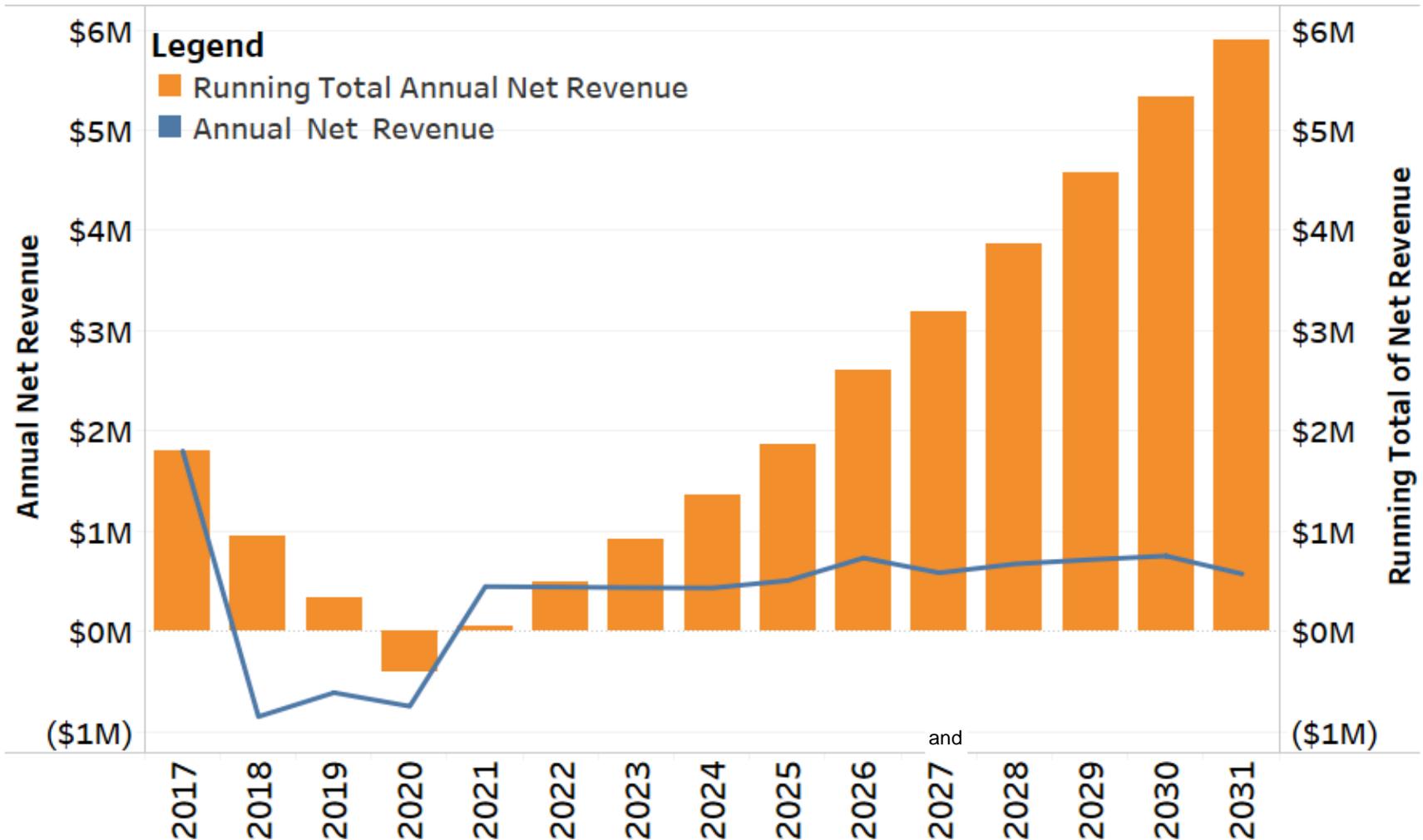
Financial Analysis

Stress Test—Base Case

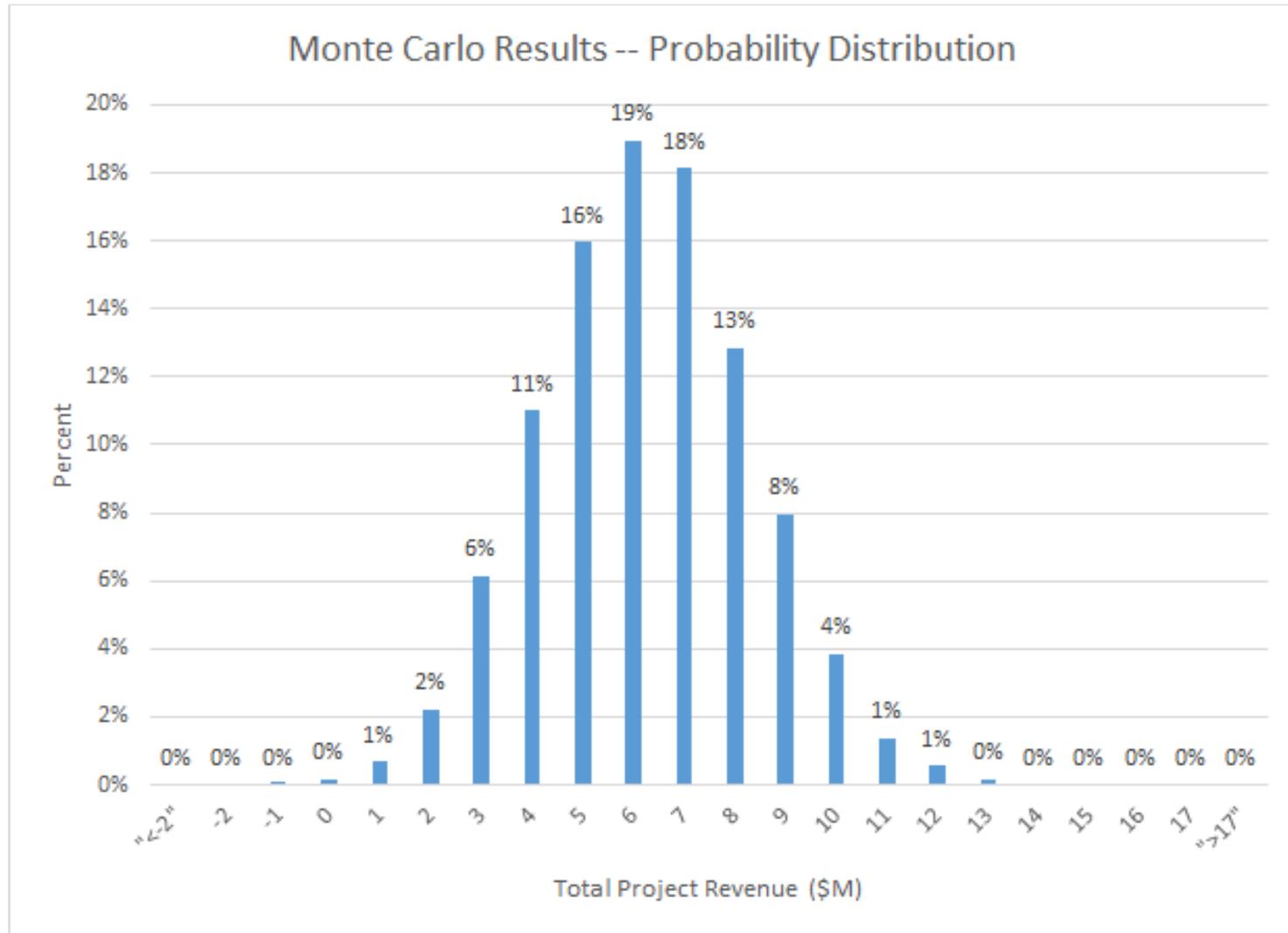


Financial Analysis

Stress Test—Worst Case



How Much Net Revenue will PHP Earn from 2018–2031?



Summary

- Net-positive deal
 - Estimated revenues projected to exceed expenses by \$5.8 million over 15 years
 - Ending fund balance: ~\$7.6 million
 - Greater than 99% probability of positive net revenues
- Multiple mitigation tools in the contract
- Maintain control of the water supply
- Produce energy from a renewable source

Next Steps

- August 16: Council Presented with Contracts
 1. PGE PPA
 2. EWEB Scheduling
 3. PGE Transmission Maintenance
- Oct–Dec: Interfund Loan Requirement
 - If needed
 - Timing of expenses

Questions?