



REDWOOD COAST
EnergyAuthority

Potential Impacts of Additional Biomass Power Procurement on Achievement of CCE Program Targets

Presentation for
RCEA Board of Directors
November 2017

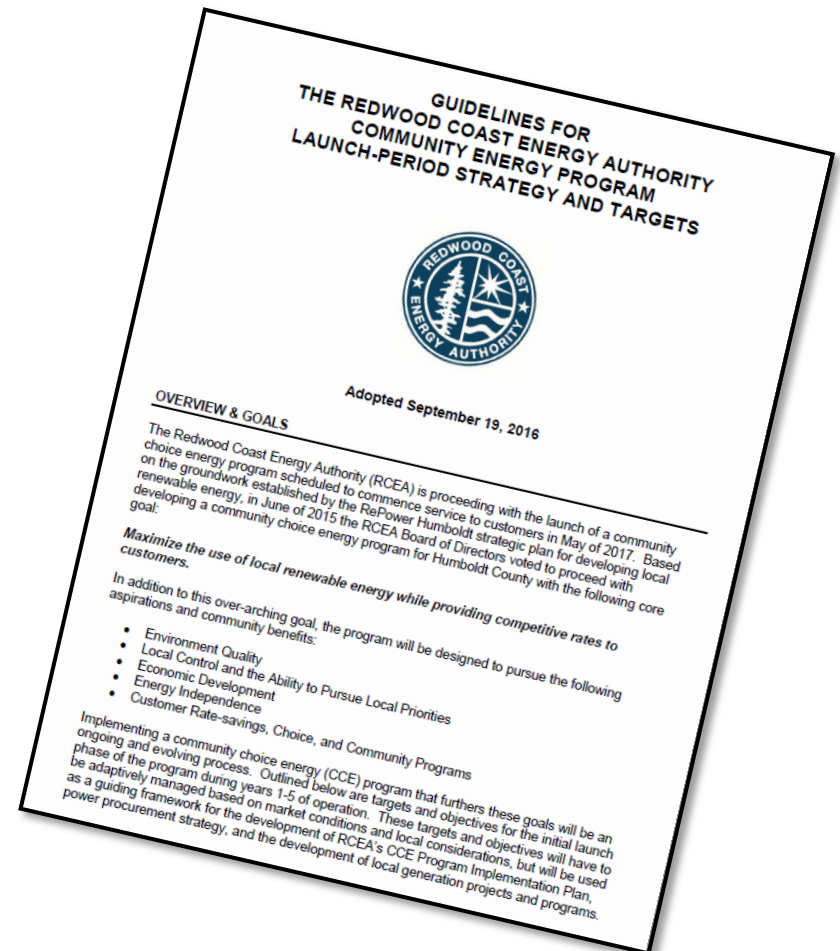
Topics

- Review of key CCE targets set by Board in Sept. 2016 and progress to date
- Review of CCE program headroom for 2017
- Projection of 2018 program headroom
- Discussion of potential impact of additional biomass power procurement on program headroom

Review of Key Targets: Overview

Source: *Guidelines for the Redwood Coast Energy Authority Community Energy Program Launch-Period Strategy and Targets*, adopted September 2016

- Financial performance
- Power objectives
- Existing renewables
- New solar
- New other renewables
- Customer programs



Review of Key Targets: Financial

Source: *Guidelines for the Redwood Coast Energy Authority Community Energy Program Launch-Period Strategy and Targets*, adopted September 2016

- Rate savings at least \$2M per year – set generation rates 2.7% below PG&E’s across the board. Projected 2017 customer rate savings exceed \$1M.
- Reserves of \$35M in first five years (at least \$10M under “adverse market conditions”) – on track to achieve over \$5M in reserves for first 8 months of operation (May-Dec 2017)

Review of Key Targets: Power Objectives

Source: *Guidelines for the Redwood Coast Energy Authority Community Energy Program Launch-Period Strategy and Targets*, adopted September 2016

- At least 5% more renewables than PG&E mix – surpassed with 42% renewables for 2017, vs 33% for PG&E in 2016 (PG&E's 2017 portfolio not yet reported)
- GHG emissions at least 5% lower than PG&E's – with 80%+ fossil-fuel-free power content overall, this target is expected to be surpassed in 2017

Review of Key Targets: Existing Renewables

Source: Guidelines for the Redwood Coast Energy Authority Community Energy Program Launch-Period Strategy and Targets, adopted September 2016

- Biomass target “around 20 MW...about 15% of total RCEA power portfolio” – HRC contract for 5 MW fixed-rate contract plus additional generation at day-ahead pricing expected to result in 12% local biomass in 2017 portfolio; expected to hit 15% target in 2018 assuming some over-generation as in 2017
- Existing small hydro target of 2 MW – no procurement to date

Review of Key Targets: New Local Solar Power

Source: *Guidelines for the Redwood Coast Energy Authority Community Energy Program Launch-Period Strategy and Targets*, adopted September 2016

- Feed-in tariff – projected at \$80-\$100/MWh, portfolio allocation of 6 MW – not developed yet; City of Arcata and others have expressed interest
- Utility-scale solar: 5 MW by 2018, 15 MW by year 5 (2022) – 2 MW EPIC project at ACV if funded; exploring additional project opportunities identified through solar request for information (solicitation still open)

Review of Key Targets: New Other Renewables

Source: Guidelines for the Redwood Coast Energy Authority Community Energy Program Launch-Period Strategy and Targets, adopted September 2016

- New local on-shore wind – RCEA plans to assess possibility for up to 50 MW on Bear River Ridge (revisit Shell project)
- New local small-scale hydroelectric – HSU study identified opportunities on Green Diamond property
- Offshore wind – MOU with Principle Power and moving forward with assessing feasibility for project off Humboldt Bay
- Wave energy – WaveConnect and CalWave studies identified local potential; currently on hold

Review of Key Targets: Customer Programs

Source: *Guidelines for the Redwood Coast Energy Authority Community Energy Program Launch-Period Strategy and Targets*, adopted September 2016

- Enhanced solar net metering (retail rate + \$0.01/kWh on net surplus generation) – program in place. As of November 2017, there are 1,018 participating accounts
- 100% renewable energy option – program in place, premium is \$0.01/kWh. As of November 2017, 701 customers or 1.1% of RCEA customers are opted up
- Up to \$1M/year for new programs – Staff is developing a proposal for a program to support developing solar for public agencies and critical facilities. RCEA will provide grant matching funds for the proposed ACV microgrid project, to be financed then recovered through power sales revenue

Looking ahead to 2018: key takeaways from TEA's model analysis

- All figures reported on accrual basis
 - Expected end of 2017 reserves will exceed \$5 million
- Forecasted supply costs increased about \$1.20/MWh since prior board meeting
 - Wholesale energy: ~\$1.10
 - RA: ~\$0.10
- Material change provision for HRC unlikely to trigger
 - 3% rate savings
 - \$2 million additional reserves
- Financially difficult to add additional DG Fairhaven while continuing current program goals and HRC
 - Net DG Fairhaven annual costs are roughly \$280,000/MW
- Stress-tested unexpected PCIA increase scenario resulted in an annual cost increase of over \$1 million
 - Material change provision will not trigger

Updated Headroom

2018 Headroom From 10/16/17 Board Presentation

| | \$/MWh | \$mm |
|---------------------|----------|----------|
| PG&E Gen | \$ 97.26 | \$ 67.91 |
| RCEA Cost* | \$ 90.04 | \$ 62.87 |
| Supply | \$ 52.35 | \$ 36.55 |
| O/H | \$ 6.29 | \$ 4.39 |
| PCIA+FF | \$ 31.40 | \$ 21.92 |
| Headroom | \$ 7.22 | \$ 5.04 |

Included Expenditures

| | | |
|-------------------------|----------|---------|
| 2.7% Gen Rate Reduction | \$ 2.60 | \$ 1.82 |
| 5->13 MW Biomass | Included | \$ 5.01 |
| 40% Renewable | Included | \$ 0.78 |
| 80% Non-Thermal Gen | Included | \$ 0.34 |
| Net Reserves | \$ 4.62 | \$ 3.15 |

Current 2018 Headroom

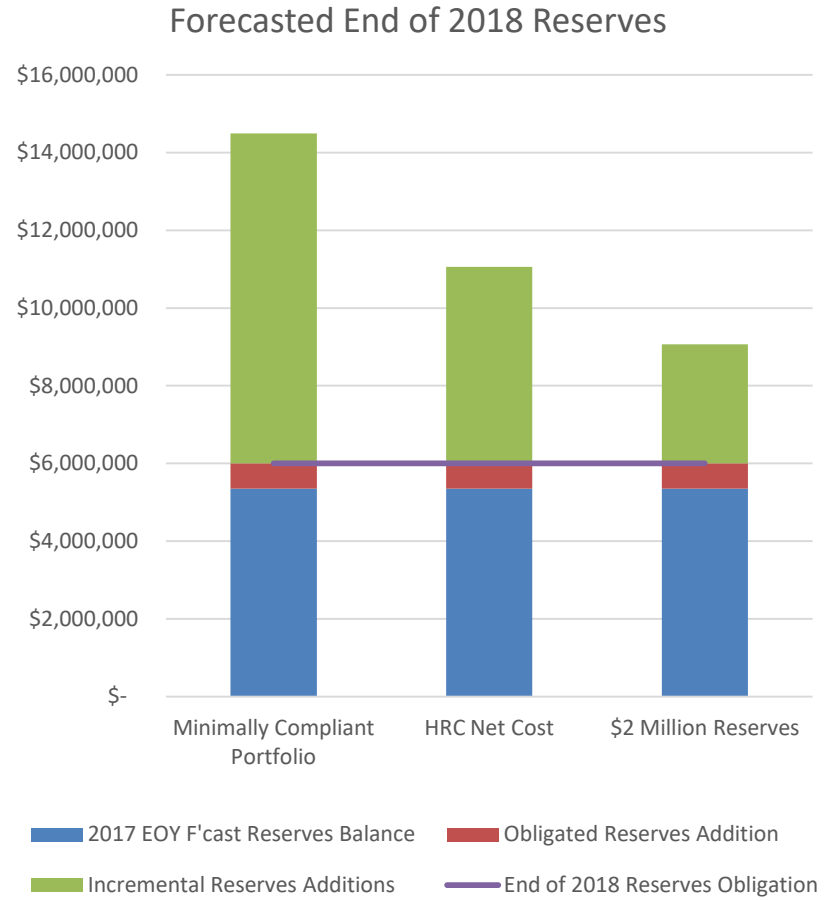
| | \$/MWh | \$mm |
|---------------------|----------|----------|
| PG&E Gen | \$ 97.46 | \$ 68.05 |
| RCEA Cost* | \$ 90.89 | \$ 63.46 |
| Supply | \$ 53.53 | \$ 37.37 |
| O/H | \$ 6.29 | \$ 4.39 |
| PCIA+FF | \$ 31.08 | \$ 21.70 |
| Headroom | \$ 6.57 | \$ 4.59 |

Included Expenditures

| | | |
|-------------------------|----------|---------|
| 2.7% Gen Rate Reduction | \$ 2.62 | \$ 1.83 |
| 13MW Biomass (net) | Included | \$ 3.43 |
| 40% Renewable | Included | \$ 0.49 |
| 80% Non-Thermal Gen | Included | \$ 0.61 |
| Net Reserves | \$ 3.94 | \$ 2.75 |

HRC Material Change Provision Test

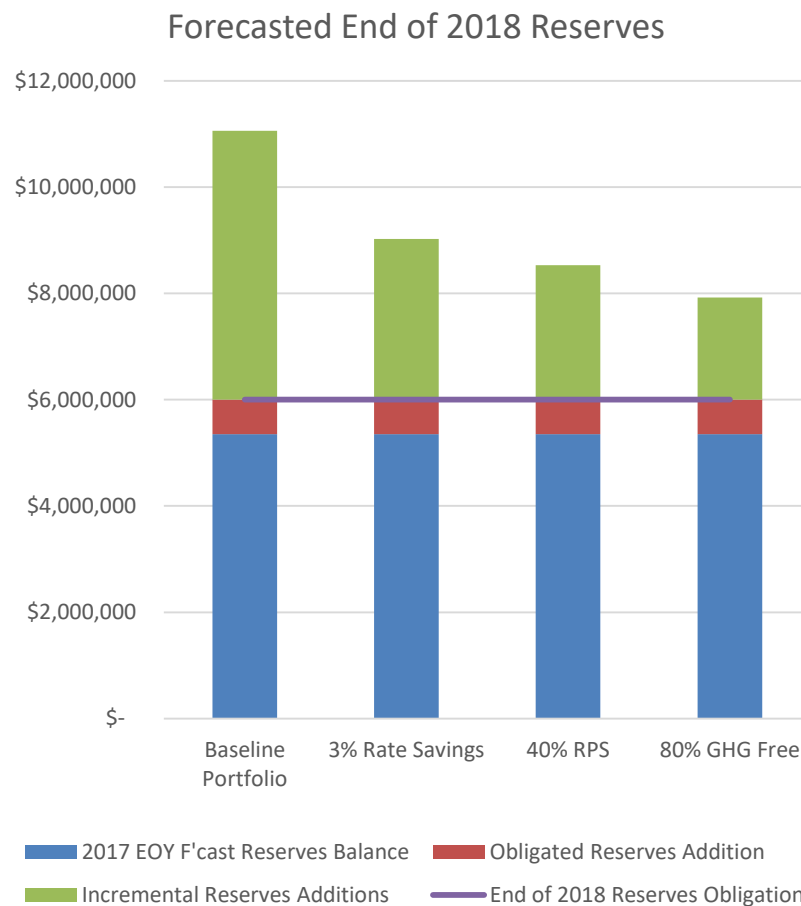
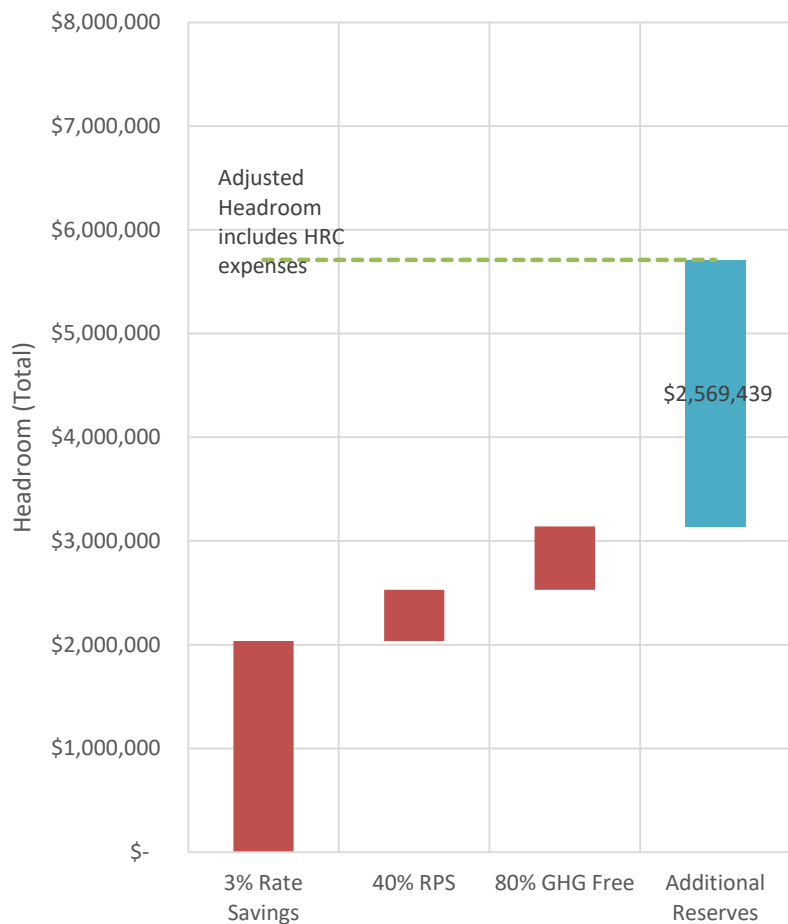
HRC contract as part of a portfolio that meets minimal RPS requirements should not trigger a material change



Minimally Compliant Portfolio includes: CPUC Mandated RPS (29% in 2018), no additional non-fossil fuel purchases, no biomass purchases

Allocation of Headroom

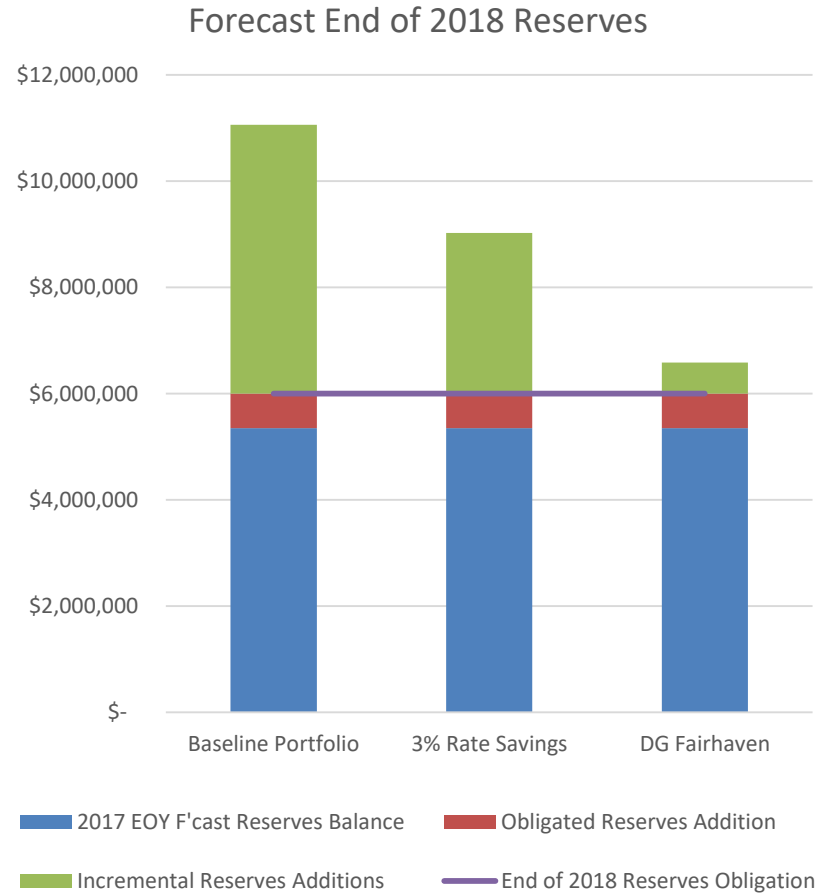
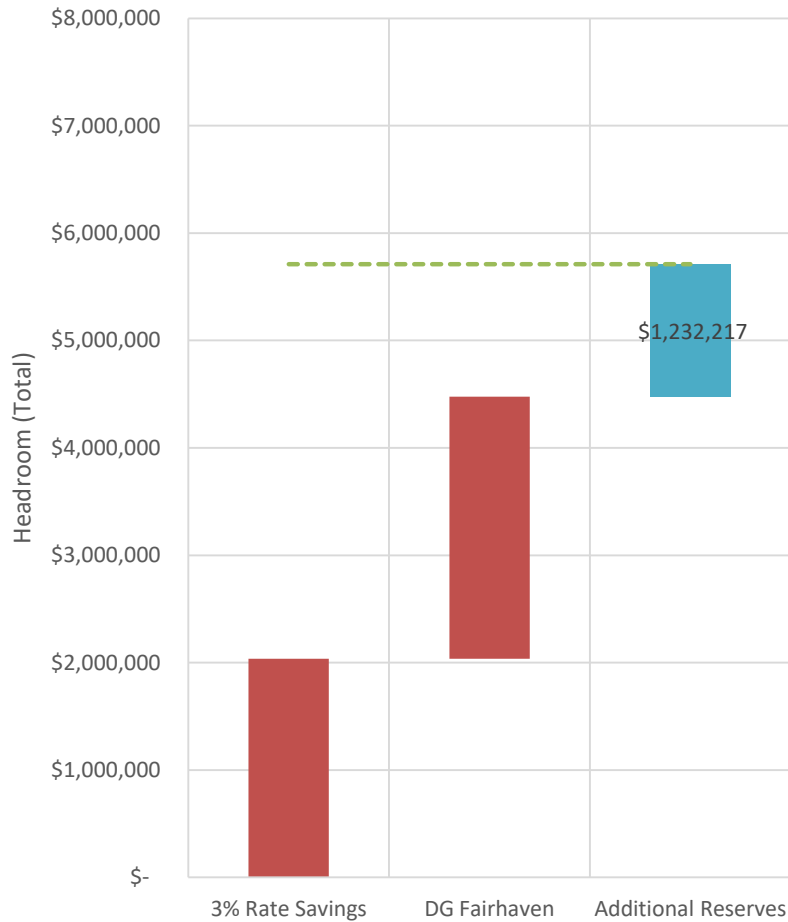
Continuation of 2017 Portfolio Goals (above RPS requirements)



Adjusted baseline includes: CPUC Mandated RPS (29% in 2018), no additional non-fossil fuel purchases, 5MW → 13.25MW biomass purchases

Allocation of Headroom

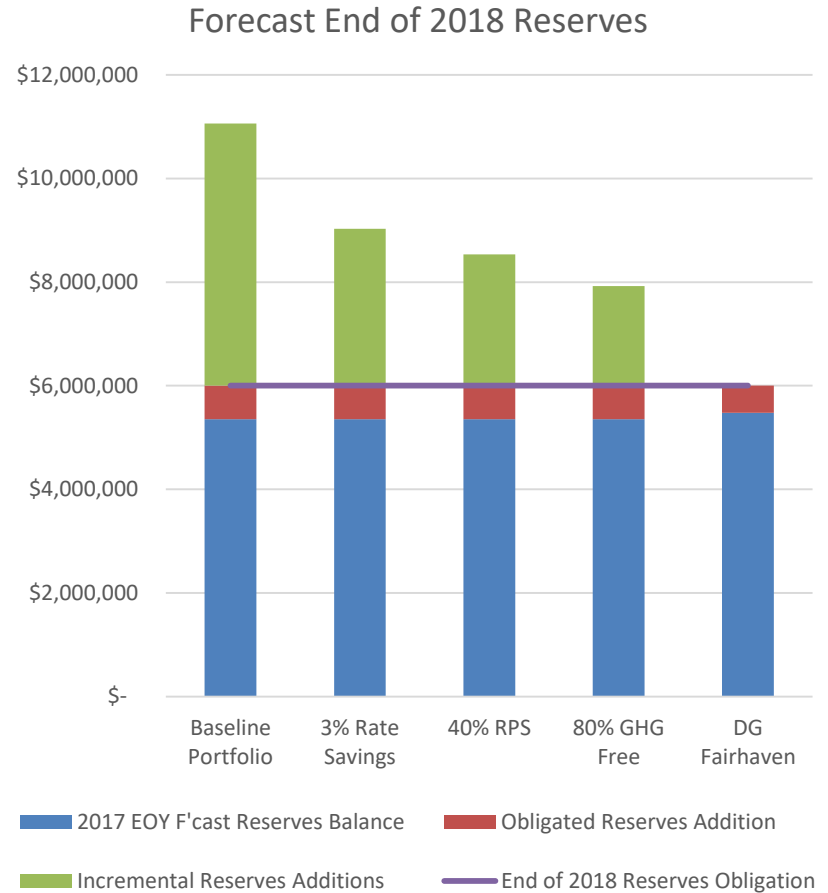
Biomass Priority (add DG Fairhaven contract to existing HRC contract)



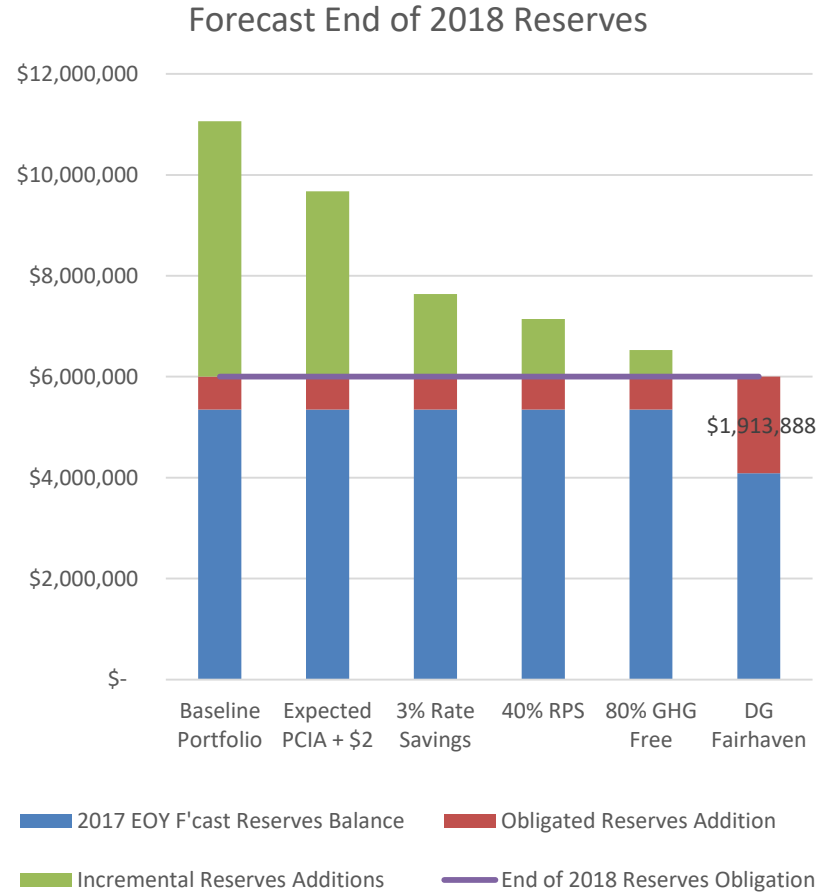
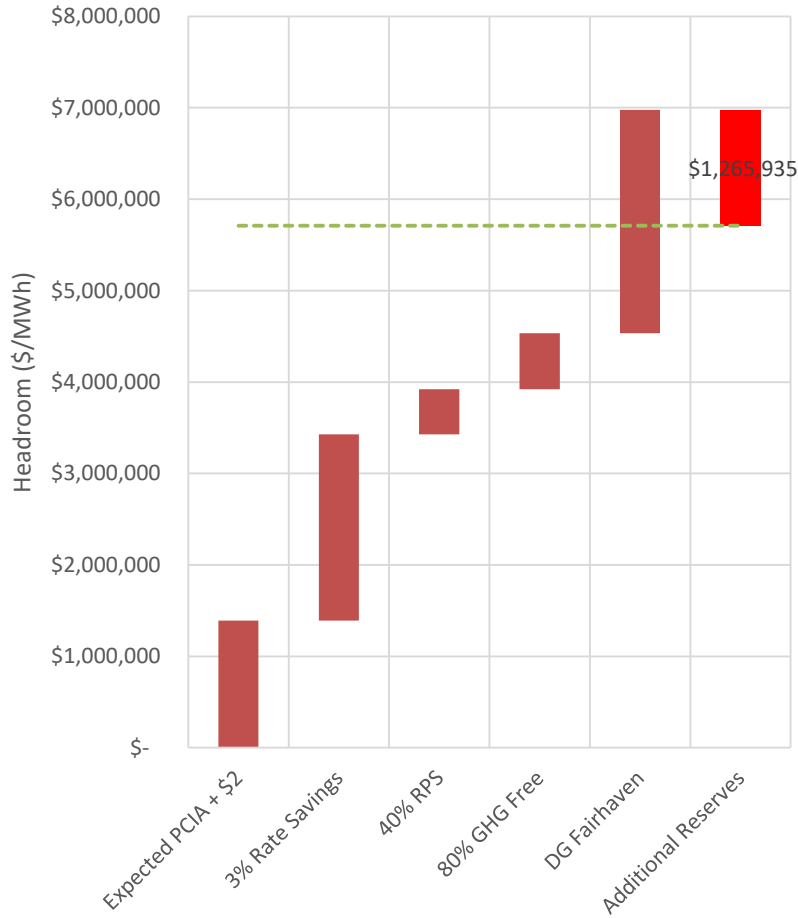
Assumes DG Fairhaven begins March 2018

Allocation of Headroom

Continuation of 2017 Portfolio Goals + DG Fairhaven



PCIA Stress Test



End of presentation