

## Current Aggregate Model Settings and Capability

### **Regular Rate Case**

With a regular rate case, the user sets a target equity return, and inputs either the interval between rate cases, or selects an 'earnings band' around the target return that will trigger a rate case. If a utility falls outside of the band, there will be a rate case in the following year.

All rate cases are 'current test year' which means that the revenue requirements in the rate case year are used to set the rates.

For purposes of the analysis, the rates are determined in two pieces; the fuel piece which covers energy and capacity costs, and the non-fuel piece which covers depreciation of assets, shareholder return, tax, DER program costs, and O&M.

For purposes of modeling, we assume a rate case year in the first year in all cases.

### **PBR**

If the user selects PBR rather than a rate case, the model will use 'revenue cap' PBR. The user sets an inflation factor, a productivity factor (X factor), and a general cost factor (Z factor). The user also selects an interval between rate cases in years. The model adjusts the revenue requirement between rate cases according to the following formula;

$$\text{Revenue}(t) = \text{Revenue}(t-1) * (1 + \text{inflation} + \text{Z-factor} - \text{X-factor})$$

Once the revenue requirement is calculated, the rates are set so that this amount of revenue is collected.

When it is time for a rate case, the rates are set so that it collects the revenue requirement, just as in a regular rate case.

### **Decoupling**

With decoupling selected, an adder to the 'non-fuel' rate is made to collect the 'non-fuel' costs, regardless of the change in sales. The decoupling mechanism assumed in the model works as follows;

$$\text{Non-fuel Adjustment} = (\text{Sales Forecasted} - \text{Sales Actual}) * \text{Non-fuel rate set at rate case}$$

Note that the way the decoupling mechanism is set up, it protects the utility from a change in sales, but not a change in costs.

### **Fuel Adjustment Clause**

The fuel adjustment clause can be set to True or False for each method of rate-setting in the model (regular rate case, PBR, or decoupling). When True, the fuel rate is set to collect exactly the energy and capacity costs of the utility in each year. When False, the fuel rate is set at the fuel rate determined in the prior rate case.

### **Forecast Sales**

The forecast sales is set by a base case sales (MWh) and escalated by a constant growth rate through the study period. The Forecast Sales is equal to the actual sales in the base case.

### **Actual Sales**

The actual sales is determined as an adjustment to the forecast sales. The actual sales are used to set new rates in a rate case test year, as well as to compute actual revenues. The actual sales are computed using the following formula;

$$\text{Actual Sales} = \text{Forecast Sales} - \text{Change in Sales from DER (EE or Behind-meter DG)}$$

### **Capital Expenditure (Capex) Saving**

The amount of capital expenditure savings from the base case, attributed to DER is calculated as follows:

First, the 'growth related' capital expenditure is estimated from the utility total capex. We assume that only the growth related capital expenditures are avoidable. This is calculated as a percentage of the total (30% in the base case).

$$\text{Growth Related Capex} = \text{Total Capex} * \text{Percent Growth Related (30\%)}$$

Then, the coincident peak load reduction from DER is calculated. For DG, this is equal to the installed nameplate capacity of the DG times the coincident peak factor.

$$\text{Peak Load Reduction from DG} = \text{Nameplate kW} * \text{Coincident Peak}$$

The avoided capital expenditure is then equal to the following;

**Avoided Capex =**

Growth Related Capex \*

Min{ 100%, (Peak Reduction of DG \* Sensitivity Factor (0% to 100%)) / Growth (MW) }

The sensitivity factor translates the coincident peak load reduction seen at the utility, to the impact on growth-related capital expenditures. Currently, in the base case this is set at 50%. If there are no savings from DG the factor should be set at 0%, if the savings are equal to the proportional share of offset growth, the factor should be set to 100%