



2016 IPL IRP Public Advisory Meeting #2

June 14, 2016

Metrics Exercise Formula Sheet

Cost Metrics

1. Present Value Revenue Requirement (PVRR):

- The total plan cost (capital and operating) expressed as the present value of revenue requirements over the study period

**PVRR = Present Value of Revenue Requirements
over the study period**

2. Rate Impact:

- expressed in terms of cents/kWh for years 1-10 and 11-20
- Levelized average system cost

Rate Impact = $\frac{\$ \text{ Total Revenue Requirements (10 yr period)}}{\text{Total kWh Sales (10 yr period)}}$

I. Financial Risk Metric

1. Cost Variance Risk Ratio:

- Shows how likely costs are to be higher or lower than the expected cost
- Ratio of how high costs could be to how low costs could be
- Calculated based on
 - Mean PVRR
 - Range of possible costs higher than mean PVRR
 - Range of possible costs lower than mean PVRR
- Score less than 1.0: costs are more likely to be lower than mean PVRR
- Score greater than 1.0: costs are more likely to be higher than mean PVRR

Cost Variance Risk Ratio = $\frac{95\text{th Percentile (PVRR)} - \text{Mean (PVRR)}}{\text{Mean (PVRR)} - 5\text{th Percentile (PVRR)}}$



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II. Environmental Stewardship Metric

1. Annual Average CO₂ emissions (tons)

- the annual average tons of CO₂ emitted over the study period

$$\text{Annual Average CO}_2 \text{ Emissions} = \frac{\text{Sum of CO}_2 \text{ tons emitted}}{\text{\# of years in the study period}}$$

2. CO₂ intensity (tons/MWh)

- CO₂ Intensity for study period

$$\text{Annual Average CO}_2 \text{ Emissions} = \frac{\text{Sum of CO}_2 \text{ tons emitted}}{\text{\# of years in the study period}}$$

III. Reliability Metrics

3. Planning Reserves

- MW of supply above peak forecast

$$\text{Planning Reserves} = \text{IPL's resources (MW)} - \text{utility load forecast (MW)}$$

4. Flexibility:

- Ability of IPL's system to respond to load changes

$$\text{Calculation} = \text{TBD open to input}$$