Northwest Power and Conservation Council

September 11, 2007

MEMORANDUM

TO: Power Committee

FROM: John Fazio, Senior System Analyst

SUBJECT: Status report on development of an economic adequacy target

One of the goals of the Resource Adequacy Forum is to develop an economic adequacy target that would reduce the region's exposure to high-cost future years. The currently adopted resource adequacy standard limits the likelihood of future year curtailments but does not address electricity price volatility. As the Council clearly described in its 5th power plan, there is a relationship between average system cost and economic risk. The Council chose a resource strategy that minimized economic risk by reducing exposure to market resources and by diversifying fuel types. Generally lower economic risk requires more resources and higher average cost. This implies that the economic target will require more resources than the current adequacy target.

In its efforts to develop an economic adequacy target, the Forum is considering three options. The first option is to use the Council's measure for economic risk and the level of that measure derived from the 5th plan. A variation of the first option is to use the Council's measure for economic risk but to choose a different level to reflect economic adequacy. A second option would have the Forum develop its own measure for economic risk and choose an appropriate level for that new measure. A third option is to use only firm resources when assessing the balance between loads and resources. (Recall that the current adequacy standard includes uncommitted Independent Power Producer resources and a 1,500 average megawatt planning adjustment to account for market supplies and hydro flexibility). Using the third option would simplify the calculation but unfortunately it would not be based on any kind of economic analysis.

Currently, the Forum's technical committee favors option 1, which is, using the Council's plan as a guide. However, the committee would like to review the methodology that the Council used in choosing the right balance between average cost and economic risk. The committee may choose to develop its own strategy for determining the right balance to have for the region. The committee will forward its proposal to the Forum's steering committee early in October.

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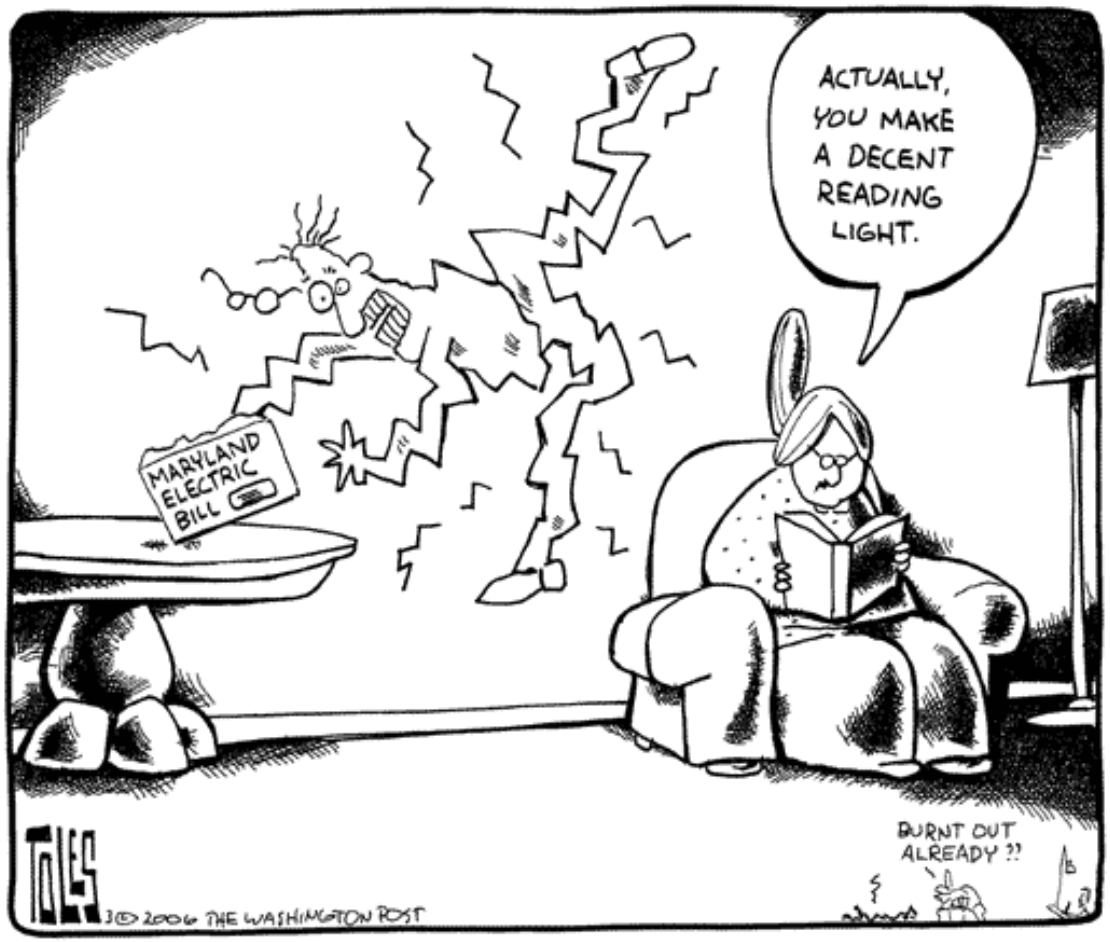
Economic Adequacy Target



Power Committee Meeting
Portland, Oregon
September 11, 2007

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Outline

- What do we mean by “economic” adequacy?
- How the Council addressed economic risk in its 5th Power Plan
- Options being considered by the Adequacy Forum for an economic adequacy target

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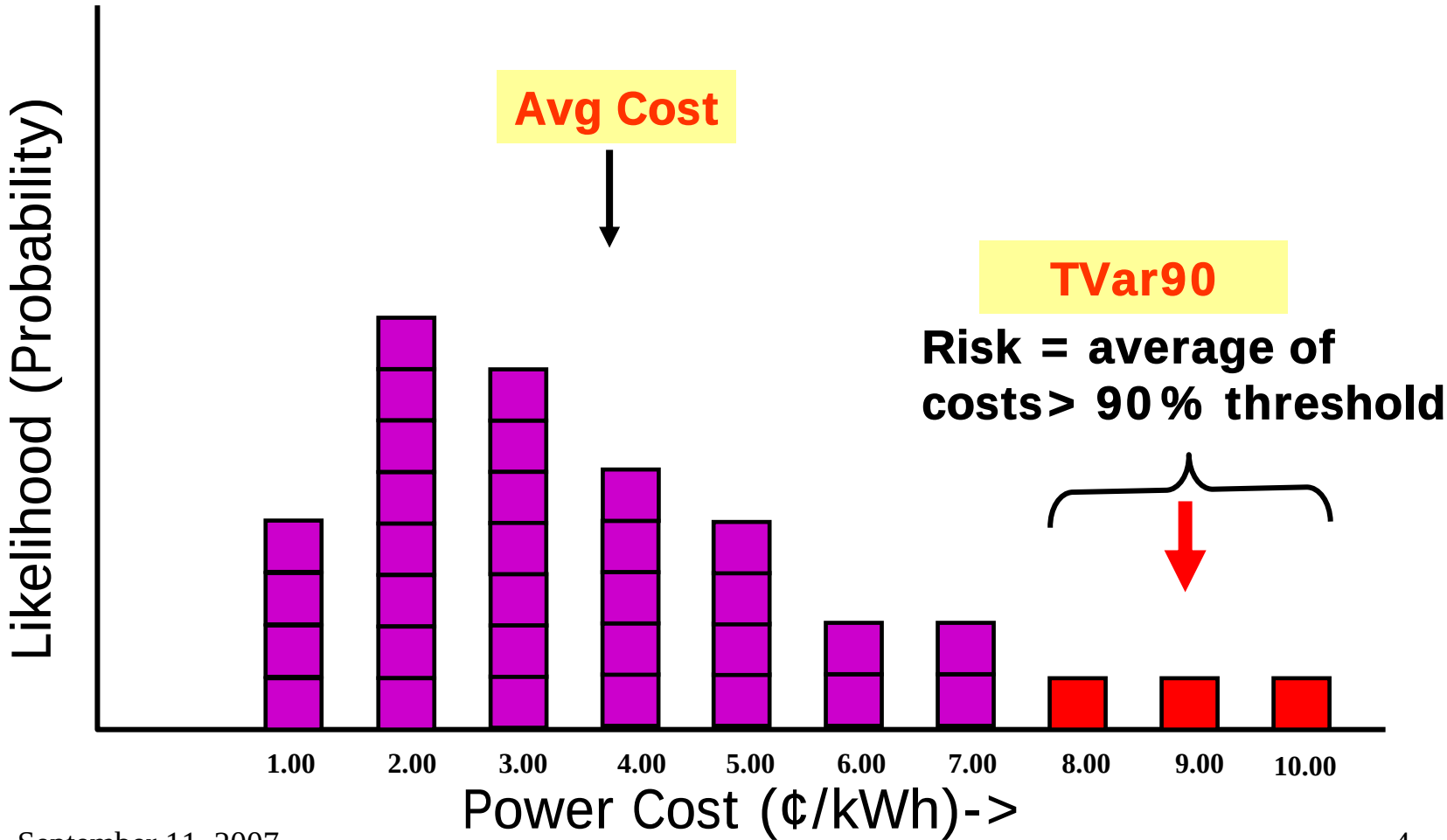
Defining Economic Adequacy

- Minimizing the **risk** of high-cost futures by
  - Reducing exposure to market supplies
  - Reducing exposure to high fuel costs
- While not raising the average **cost** significantly

Council's Method

Average Cost and Economic Risk for a Resource Plan



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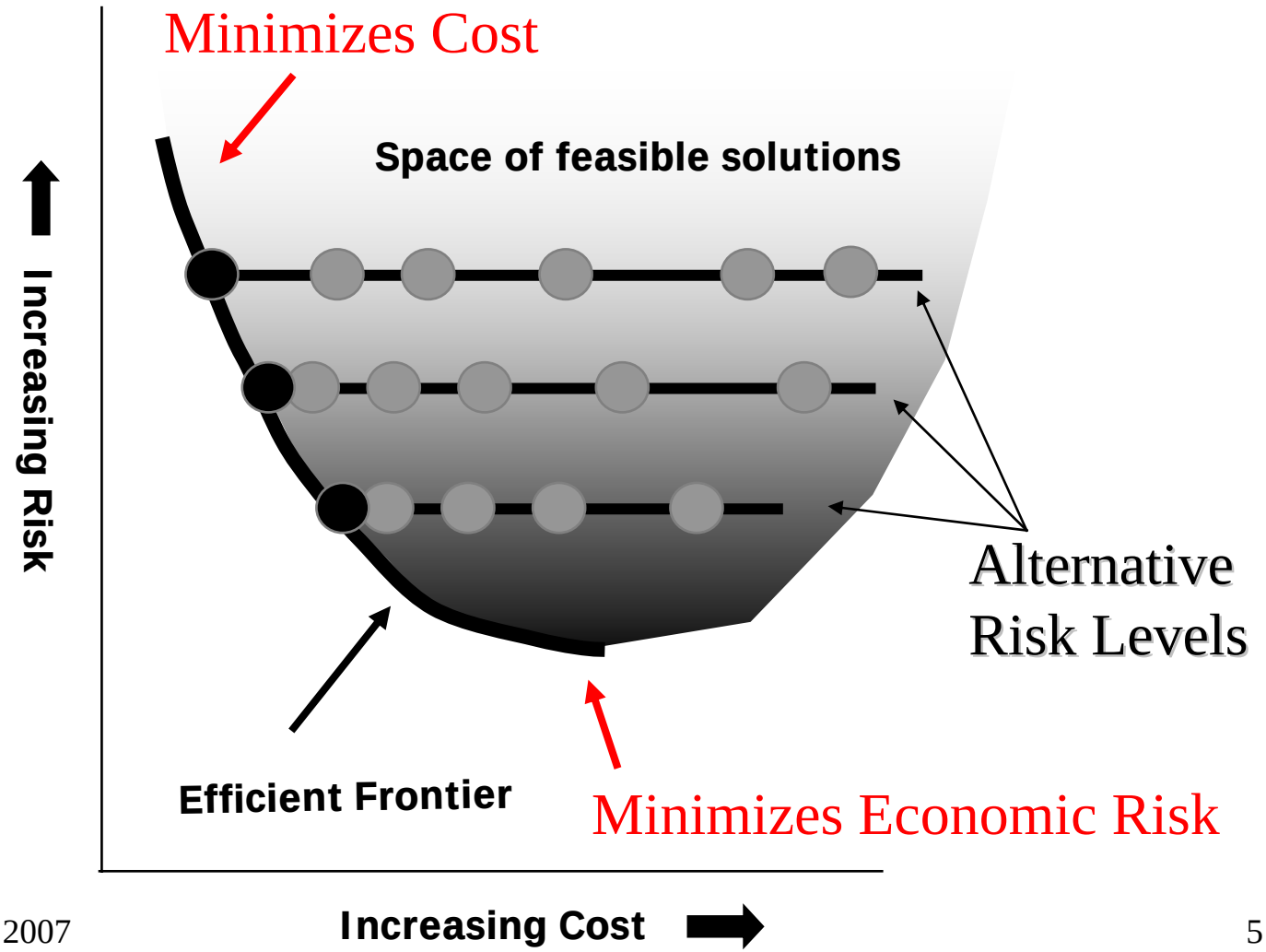
Efficient Frontier



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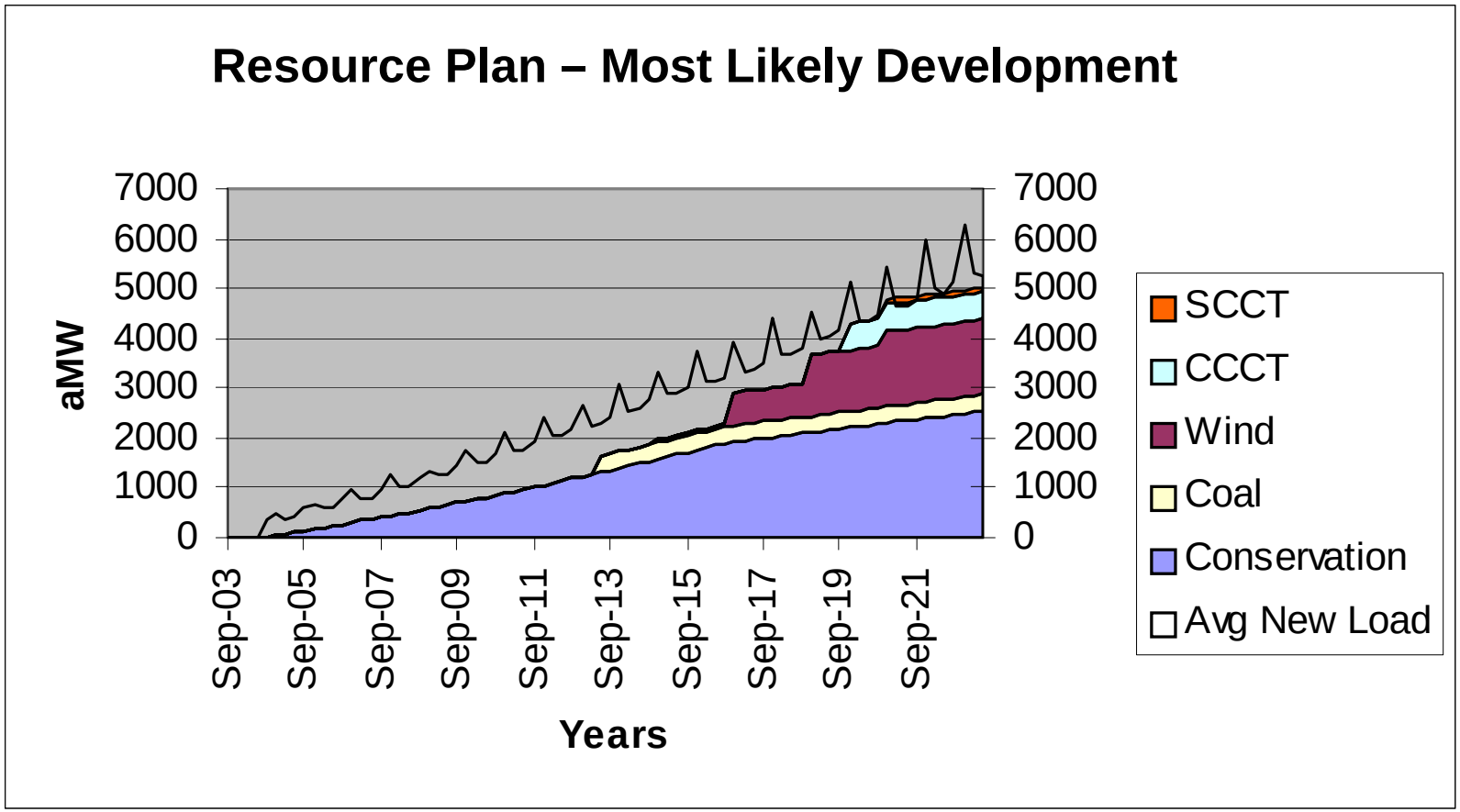
A Resource Plan on the Efficient Frontier



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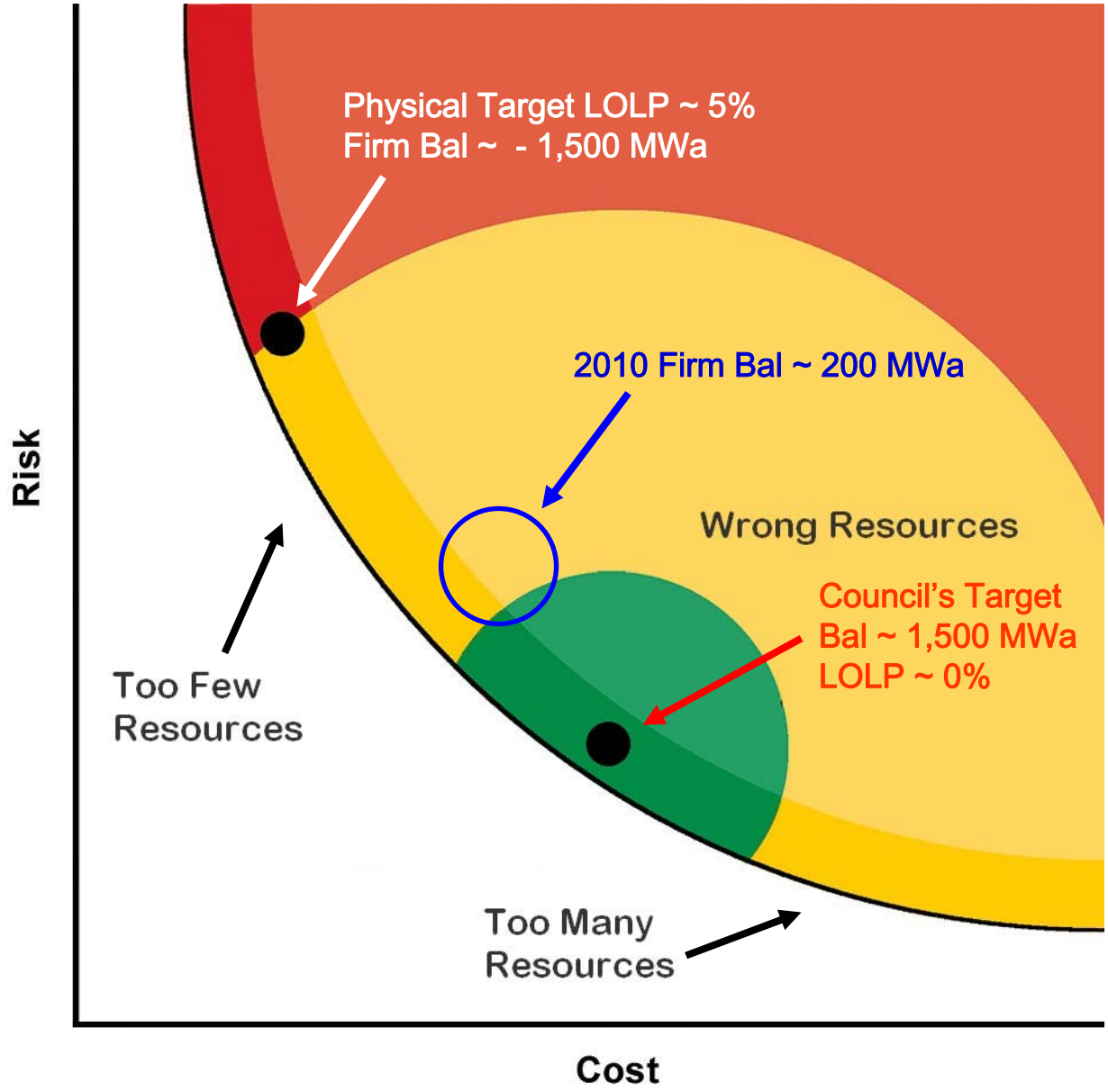
Options Along the Efficient Frontier (Illustrative)



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Options

1. Use the TVar90 parameter for economic risk
   a. Use the Council's power plan to select the desired point along the efficient frontier
   b. Select a different point along the efficient frontier using an alternative method
2. Define an alternate parameter for economic risk
   - Develop a method to assess this parameter for various plans
   - Develop a method to determine an appropriate value for the alternative risk parameter
3. Use resources without uncommitted IPPs and planning adjustment to define the economic target (more like NRF)

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Options: Pros and Cons

Option	Pros	Cons
1a	Matches Council's plan. Utilizes completed work. Less work for the Forum.	Council's choice for point on efficient frontier not well defined. May be out of date.
1b	Uses same risk parameter. Utilizes completed work. Choice for point on efficient frontier will be better understood.	Develop new method to choose. May take lots of time.
2	Chance to revisit economic risk methodology. Will be up to date. Will result in a better feeling of ownership.	Will take lots of time and effort. May not be any better. May get politically bogged down.
3	Familiar and easily understood. Less work for the Forum.	Not based on an economic model. No guarantee to reduce risk.

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Options Status

- The technical committee favors options 1a and 1b but wants to explore the Council's method of choosing a point on the efficient frontier before deciding
- Option 2 had no support
- Option 3 had little support because it is not based on an economic analysis