Discussions on Economic Assessment Methodology

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C3ET Project 4th Stakeholder Meeting (Web Seminar)
August 1, 2008
In this presentation, we highlight some major principles used in the C3ET economic assessment

Two-Step Study Approach
Three-Tier Database Architecture
Yearly and Total Benefits
Two-Step Study Approach

Three-Tier Database Architecture

Yearly and Total Benefits
Two-Step Study Approach
Reliability Assessment and Economic Assessment

Reliability Assessment:
First things first, meet the reliability criteria
However, not at any costs!
Develop a minimum-cost upgrade as one of the alternatives

Economic Assessment:
Second, try to maximize economic benefits
The minimum-cost upgrade is not necessarily the best solution!
Compare the net benefits of alternatives
Two-Step Study Approach
Define Alternatives and Determine the Best One

Proposed alternatives

1 2 2a 2b 2c 2d 3 4 5 6 7 8 9 10

Reliability Assessment

Make sure all alternatives meet reliability criteria on a specified planning horizon

Revised alternatives

1 2 2a 2b 2c 2d 3 4 5 6 7 8 9 10

Economic Assessment

Engineering studies to calculate benefits Cost-benefit analysis

The most-preferred alternative

x
Two-Step Study Approach

Three-Tier Database Architecture

Yearly and Total Benefits
Three-Tier Database
With Managed Change-Sets

C3ET Project alternatives:
- New lines
- New stations
- New ratings

CAISO Baseline:
- CEC 1-in-2 load forecast in 2015 and 2020
- California RPS in 2015 and 2020
- Additional new generation projects
- Additional new transmission projects
- Path OTC and nomograms

TEPPC Database:
- 2017 WECC base case
Three-Tier Database

Most of the Efforts Is to Establish the CAISO Baseline

- Project-specific planning (e.g. the C3ET project)
- 90% of the efforts is to build this baseline
- Defining the RPS scenarios is a major undertaking
- Different change-sets facilitate data update
- Swappable underlying base case

The CAISO Baseline will be a re-usable and updatable platform for economic planning studies
Two-Step Study Approach

Three-Tier Database Architecture

Yearly and Total Benefits
Yearly and Total Benefits

1. Calculate yearly benefits of 2015 and 2020
2. Linear interpolate yearly benefits between 2015 and 2020
3. Assume zero escalation of yearly benefits beyond 2020
4. Discount the yearly benefits over economic lifespan
5. Sum up discounted yearly benefits as the total benefit

- Engineering Study
- Cost-Benefit Analysis (CBA)
Your comments and questions are welcome

For written comments, please send to:
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Please send written comments in two weeks by COB on 15-Aug-2008