



Update on portfolio development cases and modeling process

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Revised Cases

- Handout with revised cases
 - Written comments considered and incorporated
 - Total number of cases kept at 43
- Changes
 - Eliminated concept of “Acquisition Path Analysis” cases
 - All cases treated contemporaneously
 - Expanded number of \$0/ton CO2 tax cases
 - Eliminated high CO2 tax/low natural gas price combinations
 - Added \$70/ton CO2 tax cases
 - Added CO2 tax real-escalation cases with accompanying change in load growth
 - Assumed no Renewable Portfolio Standard (RPS) constraints for purposes of initial portfolio development
 - Addresses Utah commission methodology requirement for evaluating incremental renewables needed for RPS compliance

Revised Cases

- Changes continued...
 - Reserve margin cases narrowed to 12% and 15% comparisons
 - Cases reflect variation in load growth and gas price assumptions to parallel key stochastic variables in PaR model simulations
 - Cases with alternate CO2 tax assumptions considered, but associated resource mix impact considered a secondary concern for evaluating portfolio reliability
 - Percentage-point spread for defining low and high load growth cases increased from 1% to 1.5%
 - Case for evaluating sustained peaking period for capacity planning removed
 - Will be addressed with a capacity load & resource balance scenario study

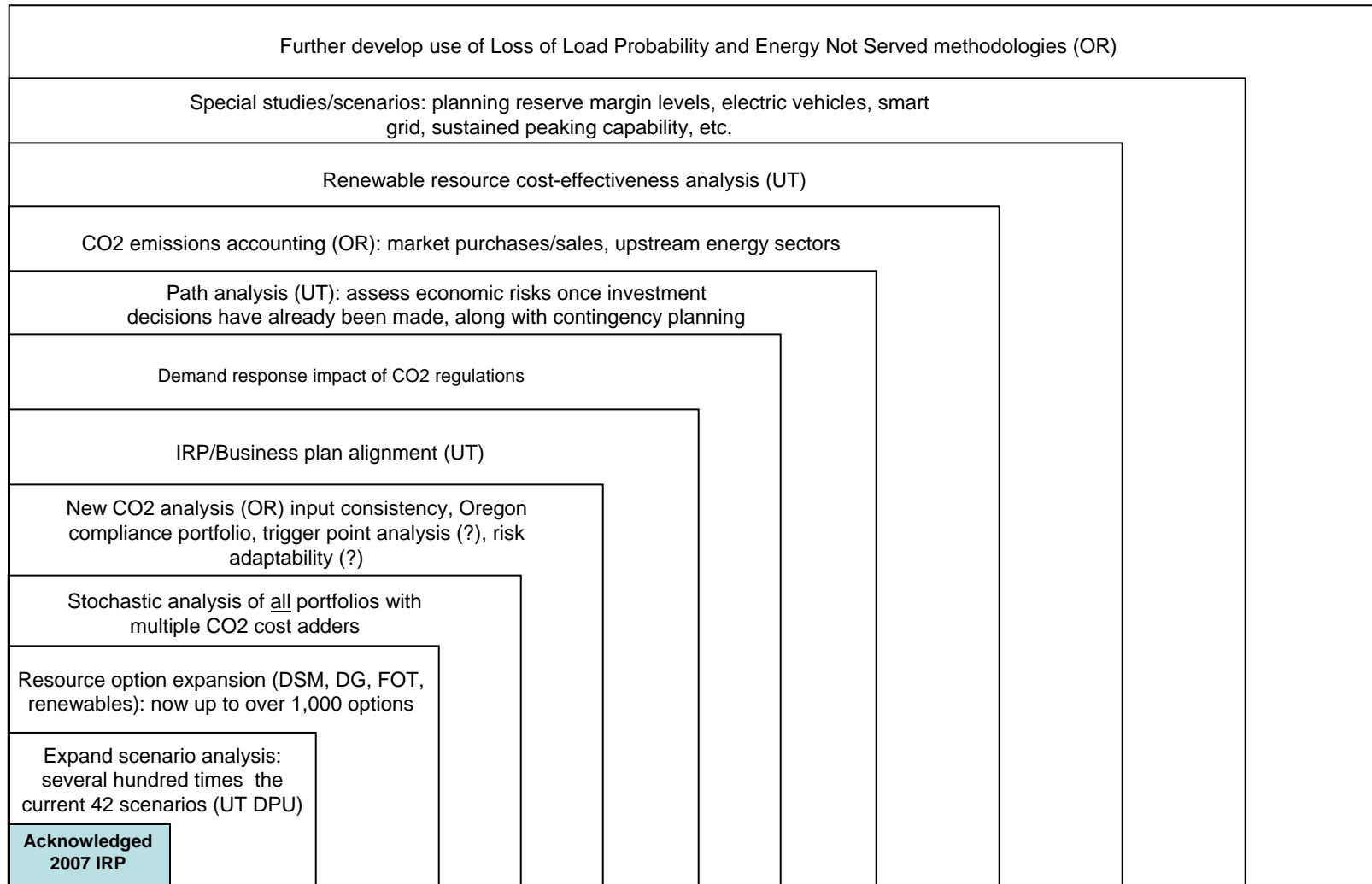
Deterministic Cost Uncertainty Analysis

- Develop a portfolio for each case
- Model each portfolio in System Optimizer with all sets of case assumptions
- Determine average PVRR for each portfolio across all cases on a per-MWh basis (to levelize for different resource quantities based on assumed load growth/planning reserve margin levels)
- Determine upper-tail PVRR (per-MWh) for each portfolio
 - Average of five highest PVRRs across the cases
- Develop scatter plot of average PVRR vs. upper-tail PVRR
 - Analogous to stochastic upper-tail vs. stochastic average scatter plots used for previous IRPs
- Use to screen portfolios for stochastic simulation?

Renewable Resource Requirements Evaluation

- Conduct portfolio analysis assuming no RPS requirements
- Determine the "pre-RPS" best cost/risk portfolio according to PacifiCorp's portfolio evaluation methodology
- If the renewables in this portfolio are below the system-wide RPS requirement, run the System Optimizer with the portfolio resources fixed, and add the RPS constraint
- Run the resulting "post-RPS" portfolio in Planning and Risk model for risk analysis
- Report the costs and risk impact of the incremental renewables (i.e., the PVRR/risk measure deltas for the pre-RPS and post-RPS portfolios)

Meeting Expectations - Modeling Scope Expansion since the 2007 IRP



Meeting Expectations – Adequacy of Portfolio Development Cases

- The Utah DPU and Committee of Consumer services views the number of cases that PacifiCorp has defined as inadequate for portfolio evaluation
 - DPU: Suggests that “the Company assign more staff to IRP modeling, because we do not believe that 42 scenario runs provides adequate case analyses and there should be several hundred times that many case scenarios in future IRP modeling in order to account for the various input factors.”
 - CCS: States that “it is difficult to comprehend that a Company as large as PacifiCorp, with many complex resource planning challenges, could find forty-two scenarios adequate for planning purposes. The Committee agrees with the Division’s comments dated June 6, 2008 that forty-two is far insufficient, although we would not go so far as to recommend several hundred times that number.”
- PacifiCorp cannot accommodate this many cases, as explained in past meetings
- Will this, in and of itself, result in recommendations for IRP non-acknowledgment?
- What is the Utah commission’s view on this matter?
 - If the Utah commission concurs, where does this leave the IRP process?

Oregon CO2 Cost Requirements (UM 1302)

- Propose that consideration of trigger point analysis and risk adaptability assessment outlined in Oregon commission staff's proposed IRP guideline 8 (Docket UM 1302) be delayed until the Oregon commission issues its order
- At that time convene a meeting with affected utilities (PacifiCorp, Portland General Electric, and Idaho Power) to discuss development of a joint approach for meeting these requirements