
MACRUC Risk and Regulation Workshop

June 24, 2013

Glossary of Terms

Terms and definitions from Ceres report “Practicing Risk-Aware Electricity Regulation: What Every State Regulator Needs to Know”¹ and Synapse/Regulatory Assistance Project presentation at Mid-Atlantic Conference of Regulatory Utility Commissioners, June 24, 2013.

AVERCH-JOHNSON EFFECT The tendency of utilities to overinvest in capital compared to labor.

BETA A measure of risk that measures volatility of portfolio relative to volatility of an index. Does not capture risk of the portfolio independent of market risk.

“BIGGER-IS-BETTER” SYNDROME The tendency of utilities to follow the historical practice of making large investments in relatively few resources rather than to support smaller scale resources, distributed resources or programmatic solutions to energy efficiency.

CAPITAL SHOCK RISK An example of risk generally proportional to the size of the capital outlay and the time required for construction of a generating unit. Simply put, the larger the capital outlay and the longer that cost recovery is uncertain, the higher the risk to investors.

CARBON PRICE RISK A risk factor that takes into account state or federal limits on greenhouse gas emissions. Fossil generation without carbon sequestration and storage (CSS) has a high risk of being affected by future carbon emission limits.

CONSTRUCTION COST RISK The risk that the cost to develop, finance and construct a generation resource will exceed initial estimates. This risk depends on several factors, including the size of the project, the complexity of the technology, and the experience with developing and building such projects.

CONSTRUCTION WORK IN PROGRESS (CWIP) The practice of including in a utility’s rates investment in a plant during the years of its construction. CWIP is often misunderstood as a tool for reducing risk. CWIP does nothing to actually reduce the risks associated with the projects it helps to finance. Construction cost overruns can and do still occur.

COST RISK Cost risks reflect the possibility that an investment will not cost what one expects, or that cost recovery for the investment will differ from expectations.

DECISION RISKS Every decision has risks because they impact future events, some of which are known and others which are unforeseen. Decisions involving risk affect costs, reliability, service adequacy, etc.

¹ Binz, R., R. Sedano, D. Furey, and D. Mullen. April 2012. *Practicing Risk-Aware Electricity Regulation: What Every State Regulator Needs to Know*. Ceres. Available at: <http://www.ceres.org/resources/reports/practicing-risk-aware-electricity-regulation/view>

DISPATCHABLE RESOURCE A resource able to be called upon in real time.

DIVERSIFICATION In the same vein as financial portfolio diversification, diversifying utility supply portfolios across many factors (fuel types, generator types, generator sizes, generator ages, generator locations, ownership versus contracts, etc.) can limit risk.

EXTREME VALUE Measures the difference between expected cost and some estimate of worst-case cost.

FUEL AND OPERATING COST RISK Includes fuel cost and availability, as well as O&M cost risks.

HIGHER RISK Higher risk for a resource or portfolio means that more value is at stake or that the likelihood of a financial loss is greater, or both.

INFORMATION ASYMMETRY A bias intrinsic to utility regulation—regulators do not have the same information that is available to the regulated companies and do not normally have adequate information to assess market risks.

INTEGRATED RESOURCE PLANNING (IRP) A tool to ensure that the utilities, regulators and other stakeholders have a common understanding of a full spectrum of possible utility resources; that the options are examined in a structured, disciplined way in administrative proceedings; that demand-side resources get equal consideration alongside supply-side resources; and that the final resource plan is understood (if not necessarily accepted) by all.

INTERMITTENCY Not to be confused with risk, intermittency is the operating characteristics of any resource that affects how it is integrated into a generation portfolio and how its output is balanced by other resources. For wind or solar resources, intermittency is expected and is accommodated in the portfolio design. Thus, while individual wind towers might be highly intermittent, and a collection of towers in a wind farm less so, a wind farm can also be termed highly reliable and present low risk because it will likely operate as predicted.

LEVELIZED COST OF ELECTRICITY (LCOE) Indicates the cost per megawatt-hour for electricity over the life of the plant. LCOE encompasses all expected costs over the life of the plant, including costs for capital, operations and maintenance (O&M) and fuel.

MARKET RISK The risk that the value of an investment will decrease due to moves in market factors.

NEW REGULATION RISK Takes into account future regulations, including air and water quality rules, waste disposal, land use, and zoning.

PROBABILISTIC SIMULATIONS The process of characterizing input assumptions as distributions in order to recognize volatility and uncertainty. Could also take the form of low, medium, and high forecasts with probabilities attached.

PORTFOLIO MANAGEMENT A process and set of tools that can be applied in order to achieve objectives specified by the user. Applies to vertically integrated utilities as well as default service resource planning and procurement in states that have restructured their electric industry.

POWER PLANT OPERATIONAL RISK The risk that a plant will fail to deliver electric power. Includes the risk of low frequency, high impact events such as the inability to acquire fuel.

RATES AT RISK The potential change in a retail customer's rates as a result of how external fluctuations affect the cost of the generation supply portfolio as a whole

REGULATORY RISK The risk of failing to comply with regulatory requirements or regulators' expectations.

RENT-SEEKING The tendency for regulated utility companies to use regulatory or legislative processes as a means of increasing profitability (rather than improving its own operational efficiency or competitive position).

RISK Risk arises when there is harm from adverse uncertainty.

SCENARIO ANALYSIS A key tool for recognizing risk in planning, scenario analysis is a process of analyzing possible future events by considering alternative possible outcomes.

SENSITIVITY ANALYSIS Sensitivity analysis is a key tool for recognizing risk in planning in which quantitative assumptions and computations (underlying a decision, estimate, or project) are changed systematically to assess their effect on the final outcome.

TVaR Tail value at risk. A risk measure that quantifies the increase in cost over a given planning horizon for a specified probability or risk level. At the 90% level for a 10 year planning horizon, the TVaR would give the amount of extra cost that a portfolio has a 10% chance of incurring over the next ten years.

THROUGHPUT INCENTIVE A bias of utilities towards selling more energy.

TIME RISK Time risks reflect the possibility that circumstances will change over the life of the investment and materially affect both the cost of the investment and the degree to which it benefits consumers.

TRANSMISSION RISK The risk that power will not be able to be delivered as a result of a transmission failure. This could take the form of a line congestion, or an outage caused by adverse weather conditions.

UNCERTAINTY Uncertainty describes a situation where current and/or future conditions are unknown. Risk is a potential consequence of uncertainty.

UTILITY CREDIT RISK A utility must maintain good credit in order to finance capital investments at reasonable rates. Can also refer to the risk that a utility will suffer a financial loss because its customers fail to pay their bills.

VALUE AT RISK The maximum reduction in value (or increase in supply cost) that could occur over a specified period at a given confidence level. Can be used to measure the cost increase that has a certain probability of occurring (risk level) during a certain time period.

VOLATILITY Refers to near-term fluctuations in a security's value, e.g. fuel price. A higher volatility means that a security's value can potentially be spread out over a larger range of values. This means that

the price of the security can change dramatically over a short time period in either direction. A lower volatility means that a security's value does not fluctuate dramatically, but changes in value at a steady pace over a period of time.

WATER CONSTRAINT RISK Takes into account the availability and cost of cooling and process water, which affects all thermal resources.

