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COST RECOVERY FOR YOUR POWER PORTFOLIO MIX

How your conventional and renewables impact asset accounting and customer rates

For generating utilities, renewable energy resources such as wind and solar are a mixed blessing. While they can be good for the environment and for meeting renewable portfolio standards, conventional power resources such as coal and gas may be necessary to fill the gaps when renewables don't meet the needs of your system's load curve. Given that reality, it's critical to know your options for cost recovery in these "double" resources.

The shifting power supply landscape

Generating assets are shifting to renewables due to industry trends as well as mandates and incentives at the federal and state level. We are in a transitional period between the "old" (conventional) and "new" (renewables) sources of power supply. There is overlap in rate recovery from the "old" conventional assets, i.e., assets that are not to the end of their useful lives, which will continue to be used for the foreseeable future, and which most likely have related outstanding debt that financed their construction. The "new" assets are the shiny objects that are the future of your utility's power supply but are not yet a fully self-sustaining supply option. Most renewables' prime generating power period does not match peak demand times from consumers, and there is still time before battery storage technology has advanced enough to meet this difference.

What issues does this raise for asset cost recovery?

With the combination of "old" and "new" assets, the main questions utilities executives should be asking regarding the "old" or conventional resources include:

- What rate methods are industry best practices for cost recovery?
- How many years until renewables and battery storage replace our conventional generation?
- How many years of remaining debt payments are due on our conventional generation?
- If we need to retire the conventional generation before the end of its useful life, what accounting mechanisms are available for potential inclusion of the remaining asset value in customer rates?

Best practices in cost recovery

The traditional, seasonal approach

The traditional industry approach to cost-of-service studies is to assemble all power supply resource costs for a seasonal period (i.e., winter or summer), and design electric rates for customers based on their average load curve on a winter or summer day. Industrial customers generally have time-of-use rate options, and more utilities and cooperatives are implementing residential time-of-use rates. Still, the cost includes the average cost of all power supply resources–both conventional and renewable–for those seasonal periods.

The real-time rates approach

The ability to tie customer electric use to the exact source of supply has become a reality through smart meters. With the data provided by smart meters and SCADA (supervisory control and data acquisition) systems, the cost of the power supply mix for any hour of the day can be used to develop customer rates, as a direct match can be made between hourly power production resources and customer usage.

This "real-time" or "dynamic-pricing" hourly rate approach is in its infancy but can become the norm in rate design. For example, Ameren Illinois offers a rate tariff for residential customers called "Power Smart Pricing." This tariff charges residential customers hourly using day-ahead market pricing. As this tariff uses hourly prices for the overall market, it is still one step removed from using the actual power supply costs by hour for Ameren. However, the overall industry trend is in that direction.

In theory, if your utility's power supply for 1:00 p.m. is in the heart of the duck curve, the cost for kW and kWh for the solar or wind resource producing power can be calculated using metering data. Likewise, cost per kW and kWh can be calculated if it is 1:00 a.m. and conventional resources are the power supply resource.

The more realistic, more equitable hourly "all-resources" approach

Utilities build their power supply capabilities with a number of conventional and renewable resources to address their overall system needs. In calculating the 1:00 p.m. cost of power, not only should the cost per kW and kWh for the renewable resources in use be included in determining power costs, but a portion of the idled conventional resources should be part of power costs for that hour. The resulting rate includes the duplicate resource (conventional assets), which is unneeded at 1:00 p.m. but *is* needed at 1:00 a.m.

This rate approach is more equitable to the utility and to customers. The utility recovers all resource costs, while customers pay for their use of the utility's investment.

As battery storage becomes more robust and able to store unneeded daytime renewable generation for use at night, the conventional resources become unneeded altogether and should be evaluated for early asset retirement.

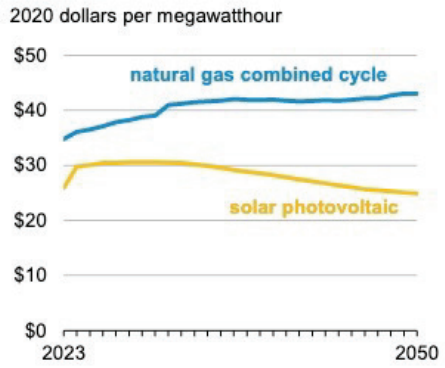
Early retirement of conventional generating units and the impact on utility costs

The EIA (Energy Information Administration) forecasts that the levelized cost of electricity (LCOE), or capital plus operating costs over the life of a generating resource, will continue to decline for solar resources relative to natural gas and coal resources over the period of 2023-2050.[1]

Forecasted Levelized Cost of Electricity – Natural Gas and Solar - 2023-2050[1]

The declining cost of solar generation, coupled with increasing battery storage capabilities, will accelerate the retirement of conventional generation units, in many cases before the end of their useful lives. The early retirement of these assets triggers an accounting loss recognizing the remaining generating asset's book value.

For example, if a generating asset has a net book value of $50 million when it is taken out of service, accounting standards require the recognition of a $50 million loss on early retirement in that year. These losses negatively impact the utility's income in the year of retirement and leave "stranded costs" that still need to be recovered from customers to make remaining debt payments on the asset's original construction.



1 - U.S. Energy Information Administration. (2021) EIA publishes a ratio of revenues-to-costs to explain power plant additions. Retrieved from https://www.infrastructurereportcard.org/wp-content/uploads/2017/01/Drinking-Water-Final.pdf

Two accounting mechanisms used to capture the losses on early retirement of generating units for future rate recovery include:

1. Acceleration of the useful life of the conventional asset, leading to a higher annual depreciation recovery, but also accelerating a decline in the return on ratebase for the asset.

or a more preferred method:

2. Use of regulatory accounting under accounting standards ASC 980 or GASB 62 for deferral of the loss on early retirement, with the intent to include those losses in future customer rates. (Applying regulatory accounting to capture the loss on asset retirement requires the approval of the utility or electric cooperative oversight board or commission.)

Using asset management tools to recover asset costs

With the increased investment in renewable generation and battery storage, utilities may seek recovery outside of the normal process through surcharges and riders. This allows them to accelerate the investment with less cash burden on the utility. Even without separate recovery methods, these large investments invite opportunity for regulatory or lender scrutiny.

The increased investment in renewables and battery storage may be able to be recovered through surcharges and riders to accelerate the investment with less cash burden from the utility. This requires accurate tracking of projects while under construction and throughout the in-service life so it can be included in customer rates. Solutions like PowerPlan support accounting best practices by enabling utilities to track project and asset data at a highly granular level and then report on it easily.

In addition, ongoing capital maintenance may not be recovered and need to be tracked separately from other capital work. Asset book values must be accurate, should early retirement of the asset be necessary and require tracking of the stranded costs separately for recovery purposes. In short, it's essential to know with great specificity your asset capital and operating costs, or these costs will not be recovered from your customers.

Moving forward

Because we are on the front end of the move from conventional fossil generation to full use of renewables to serve customers, there is an overlap period where our power supply portfolio includes more resources than needed due to the state of battery storage. Eventually, renewable resources can replace conventional resources, but until then, tracking the detailed capital and operating costs of each resource is key to recovering your utility's full cost of service.

About the Author

Russ has more than 35 years of experience as a utility industry accounting executive, author, speaker and instructional design leader. He teaches advanced accounting to utility professionals to help them understand and apply current standards, and utilize best practices in financial reporting, ratemaking, and strategic planning. As the founder of Utilities Accounting Education Specialists, Russ and his firm offer on-demand, CPE-eligible courses, live instruction, and customized training programs for finance professionals. He has authored multiple books, articles, and textbooks on utility accounting topics ranging from introductory to highly technical. Russ is a frequent speaker at industry events.