ENERGY PORTFOLIO MANAGEMENT

Portfolio Planning Advisory Services
Expert advice to help you turn energy markets strategies into actionable results
How do you make confident portfolio resource and investment decisions in complex energy markets? With ABB.

For over 40 years, energy firms have trusted ABB for advice on power markets, energy fuels strategy, fuel fundamentals and energy portfolio risk.

ABB Advisory Services help our clients turn their energy markets strategies into actionable results with a unique combination of software, data and advisory services to provide market-leading solutions for fundamental analysis.
Energy markets are rapidly changing because of legislative, environmental and technology developments. It is challenging to stay current with these diverse trends.

ABB has over 40 advisors that track these developments daily to provide our clients with the most up-to-date information.

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Essential services

ABB offers a unique combination of software, data and advisory services to provide market-leading solutions for fundamental analysis, including:

- Integrated resource planning
- Request for proposals (RFP) analysis
- Rate impact assessment
- Independent evaluator – expert witness
- Asset valuation
- Avoided costs

From a trusted advisor

ABB’s advisory services team comprises experts with detailed knowledge of not only the latest market developments, but also in how to model and analyze them. We have a wealth of tried-and-tested models, datasets, out-of-the-box market forecasts and modeling methodologies to start from, so we can help our clients quickly and cost effectively. Our business model is very flexible: we can offer independent market views, be your “on call” modeling team, or help your in-house team solve complex problems through the use of our tools, data and experience.

Why ABB:

Unparalleled experience with more than:
- 134,000+ employees
- $32 billion in revenue
- 40+ years of providing solutions to the power market

Software expertise:

- ABB software applications are the most comprehensive in the industry
- We know the models better than anyone else and have been using them to analyze client decisions for decades

Access to ABB Market Intelligence:

- ABB Velocity Suite
- ABB Power Reference Case

We stand with our clients from start to finish:

- Help define the problem and how to address it
- Support throughout the regulatory process
Experienced professionals, proven solutions, trusted results

Integrated resource planning
With more than 40 years of experience assisting clients in North America, Europe, Middle East and Asia Pacific, ABB consultants have conducted over 100 integrated resource planning and long-term electricity generation expansion studies. Along with a comprehensive toolbox of best-in-class software to help address your challenges, ABB Advisors have the experience to help you build a comprehensive and defensible resource planning process that incorporates all the requirements of your corporate, public stakeholder and regulatory environments.

ABB Advisors employ valuation models covering both power and gas portfolios and using state-of-the-art methodologies to rigorously model even the most complex portfolios. Stochastic valuations help corporate decision makers and risk managers understand the risks associated with specific market positions.

ABB Advisors can help with the integrated resource planning process by:
- Review of planning processes
- Develop data assumptions and alternatives / scenarios
- Capacity expansion resource optimization
- Portfolio optimization and risk assessment
- Operational analyses
- Recommended plan & action plan
- Documentation & regulatory support
- Stakeholder facilitation and project management

ABB’s advisory consultants have conducted and participated in state-wide stakeholder sessions in Michigan, Georgia, Virginia, Indiana, Missouri, Colorado, South Dakota, Wyoming and Nebraska.

Request for proposal (RFP) analysis
Companies that procure resources through RFPs are faced with the task of determining the best combination of resources that minimize cost and meet renewable and emissions regulations. In addition, the number of responses may be numerous, making the task of identifying the best combination difficult.

ABB Advisors use their powerful ABB Capacity Expansion tool for evaluating RFPs for resource acquisition. Capacity Expansion allows numerous alternatives to be included and is not limited to generic or typical resource types. Therefore, the analysis and selection process requires less time and provides accurate results. The ability to simultaneously evaluate all responses provides a robust result for third-party audits and achieving regulatory approval.

Rate impact assessment
ABB Advisors can help with rate impact assessment to determine the rate impact of capital investments to various customer classes.

How ABB can help:
- Ratemaking goals: reasonable pricing; capital attraction; incentives for efficiency, demand control, cross-class rate subsidies
- Detailed examination of incremental capital expenditures to acquire or upgrade assets.
- Lifecycle analysis
- Discounted cash flows
  - Determine the value of an asset under nominal assumptions
  - Determine the sensitivity of the asset value to change in assumptions
  - Determine the difference between valuations using different debt/equity assumptions
- Revenue requirements

ABB’s experience translates into time and cost savings in the engagement.
Independent evaluator – expert witness

ABB Advisor consultants review and comment on client competitive bid process for the solicitation, solicitation outreach, evaluation, and selection methodology, provide feedback to client of its evaluation and selection methodology, and report its findings to the appropriate Public Utility Commission or regulatory authority. As an independent evaluator, ABB consultants ensure that RFP solicitations and negotiations are open and fair. They can evaluate and review the process and respond to issues raised by intervenors.

In recent years, ABB experts have filed testimony and testified in Indiana, Wyoming, South Dakota, Colorado, Texas, West Virginia, Missouri, Wisconsin, Pennsylvania, Wisconsin, Louisiana, Oklahoma and New Brunswick.

Avoided costs

ABB Advisors simulate utility operation to perform utility-specific portfolio analyses by combining unit commitment and dispatch with market purchases and sales. The generation fleet is dispatched competitively against zonal market prices from ABB’s Reference Case. In addition to the Reference Case assumptions, Advisors use data assumptions consistent with individual Integrated Resources Plans and/or public documents.

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Asset valuation

ABB’s industry-proven methodology and approach for asset valuations have been street-tested in over $35 billion in financing transactions covering more than 85,000 MW of energy projects worldwide. ABB Advisors have also produced more than 45 market reports and portfolio evaluations for both buyers and sellers of power plants in North America, Europe and multiple Asia Pacific markets since 2013.

Advisors asset valuation services will help you to answer questions such as:

- What is your debt portfolio now worth on a merchant basis?
- How is your portfolio going to be affected from gas price increase/decrease?
- What discount rates are implied by the recent sales?
- How can you compare these sales to your own portfolio?
- How has the value of your portfolio changed in the last six months?
ABB energy portfolio planning

ABB energy portfolio planning is used to support data integration, which has been completely refreshed to address the changing needs of the modern customer. It utilizes a common interface that is shared by ABB’s other market and portfolio solutions, allowing a consistent look and feel across many products (ABB Capacity Expansion, ABB PROMOD® and ABB Portfolio Optimization). New workflow management features, configurable reporting and an in-application formula tool provide users the flexibility to mold the application to their specific needs.

Easy-to-configure activities can be automated, resulting in a seamless integration with upstream and downstream systems. These features have been developed to optimize the user experience, regardless of whether they are modeling a small portfolio deployed on a single machine or modeling multiple markets in the cloud on thousands of nodes.

ABB PROMOD®

ABB PROMOD® is the premier integrated electric generation and transmission market simulation system. PROMOD is recognized in the industry for its flexibility and breadth of technical capability, incorporating extensive details in generating unit operating characteristics and constraints, transmission constraints, generation analysis, unit commitment/operating conditions and market system operations.

For over 40 years, energy firms have been using PROMOD for a variety of applications that include locational marginal price (LMP) forecasting, financial transmission right (FTR) valuation, environmental analysis, asset valuations (generation and transmission), transmission congestion analysis, and purchased power agreement evaluations.

PROMOD provides valuable information on the dynamics of the marketplace by determining the effects of transmission congestion, fuel costs, generator availability, bidding behavior, and load growth on market prices. PROMOD performs a daily or weekly commitment and hourly or sub-hourly dispatch, recognizing both generation and transmission impacts at the nodal and zonal level.
ABB Capacity Expansion

ABB Capacity Expansion gives resource planners and portfolio managers the valuable ability to assess and develop strategies to address current and evolving renewable portfolio standards and emissions regulations. The solution provides optimal long-term resource plans with the potential options of resource additions, retirement, refurbishment and changes in operations. Capacity Expansion develops long-term, 20- to 30-year resource investment plans, including technology type, fuel, size, location and timing of capital projects required to meet reliability requirements.

The resource alternatives that can be analyzed include demand response, energy efficiency programs, and transmission expansion in addition to new unit construction. The solution uses either mixed integer programming (MIP) or linear programming (LP) algorithms for the optimal solution to solve for the desired time period with the existing system as well as alternatives for future expansion plans.

ABB Portfolio Optimization

ABB Portfolio Optimization optimizes a portfolio's operation by modeling detailed unit operating constraints and market conditions to:

- Provide a generation schedule for energy and ancillary services and fuel nominations
- Support the evaluation and pricing of potential short-term transactions
- Facilitate the analysis and simulation of deterministic scenarios

It provides comprehensive modeling and excellent optimization capabilities, which enable generating companies to schedule resources, meet a wide range of operating and business constraints, minimize operating costs, and/or maximize profitability.

Portfolio Optimization globally optimizes thermal units, combined cycle units, combined heat and power stations, independent and pump storage hydro units, cascaded hydro systems, and renewables in a single solution.

Portfolio Optimization also optimizes a combined portfolio of supply resources (traditional generation) and demand response/distributed generation assets modeled as virtual power plants (VPPs).

A comprehensive fuel and pipeline model is provided, including multi-fuel units and volumetric/flow limitations. The solution also includes a robust transaction model that embraces energy, reserves, emission allowances, and fuel products, and supports both purchases and sales of each. Multiple areas with transmission limitations are supported, as are system constraints.