

Mastering Project Development to Achieve Energy Transition Goals

By William Omatsone

As utilities invest in grid modernization, they face significant challenges to complete increasingly complex projects. To navigate these challenges, it is essential to focus on effective project development by establishing a clear scope, creating risk-adjusted budgets, and developing an initial schedule for each project in the portfolio of projects. Integrating robust project development practices can enhance portfolio management and achieve strategic goals.



Utilities face a significant challenge to achieve their ambitious energy transition goals while managing the substantial capital expenditures required to maintain and upgrade their electrical grid systems. As forecasted spending grows, so do the complexities and risks associated with these investments. Successfully navigating these challenges requires a deep understanding of project development and execution.

The Complex Landscape of Utility Capital Spending

Utilities are grappling with large capital budgets, driven by the need to modernize infrastructure and achieve energy transition objectives. These investments are essential to maintain reliable and resilient electrical grids, yet they often encounter hurdles that can derail even the most well-intentioned plans. The typical utility capital portfolio faces challenges such as inadequate project planning, strict outage constraints, material shortages, rising manufacturing

costs, labor shortages, and a decline in experienced professionals due to retirements and staff reductions, along with complex regulatory environments. These challenges can lead to project delays, budget overruns, and lost revenue from missed deadlines, preventing clients from capitalizing on new projects as planned, all of which can significantly affect overall efficiency and effectiveness.

Key Challenges in Utility Portfolios

In managing utility portfolios, a range of challenges can significantly impact the successful execution of projects. From the initial planning stages to final execution, utilities must navigate complexities that can disrupt timelines, budgets and overall project outcomes. Key challenges utilities commonly face in their capital portfolios include:

- **Capital portfolio planning:** Many utility portfolios include projects that, due to inadequate upfront planning, may not be executed as efficiently as required.

These projects often face unexpected issues that lead to frequent revisions of the portfolio, affecting both planned in-service dates and budgets.

- **Outage constraints:** Performing capital work requires carefully planned outages. These outages must be managed to both minimize disruptions and facilitate necessary studies and validations, all to keep projects on track.
- **Labor constraints:** Electrical and utility projects typically require specialized labor, which can significantly affect project scheduling and execution. Limited availability of such skilled workers often leads to bottlenecks across the project portfolio.
- **Governance processes:** Utilities typically follow rigorous governance processes designed to justify and prioritize projects effectively. Engaging key parties early in the governance process helps streamline decision-making and can ultimately enhance the overall project plan. By considering governance requirements from the outset, utilities can better navigate complexities and achieve smoother project execution while maintaining accountability and transparency.
- **External factors:** Projects are subject to various external influences, such as regulatory and permitting processes, as well as supply chain challenges. Materials with long lead times, such as specialized equipment or critical components, can introduce schedule uncertainties and delays that are difficult to predict and manage. These external requirements and resource dependencies create additional layers of complexity for project timelines.

The Need for Enhanced Project Development

To address these challenges, utilities are increasingly adopting program delivery approaches to streamline large numbers of similar projects. However, portfolios often contain a mix of typical and atypical projects, necessitating a more nuanced approach. In these scenarios, project development becomes crucial because it provides the additional support needed to tackle complex projects.

Project development involves the thorough analysis and planning required to clarify project scopes, budget and schedules. It aims to identify and mitigate risks early in the project life cycle, so that projects are executed efficiently and effectively. Key components of project development include:

- **Comprehensive scope:** A comprehensive understanding of project scope is vital for successful project execution. Project development involves defining the exact requirements and deliverables of each project. This detailed scope prioritizes that vested and

interested parties have a clear understanding of the project objectives, reducing the risk of scope creep and misalignment.

- **Detailed cost:** Accurate cost estimation is fundamental to project planning. Project development provides detailed cost assessments, including initial estimates and long-term financial implications. Providing a detailed cost plan helps to establish realistic budgets and avoid unexpected financial strains.
- **Thorough schedule:** A well-defined schedule outlines the project timeline, including key milestones and deadlines. Project development involves creating a detailed schedule that accounts for all phases of the project, from planning to execution, so that projects are completed on time and within budget.
- **Risk identification:** Identifying and managing risks is a crucial aspect of project development. By assessing potential risks — such as those related to real estate acquisition, siting and permitting, and procurement — project development helps in creating strategies to mitigate these risks, reducing their impact on the overall project.
- **Engaging with interested parties:** Effective engagement is essential for project success. Project development includes engaging all relevant parties early in the process to gather input, address concerns and facilitate alignment. This collaborative approach helps in securing necessary approvals and support throughout the project life cycle.
- **Regulations and permitting:** Navigating regulatory and permitting requirements is often one of the most challenging aspects of project development. Project development teams work to understand and address these requirements so that projects comply with all regulations and obtain the necessary permits in a timely manner.

Integrating Project Development Into Existing Processes

For utilities looking to optimize their capital portfolios, integrating project development into existing processes can provide substantial benefits. Partnering with professional consulting firm that has a deep understanding of the project development process and its framework can offer valuable support when creating new processes or improving existing ones by:

- **Establishing a project development process:** Utilities without a defined project development process can leverage the knowledge and experience of an AEC firm to establish a comprehensive framework. This involves developing a structured approach to project planning, risk management and engagement with interested parties.

- **Enhancing existing processes:** For utilities with established processes, collaborating with specialized professionals can offer valuable insights and recommendations for integrated project development. This may involve refining existing processes to incorporate more rigorous planning and risk management practices, thus enhancing overall portfolio clarity and efficiency.

As utilities continue to face increasing capital demands and project complexities, the importance of incorporating a project development process cannot be overstated. By proactively integrating comprehensive project development practices, utilities can better navigate the challenges of growth, facilitating efficient project management while aligning with broader strategic goals.

With evolving regulations and increased load growth driving more capital investment into the grid, utilities must rethink their approach to project development to maintain

compliance and secure long-term success. A strong emphasis on project development allows utilities to optimize capital portfolio management, mitigate risks and deliver projects on time and within budget. Partnering with specialized professionals who understand how to design and implement these processes enables utilities to effectively manage growing demands and achieve sustainable growth.

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