



Capital Budget Prioritization via Project Portfolio Management

Guidebook for developing capital investment strategies

Introduction Letter by Brian Bird



NorthWestern Energy makes significant capital investments in our system each year. We have increased our investment levels from around \$100 million annually 10 years ago to nearly \$300 million annually now and going forward. These capital investments are necessary to continue to replace aging assets on our system, meet compliance requirements, upgrade capacity, and ensure that we continue to have a safe and reliable system for our customers now and into the future.

With that said, we need to be sure that we are investing in capital projects that are least cost for our customers, and that we are funding those projects that have the highest needs and provide the highest benefits for our system and our customers. The project portfolio management and strategic yield process for scoring and ranking projects was developed by our Asset Management group. This process helps us score and rank our projects so that we can ensure we are funding our highest priority projects.

The process is currently being used to justify, score, and rank projects for our distribution and transmission projects which account for the majority of our capital spend. We have plans to incorporate all other areas of the company into the overall project management and strategic yield process going forward. The book is intended to summarize a very detailed process and provide a common language that we use to ensure we are meeting the expectations of all stakeholders. I appreciate everyone's support in continuing to advance this process into the future.

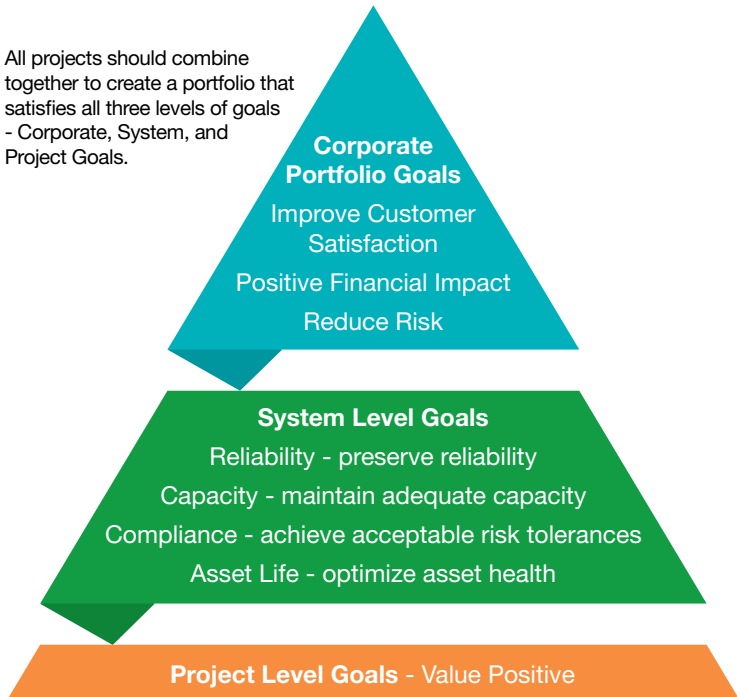
A handwritten signature in black ink, appearing to be 'B. Bird', written in a cursive style.

Project Portfolio Management and Strategic Yield

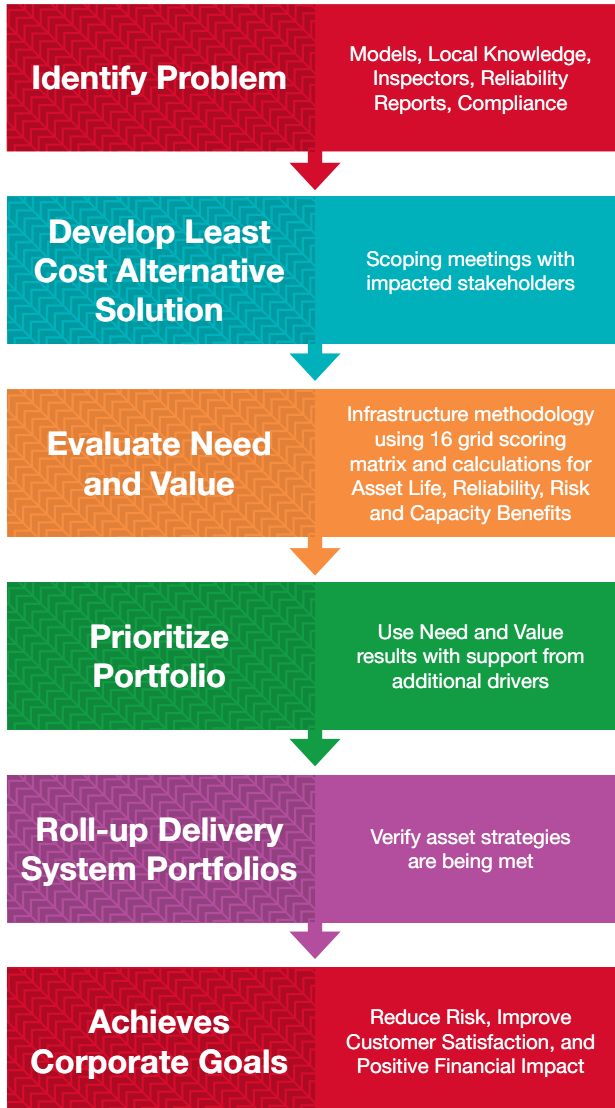
Project Portfolio Management is a tool-supported process for selecting projects and managing portfolios to generate the greatest possible value. This process allows projects to be ranked using a common language and a consistent level of importance across all business units. It identifies projects that should be funded to ensure corporate and system goals are being met while also documenting the justification and need at a project level.



All projects should combine together to create a portfolio that satisfies all three levels of goals - Corporate, System, and Project Goals.



Capital Prioritization Process



Project Need

To determine the Need of a project, a 16-grid matrix is utilized. The details of each individual project are entered into PowerPlan based on known data. The overall need and value of the project are then automatically calculated and the results allow for comparison between other projects that have been submitted.

The general guidelines for developing the 16-grid matrix are shown below. There are currently templates for Electric Distribution, Electric Transmission, Gas Distribution, Gas Transmission, and Facilities. Generation and BT templates are currently in development.

Scoring Matrix General Guidelines				
Strategic Alignment	Asset Life <i>proactive (asset condition and performance)</i>	Reliability <i>reactive (impact to system deliverability if failure occurs)</i>	Compliance <i>risk (consequence and probability)</i>	Capacity <i>system availability (current availability and projected growth)</i>
Company Approved Performance Target	Asset age compared to useful life	Business function or customer impacted	Level of compliance	Current system demand
System impacts if event occurs	Asset's current condition (<i>health</i>)	System impacts	System condition (<i>conditions that must exist to create consequence</i>)	System Improvements
History of the asset	History of performance	Historical level of service	Probability of event (<i>frequency</i>)	How often are systems currently overloaded
Operational Issues	Operation and Maintenance Costs	Operational impacts	Safety	Projected Growth

Total Score:
need of the project

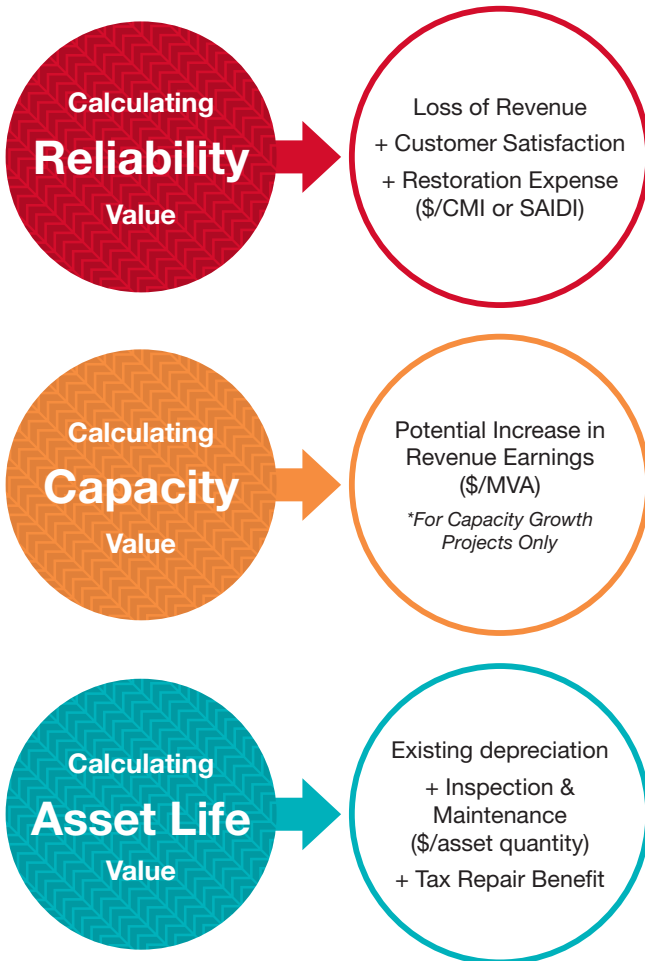
Total Asset Life Score	Total Reliability Score	Total Compliance Score	Total Capacity Score
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Total Benefit:
financial value for B/C

Total Asset Life Benefit	Total Reliability Benefit	Total Compliance Benefit	Total Capacity Benefit
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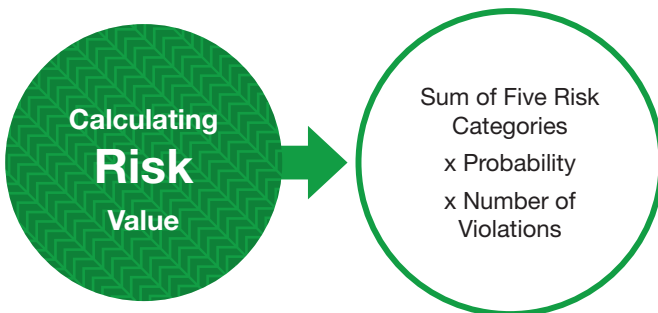
Project Value

In addition to determining the Need of each project, the Value is also calculated and uses a Benefit/Cost methodology. The overall value of a project is then the sum of the four Corporate Driver benefits divided by the cost of the project. The individual Corporate Driver benefits are calculated as shown below.



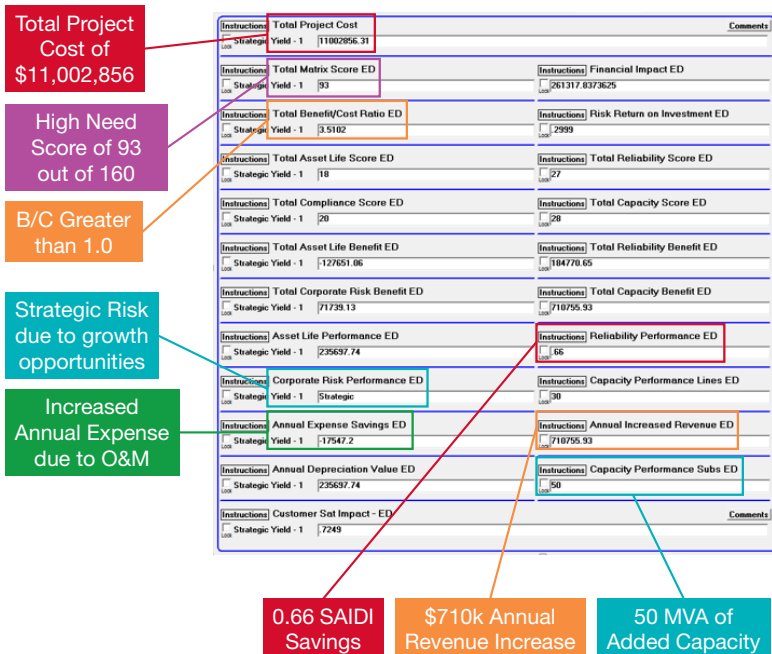
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Risk is divided into 5 Categories to emphasize the different types of risk that are being addressed for each project.



Examples

This is an example of the output from PowerPlan of an Electric Distribution project using this methodology. After entering the data associated with a project, the need and value results are calculated and output in PowerPlan. Many of these outputs tie back to the Corporate and System goals. The Corporate Goals addressed in this example include 0.66 SAIDI savings for Customer Satisfaction, an estimated \$710k annual revenue increase for financial impact, and will address a Strategic Risk component to reduce Risk.



Frequently Asked Questions

Q. What is Benefit/Cost (B/C)?

- A. Benefit/Cost is a widely-used systematic technique to analyze the benefits and costs of projects in order to determine the most prudent investment solutions. A B/C ratio greater than 1.0 indicates that a project should deliver a positive net benefit.

Q. Why do we fund projects with a B/C less than 1?

- A. There are actually a number of reasons why this happens, but no matter what those reasons may be, additional drivers are necessary in order to be approved for funding. In some cases, the original need of the project meets the corporate drivers such as customer satisfaction, finance and/or risk. Projects may be extremely cost-effective solutions to reliability improvements. NorthWestern Energy may have projects that are required in order to adhere to regulations where there may not be asset life, reliability or capacity benefits.

Q. Do we expect to see these benefits on the balance sheet?

- A. Yes and no. Some of the benefits considered in the calculations could be tied to the actual financial reports of the Company such as potential increased revenue or maintenance and expense impacts. However, other benefits are considered "soft-costs", which do not directly impact the bottom line, but are quantified in order to recognize the contribution. These include items such as customer satisfaction and risk avoidance.

Q. Why do we need all of these outputs? Can't we just have one number?

- A. The B/C ratio alone enables a prioritization method for all projects within a portfolio; however, a single number does not always tell the whole story. Other metrics are useful in verifying that corporate drivers are being met, as well as, presenting data that should be evaluated especially for projects with a B/C less than one. In addition, it allows the capital budget committee to sanity check the data that was entered for each project.

Q. This seems too complicated – can't it be simplified?

- A. Unfortunately, this is a complicated endeavor because of all the factors that should be considered when making critical business decisions for the Company. The goal of the process is to be as simple as possible by entering the appropriate valuable information for each project and letting the complicated calculations run in the background.

Q. Why isn't the whole company doing this?

- A. This process takes time to develop. Other companies have entire departments that focus on this type of work. With the resources that are available, the priority has been to optimize the solution for a sub-set of the capital budget, T&D that accounts for approximately 70% of the capital budget, before rolling it out to the entire company.

Q. I thought the Project Management Organization (PMO) and Enterprise Risk looked at risk for the company – what is risk telling us in this process?

- A. This is true – there are several other departments and processes that consider risk as part of their functions. In this solution, the goal is to investigate the risk to the company if the capital budget item is not funded, ie. risk avoidance. Enterprise Risk establishes risk ranking to ensure alignment with enterprise goals and the PMO considers the impacts of risk on project execution once funded.

Recognition

Leadership NorthWestern is an annual learning opportunity for employees. Our group is part of the team that was selected for the class of 2018. This group was selected to work with John Kasperick and the finance team on a project that would offer long term value to the company.

- Tara Arno, Electric Asset Management Engineer - Great Falls, MT
- Dan Benson, Safety Professional - Yankton, SD
- Jade Gonder, Collections Specialist - Butte, MT
- Broc Gauer, Journeyman Lineman - Yankton, SD
- Paul Mantz, Key Accounts and Economic Development Specialist - Sioux Falls, SD
- Josh M. Peck, Marketing and Events - Butte, MT

We want to give special thanks for project assistance from:

- Brandi Hellwinkel
- John Kasperick
- Cassie Scheidecker

We are very proud of the work that was put into the development and testing of this project, but want everyone to keep in mind that it is a work in progress. Balancing the delicate nature of our type of business and keeping all of the different internal and external stakeholders knowledgeable of our processes and the understanding of why certain capital purchases are approved and why certain projects are selected is difficult and hard to balance.

If you are looking for more information or have further questions please contact:

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