

Prioritization of capital projects

Workshop Agenda

April 19, 2012

BPA's preliminary approach to prioritizing investment	45 min.	Mike DeWolf, BPA
Prioritization methods used by other utilities	45 min.	Robert Cromwell, Seattle City Light Ginette Handfield, BC Hydro
Economic value-based approach to prioritizing sustain projects	30 min	Laura Demory, Program Manager, BPA Power System Control

Prioritization of capital projects

Capital Investment Review Workshop

BPA's preliminary approach and work plan

April 19, 2012

Proposed framework for capital project prioritization

Initial CIR Publication, Pages 25-29

Capital projects are prioritized *separately* for Sustain and for Expand projects

Sustain

- Defined as: **capital projects where the primary purpose is to replace, modernize or refurbish equipment and facilities in order to maintain asset capabilities and performance**
- Prioritization of sustain investments is **determined through asset condition/risk assessments in the asset strategies**
- Highest priority is assigned to projects that **address the most critical assets at greatest risk, based on condition assessments. Condition assessments cover risks of :**
 - Safety or health issue
 - Operational failure or technological obsolescence
 - Environmental damage; or
 - Security breach or noncompliance
- **In no case are sustain projects cancelled or deferred if it would lead to a violation of standards, tariff or other legal obligation**
- **Emergency situations take precedence.**

Prioritization of Sustain investment is established via asset strategies

Expand

- Defined as: **Capital projects where the primary purpose is to add capacity or flexibility or to increase operational output/productivity**
- Prioritization of expand investments is determined by a **mandatory Vs discretionary split – mandatory are assigned highest priority followed by top-ranked discretionary**
- **Mandatory expansion projects are investments that a law, appropriations act, regulation, tariff, or contract requires be made. Mandatory projects are limited to investments that, if not made, will result in non-compliance. (tentative definition)**

Focus of the new prioritization process

- **Projects that do not meet the mandatory test are subject to priority ranking at the agency level.**
- **Once priority ranked, a cut line is drawn to delineate Go Vs No-Go. The result: a single agency prioritized list of discretionary projects**

How BPA is defining “prioritization”

In the CIR, BPA defines “prioritization” as:

- The *importance* of projects – to distinguish more important projects from less important projects, so that critical needs are met, risks are managed well, and limited resources are directed to greatest benefit
- Not the *timing* of projects. Sequencing and timing of projects takes into account importance but also availability of labor, outage time, interdependencies with other projects, NEPA process timelines, etc.
- Not the *source of capital*. Projects are prioritized regardless of the source of capital that will be used to finance a project

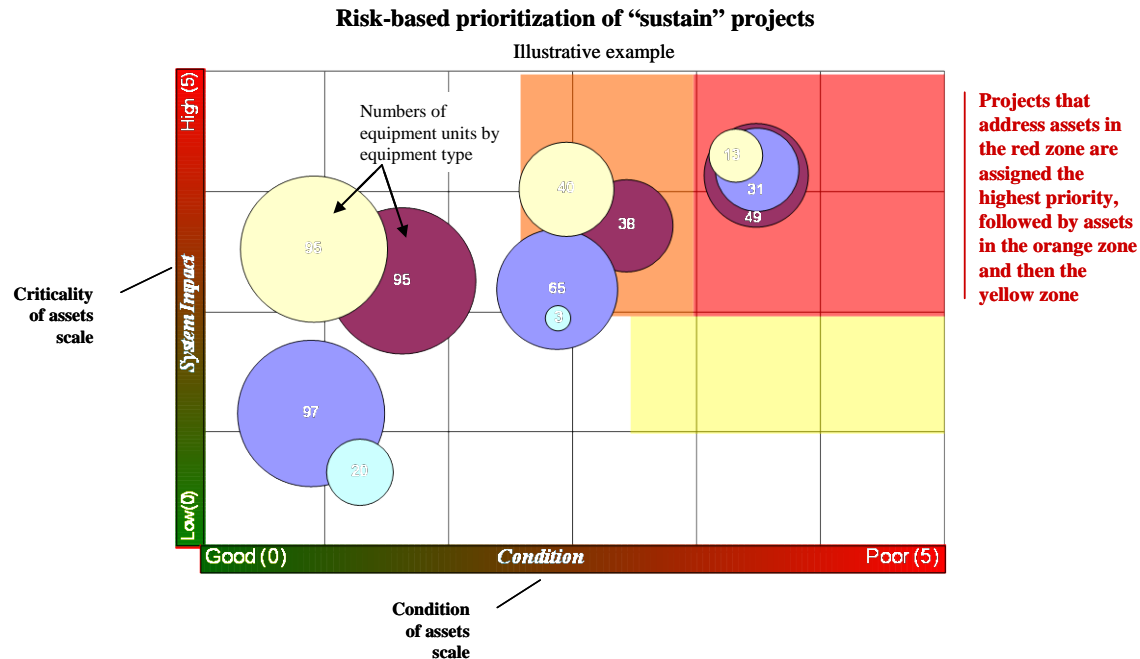
At BPA, prioritization of projects is not authorization or funding of projects. Regardless of their priority or mandatory Vs discretionary nature, all projects must be vetted and authorized through the agency’s investment review process

Capital project prioritization

How the prioritization process for *Sustain* projects works

Sustain investment is focused on preserving the asset base, not adding to it. Sustain investments are prioritized via the asset strategies developed by each of the six asset categories.

This prioritization assigns highest priority to the most critical facilities and equipment that are at the greatest risk. Risks are determined through asset condition assessments to determine the likelihood of safety mishap, equipment or facility failure, technological obsolescence, environmental damage, or security



Emergency situations take precedence. In no case are Sustain projects cancelled or deferred if it would lead to a violation of standards, tariff provisions or other legal commitments and requirements.

Goals for the new prioritization process

Create an agency-level process that:

- Furthers the agency's strategic priorities/objectives
- Provides a "level playing field" for projects with different risk/cost/benefit characteristics from various asset categories
- Optimizes the agency's investment portfolio within capital, labor, rate, and other constraints
- Ensures decision-making is risk-informed and supported by thorough analysis
- Provides transparency both internally and externally
- Enables efficient, timely decision making
- Enables BPA to track the performance and measure the realized value from investments

The methodology and process must be directed at maximizing the long-term operational and economic value of assets

- The goal is reached if the following two standards are met:
 - Assets operate efficiently and effectively and provide the capacity and capabilities needed to meet health and safety, reliability, availability, adequacy, environmental, security and other standards
 - Total economic costs are minimized over the long-term. Total economic costs include not only BPA's costs to maintain, replace and expand assets but also the costs that customers and others may bear should the assets fail to perform as needed.

Scope

All major expansion projects of BPA and its FCRPS partners

- “Major” defined as projects with an estimated direct capital cost of \$3 million or more
- Implementation will be staged

Initially, the methodology for determining the economic value of projects will focus on discretionary transmission and information technology projects – the asset categories that have the largest number of discretionary projects

- The methodology would then be extended to discretionary investments in other asset categories

An estimated \$1.5 – \$3.0 billion of discretionary investment would be prioritized through the new process over the next 10 years

Approach

(Preliminary)

Mandatory projects are segregated from discretionary projects

- Mandatory projects are funded first

Discretionary projects are evaluated through three tests:

- ***Strategic fit:*** the importance of the project for the agency to deliver on its strategic priorities and objectives
- ***Economic value created:*** a ranking of projects by the ratio of “total economic value created “ to “total project/investment cost”
- ***Feasibility test:***
 - Is the project affordable (Is the needed capital available? Will O&M funding be available to sustain the asset after it is placed in service?)
 - Will adequate human resources (labor) be available?
 - Are the implications for BPA cash flows acceptable (net present value of cash flows)?
 - Are the implications for BPA revenue requirements acceptable (present value of revenue requirements)?
 - Who are the beneficiaries of economic value, and will BPA’s share of project costs be equitable?

To make the list of priority discretionary projects, a project must rank high economically and meet the strategic fit and feasibility tests

Economic value ratio

What are the basic ingredients?

A prioritization method for discretionary investment that is based on total economic value created over total project/ investment cost

“Total project cost/investment” includes the present value of:

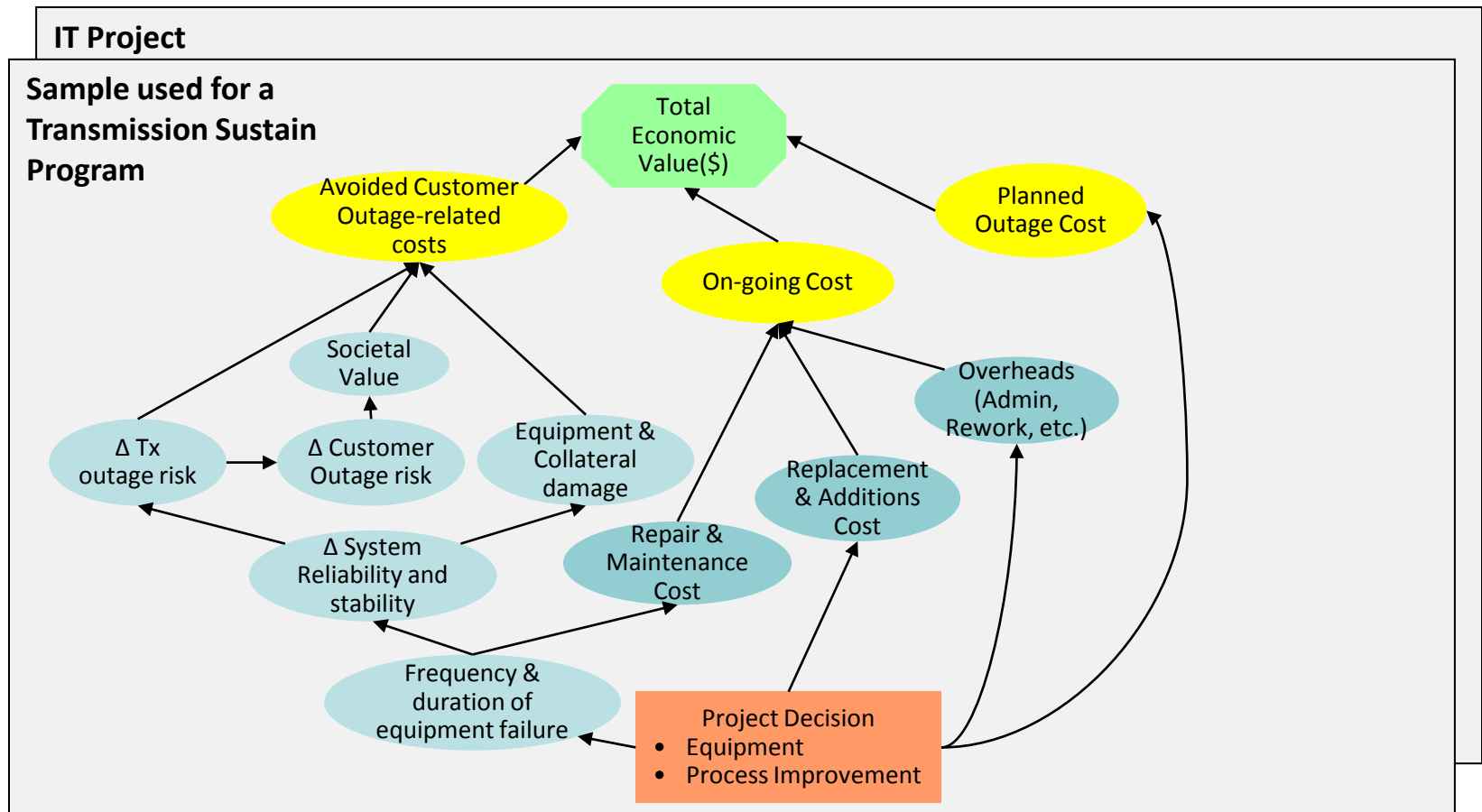
- All tangible project costs (project planning, environmental review (NEPA), land/land rights acquisition, procurement, construction/installation)
- Implicit/opportunity cost for executing project (required outage during implementation, opportunity cost for internal resources, etc.)

“Total economic value created” includes the present value of:

- Avoided congestion costs (avoided fuel and other production costs enabled by adding capacity on constrained transmission paths)
- Avoided power purchase costs or increased power sales
- Avoided organizational costs (e.g., labor savings through process efficiencies)
- Avoided CO2 or other environmental costs (monetized)
- Post project maintenance and operations costs (maintenance, repairs, monitoring, licensing (IT), support)

Total economic value approach incorporates regional as well as BPA costs and benefits

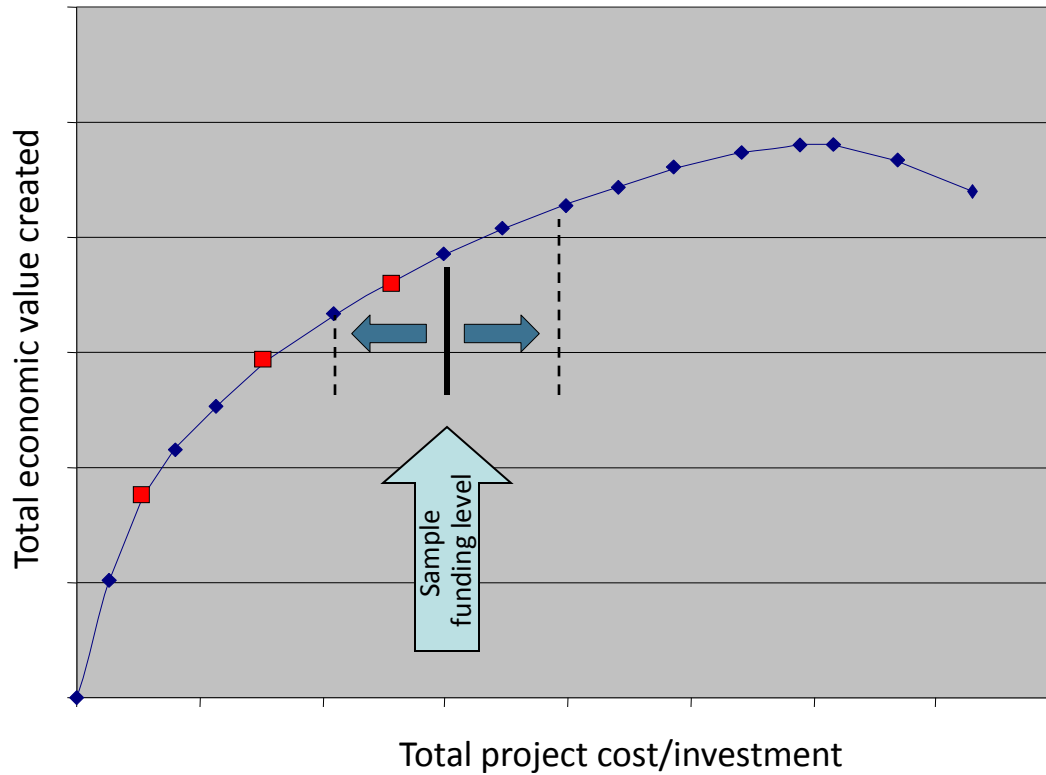
A value map enables the valuation of each project for its impact on the system and its translation in terms of economic value



Economic value test

The funding curve enables a visual ranking of projects

Illustrative Funding Curve (Discretionary Projects)



- Mandatory projects are funded first (not shown on this curve)
- Discretionary projects are tested for their strategic fit – projects are eliminated if they do not “fit”
- **Remaining projects are ranked based on ratio of the total economic value created to total project cost//investment**
- **Carry-over projects (■) are re-evaluated with prior years’ expenditures sunk. (Typically, a carry-over project will get “better” over time)**
- Projects with a high economic ranking are then tested for feasibility

Some possible design elements

- **A single agency-level process for discretionary investment**
- **BPA's Capital Allocation Board (CAB) governs this new process**
 - Approves methodology and process, oversees its implementation, and recommends prioritizations
- **Business units evaluate and submit candidate projects**
 - Process for submitting projects is annual, timed to fit with budget process and CIR/IPR schedules
- **Administrator and CAB would have latitude to revise the rankings based on strategic and other considerations**
 - Analytical scoring is not the final determinant of a project's priority
- **Once the three tests are applied (strategic fit, economic value, and feasibility tests), a "Go – No-Go" cut line is drawn**
- **The prioritization results are shared with stakeholders**
 - Via Quarterly Business Review or Capital Investment Review
- **All projects, including mandatory projects and discretionary projects that are ranked "Go", are subject to the agency's business case and project authorization process**
 - Project prioritization is not project approval; projects that make the cut must still be vetted and authorized via the CAB process
- **Once in service, priority investments are tracked to determine if they deliver the economic value that was expected**
 - Results are reported to the CAB and to customers and other stakeholders

Schedule

- **BPA team formed** **May 2012**
- **Phase 1 complete: method and process are created/defined** **August-September**
- **QBR stakeholder check-in (1)** **August**
- **Phase 2 completed: method and process are tested/proven** **February 2013**
- **QBR stakeholder check-in (2)** **February**
- **Implementation begins** **March**