



NPV-Based Procurement Model

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Background

Deep energy retrofit projects can generate significant value for building owners, via greater energy savings, higher subsidies, and reduced construction costs.

Traditional requests for proposals (RFPs) have scoring criteria that favor the lowest bidder, which can be a useful model when procuring certain items. However, for an energy retrofit—where greater initial investments translate into higher energy savings and shorter payback periods—awarding contracts to the lowest bidder limits how effectively the project will perform.

With a simple change in the procurement process, contracts can be awarded to the project with the highest long-term value, rather than the lowest upfront cost, which ultimately increases energy savings and project performance. An RFP based on net present value (NPV) ensures that projects are designed in the owner's best interests, maximizing overall value and project benefits.

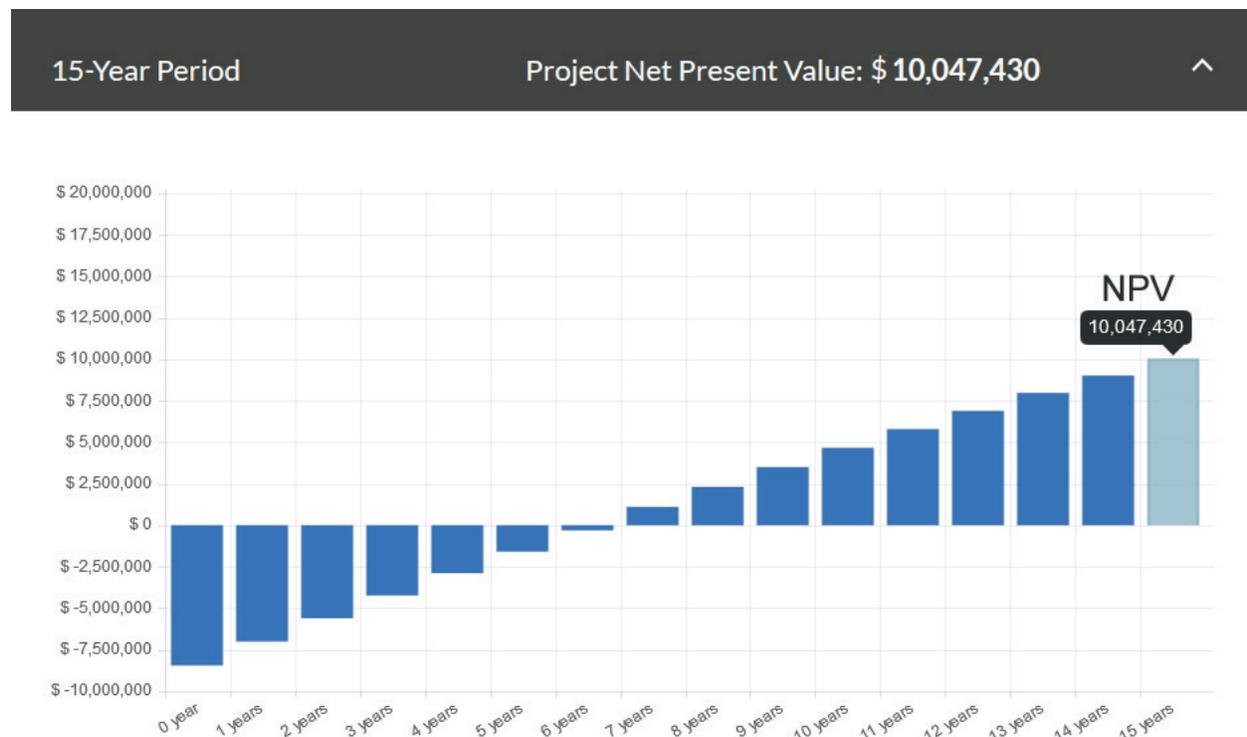
What is Net Present Value?

The net present value of a project is a financial metric that can be used to evaluate the merit of a project. It is the value in today's dollars of the future cash flows of a project, considering project costs, savings, incentives, and asset renewal, normally calculated for a period of 15 or 20 years.

In the following example scenario, a project with an initial cost of \$8.3M has ongoing energy savings that provide a return on investment within 6 years and generate \$10M in net present value after 15 years.

An interactive tool to simulate net present value can be accessed on the following page:

<http://ecosystem-energy.com/about/what-is-iepc/pillar-3-highest-value-lowest-cost/>



Advantages of an NPV-Based Procurement Model

Using a project's net present value to determine its merit has several advantages:

Deeper Energy Savings

- › To obtain a high NPV, firms are incentivized to find opportunities for deep energy savings that address all energy systems and go beyond conventional equipment replacement, leading to greater economic benefits and improved GHG reductions.

Highest Value Rather than Lowest Bidder

- › Lowest bidders drive down internal costs to win business, meaning they are unable to dedicate sufficient time to complex design. NPV-based bidders devote more time to efficient design to develop the project with the highest value.

Firms are Incentivized to Save, not Spend

- › With the typical “cost-plus” model, firms are incentivized to increase project costs to increase their professional fees. With the NPV model, firms are incentivized to drive more value by controlling project costs.

Ease of Comparing Projects

- › In a proposal submission, firms may submit very different projects with different measures, costs, and payback periods. The NPV criteria allows owners to compare these projects side-by-side using a common variable (“apples to apples”).

Opportunities for Value-Added Asset Renewal

- › When asset renewal needs are combined with an NPV-based procurement process, projects requiring capex can be transformed into projects with a payback.

Aligned Interests

- › A value-based proposal aligns the interests of all stakeholders. The NPV model normally requires the winning firm to provide contractual guarantees for project costs and performance, ensuring that interests are fully aligned from project start to finish.

Procurement Processes Using NPV

The NPV-based procurement model can be carried out in one step by beginning directly with an RFP process, or in two steps by preceding the RFP with a request for qualifications (RFQ) in order to have a more efficient RFP stage with a smaller number of pre-qualified bidders.

One-Step Process

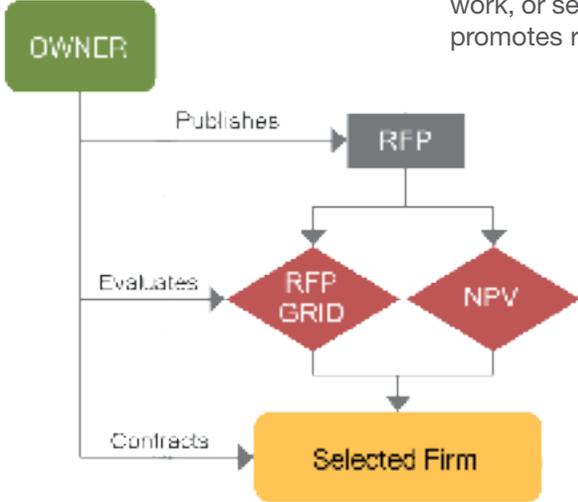
In the one-step process, firms are invited to prepare and submit comprehensive energy services proposals that include a description of the proposed energy conservation measures, implementation approach, methodology, and company experience, in addition to financial information, including NPV, return on investment period, and annual energy savings.

An evaluation committee evaluates the proposals based on the criteria and requirements listed within the RFP document in order to assess the quality and economic value of the proposed projects.

The winning proposal (if any) will have met all mandatory requirements and obtained the highest score for weighted economic value. This is calculated by multiplying the NPV by the qualitative score from the evaluation grid (see evaluation tools on upcoming pages).

$$\text{Weighted Economic Value} = \text{Qualitative Score (\%)} \times \text{NPV}$$

Upon being selected, the winning firm must demonstrate the accuracy of its financial projections with a detailed feasibility study. In the event that the return on investment period or energy savings is not attainable by the firm, the owner may either cancel the contract without compensating the firm for the study, or redefine the scope of work, or see if the firm is willing to make up the difference. This policy promotes realistic financial projections during the RFP process.



NPV Calculations for One-Step or Two-Step Process: Example Scenario

In the following table, NPV calculations are provided for an example scenario in which the cash flow is determined for a 20-year period based on defined parameters.

Project Metrics

Project Cost:	\$17,077,442	
Grants/Incentives:	\$2,954,386	
Annual Energy Savings:	\$2,094,806	Constant all year long
Energy Savings During Construction:	\$1,047,403	
Design/Build Period (months):	24	
Energy Inflation Rate:	2.00%	Applied only once a year
Senior Debt Project Interest Rate:	5.00%	
Simple Payback (years):	6.74	
Total Contract Term (years):	7.50	
NPV of Project	\$26,461,192	

Assumptions

50% of Annual Energy Savings during Construction

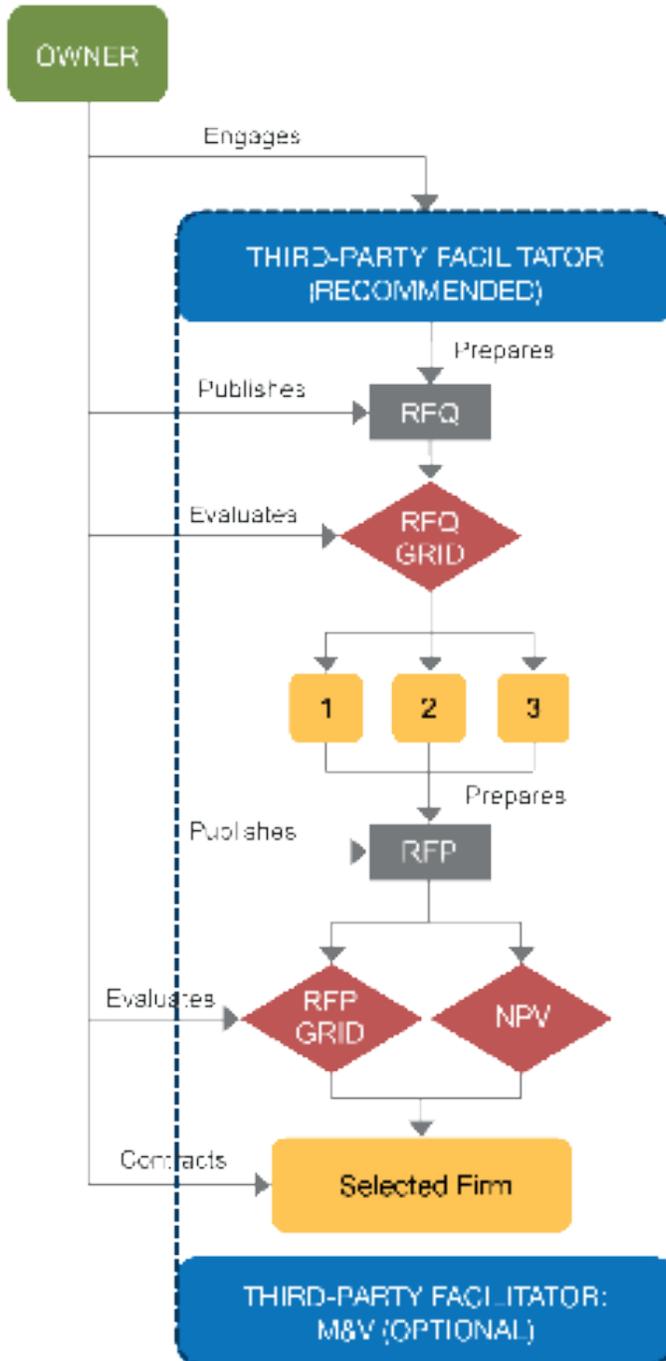
20-year useful life

Proposed Evaluation Grid for One-Step Process – RFP

Category	Criteria	Percentage Weight	Points per Category
		%	
General	Clarity and accuracy of proposal	2	4
	In-person presentation/conciseness	2	
Company Experience	Engineering related to energy efficiency	2.5	20
	Project management	2.5	
	Post-construction M&V and follow-up of energy performance services projects	2.5	
	Typical project performance results and references	7.5	
	Quality and experience of company's personnel	5	
Management	Project team	2.5	20
	Organization/planning/cost control	15	
	Proposed project schedule	2.5	
Technical	Approach and overall methodology	5	45
	Proposed energy conservation measures	35	
	Savings verification methodology	5	
Training and Awareness	Quality and relevance of proposed training program	2	4
	Quality and relevance of proposed awareness campaign	2	
Financial	Relevance and reliability of financial performance guarantees	2	7
	Evaluation of company's recent financial statements	5	
TOTAL :		100	100

Two-Step Process

The two-step process normally involves a third-party facilitator and is often used for large-scale projects. During the request for qualifications (RFQ) stage, pre-qualified bidders are selected based on company strength and experience, and these bidders then participate in an RFP process similar to the one-step process.



3rd Party Facilitator

- Acts as contact point between owner and firms
- Coordinates procurement process
- Prepares procurement documents
- Advises owner on the process and selection

Step 1: Request for Qualifications (RFQ)

- 1-month process
- Open call for submission
- Broad document describing company history, projects
- Qualitative evaluation of experience, expertise, and references (see RFQ evaluation grid)
- Selection of 3 or 4 pre-qualified bidders

Step 2: Request for Proposals

- 2-4 month process
- Proposals solicited from pre-qualified bidders
- Technical submission describing specific project proposed
- Qualitative evaluation of implementation plan, methodology, and technical solution (see RFP evaluation grid)
- Quantitative evaluation of technical solution and financial figures based on NPV
- Selection of winning firm

Third-Party Facilitator: Monitoring & Verification (Optional)

- Provides third-party verification of savings projections, baseline adjustments, and savings achieved
- Same facilitator can be used as for the procurement process for project continuity

Proposed Evaluation Grids for Two-Step Process

RFQ (Step 1)

Criteria	Points per Category
1. Organizational structure	5
2. Qualifications/experience of proposed project team	15
3. Experience and expertise in energy efficiency engineering	20
4. Experience and expertise in project and construction management of energy efficiency projects	20
5. Experience and expertise in providing technical training for energy efficiency, operations, and maintenance	10
6. Experience implementing awareness campaigns on energy efficiency, the environment, and sustainable development	5
7. Representative case studies and client references	15
8. Assessment of recent bidder financial statements	10
Total:	100

RFP (Step 2)

Category	Criteria	Percentage Weight	Points per Category
		%	
Management	Project team	10	30
	Organization/planning/cost control	15	
	Proposed project schedule	5	
Technical	Approach and overall methodology	5	50
	Proposed energy conservation measures	40	
	Savings verification methodology	5	
Training and Awareness	Quality and relevance of proposed training program	5	10
	Quality and relevance of proposed awareness campaign	5	
Financial	Relevance and reliability of financial performance guarantees	5	10
	Evaluation of company's recent financial statements	5	
TOTAL :		100	100

Further Information

Procurement processes based on NPV are still relatively new in many parts of North America, though they have proven their success in the province of Quebec, which has served as a testing ground for this model for more than fifteen years. NPV is the standard selection criterion used by Quebec's educational and healthcare institutions when soliciting proposals for energy performance projects, which have increased the environmental and energy performance of the province's institutional building stock to enviable levels. While energy projects that use standard procurement methods tend to generate 15-20% energy savings, NPV-based models typically result in projects that generate 30-40% savings. Ecosystem's projects alone have led to \$200M in cumulative savings and 370,000 metric tons of avoided GHG emissions.

To learn more about procurement processes based on NPV, and to consult additional tools including a detailed RFP model and NPV spreadsheet, please contact Ecosystem at info@ecosystem-energy.



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