The Top 10 Green Energy Finance Mistakes (And How to Avoid Them)

A Guide for Local Governments

WULFF, HANSEN & CO.

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The Top 10 Green Energy Finance Mistakes

Introduction

When implementing solar and energy efficiency ('green') programs, local governments frequently spend the majority of their time debating and discussing the physical attributes of a program – how many megawatts of solar will be installed, which HVAC units will be replaced, etc. The actual financing of the project is too often considered an afterthought and arranged only at the end of the process, and sometimes may be dictated by the vendor. This is a mistake because the project's financing can dramatically affect the success of the program. In extreme circumstances, a poorly thought-out financing package cannot only negate the beneficial aspects of the program itself, but can also be detrimental to the government's overall fiscal health. In this paper we describe what, in our experience, are the ten mistakes most commonly made in energy project finance.

1) Using Inflated or Unrealistic Utility Cost Escalation Rates

Savings calculations are projections and, as such, are highly dependent on assumptions about future utility rate increases. Any project can be made to look good by using aggressive rate escalation assumptions. Use realistic and conservative escalation rates. If rates increase by less than the assumption, savings will not meet expectations. You should run project economics under a variety of rate escalation scenarios – high, middle, and low. Negative Savings NPV (explained below) in some rate scenarios means the project has a potential financial downside and can actually lose money for the sponsor.

2) Neglecting to Calculate Savings at Their Net Present Value

A dollar today is worth more than a dollar tomorrow. Savings numbers need to be converted into their Net Present Value (NPV) to be useful and not misleading. This is done by discounting savings using your 'cost of capital' as the discount rate. You may have an internal cost of capital rate used for projects. If not, one can be approximated from your long-term bond rate. Once you calculate the present value (PV) of projected savings you then subtract the up-front cost of the project to obtain the net present value of future savings. A negative number means that the project costs more in today's dollars than it will generate in future savings.

3) For Solar, Not Considering Two Alternatives: PPA vs. Ownership

Solar financing should be considered separately from other green energy projects because a solar installation need not be owned outright: It can be financed instead via a Power Purchase Agreement (PPA). In such a financing, a third party builds and owns the facility, selling the power to the end user (you) at a contractually agreed-upon rate which is less than the local utility's rate. A PPA allows you to lock in steady and potentially inexpensive electricity rates for 20 to 25 years.

The system's owner receives the benefit of a 30% Federal Investment Tax Credit (ITC) and accelerated depreciation; there may also be substantial state incentives. Since these tax benefits have no value to a municipal entity, nothing is being given up.

Operations, maintenance, and system upkeep are the responsibility of the system owner, not you. With a PPA, you pay only for the electricity the system produces **s**o all operational risk stays with the owner. On the other hand, solar systems are quite easy to maintain and don't have much risk associated with them. Owning yours offers the potential of receiving (nearly) free electricity after the system has been completely paid for.

However, as with any other form of financing, the details of the contract are crucial. Many PPA providers offer only rates that, while less than those of the local utility, provide significantly lower savings than what could be obtained by ownership of the system. Other contractual terms are frequently unfair, greatly favoring the PPA provider over its customer. It's also vital to review in detail the end-of-term provisions, which are often unreasonably costly and onerous to the user.

Consider both financing options carefully as they have very different pros and cons.

4) Ignoring the Limits of a System's Useful Life

All equipment wears out and has an expected useful life. LED streetlights eventually stop working. High-efficiency motors burn out. Solar panel production degrades slowly and predictably over time. The inverter (which converts solar-generated DC current to usable AC) must be replaced periodically. Many savings projections run for 30, 35 or even 40 years without properly allowing for repair and replacement costs.

Savings projections which ignore these future costs can be very misleading. In such long timeframes most equipment will have long ago stopped working and been replaced at a cost. Savings should be calculated only for the expected useful life of the equipment or should include the costs of future repair and replacement. Otherwise, savings projections will be significantly overstated. Similarly, the term of the financing should under no

circumstances exceed the average useful life of the project. This mistake could result in the owner being obligated to make payments on assets that no longer provide any benefit.

5) Misunderstanding the Savings Warranty/Guarantee

This guarantee is a large part of the value that a vendor brings to the table, so ask questions until you understand exactly what's being promised. Some 'guarantees' aren't worth the paper that the contract is printed on. Others have significant value and can protect the owner in the event that things don't work out as expected. Some companies even promise to write a check if savings don't materialize. Occasionally a project's owner may conflate the savings guarantee with the performance bond that guarantees physical completion of the project, but they are entirely separate and the performance bond offers no support to any savings or production guarantees.

Make sure you understand exactly what is being warranted, and by whom. Is it actual dollars or is it electricity savings or energy production? Is the guarantee the responsibility of the contractor, of the equipment manufacturer, or of both? How long does the guarantee last? Will it end before the project is paid for? What happens if the company is sold or goes bankrupt? What rights do you have? In what ways is the company allowed to make good on its warranty/guarantee? These questions are of vital significance.

In our experience, few clients take the trouble to fully understand the substance of a 'guarantee' or 'warranty', let alone what the 'warranty' actually 'warranted'. The details are very important and if things go awry, a poor guarantee can turn savings into a loss. Most energy efficiency companies warrant the number of kilowatt-hours saved through increased efficiency, not actual dollar savings. Further, companies usually retain the right to address a shortfall not with cash but with remedial measures such as installing even more energy saving equipment until the electrical consumption savings meet the terms that were originally promised. In such cases, the user is saddled with higher-than-expected utility costs until such time as the additional equipment eliminates the shortfall. These additional and unexpected costs will likely never be recovered.

The term of the guarantee is as important as its content: Many guarantees cover only the first few years (often only two to five) of a project which is being financed over twenty years or more. What happens when the guarantee runs out? Worse, in some cases, the provider has the right to end its liability under the guarantee by payment of a specified lump sum. This is to protect it against a project gone bad, but who will protect the project's owner?

Companies also have various ways to measure 'savings'. Typically, they simply compare pre- and post-project energy consumption or production measures, which is useful but less

than completely accurate unless all other conditions are identical, which they rarely are. For example, where HVAC is involved the normal variation in outdoor temperatures from year to year can have a dramatic effect on the measured 'savings'.

Clients can ask for more extensive monitoring and verification (M&V) of savings but this is expensive and time-consuming. For simple energy retrofits like replacement of incandescent lights with LEDs, little or no M&V is necessary; savings calculations aren't complex and the project isn't risky. A more complex project like landfill gas to energy may require extensive monitoring and verification backed by a comprehensive warranty along with a third-party guarantee in case things go wrong. Further, a warranty or guarantee is only as good as the company providing it. Does it have the operational and financial strength to stand behind its promises? Has it made good on guarantees for other customers? You and your advisors should examine a company's track record, claims history, and audited financial statements before you commit to moving ahead with a project.

6) Neglecting to Consider Operation and Maintenance Costs

In order to generate the savings projected, systems and equipment need to be maintained. Electricity production or revenue projections assume that this is being done, but don't always mention the cost. Even solar systems require maintenance: inverters need to be replaced every 10 to 15 years, panels need to be washed regularly, etc. Maintenance can be done by external companies or by existing staff, but someone must pay the costs. These costs need to be included in the financial analysis of the project's economics.

7) Needlessly Incurring a General Fund Obligation

Popular financing mechanisms for paid-from-savings projects include bank loans, tax-exempt lease-purchases, and Certificates of Participation. All of these are typically general fund obligations. As such, they can negatively impact the borrower's other operations if project performance is less than expected and savings are less than the original projections, resulting in an unbudgeted need to draw on the general fund.

Depending on the nature of the project, this potential problem can sometimes be easily avoided. For example, financing an energy efficiency project done for a water or wastewater enterprise can utilize a revenue pledge and rate covenant rather than creating a general fund obligation. The debt payment is then made directly from system revenues. With an identified separate stream of cash for repayment, a draw on the general fund is not necessary. Such financings are also typically more attractive to investors, thus reducing overall financing costs.

8) Choosing a Lender Without Competition

Many governments would never consider purchasing expensive goods or services without first running some type of competitive process, yet quite frequently these same governments eagerly accept the first energy financing package presented to them by the contractor. In our experience, one can almost always obtain a better financing package by having lenders compete for the business. The contractor's goal, understandably, is not to ensure that the client gets the most favorable financing terms available: His goal is simply to get the project quickly funded so work can begin.

We sometimes see dramatic differences in the interest rates and terms offered by a particular bank or other lender to similar borrowers for similar projects. The only difference is often that one borrower used the services of a Municipal Advisor to obtain unbiased third-party financial advice and ran a competitive process while the other one did not. The best rate is rarely achieved by a borrower acting as a captive audience who hears from only one lender. Even small differences in interest rates can have a major impact over time. For example, a 20 basis point difference in a $20 million financing over 15 years equates to $600,000 in additional interest costs.

9) Making a Financing Decision Based Solely on the Interest Rate

The interest rate isn't the bottom line when it comes to financing. Borrowers need to closely examine the terms and conditions. For example, some proposals may include all transaction fees while others do not. Some lenders charge a large 'review' fee; others do not. Similarly, one lender may accept a 'validity' opinion from the borrower's counsel while another may require it to be prepared by an expensive external counsel at the borrower's expense.

Prepayment terms can also have a dramatic impact on overall value: One proposal may allow for prepayment at any time on favorable terms. Another may allow for repayment only with a substantial penalty or premium, or even prohibit prepayment completely. Prepayment options are especially significant if you need financial flexibility in the future, or hope to refinance at more favorable rates.

In some cases, a lender will require the borrower to pledge an asset (typically via a lease or COP structure) in order to obtain financing. Tying up an asset may be necessary but a mistake here can have unintended consequences down the road and reduce the borrower's future financial options. The impact of these and other terms and conditions can be enormous, so it's critical to take a comprehensive look at the terms before you automatically leap at the lowest nominal interest rate.

10) Ignoring Low Cost and Subsidized Financing

There are a number of Federal and State programs that offer very attractive financing for green projects. On the Federal level, until 2018 both Qualified Energy Conservation Bonds (QECBs) and Clean Renewable Energy Bonds (CREBs) offered long-term financing (more than 20 years) at rates typically less than 2% and sometimes less than 1%. While these were eliminated by the 2017 tax bill, similar programs may reappear in the future. At the State level, there are several programs, including funds from Prop 39 and the California Energy Commission offering both 0% and 1% loans for smaller projects. Cost-free grants may also be available. Don't count on your vendor to identify these for you; again, his goal is to get the project quickly funded so work can begin. You or your advisor should explore these sources first and then fill in any gaps with traditional methods.

Summary and Conclusion

The financing mistakes discussed here may seem obvious once considered, but they are made every day by eager borrowers excited by their new clean energy project. Fortunately, there are easy ways to avoid these mistakes. Ask about the financing early in project development. Evaluate and consider multiple alternatives. If you need to bring in outside expertise from your Municipal Advisor or elsewhere, don't hesitate to do so. Invite a member of your finance or treasury department to be a part of the project team. Be sure to shop around for the best overall financing package. Finally, don't be afraid to ask 'stupid' or 'obvious' questions about the financing. Financing is an important component of making your project a success.

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