

Assumption:

The Energy Committee has requested an increase in funding for its capital reserve account from \$50,000 to \$150,000. This would allow it to make deposits on two solar array projects, one at the Stump Dump and the other at the Mountain Road Landfill. The proposal estimates both projects have equal costs and financial benefits, with each costing \$300,500 after a 30% Investment Tax Credit. The combined total is \$601,000.

Motion:

The proposed motion is to defer a decision on funding the solar array proposal to allow the Budget Committee to conduct a thorough financial analysis of this and other alternatives to meeting the Town's energy sustainability goals. We recognize this may result in foregoing current Federal Tax Rebates.

Rationale:

The return on investment (ROI) calculation presented by the solar array vendor does not follow the standard financial formula. The vendor reported an ROI of 8.3% for the Stump Dump project, and the Energy Committee expects the same for the Mountain Road Landfill. The vendor noted that the 8.3% ROI was derived by *dividing annual revenue by the net cost of the investment*: \$24,750 divided by \$300,500 for the Stump Dump array, or \$49,500 divided by \$601,000 for both projects.

However, the standard formula for calculating the ROI is *income minus the cost of investment, divided by the cost of investment*, see footnote (1). This results in a first-year ROI of *about negative 91.7%* for either project or both combined: \$24,750 minus \$300,500 divided by \$300,500, or \$49,500 minus \$601,000 divided by \$601,000. The return improves as income accumulates over time.

A Present Value (PV) calculation considers future cash flows, and the Net Present Value (NPV) calculation recognizes the time value of money, see footnote (2). These analyses are simplified by omitting any additional future inflows, outflows, and long-term factors such as inverter replacements. Including these elements would improve the calculation's precision. These analyses show the project does not have a positive return until year 13. The breakeven point would extend further out if the project were financed through borrowing and incurred a cost of capital.

The town needs more accurate, complete numbers for its discussion of this proposal and a comprehensive review of future cash flows. Alternatives for meeting the Town's energy

sustainability goals have their own financial attributes. A genuine financial analysis would evaluate them to determine which is the most cost-effective way to achieve this goal.

The town’s investments reflect its values, including public safety, maintained roads, land preservation, the library, and other. When developing options to meet these goals, the town should consider the tax burden and use financial analysis to find solutions that best balance funding those investments with that burden. Typically, these investments do not generate revenue. For the energy sustainability goal, this project will generate revenue, but a positive net return is not expected for over a decade. Further assessing this and other alternatives is the fiscally responsible approach.

(1) Per the Corporate Finance Institute | **ROI = Net Income / Cost of Investment**
<https://corporatefinanceinstitute.com/resources/accounting/return-on-investment-roi-formula/>

(2)

Cost of Capital		0%	Initial Investment	Income	Present Value Formula
Year					
2026	0		-\$601,000		-\$601,000
	1			49,500	49,500
	2			49,500	49,500
	3			49,500	49,500
	4			49,500	49,500
	5			49,500	49,500
	6			49,500	49,500
	7			49,500	49,500
	8			49,500	49,500
	9			49,500	49,500
	10			49,500	49,500
	11			49,500	49,500
	12			49,500	49,500
	13			49,500	49,500
					\$42,500
Using the NPV formula					\$643,500
Initial Investment					-601,000
Net @ 13 Years					\$42,500

