

Financial info supporting the Journal editorial submitted 12/27/2012.

I realize numbers and accounting are not for everyone. However, for integrity purposes I believe the numbers I stated in my editorial must be offered to those interested along with my calculations and methodology.

Estimating the total cost of the OPALCO broadband capital expansion:

The following is my attempt to calculate the costs of the broadband expansion using 10 years to pay for it. Keep in mind our board may find alternate ways to structure the expansion so costs may be higher or lower than previously estimated by OPALCO. The O & M are the operating and maintenance costs of broadband assets.

The estimate of \$34 MM (million) cost of the expansion came from information published by OPALCO last July and can be found here:

<http://www.opalco.com/wp-content/uploads/2012/04/Broadband-FAQ-07-05-12.pdf>

which estimated \$30 MM and a more recent conversation with an OPALCO executive who said the \$4 MM cost to replace a Lopez-San Juan Island cable crossing with one that has fiber optic cable inside it was denied in our last RUS loan application approval so it will be added to the consumer broadband build cost. In 1995 the board decided to repair the existing cable for \$1 MM rather than replace it for \$3.5 MM. Smart Grid communications is currently provided by a microwave link between these two islands and may be inadequate to carry future consumer broadband traffic if it is approved by our members. So this new power cable with fiber optic cable inside will be necessary.

The loans to cover the \$34MM might be a variety of RUS type loans. Perhaps something like this http://www.rurdev.usda.gov/utp_infrastructure.html. For calculating loan interest payments I make some very favorable assumptions. Interest rate used is 1.925% based on Dec 21, 2012 RUS Federal Treasury rate plus 1/8 percent (1.8% +.125%). I used the Excel PMT function with 10 years of monthly interest and principal repayments. These provide a lower cost of funds compared to quarterly or 20 year repayment periods. The total interest to be paid using this function and these assumptions came to \$3.4 MM. For you accounting experts this does not represent the present value of those future costs. If anyone posts a request in this thread I will provide a link to the Excel spreadsheet I created for this.

In comparison, if we committed to 20 years of quarterly re-payments our cost of funds could be over \$7 MM. I was told by an OPALCO executive that loans would be phased in during the build out and most of it would have a 25 year useful life while the fiber expansion would have a shorter life. Additionally, those funds would be drawn down in phases during the build out at various interest rates. For high-level analysis of the cost of funds it seems reasonable to use a single loan at the least expensive terms as I have done here. So I have possibly understated the cost of funds.

So the total build cost of the broadband expansion after adding cost of loans is estimated at \$37.4 MM. Again my numbers are based on information provided by OPALCO in summer – fall of 2012.

Just before the last election Representative Rick Larson publicized \$38.4 MM in RUS funds had been applied for by OPALCO and approved. I was told some amount of that was for the consumer broadband build out, but some of it was for “smart grid” improvements. So it may be some of the \$34 MM total broadband initiative expansion previously quoted is now re-categorized for smart grid improvements in the current 4-year construction work plan.

The question to be asked is how much of those \$ millions in the current loan approval are related to plant-to-plant fiber-optic expansion and remote switching and monitoring equipment which is smart grid and how much is for just throwing fiber-optic cables in ditches that go toward consumer's homes and future towers. If it isn't the former then it should properly be included in the cost of the consumer broadband effort.

The size of the broadband capital expansion compared to our existing plant capital:

To compare this with the existing capital of our co-op and thereby get a sense of the size of the proposed expansion I use the most recent audited accounting of our capital from end of 2011. That value was \$81.6 MM. This is the value before depreciation and includes construction work in progress at the time. It is also important to note that this value does not include the costs of funds to pay for that existing capital. Therefore, I use the \$34 MM estimate of the broadband capital expansion and not the \$37.4 MM total cost.

So the broadband expansion represents about a 42 percent ($\$34 \text{ MM} / \81.6MM) increase in capital assets.

The cost over 10 years to operate and maintain (O & M) the broadband expansion:

Knowing this is important, because the burden to build combined with the costs to operate and maintain the broadband capital expansion is the amount the broadband assets must earn to break-even. This is a way to determine our bottom line 10-year revenue target. Baring the socioeconomic consequences of our cooperative branching into consumer broadband / telecommunications these costs must be matched or exceeded by the revenues generated by the expansion into a new business. Otherwise, it is a drag on the co-operative's founding purposes and mission which the members will pay for.

Here are the numbers and calculations for O & M.

The proposed new plant equipment may create an estimated additional \$1.5 MM in annual maintenance expense. This maintenance estimate was provided by OPALCO. It could be high if OPALCO eventually does in-house maintenance. What the associated consumer broadband operational costs would be has not been revealed. However, we can make an approximation.

To approximate the consumer broadband and wireless operating expenses I use the ratio of electric operational distribution costs to distribution maintenance costs and multiply this ratio by the proposed consumer broadband maintenance costs. This method may overstate or understate the operational expenses, but here are the calculations:

Audited end-of-2011 electric distribution operational costs (DO) were \$2.3 MM and the electric distribution maintenance costs (DM) were \$1.4 MM. Therefore DO is 1.6 times DM. I use this ratio next.

OPALCO's estimate of the consumer broadband plant maintenance costs are \$1.5MM. So using the same ratio DO-to-DM it might be a reasonable approximation to say broadband operational expenses will be \$2.4 MM ($1.6 \times \1.5 MM) annually.

Therefore annual O & M for broadband expansion are calculated at \$3.9 MM (\$1.5 MM + 2.4 MM). This may be high, but we lack operational cost estimates from OPALCO for now.

So 10 years of consumer broadband / telecom O & M would be \$39 MM (\$3.9 MM x 10 years).

Combine costs to build, operate, maintain, and interest payments over a 10 year repayment period and we get an estimate of our break-even point over 10 years?

\$76.4 MM (\$39 MM + \$37.4 MM)

Note: This number may not include the annual costs of Internet gateway/access on the mainland nor increased dark fiber costs between OPALCO's head-end on Fidalgo and Bellingham. Maybe my operating expenses estimate will cover these, I don't know.

That portions out to about **\$7,075 per member** (\$76.4 MM / 10,800 members).

Now there will be some revenues, but we don't know yet what OPALCO's range estimates are for broadband coverage, pricing, customer installation and setup costs, or market share, or will they be allowed to provide broadband to non-members. These will be critical in order to estimate the range of revenue and how much of that \$7,075 per member will be reduced.

But billing is not based on number of members. Some may pay more, some less:

Each member is billed according to the number of meters they have and electricity usage at each meter. There are about 14,700 meters in our cooperative system. Some number of those are cooperative owned meters, but let's assume the entire number is covered by member meter billings.

Some members have more than one meter. Some members get assistance on their bills paid for through the generosity of the rest of our membership. Will the broadband burden be shifted for those who need help paying their OPALCO bills?

If you divide the 10-year broadband expansion costs by the number of meters it is about \$5,200 to each meter (\$76.4 MM / 14,700 meters).

Some members have 2 or more meters so just multiply \$5,200 times the number of meters you have and you will get your member share of the cost. This is regardless of whether you are an OPALCO consumer broadband subscriber.

The number of meters and membership numbers are from OPALCO financial reports and website.