

From: Michael Schilmoeller
To: [Merrell, Melissa](#)
Subject: Portland Utility Board questions
Date: Friday, July 14, 2017 5:23:00 PM

Hi Melissa,

It was a pleasure to meet you on Tuesday. I had a couple of questions that I thought might be useful for the PUB to consider.

1. I noticed that in the charts that were handed out, cryptosporidium treatment costs for all of the alternatives begin to hit the rates almost immediately. That seemed unlikely unless there were no financing (debt). In my utility background, one of the key objectives is to match rates to services (to avoid shifting costs among customer cohorts, an application of the matching principle in accounting). Financing does that, and typically at a small fraction of the total cost. Did I miss something here?
2. I believe I heard that the construction time requirement for treatment alternatives was five to ten years. I was surprised not to hear more discussion of financial risk related to construction of the alternative remedies. Over five to ten years, there are substantial uncertainties due to regulatory and technology innovations, and of course due to direct costs like electrical power. (Direct cost excursions often have a much smaller impact than the first two.) Merely having shorter construction time, for example, can have a significant quantitative advantage, because forecasts over shorter periods of time are typically more reliable. Final costs are therefore closer to projections. Moreover, some alternatives may provide more cost-effective mid-construction exit strategies.

I will add that a quantitative analysis of risk issues, although desirable, is generally unnecessary. Given the time constraints, I suspect detailed analysis would be infeasible. Many of the right questions will emerge, however, from simply walking through the various scenarios that could arise.

No response is necessary. I hope these questions are helpful.

Very best,

Michael

No response is necessary