

Comprehensive Energy Plan
Responses to RMI Questions
July 16, 2012

From the REMI model assumptions document, slide 3, do you know where the "total premises" data was taken from? We're having a hard time finding good data on this.

Total premise data is a proxy number derived by calculating the total number of electric customers in Connecticut. Total electric customer data was downloaded from SNL for the year 2010. SNL compiles all FERC Form 1 data from electric and gas companies.

For a typical conversion in each sector, for the annual loads that we've already discussed—~100MMbtu/y for Res, 150MMbtu/y for Com, and 1000MMbtu/y for Ind—what is the average amount of capital the LDC can put in the ground for a CIAC of \$0?

For Yankee Gas, 100 MMbtu of Res supports \$5,250; 150 MMbtu of Comm load supports \$7,900; 1,000 MMbtu of Ind load supports \$23,500.

For SCG/CNG, 100 MMbtu of Res supports \$5,150; 150 MMbtu of Comm load supports \$10,325; 1,000 MMbtu of Ind load supports \$38,500

For a typical on-main residential conversion, how much is the CIAC? We have an average service and meter cost of \$4,300, leading to a CIAC of ~\$350—does that seem about right/representative?

For 100 MBTU the CIAC would be \$0 at any of the companies.

Do we have any data on how much CIAC customers are paying on average for the 1500 or so conversions/y that are occurring today?

For calendar year 2011, SCG/CNG collected 125 CIAC's from customers. The median collected was \$1,121. For Yankee Gas, the average CIAC for those who had paid the CIAC it in 2011 for a Residential Rate 2 conversion (76 customers had to pay) was on average \$ 720.

However when you analyze how much CIAC was paid out of the total meters set, then the average CIAC per customer was \$90 for Yankee Gas. The key point is that are were many jobs that required a CIAC and the customer was not willing to pay, this results in the customer staying on oil and the next time there would be an opportunity to switch this premise is 20 years in the future.

For the 2009-current new customers per year data that you sent, do you have data for Yankee? Also, you mentioned that the data includes both new buildings and conversions, do you think the portion due to new buildings is significant? Do we need to get data with the new buildings broken out?

The number of on-main residential conversion rate-02 meters set in 2011 was 1,088 while the associated service installations totaled about 780. The new construction rate-

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02 meters totaled 1,767 in 2011. Please note that several other multi-family units (one meter serving several residential units) also converted in addition to these.

We've written the following description of how conversions work—can you take a quick look to see if it's accurate.

"Here's how the typical conversion works. One of the state's three local distribution companies (LDCs)—Yankee Gas, Southern Connecticut Gas and Connecticut Natural Gas[[JA1](#)] —.

The LDC determines what infrastructure is needed to serve the customer. This could involve a main extension and service, a service only or in the case of a low use customer no new infrastructure.

The LDC provides the installation of gas services (through the installation of new business mains and services) without charge to new customers where the anticipated use of gas is sufficient to meet the minimum required rate of return on the capital investment. In cases where the rate of return is insufficient, the installation of gas services will be furnished only when the customer provides a contribution-in-aid-of-construction (CIAC) to bring the anticipated rate of return to an acceptable level.

For jobs that require a service only, the LDC installs an underground service line from the gas main to the customer's house. The pipe is narrow enough (1/2 to 1 inch in diameter) [[TU2](#)] that [[JA3](#)] it usually can be pushed through the soil instead of requiring a trench to be dug. For an average customer located "on-main"—i.e. within ~150ft of a natural gas distribution main line—this process, including a meter, will cost ~\$4,200[[i](#)]

For Yankee Gas, the diameter for service lines varies from 0.5" to 2" and the procedure for service installation, in accordance with the Company's General Operating Procedure is to direct bury for most of the service installation to (1) insert warning tapes that alert future excavators of the presence of gas pipelines, and (2) to ensure that there is 12" clearance all around the service line, and use the "mole process" - that is, push the pipe through the soil only under the areas of obstructions such as retaining walls and sidewalks.

For SCG/CNG, we agree with Yankee with one exception we do attempt to use the mole where conditions allow it, in addition to under areas of obstructions.

The LDC can often pay these hook-up costs, if the increased revenues from acquiring an additional customer are sufficient to cover the costs. If, however, the capital costs are too high, or the anticipated revenues are too low so that the net present value of the revenues doesn't cover the upfront costs, then customers are asked to pay the difference as an upfront, one-time payment. This charge is called a 'contribution in the aid of construction' (CIAC). For residential conversion within 150ft of a main gas line, the CIAC is expected to average about \$400 [[ii](#)].

It is important to clarify here that the net present value calculation is done with a 15 year timeframe for residential customers for Yankee Gas and 20 years for

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CNG/SCG. Under the 20 year model, for a typical residential customer with no complex construction requirements at a capital cost less than \$5,150, there would not be a contribution.

For those customers who are already hooked up to a gas main for cooking or other non-heating uses this cost is obviously not an issue.

The new gas customers then must remove their existing oil tanks and oil boilers and replace them with gas furnaces or boilers and, often, gas water heaters. The new (higher efficiency) furnace or boiler, which can be used with the existing radiators/ductwork, plus a natural gas water heater, will cost about \$3000 at the supply house, but the total bill for entire equipment removal and replacement adds up to an average of \$7,500 (Figure 7)(iii). In the conversions that have occurred in the last few years, customers have covered these costs either out of pocket or through home equity borrowing or other financing mechanisms."

Recommend changing the first sentence to read "The new gas customers then need to either modify their existing boilers to allow use of natural gas (for newly installed boilers) or replace their oil boilers with a more efficient gas furnace, and often, add a gas water heater (for older models)".