**Guidance on Estimating Savings for a Market Transformation Accord (MTA)**

MTA accomplishments should be determined by as the difference between the market characteristics with an active MTA and a pre-determined baseline that represents what the market would’ve been in the absence of the MTA. When forecasting an MTA’s accomplishments, a forecast of what the market would look like the in the presence of the MTA needs to be developed. The forecast for the MTA’s accomplishments is the difference between the baseline forecast and the expected real-world market forecast.

Developing forecasts for the baseline and the market is challenging. Guidance on what considerations need to be taken to develop these forecasts is required so that MTA proposals are commensurate with the level of rigor necessary to develop acceptable forecasts of the market and to develop an acceptable baseline. Without this guidance, evaluating program accomplishments forecasts and evaluating MTA achievements over a baseline would become a subjective and fraught exercise. (Question – who will develop this guidance?)

Once these forecasts are established, MTA energy savings can be estimated. The easiest scenario to estimate savings attributable to an MTA is when the MTA is the only utility funded energy efficiency initiative in the market. Estimating savings becomes complex when MTA for a specific measure coexists with resource acquisition (RA) and codes and standards (C&S) initiatives that offer the same measure. There isn’t a simple one size fits all solution to figuring out savings attribution among these separate interventions because the savings that each intervention type attains depends on the incremental impact each intervention has.

When multiple intervention types are expected to co-exist, an explanation of how multiple intervention types which focus on the same measure need to work together to achieve the objective of completely transforming the market should be developed. This explanation, or theory of change, will then be the basis for estimating how total market savings should be attributed between these different intervention types.

Over the course of a measure’s progress through the market, there will be phases during which either the RA, C&S, or MTA are the dominant intervention type. So, the theory of change should explain how these three intervention types will work together by explaining how each intervention type is incremental to and/or supports other interventions types.

For example, the theory of change for a measure could be to apply an MTA to bring an emerging technology to market maturity by working with manufacturers. On accomplishing this the MTA could then plan to focus on upstream channels of market transformation (such as working with major retailers) while an RA initiative could offer a complementary downstream program targeted at specific customer types that wouldn’t be reached through the upstream program. When this measure reaches high levels of market adoption, the theory of change could then be to focus on a codes initiative while offering a smaller MTA effort that focuses on accelerating code adoption.

In this example, during the first phase of the measure’s progress all savings will be attributed to the MTA. When the measure reaches market maturity and a specific RA initiative is established, the RA initiative’s savings would be calculated by rules governing the RA program. The MTA savings during this phase would be the market progress incremental to both the baseline and the RA accomplishments. In the final stage, when the C&S initiative takes over as the predominant intervention then first the C&S savings would be determined based on the C&S initiative’s intervention strategy and that strategy’s forecasted (and later evaluated) uptake. The MTA savings in this final phase would be the market progress incremental to the baseline and the C&S savings.

Therefore, the relative contribution of each intervention type to total market uptake of the measure is the basis of both savings forecasts and savings attributed to each intervention type. The program design of RA and C&S programs will thus be constructed in accordance with an already existing MTA. Conversely if an MTA is being proposed where an RA and C&S already exist, then the MTA would have to demonstrate through this theory of change how it results in incremental measure adoption in excess to that already planned by RA and C&S programs.

This theory of change will be informative when designing MTA, RA, and C&S programs and submitting program budgets for approval for all three intervention types. This will avoid duplication of effort among the three initiative types and avoid both leaving savings on the table or conflicts over claiming the same tranche of energy savings.

**Formulae to calculate savings**

Savings attributable to MTA between over a set time period is the difference between total consumption in the marketplace with and without the MTA. Total energy consumption without the MTA is determined using the counterfactual baseline which will be developed by the MTA at Stage 3 of the MTA Stage Gate Process outlined in the CPUC proposal.

Savings accrued by an MTA over time *t* years in a hypothetical market with two efficiency levels (efficient and inefficient):

Savingst = (UECi \* Nib + UECe \* Neb) - (UECi \* Nia + UECe \* Nea)

Where,

Savingst = Total annual savings attributable to the MTA through for a time period of t years

UECi = Unit annual energy consumption of the inefficient appliance

UECe = Unit annual energy consumption of the efficient appliance

Nib = Number of inefficient units that would’ve been moved through the market through t years in the baseline (where no MTA would’ve been present)

Neb = Number of efficient units that would’ve been moved through the market through t years in the baseline

Nia = Number of inefficient units that move through the real-world market through t years

Nea = Number of efficient units that move through the real-world market through t years

Estimating savings when RA programs and C&S programs are also present:

Savingst = (UECi \* Nib + UECe \* Neb) - (UECi \* Nia + UECe \* Nea) – ESRA - ESC&S

Where,

ESRA = Total Net energy savings claimed by resource acquisition programs through a time period of t years.

ESC&S = Net energy savings claimed by codes and standards programs.

This formula represents savings attributable to an MTA over a given time period. This is the same formula that Margie presented, in more detail to avoid confusion between the unit energy savings (UES) of a measure offered through the RA program which changes over time and that of the MTA which stays constant.