### 1. Summary of Energy Efficiency Achievable Cases

For the 2021 IRP Potential Study, Guidehouse ran four cases for achievable EE potential. Three of the cases were derived from Scenario 2 of the approved Energy Smart PY10-12 implementation plan and set incentives for potential measures based on a percentage of the Full Measure Cost (FMC). One case was derived from the base case used in the 2018 IRP Potential Study and set incentives for potential measures based on a percentage of the Incremental Measure Cost (IMC) in order to offer a case showing an industry standard level of incentives.

FMC takes into account the full cost of installing a measure, while IMC represents the additional cost of installing a higher energy efficiency measure as compared to installing a base level energy efficiency measure. Guidehouse set incentive levels at 86% and 32% of FMC for residential and commercial programs in the 2% Program case, respectively. These percentages are consistent with what is currently being seen in Energy Smart program implementation when looking at incentive level compared with the full invoice cost of the measure. Guidehouse then varied the percentages for the Low and High Program cases. The Reference case used IMCs because it was based on the Base case from the 2018 IRP Potential Study performed by Navigant, in which IMCs were also used. Either IMCs or FMCs can be used to tie back to historical performance without significant variance in model results.

**2% Program Case**
The 2% program case is defined by the approved Energy Smart PY10-12 implementation plan, Scenario 2. Guidehouse set incentives at 86% and 32% of the full measure cost for residential and C&I measures, respectively. Guidehouse calibrated the model results by adjusting adoption parameters and behavior program rollout to align with the historical program achievements and planned savings as documented in the implementation plan.

**Low Program Case**
The low case uses the same inputs as the 2% program case, (ENO implementation plan, Scenario 2) except for lower levels of behavior program participation rollout (50% of the 2% program case). Incentives are set to 50% of full measure cost for residential and 25% for C&I. Administrative costs on a dollar per kWh saved basis are the same as the 2% program case.

**High Program Case**
The high case is based off the 2% program case but with higher incentives as a percent of full measure cost at 100% for residential and 50% for C&I. Additionally, there is a more aggressive plan for behavior program rollout. Behavioral program rollout for the residential sector increases slightly compared to the 2% case and reaches the maximum achievable level. Administrative costs on a dollar per kWh saved basis are relatively equal to those in the 2% program case.

**Reference Case**
In an effort to develop a case reflecting an industry-standard level of incentives, and because the actual program results for the approved PY10-12 plan are tracking to higher levels of kWh savings than are often seen in long term potential studies, it was useful to provide a Reference Case that tied back to the Base case from the 2018 study. This Reference case reflects the Base case from the 2018 study where the program administrative costs reflected current spend targets on a dollar per kWh saved basis

and the incentives were set at 50% of incremental measure costs. In Guidehouse's experience in incentive level setting and potential study analysis, others have set incentives or cap incentives at 50% of incremental measure cost. Behavior program roll out matches the low program case levels as a conservative assessment of the potential roll out of the recommended programs for the ENO portfolio.

The case studies are based on the incremental and full measure cost capping and shown in the table below.

**Incentive Setting and Behavioral Program Participation by Case**

|  | 2% | Low | High | Reference |
|---|---|---|---|---|
| Res Incentives | 86% Full | 50% Full | 100% Full | 50% IMC |
| C&I Incentives | 32% Full | 25% Full | 50% Full | 50% IMC |
| Behavioral Participation | Medium forecast | Low forecast | High forecast | Low forecast |

## 2. Summary of the Demand Response Achievable Case

Unlike EE, the DR analysis does not develop separate economic potential estimates for DR since the cost-effectiveness screening of DR options takes place at the program level under achievable participation assumptions. The list of DR options that were considered is in the table below.

**Summary of DR Options**

| DR Option | Characteristics | Eligible Customer Classes | Targeted/ Controllable End Uses and/or Technologies |
|---|---|---|---|
| DLC<br>• Load control switch<br>• Thermostat | Control of cooling load using either a load control switch or smart thermostat; control of water heating load using a load control switch. | Residential Small C&I | Cooling, water heating |
| C&I Curtailment<br>• Manual<br>• Auto-DR enabled | Firm capacity reduction commitment with pay-for-performance ($/kW) based on nominated amount or actual performance. | Large C&I | Various load types including HVAC, lighting, refrigeration, and industrial process loads |
| Dynamic Pricing[41]<br>• Without enabling technology<br>• With enabling technology | Voluntary opt-in dynamic pricing offer, such as Critical Peak Pricing (CPP) | All customer classes | All |
| BTMS<br>• Standalone battery storage | Dispatch of BTM batteries for load reductions during peak demand periods. | All customer classes | Batteries |

The achievable potential results only include cost-effective DR options. All of these programs were found to be cost-effective except for the DLC-Water Heating and BTMS program.

### 3. Benchmarking

Guidehouse benchmarked the EE and DR achievable potential results against the potential study findings of other utilities and states to provide context for the results and to understand how results may be influenced by various factors such as region or program spend. The three benchmarked pools are displayed in the table below.

| Utilities (EE) | State Level (EE) | Utility/Organization (DR) |
|---|---|---|
| Austin Energy | Arkansas | AmerenUE |
| Colorado Springs Utilities | Average (State) | ComEd |
| CA Public Utilities (Aggregated) | Louisiana | Con Ed |
| ComEd | Mississippi | ERCOT |
| Duke Energy | Tennessee | HECO |
| Louisville Gas & Electric/ Kentucky Utilities | Texas | PSE |
| Seattle City Light | | SPP |
| Snohomish PUD | | |