

# MEMORANDUM

**TO** Parties to Council Docket UD-20-02  
**FROM** Jeffrey Huber, GDS Associates, Inc.  
**DATE** June 17, 2021  
**RE** New Orleans Potential Study Achievable Potential Cases

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This memo describes the achievable potential cases for the City of New Orleans Energy Efficiency and Demand Response Potential Study. For both energy efficiency and demand response, GDS describes the scenarios used to frame achievable cases. As appropriate, GDS can adjust some elements of each case based on stakeholder input.

## SUMMARY OF ENERGY EFFICIENCY ACHIEVABLE CASES

GDS's modeling of the achievable energy efficiency potential is framed around three scenarios (cases). These include and are described below:

- Reference Achievable Potential Case
- Maximum Achievable Potential Case
- Council (2%) Policy Case
- Alternative Stakeholder Planning Case

### Reference Achievable Case (RAP)

The Reference Achievable case is informed by historical incentive levels and associated estimates of participant adoption (informed by the Delphi panel research conducted by the GDS Team). On average, incentive levels in the commercial sector are approximately 50% of the modeled measure cost and residential incentives were roughly 65% of the modeled measure cost. Incentives levels are assumed to be relative to the incremental measure cost (IMC) for replace-on-burnout (ROB) measures and full measure cost (FMC) for retrofit/early replacement measures.

The GDS Team conducted Delphi panel research with a mixture of industry professionals (home builders, HVAC contractors, equipment distributors, property managers, business owners, national laboratory energy efficiency experts, program implementors, program managers) across the residential and C&I sectors. In the residential sector, the research focused on estimated maximum adoption levels at various incentive levels across a several replace-on-burnout and retrofit opportunities. Similarly, the C&I research focused on estimated adoption rates at various payback performance levels.

The tables below present summary data of the Delphi panel research.

Table 1: Residential Delphi Panel Research – Estimated Long-Term Adoption Rates at Various Incentive Levels

Technology/ Replacement Type	100% Incentives	75% Incentives	50% Incentives	25% Incentives	0% Incentives
LED/Appliances (ROB \$)	75.2%	66.5%	56.5%	41.0%	29.0%
HVAC/Water Heat (ROB \$\$\$)	79.0%	66.5%	52.5%	35.8%	22.5%
Early Replacement	46.0%	34.1%	23.0%	11.0%	4.2%
Retrofit (\$)	67.5%	62.5%	46.2%	34.0%	25.6%
Retrofit (\$\$)	65.0%	52.6%	40.7%	24.6%	15.0%
Retrofit (\$\$\$)	49.9%	35.0%	22.6%	12.0%	4.6%

(\$ - \$\$\$ represent low to high assumed measure costs)

Table 2: C&I Delphi Panel Research – Estimated Long-Term Adoption Rates at Various Payback Levels

Technology/ Replacement Type	0 Year Payback	1 Year Payback	2 Year Payback	4 Year Payback	8 Year Payback
Lighting / ROB \$	80.5%	64.4%	50.3%	38.5%	22.9%
HVAC / ROB \$\$\$	83.0%	59.3%	49.4%	37.6%	24.7%
Early Replacement	36.8%	24.6%	15.7%	9.3%	8.8%
SEM/ RCx / Retrofit \$	71.0%	55.2%	44.3%	30.5%	21.4%
Cooking / Compressed Air / Industrial Process	76.7%	49.7%	43.9%	38.5%	26.7%
Retrofit (\$\$\$)	68.3%	42.0%	37.0%	31.6%	19.1%

(\$ - \$\$\$ represent low to high assumed measure costs)

In the near-term, savings estimates approximately align with existing planning assumptions or past achievements. Over the long-term, adoption rates reach the predicted maximum levels that relate to current incentive levels. This case results in near-term achievable potential that aligns with current program efforts while not restricting future potential opportunities.

Behavior program rollout for the residential sector is roughly in line with business-as-usual estimates. Administrative costs on a dollar per kWh saved basis are aligned with recent historical and/or planned projections and increase over time by the rate of inflation.

### Maximum Achievable Case (MAP)

The maximum achievable case assumes that incentives are offered at 100 percent of the incremental or full measure cost. This case utilizes adoption curves that lead to more aggressive adoption rates, with greater savings in the near-term than the Reference Achievable Case. Behavior program rollout for the residential sector increased compared to the Reference Achievable Case. Administrative costs on a dollar per kWh saved basis are aligned with recent historical and/or planned projections and increase over time by the rate of inflation.

## Council 2% Policy Case

Based on input from stakeholders and in alignment with ENO’s potential study, GDS is modeling a case in which two percent of electricity loads are saved each year. This requirement adjusts incentives and other modeling parameters to lead to an outcome, rather than letting incentives drive the outcome. GDS will develop the model parameter adjustments to create an initial 2% planning case.

## Alternative Stakeholder Planning Case

GDS will develop a fourth case based on input from stakeholders using the Council 2% Policy Case to guide considerations for an alternative case. GDS will coordinate with advisors and stakeholders on whether there are any modeling parameters to consider adjusting from the Council 2% Policy Case. The modeling and outcome will be informed by the input from advisors and stakeholders.

## SUMMARY OF DEMAND RESPONSE ACHIEVABLE CASES

The GDS modeling of demand response programs analyzes cost-effectiveness at the program level. GDS has modeled the following types of programs and end-use measures. In the following table we summarize nature of demand response technologies and uses. Not all customer classes are represented in each type of control or end-use.

Demand Response Type	Types of Control	Customer Classes	End Uses
Direct Load Control	Thermostats; Switches	Residential, Small C&I	A/C; Water Heaters; Pool Pumps; Lighting
Critical Peak Pricing	Retail rate price signal during critical peak	All	With enabling and without enabling technologies
Time of Use Rates	Retail rate price signal for defined blocks of time	Residential, Small C&I	With enabling and without enabling technologies
Interruptible Rate	Discount for customers agreeing to interrupt or curtail load	Large C&I	All
EV Charging	Rates design to shift charging to off-peak	Residential, Small C&I, golf courses	Electric vehicles
Electric Thermal Storage	Chilled water/ice produced during off-peak periods	Small C&I	A/C and other loads requiring cold temperatures
Capacity or Demand Bidding	Monthly nominations of capacity; flexible bidding year 'round	Large C&I; Small C&I	All

Like EE, the DR achievable includes a maximum and reference achievable potential case. The MAP for this study is defined as offering default opt-out DR rate options for all customers and achieving customer participation rates for non-rate DR program options that reflect a “best practice” estimate of what could eventually be achieved. RAP is defined as offering opt-in DR rate options for all customers and achieving

customer take rates for non-rate DR program options that reflect a realistic estimate of what could eventually be achieved assuming a typical or “average” industry experience.

## **BENCHMARKING**

GDS performed a top-down benchmarking analysis intended to be both national and comprehensive. In the top-down approach, GDS derived a maximum achievable potential estimate and a reference case point estimate based on metadata from the DOE’s Energy Efficiency Studies Catalog (DOE Catalog). The DOE Catalog is a compilation of more than 85 state and local energy efficiency potential studies published since 2007. To provide a more direct comparison to the City of New Orleans study, GDS limited comparison to studies in the DOE Catalog that included estimates of achievable potential and covered a roughly 20-year timeframe. The comparative point-estimate for MAP was based on the average of the highest two utilities in the benchmarking analysis, while the comparative estimate for RAP was based on the 50<sup>th</sup> percentile.

GDS has also previously examined numerous specific market potential studies in other jurisdictions (including: Ameren MO, Focus on Energy (WI), Pennsylvania, Georgia Power, etc). If appropriate, GDS will append these benchmarking studies to the benchmarking performed by Guidehouse for numerous market potential studies in the region.