

# INDUSTRIAL PRIMARY DATA COLLECTION

Methods, status, and preliminary results

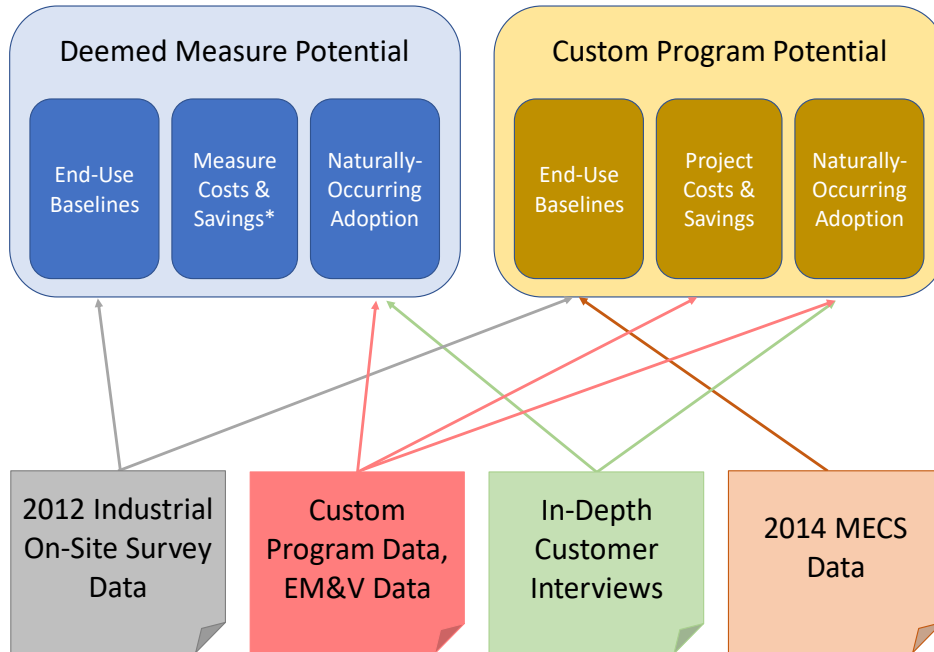
# DATA COLLECTION APPROACH

Hybrid approach

- » **ComEd's industrial customers account for roughly 17% of total nonresidential load and less than 8% of total load (once >10 MW customers removed)**
- » **Industrial customers highly heterogeneous**
  - Difficult to characterize the population from an end-use perspective
  - Primary data collection can be risky in terms of high cost (per site) and representativeness of data
- » **Itron team had access to two rich data sets**
  - 121 industrial on-site surveys and 527 telephone survey from 2012 baseline study
  - 10 years of industrial custom program and EM&V data
- » **Given existing data, we proposed a hybrid approach to characterize industrial baseline**
  - Data mining historic program and EM&V data (Summer '19)
  - Conducting in-depth interviews with industrial customers (Summer/Fall '19)
  - Supplement data gaps with results from 2012 baseline study and 2014 MECS (Winter '19/'20)

# POTENTIAL MODELING APPROACH

Split estimation of potential from deemed and custom measures



## » Lighting and HVAC will be treated as deemed measures in Dunsky's DEEP model

- Sufficient stock and technology data available from 2012 Baseline Study to support this
- Outputs will be estimates of technical, economic, and naturally occurring potential in same form as those for residential and commercial measures

## » All other custom measures will be treated in a top-down approach that leverages available program tracking, evaluation, and billing data

- Key benefit is that results will be grounded in actual custom project costs and savings and observed behavior in ComEd's specific industrial customer population
- Also highly transparent

# CUSTOM POTENTIAL ASSESSMENT APPROACH

Main calculational steps

- 1) Calculate “eligible” load by high-level project type (kWh)
  - Billing + tracking => non-participant load
  - 2012 BL + MECS => share with end use/opportunity
  - Non-participant load \* share with end use = eligible load
- 2) Calculate average project savings as a share of total customer load by project type (%)
  - Tracking + billing
- 3) Multiply eligible load by the average percent savings by project type (kWh potential)

**Result is ≈ gross max achievable potential**

- » Less than true economic potential
- » Reflects savings potential associated with industrial customers’ revealed willingness-to-pay – assuming no other market barriers

Project Type	Ex Ante kWh Savings	% of Total Ex Ante kWh Savings
Air Leaks	40,168,982	16%
Compressed Air	61,838,931	25%
Engineered Nozzle	2,133,567	1%
No-Loss Drain	1,613,998	1%
Controls / EMS/ SCADA	19,768,593	8%
Cooling	25,603,443	10%
Refrigeration	11,917,013	5%
VSD/ VFD	21,264,383	9%
HVAC	6,630,199	3%
Lighting	8,078,158	3%
Injection Molding	2,055,035	1%
Other	38,508,577	16%
Pumps & Motors	6,025,888	2%
<b>Total</b>	<b>245,606,769</b>	<b>100%</b>
<b>In Scope</b>	<b>199,017,268</b>	<b>81%</b>

# CUSTOM POTENTIAL ASSESSMENT APPROACH

Naturally occurring potential estimation

- 1) Calculate historical average annual gross program savings by project type and extrapolate forward assuming BAU**
  - Tracking data
  - Collaborate with ComEd program staff to establish forecast
- 2) Calculate historical average net-to-gross ratio by project type and extrapolate forward assuming BAU**
  - EM&V data
  - Collaborate with ComEd program staff to establish forecast
- 3) Multiply forecasted annual gross program savings by (1-NTG)**

## Result is forecast of program free-ridership

- » Less than true naturally occurring potential
- » Internally consistent with observed customer adoption behavior in ComEd's territory
- » Provides meaningful benchmark against which to evaluate max achievable potential results

# INDUSTRIAL CUSTOM POTENTIAL ASSESSMENT

Example for compressed air (draft result)

Segment	Total Population (GWh)	Program Participants (GWh)	Non-Participants (GWh)	Share with Opportunity (%)	Eligible Load (GWh)	Average Project Savings (%)	Max Achievable Savings (GWh)	Max Achievable Savings (% of total load)
<100 kW	480	0	480	75%	358	4.7%	17	3.5%
100-400 kW	906	3	903	99%	894	4.7%	42	4.6%
>400 kW	6,889	688	6,201	96%	5,965	1.7%	103	1.5%
<b>Total</b>	<b>8,275</b>	<b>691</b>	<b>7,584</b>	-	<b>7,217</b>	-	<b>161</b>	<b>1.9%</b>

Billing  
 Billing + Program Tracking  
 2012 Baseline Study

Total PY4-PY9 Ex Ante Claims = 61.8 GWh

No compressed air projects in this segment yet; need to assume value (example uses 100-400 kW value)

Share of businesses with compressed air

# INDUSTRIAL CUSTOM POTENTIAL ASSESSMENT

## Next steps

### Custom:

- » Itron will send a memo that lays out custom potential modeling methodology in full detail (including all assumptions) for review/comment by SAG (week of Feb 24<sup>th</sup>)
- » Itron will send draft custom potential results for review/comment by the SAG (week of March 23<sup>rd</sup>)

### Deemed:

- » Itron will work with Dunsky to develop proposed set of inputs for industrial lighting and HVAC (Feb)
- » Itron will send a memo of proposed inputs for review/comment by SAG (week of March 2<sup>nd</sup>)
- » Dunsky will incorporate final set of inputs and send draft results for industrial deemed measures for review/comment by the SAG (June 17<sup>th</sup> – with res and com results)

THANK YOU



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