

2018 I&M IRP Website Stakeholder Comment Summary (Volume 2)

| | Stakeholder | Comment | I&M Response |
|--|---------------------|--|--|
| Questions 42 – 63 were submitted by MPSC Staff (1/04/19) in response to I&M’s request for comments on its 2018-2019 IRP Inputs & Portfolios Update dated December 10, 2018. | | | |
| 42. | MPSC Staff (1/4/19) | VVO - Slide 20 points out that I&M has 68 MW of demand reduction potential from VVO. How many MW of VVO potential are in Michigan vs Indiana? How many of the existing and planned VVO circuits are in Michigan vs. Indiana? | <p>I&M estimates about 16 MW out of the 70 MW (see response to 43) total demand reduction potential are in Michigan. The remainder are in Indiana.</p> <p>As of 2018, I&M has 18 station busses with 46 distribution circuits enabled and operating in VVO mode in Indiana. I&M has 1 station bus and 3 distribution circuits enabled and operating in VVO mode in Michigan.</p> <p>I&M has an additional 6 station busses with 19 distribution circuits currently under construction in Indiana with planned in-service dates by mid-2019. I&M is currently planning the next 2 deployment of circuits for VVO in Michigan and estimates those deployments to include about 3 station busses with 9 distribution circuits in each deployment.</p> |
| 43. | MPSC Staff (1/4/19) | VVO - Is the 68 MW of potential for VVO circuits intended to reflect the sum of demand reduction in the “Demand Reduction (kW)” column of slide 20? | Yes, however, in checking this value the Company determined that the value is ~70MW, not 68MW as originally reported. |
| 44. | MPSC Staff (1/4/19) | VVO - What do the capital and O&M costs consist of? | <p>The capital costs includes the engineering and design, equipment and labor to install the necessary VVO equipment/systems. The O&M costs consist of the equipment and labor estimated to maintain the performance of the VVO system.</p> <p>VVO capital costs generally consistent of the cost to place assets in-service to enable VVO operation. These costs can include: station relay and control equipment costs, station communication system costs, VVO software/algorithm costs, distribution line equipment controls costs, distribution system communication equipment costs, and distribution line voltage control equipment and voltage monitoring equipment costs. O&M costs can include</p> |

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| | | | communication system operation and maintenance costs to ensure ongoing communication and system reliability, control equipment maintenance costs, and VVO software maintenance costs. |
| 45. | MPSC Staff (1/4/19) | VVO -How do the capital and O&M costs on slide 20 compare to the actual costs for the three pilot circuits in Niles and any other VVO circuits currently in operation? | The capital costs are based on average per circuit cost estimates multiplied by the number of circuits per tranche. Actual cost performance has improved as I&M has gained experience through several VVO deployments. Initial pilot costs were highly dependent on circumstances encountered at each station where specific stations and circuit costs varied around the average contained within slide 20 costs, with some higher and some lower. The actual costs of the Niles pilot were higher than estimated. However, as I&M has gained experience and honed planning functions, the average cost estimate used in slide 20 can be considered as reliable representations of costs for VVO deployment. I&M has also found O&M estimates as reliable, but can vary higher or lower depending upon extenuating circumstances such as communication equipment reliability, etc. |
| 46. | MPSC Staff (1/4/19) | VVO – a. What historic data, planning information, etc. is the Company using to determine the tranche costs for Volt VAR on p. 20? b. The Company listed both a demand reduction and energy reduction for Volt VAR. Is it intended to be used as an energy savings resource or as a demand response resource during peak events? c. How is this resource modeled? d. How did the Company study Volt VAR to determine which modeling and operation approach would provide the highest ratepayer value? | <ul style="list-style-type: none"> a. See response to question 45 above. b. I&M operates VVO to produce both energy and peak demand reduction. c. The resource is modeled as any other resource; it has an installed cost and an ongoing cost and associated energy and demand characteristics. The energy savings are assigned the retail load shape. d. I&M undertook pilot VVO projects with independent EM&V on each pilot to determine and assess the benefit cost performance of VVO. However, within the IRP model, the analysis is based on the Cumulative Net Present Value of Revenue Requirements. |
| 47. | MPSC Staff (1/4/19) | VVO a. How does I&M plan to obtain voltage measurements on VVO circuits? b. What physical location will the | <ul style="list-style-type: none"> a. I&M relies on communicating control equipment and end of line voltage sensors to measure voltage on circuits. b. As part of the automated VVO system, I&M monitors voltage at the station bus, distribution |

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| | | measurements be taken in the field and how often? | equipment locations including voltage regulators, capacitors, and end of line voltage sensors on a continuous basis. |
| 48. | MPSC Staff (1/4/19) | DR/EE/DSM a. Would like a more granular discussion about DSM and EE programs. Specifically how much is the load forecast adjusted? b. What adjustment amounts are specific to EE and by program of DSM? | The load forecast incorporates the DSM/EE programs filed with Commissions. It is assumed that impacts of the programs degrade over time. Table 48-1 provides annual energy and seasonal peak demand effects reflected in the load forecast. Tables 48-2 and 48-3 provide the estimated effects of each DSM program sponsored by the Company in its Indiana and Michigan jurisdictions. Tables 48-1, 2 and 3 provided below. |

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| Stakeholder | Comment | I&M Response | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------|------------|---|--------|----------------------|--------|---------|-----------------------|--------|---------|-----------------------|--|--|--------|---------|---------|--------|---------|---------|--------|---------|---------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|------|-------|------|------|------|-----|-----|------|-------|------|------|-------|------|------|------|-----|-----|------|-------|------|------|-------|------|------|------|-----|-----|------|-------|------|------|-------|------|------|------|-----|-----|------|-------|------|------|-------|------|------|------|-----|-----|------|------|-----|------|------|-----|------|------|-----|-----|------|------|-----|-----|------|-----|-----|------|-----|-----|------|------|-----|-----|------|-----|-----|------|-----|-----|------|------|-----|-----|------|-----|-----|------|-----|-----|------|------|-----|-----|------|-----|-----|------|-----|-----|------|------|-----|-----|------|-----|-----|------|-----|-----|------|------|-----|-----|------|-----|-----|------|-----|-----|------|------|-----|-----|-----|-----|-----|------|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | <p style="text-align: center;">Indiana Michigan and Indiana and Michigan Jurisdictions DSM/Energy Efficiency Included in Load Forecast Energy (GWh) and Coincident Peak Demand (MW)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="3">Year</th> <th colspan="3">I&M DSM/EE</th> <th colspan="3">I&M - Indiana DSM/EE</th> <th colspan="3">I&M - Michigan DSM/EE</th> </tr> <tr> <th rowspan="2">Energy</th> <th>Summer*</th> <th>Winter*</th> <th rowspan="2">Energy</th> <th>Summer*</th> <th>Winter*</th> <th rowspan="2">Energy</th> <th>Summer*</th> <th>Winter*</th> </tr> <tr> <th>Demand</th> <th>Demand</th> <th>Demand</th> <th>Demand</th> <th>Demand</th> <th>Demand</th> <th>Demand</th> </tr> </thead> <tbody> <tr><td>2019</td><td>181.2</td><td>48.1</td><td>50.2</td><td>152.8</td><td>43.4</td><td>44.8</td><td>28.4</td><td>4.8</td><td>5.4</td></tr> <tr><td>2020</td><td>262.1</td><td>68.7</td><td>73.6</td><td>223.4</td><td>62.4</td><td>66.1</td><td>38.7</td><td>6.3</td><td>7.6</td></tr> <tr><td>2021</td><td>266.5</td><td>67.0</td><td>75.3</td><td>232.9</td><td>62.4</td><td>68.2</td><td>33.5</td><td>4.7</td><td>7.1</td></tr> <tr><td>2022</td><td>210.7</td><td>47.3</td><td>56.5</td><td>182.1</td><td>44.4</td><td>51.1</td><td>28.6</td><td>2.9</td><td>5.4</td></tr> <tr><td>2023</td><td>154.2</td><td>27.8</td><td>37.6</td><td>129.3</td><td>26.3</td><td>33.7</td><td>24.9</td><td>1.5</td><td>3.9</td></tr> <tr><td>2024</td><td>87.2</td><td>9.8</td><td>17.9</td><td>66.3</td><td>8.9</td><td>15.1</td><td>21.0</td><td>1.0</td><td>2.8</td></tr> <tr><td>2025</td><td>43.1</td><td>2.1</td><td>4.8</td><td>25.8</td><td>1.2</td><td>2.9</td><td>17.3</td><td>0.8</td><td>1.9</td></tr> <tr><td>2026</td><td>42.5</td><td>2.0</td><td>4.7</td><td>25.4</td><td>1.2</td><td>2.8</td><td>17.1</td><td>0.8</td><td>1.9</td></tr> <tr><td>2027</td><td>42.0</td><td>2.0</td><td>4.6</td><td>25.1</td><td>1.2</td><td>2.8</td><td>16.9</td><td>0.8</td><td>1.9</td></tr> <tr><td>2028</td><td>41.9</td><td>2.0</td><td>4.6</td><td>25.1</td><td>1.2</td><td>2.8</td><td>16.8</td><td>0.8</td><td>1.9</td></tr> <tr><td>2029</td><td>42.2</td><td>2.0</td><td>4.7</td><td>25.4</td><td>1.2</td><td>2.8</td><td>16.9</td><td>0.8</td><td>1.9</td></tr> <tr><td>2030</td><td>33.9</td><td>1.6</td><td>3.7</td><td>19.3</td><td>0.9</td><td>2.1</td><td>14.7</td><td>0.7</td><td>1.6</td></tr> <tr><td>2031</td><td>17.9</td><td>0.9</td><td>2.0</td><td>7.5</td><td>0.4</td><td>0.8</td><td>10.4</td><td>0.5</td><td>1.2</td></tr> <tr><td>2032</td><td>6.8</td><td>0.3</td><td>0.7</td><td>0.0</td><td>0.0</td><td>0.0</td><td>6.8</td><td>0.3</td><td>0.7</td></tr> <tr><td>2033</td><td>3.7</td><td>0.2</td><td>0.4</td><td>0.0</td><td>0.0</td><td>0.0</td><td>3.7</td><td>0.2</td><td>0.4</td></tr> <tr><td>2034</td><td>1.2</td><td>0.1</td><td>0.1</td><td>0.0</td><td>0.0</td><td>0.0</td><td>1.2</td><td>0.1</td><td>0.1</td></tr> <tr><td>2035</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td></tr> <tr><td>2036</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td></tr> <tr><td>2037</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td></tr> <tr><td>2038</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td></tr> </tbody> </table> <p>*Demand coincident with Company's seasonal peak demand.</p> | Year | I&M DSM/EE | | | I&M - Indiana DSM/EE | | | I&M - Michigan DSM/EE | | | Energy | Summer* | Winter* | Energy | Summer* | Winter* | Energy | Summer* | Winter* | Demand | 2019 | 181.2 | 48.1 | 50.2 | 152.8 | 43.4 | 44.8 | 28.4 | 4.8 | 5.4 | 2020 | 262.1 | 68.7 | 73.6 | 223.4 | 62.4 | 66.1 | 38.7 | 6.3 | 7.6 | 2021 | 266.5 | 67.0 | 75.3 | 232.9 | 62.4 | 68.2 | 33.5 | 4.7 | 7.1 | 2022 | 210.7 | 47.3 | 56.5 | 182.1 | 44.4 | 51.1 | 28.6 | 2.9 | 5.4 | 2023 | 154.2 | 27.8 | 37.6 | 129.3 | 26.3 | 33.7 | 24.9 | 1.5 | 3.9 | 2024 | 87.2 | 9.8 | 17.9 | 66.3 | 8.9 | 15.1 | 21.0 | 1.0 | 2.8 | 2025 | 43.1 | 2.1 | 4.8 | 25.8 | 1.2 | 2.9 | 17.3 | 0.8 | 1.9 | 2026 | 42.5 | 2.0 | 4.7 | 25.4 | 1.2 | 2.8 | 17.1 | 0.8 | 1.9 | 2027 | 42.0 | 2.0 | 4.6 | 25.1 | 1.2 | 2.8 | 16.9 | 0.8 | 1.9 | 2028 | 41.9 | 2.0 | 4.6 | 25.1 | 1.2 | 2.8 | 16.8 | 0.8 | 1.9 | 2029 | 42.2 | 2.0 | 4.7 | 25.4 | 1.2 | 2.8 | 16.9 | 0.8 | 1.9 | 2030 | 33.9 | 1.6 | 3.7 | 19.3 | 0.9 | 2.1 | 14.7 | 0.7 | 1.6 | 2031 | 17.9 | 0.9 | 2.0 | 7.5 | 0.4 | 0.8 | 10.4 | 0.5 | 1.2 | 2032 | 6.8 | 0.3 | 0.7 | 0.0 | 0.0 | 0.0 | 6.8 | 0.3 | 0.7 | 2033 | 3.7 | 0.2 | 0.4 | 0.0 | 0.0 | 0.0 | 3.7 | 0.2 | 0.4 | 2034 | 1.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 1.2 | 0.1 | 0.1 | 2035 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2036 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2037 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2038 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Year | I&M DSM/EE | | | I&M - Indiana DSM/EE | | | I&M - Michigan DSM/EE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Energy | Summer* | | Winter* | Energy | Summer* | Winter* | Energy | Summer* | Winter* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Demand | Demand | Demand | | Demand | Demand | | Demand | Demand | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2019 | 181.2 | 48.1 | 50.2 | 152.8 | 43.4 | 44.8 | 28.4 | 4.8 | 5.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2020 | 262.1 | 68.7 | 73.6 | 223.4 | 62.4 | 66.1 | 38.7 | 6.3 | 7.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2021 | 266.5 | 67.0 | 75.3 | 232.9 | 62.4 | 68.2 | 33.5 | 4.7 | 7.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2022 | 210.7 | 47.3 | 56.5 | 182.1 | 44.4 | 51.1 | 28.6 | 2.9 | 5.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2023 | 154.2 | 27.8 | 37.6 | 129.3 | 26.3 | 33.7 | 24.9 | 1.5 | 3.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2024 | 87.2 | 9.8 | 17.9 | 66.3 | 8.9 | 15.1 | 21.0 | 1.0 | 2.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2025 | 43.1 | 2.1 | 4.8 | 25.8 | 1.2 | 2.9 | 17.3 | 0.8 | 1.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2026 | 42.5 | 2.0 | 4.7 | 25.4 | 1.2 | 2.8 | 17.1 | 0.8 | 1.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2027 | 42.0 | 2.0 | 4.6 | 25.1 | 1.2 | 2.8 | 16.9 | 0.8 | 1.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2028 | 41.9 | 2.0 | 4.6 | 25.1 | 1.2 | 2.8 | 16.8 | 0.8 | 1.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2029 | 42.2 | 2.0 | 4.7 | 25.4 | 1.2 | 2.8 | 16.9 | 0.8 | 1.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2030 | 33.9 | 1.6 | 3.7 | 19.3 | 0.9 | 2.1 | 14.7 | 0.7 | 1.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2031 | 17.9 | 0.9 | 2.0 | 7.5 | 0.4 | 0.8 | 10.4 | 0.5 | 1.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2032 | 6.8 | 0.3 | 0.7 | 0.0 | 0.0 | 0.0 | 6.8 | 0.3 | 0.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2033 | 3.7 | 0.2 | 0.4 | 0.0 | 0.0 | 0.0 | 3.7 | 0.2 | 0.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2034 | 1.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 1.2 | 0.1 | 0.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2035 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2036 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2037 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2038 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Table 48-1

2018 I&M IRP Website Stakeholder Comment Summary (Volume 2)

| Stakeholder | Comment | I&M Response | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|------------------|---|---|-------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|--|--|--|-------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|---------------------------|--|--|--|--|--|--|--|--|--|--|--|--|------|------|------|------|------|------|------|------|------|------|------|------|------|----------------------------|--|-----|-----------|-----------|------------|------------|--|--|-----------|-----------|-----------|-----------|---------------------------|--|--|---------|--|--|--|--|--|---------|---------|---------|---------|--------------------------------|--|--|-----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------------------|--|-------|---------|--|--|--|--|--|--|--|--|--|-----------------|--|--|---------|--|--|--|---------|---------|-----------|-----------|-----------|-----------|---------------------------|--|--|--------|--|--|--|--|--|-----------|---------|---------|---------|--------------------|--|--|---------|--|--|--|--|--|--|--|--|--|------------------------------------|--------|--|-------|--|--|--|--|--|--|---------|--|--|--------------------|--|--|---------|--|--|--|--|--|--|--|--|--|------------------------------|--|--|--------|--|--|--|---------|---------|-----------|--------|---------|---------|--------------------|--|--|-----------|------------|------------|------------|------------|-----------|-----------|-----------|-----------|-----------|--------------|--|--|-----------|--|--|--|---|------------|-----------|-----------|------------|------------|-----------------|--|--|---------|--|--|--|---------|---------|--|--|---------|---------|----------------------------|--|--|--|--|--|--|--|--|---------|-----------|--|--|--------------------|--|--|--------|--|--|--|--|--|--|--|--|--|--|--|---------|---------|--|--|--|--|---------|-----------|---------|-----------|-----------|----------------------|--|--|--|--|--|--|--|------------|------------|-----------|-----------|-----------|-----------|--|--|--|--|--|--|--------|---------|--|--------|-----------|-----------|--------------|---------------|----------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|---|--|--|--|--|--|--|--|--|--|--|--|--|------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|---------------------------|--|--|--|--|--|--|--|--|--|--|--|--|------|------|------|------|------|------|------|------|------|------|------|------|------|---------------------------|--|--|---------|---------|--|--|--|--|--|--|--|--|---------------|--|--|-----------|------------|-------------|--|--|--|--|--|--|--|---------------------------|--|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|--------------------------------------|--|--|--|---------|--------|-----------|-----------|--|--|--|--|--|------------------|--|--|--|-----|--|--|--|--|--|--|--|--|-------------------------------|--------|-------|--|--|------------|------------|------------|--|-----------|------------|------------|----------|--|-----------|---------|--|--|-----------|--|--|--|--|--|--|--|--|--|--|--------|--|-----------|-----------|-----------|--------|---------|---------|-----------|----------|----------------------------|--|--|--|--|---------|--|--|---------|------------|-----------|---------|-----------|----------------------------|--|--|-----------|------------|------------|------------|------------|------------|------------|------------|------------|-----------|------------------|--|--|--|--|-----------|------------|------------|--|--|--|--|--|---------------------------------|--|--|--------|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|--------------------|--|--|--|--|--|------------|-----------|-----------|-----------|-----------|--|--|------------------------|--|--|--|--|--|--|---------|---------|---------|-----------|---------|--------|---------------------------------|---------|---------|--|--|--------|-----------|---------|---------|---------|---------|--------|-----------------------------|--|--|---------|--|-----------|------------|------------|------------|------------|------------|------------|-----------|----------------------------------|--|--|--|--|--|--------|--------|--------|--|--|---------|--|------------|--|--|--|--|--|------------|------------|------------|------------|------------|------------|-----------|-------------------------|--|--|--|--|--|--|--|--|--|--|--|--|----------------------------|--|--|--|--|---------|-----------|-----------|-----------|-----------|-----------|-----------|----------|-------------|--|--|--|--|---------|--|--|--|--|--|--|--|---------------------|--|--|--|--|--|--|--|--|--|--|--------|-----------|----------------------|--|--|--------|--|--|---------|--------|--------|--------|--------|--|--|--|--|-----------|-----------|---------|-----------|--|-----------|-----------|------------|------------|------------|-----------|--------------|------------------|------------------|-------------------|-------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|
| | | <p>Exhibit 2:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="13" style="background-color: #0056b3; color: white; text-align: center;">June 2018 Forecast - AEP Utility Operations</th> </tr> <tr> <th colspan="13" style="background-color: #0056b3; color: white; text-align: center;">DSM Filed Programs - Michigan</th> </tr> <tr> <th colspan="13" style="background-color: #ffff00; text-align: center;">Incremental kWh Reduction</th> </tr> <tr> <th style="background-color: #ffff00;">Year</th> <th style="background-color: #ffff00;">2008</th> <th style="background-color: #ffff00;">2009</th> <th style="background-color: #ffff00;">2010</th> <th style="background-color: #ffff00;">2011</th> <th style="background-color: #ffff00;">2012</th> <th style="background-color: #ffff00;">2013</th> <th style="background-color: #ffff00;">2014</th> <th style="background-color: #ffff00;">2015</th> <th style="background-color: #ffff00;">2016</th> <th style="background-color: #ffff00;">2017</th> <th style="background-color: #ffff00;">2018</th> <th style="background-color: #ffff00;">2019</th> </tr> </thead> <tbody> <tr> <td>R&C - Home Energy Products</td> <td></td> <td>690</td> <td>9,670,000</td> <td>5,797,473</td> <td>13,028,293</td> <td>14,553,201</td> <td></td> <td></td> <td>2,782,700</td> <td>4,049,765</td> <td>5,311,934</td> <td>5,311,934</td> </tr> <tr> <td>Res - Appliance Recycling</td> <td></td> <td></td> <td>590,000</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>666,484</td> <td>882,678</td> <td>557,840</td> <td>557,840</td> </tr> <tr> <td>Res - Low Income EE Assistance</td> <td></td> <td></td> <td>1,040,000</td> <td>578,415</td> <td>615,560</td> <td>687,609</td> <td>661,790</td> <td>565,975</td> <td>107,792</td> <td>733,131</td> <td>196,778</td> <td>196,778</td> </tr> <tr> <td>Res - HVAC Rebates</td> <td></td> <td>3,623</td> <td>190,000</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Res - Education</td> <td></td> <td></td> <td>298,000</td> <td></td> <td></td> <td></td> <td>370,272</td> <td>364,913</td> <td>1,732,040</td> <td>5,542,425</td> <td>2,245,000</td> <td>2,245,000</td> </tr> <tr> <td>Res - Online Energy Audit</td> <td></td> <td></td> <td>70,000</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>2,940,075</td> <td>925,270</td> <td>399,935</td> <td>399,935</td> </tr> <tr> <td>Res - Multi-Family</td> <td></td> <td></td> <td>460,000</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Res - New Construction / Education</td> <td>13,000</td> <td></td> <td>4,000</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>366,016</td> <td></td> <td></td> </tr> <tr> <td>Res - Onsite Audit</td> <td></td> <td></td> <td>340,000</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Res - Pilot /Weatherproofing</td> <td></td> <td></td> <td>80,000</td> <td></td> <td></td> <td></td> <td>617,119</td> <td>477,637</td> <td>1,290,029</td> <td>44,479</td> <td>452,616</td> <td>437,962</td> </tr> <tr> <td>C&I - Prescriptive</td> <td></td> <td></td> <td>7,660,000</td> <td>10,375,900</td> <td>17,303,847</td> <td>19,329,191</td> <td>17,396,489</td> <td>8,432,371</td> <td>7,360,903</td> <td>9,741,657</td> <td>6,766,700</td> <td>6,770,827</td> </tr> <tr> <td>C&I - Custom</td> <td></td> <td></td> <td>4,440,000</td> <td></td> <td></td> <td></td> <td>-</td> <td>11,619,760</td> <td>8,867,487</td> <td>7,462,637</td> <td>10,321,143</td> <td>10,321,143</td> </tr> <tr> <td>C&I - Education</td> <td></td> <td></td> <td>260,000</td> <td></td> <td></td> <td></td> <td>330,016</td> <td>276,295</td> <td></td> <td></td> <td>492,602</td> <td>498,547</td> </tr> <tr> <td>C&I Direct Install (Audit)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>456,603</td> <td>1,571,641</td> <td></td> <td></td> </tr> <tr> <td>R/C/I - IVVC Pilot</td> <td></td> <td></td> <td>60,000</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Internal Facility / EECO / Other (VVO)</td> <td></td> <td>542,064</td> <td>162,410</td> <td></td> <td></td> <td></td> <td></td> <td>808,741</td> <td>1,358,671</td> <td>959,593</td> <td>2,869,166</td> <td>3,361,432</td> </tr> <tr> <td>Residential Programs</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>12,138,924</td> <td>12,572,861</td> <td>1,303,551</td> <td>6,950,823</td> <td>3,691,890</td> </tr> <tr> <td>C&I Pilot</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>60,296</td> <td>525,460</td> <td></td> <td>14,311</td> <td>1,402,224</td> <td>1,405,691</td> </tr> <tr> <td>TOTAL</td> <td>13,000</td> <td>546,377</td> <td>25,324,410</td> <td>16,751,789</td> <td>30,947,700</td> <td>34,570,000</td> <td>31,574,906</td> <td>35,644,013</td> <td>28,893,905</td> <td>39,603,075</td> <td>34,707,827</td> <td>35,335,241</td> </tr> </tbody> </table> <p>Table 48-2</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="13" style="background-color: #0056b3; color: white; text-align: center;">June 2018 Forecast - AEP Utility Operations</th> </tr> <tr> <th colspan="13" style="background-color: #0056b3; color: white; text-align: center;">DSM Filed Programs - Indiana</th> </tr> <tr> <th colspan="13" style="background-color: #ffff00; text-align: center;">Incremental kWh Reduction</th> </tr> <tr> <th style="background-color: #ffff00;">Year</th> <th style="background-color: #ffff00;">2008</th> <th style="background-color: #ffff00;">2009</th> <th style="background-color: #ffff00;">2010</th> <th style="background-color: #ffff00;">2011</th> <th style="background-color: #ffff00;">2012</th> <th style="background-color: #ffff00;">2013</th> <th style="background-color: #ffff00;">2014</th> <th style="background-color: #ffff00;">2015</th> <th style="background-color: #ffff00;">2016</th> <th style="background-color: #ffff00;">2017</th> <th style="background-color: #ffff00;">2018</th> <th style="background-color: #ffff00;">2019</th> </tr> </thead> <tbody> <tr> <td>Res - Low/Moderate Income</td> <td></td> <td></td> <td>467,000</td> <td>591,552</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Res - Rebates</td> <td></td> <td></td> <td>9,816,000</td> <td>38,991,004</td> <td>(1,411,010)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Res - Appliance Recycling</td> <td></td> <td></td> <td>2,469,000</td> <td>3,030,422</td> <td>4,260,656</td> <td>3,987,730</td> <td>4,029,025</td> <td>3,185,144</td> <td>2,343,112</td> <td>3,391,002</td> <td>3,348,400</td> <td>3,348,400</td> </tr> <tr> <td>Res - Whole House(home energy audit)</td> <td></td> <td></td> <td></td> <td>877,408</td> <td>15,295</td> <td>6,333,587</td> <td>2,181,517</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Res - URWP Loans</td> <td></td> <td></td> <td></td> <td>779</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Res - Statewide Core Lighting</td> <td>18,000</td> <td>9,200</td> <td></td> <td></td> <td>21,229,646</td> <td>19,606,993</td> <td>15,747,122</td> <td></td> <td>8,790,461</td> <td>11,684,436</td> <td>10,796,000</td> <td>8,901,43</td> </tr> <tr> <td>Res - Statewide Core Home Energy Assessments</td> <td>1,800,000</td> <td>875,440</td> <td></td> <td></td> <td>4,237,391</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Res - Statewide Core Income Qualified Weatherization</td> <td></td> <td></td> <td>90,000</td> <td></td> <td>1,723,888</td> <td>2,119,206</td> <td>1,529,696</td> <td>30,132</td> <td>328,281</td> <td>308,497</td> <td>1,129,074</td> <td>1,129,07</td> </tr> <tr> <td>Res - Home Energy Products</td> <td></td> <td></td> <td></td> <td></td> <td>465,733</td> <td></td> <td></td> <td>525,115</td> <td>11,732,143</td> <td>1,245,832</td> <td>978,032</td> <td>4,400,500</td> </tr> <tr> <td>C&I - Rebates Prescriptive</td> <td></td> <td></td> <td>4,079,000</td> <td>24,910,220</td> <td>38,491,566</td> <td>91,826,921</td> <td>23,782,606</td> <td>25,386,828</td> <td>25,334,528</td> <td>38,223,072</td> <td>22,877,500</td> <td>16,665,00</td> </tr> <tr> <td>C&I - Incentives</td> <td></td> <td></td> <td></td> <td></td> <td>5,451,966</td> <td>34,832,235</td> <td>15,441,282</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>R/C/I - School Energy Education</td> <td></td> <td></td> <td>12,000</td> <td>766,479</td> <td>2,063,010</td> <td>4,117,010</td> <td>2,252,528</td> <td>4,962,843</td> <td>4,108,500</td> <td>2,481,388</td> <td>3,179,000</td> <td>3,179,00</td> </tr> <tr> <td>Res - Online Audit</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>12,257,878</td> <td>2,818,382</td> <td>5,135,088</td> <td>3,214,949</td> <td>2,627,578</td> <td></td> <td></td> </tr> <tr> <td>Res - New Construction</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>369,415</td> <td>719,602</td> <td>679,203</td> <td>1,041,862</td> <td>851,741</td> <td>851,74</td> </tr> <tr> <td>Res - Low Income Weatherization</td> <td>471,000</td> <td>291,000</td> <td></td> <td></td> <td>50,919</td> <td>1,395,949</td> <td>205,265</td> <td>125,105</td> <td>472,814</td> <td>734,847</td> <td>744,84</td> </tr> <tr> <td>Res - Home Energy Reporting</td> <td></td> <td></td> <td>259,000</td> <td></td> <td>3,662,381</td> <td>16,698,313</td> <td>23,776,713</td> <td>26,636,044</td> <td>28,721,021</td> <td>28,006,310</td> <td>41,190,745</td> <td>41,629,37</td> </tr> <tr> <td>Res - Renewables & Demonstration</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>58,978</td> <td>40,315</td> <td>15,000</td> <td></td> <td></td> <td>180,819</td> <td></td> </tr> <tr> <td>C&I Custom</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>18,571,762</td> <td>20,465,602</td> <td>37,072,689</td> <td>23,934,086</td> <td>34,738,978</td> <td>29,458,023</td> <td>27,648,02</td> </tr> <tr> <td>C&I HVAC Optimization /</td> <td></td> </tr> <tr> <td>C&I Direct Install (Audit)</td> <td></td> <td></td> <td></td> <td></td> <td>100,691</td> <td>3,780,638</td> <td>4,383,524</td> <td>2,573,902</td> <td>2,690,169</td> <td>2,596,065</td> <td>1,799,550</td> <td>1,599,60</td> </tr> <tr> <td>C&I Rebates</td> <td></td> <td></td> <td></td> <td></td> <td>687,018</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>C&I Load Management</td> <td></td> <td>20,125</td> <td>5,911,740</td> </tr> <tr> <td>Res - Peak Reduction</td> <td></td> <td></td> <td>26,331</td> <td></td> <td></td> <td>213,356</td> <td>62,367</td> <td>31,496</td> <td>88,286</td> <td>16,014</td> <td></td> <td></td> </tr> <tr> <td>Internal Facility / EECO / Other (VVO)</td> <td></td> <td>3,299,037</td> <td>1,755,214</td> <td>491,492</td> <td>8,588,707</td> <td></td> <td>7,733,573</td> <td>9,328,934</td> <td>18,544,218</td> <td>11,169,905</td> <td>24,794,320</td> <td>30,464,32</td> </tr> <tr> <td>TOTAL</td> <td>2,289,000</td> <td>4,474,677</td> <td>18,973,545</td> <td>69,658,577</td> <td>89,567,717</td> <td>214,455,526</td> <td>126,547,716</td> <td>127,000,110</td> <td>120,162,751</td> <td>137,936,897</td> <td>150,471,438</td> <td>148,484,06</td> </tr> </tbody> </table> <p>Table 48-3</p> | June 2018 Forecast - AEP Utility Operations | | | | | | | | | | | | | DSM Filed Programs - Michigan | | | | | | | | | | | | | Incremental kWh Reduction | | | | | | | | | | | | | Year | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | R&C - Home Energy Products | | 690 | 9,670,000 | 5,797,473 | 13,028,293 | 14,553,201 | | | 2,782,700 | 4,049,765 | 5,311,934 | 5,311,934 | Res - Appliance Recycling | | | 590,000 | | | | | | 666,484 | 882,678 | 557,840 | 557,840 | Res - Low Income EE Assistance | | | 1,040,000 | 578,415 | 615,560 | 687,609 | 661,790 | 565,975 | 107,792 | 733,131 | 196,778 | 196,778 | Res - HVAC Rebates | | 3,623 | 190,000 | | | | | | | | | | Res - Education | | | 298,000 | | | | 370,272 | 364,913 | 1,732,040 | 5,542,425 | 2,245,000 | 2,245,000 | Res - Online Energy Audit | | | 70,000 | | | | | | 2,940,075 | 925,270 | 399,935 | 399,935 | Res - Multi-Family | | | 460,000 | | | | | | | | | | Res - New Construction / Education | 13,000 | | 4,000 | | | | | | | 366,016 | | | Res - Onsite Audit | | | 340,000 | | | | | | | | | | Res - Pilot /Weatherproofing | | | 80,000 | | | | 617,119 | 477,637 | 1,290,029 | 44,479 | 452,616 | 437,962 | C&I - Prescriptive | | | 7,660,000 | 10,375,900 | 17,303,847 | 19,329,191 | 17,396,489 | 8,432,371 | 7,360,903 | 9,741,657 | 6,766,700 | 6,770,827 | C&I - Custom | | | 4,440,000 | | | | - | 11,619,760 | 8,867,487 | 7,462,637 | 10,321,143 | 10,321,143 | C&I - Education | | | 260,000 | | | | 330,016 | 276,295 | | | 492,602 | 498,547 | C&I Direct Install (Audit) | | | | | | | | | 456,603 | 1,571,641 | | | R/C/I - IVVC Pilot | | | 60,000 | | | | | | | | | | Internal Facility / EECO / Other (VVO) | | 542,064 | 162,410 | | | | | 808,741 | 1,358,671 | 959,593 | 2,869,166 | 3,361,432 | Residential Programs | | | | | | | | 12,138,924 | 12,572,861 | 1,303,551 | 6,950,823 | 3,691,890 | C&I Pilot | | | | | | | 60,296 | 525,460 | | 14,311 | 1,402,224 | 1,405,691 | TOTAL | 13,000 | 546,377 | 25,324,410 | 16,751,789 | 30,947,700 | 34,570,000 | 31,574,906 | 35,644,013 | 28,893,905 | 39,603,075 | 34,707,827 | 35,335,241 | June 2018 Forecast - AEP Utility Operations | | | | | | | | | | | | | DSM Filed Programs - Indiana | | | | | | | | | | | | | Incremental kWh Reduction | | | | | | | | | | | | | Year | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | Res - Low/Moderate Income | | | 467,000 | 591,552 | | | | | | | | | Res - Rebates | | | 9,816,000 | 38,991,004 | (1,411,010) | | | | | | | | Res - Appliance Recycling | | | 2,469,000 | 3,030,422 | 4,260,656 | 3,987,730 | 4,029,025 | 3,185,144 | 2,343,112 | 3,391,002 | 3,348,400 | 3,348,400 | Res - Whole House(home energy audit) | | | | 877,408 | 15,295 | 6,333,587 | 2,181,517 | | | | | | Res - URWP Loans | | | | 779 | | | | | | | | | Res - Statewide Core Lighting | 18,000 | 9,200 | | | 21,229,646 | 19,606,993 | 15,747,122 | | 8,790,461 | 11,684,436 | 10,796,000 | 8,901,43 | Res - Statewide Core Home Energy Assessments | 1,800,000 | 875,440 | | | 4,237,391 | | | | | | | | Res - Statewide Core Income Qualified Weatherization | | | 90,000 | | 1,723,888 | 2,119,206 | 1,529,696 | 30,132 | 328,281 | 308,497 | 1,129,074 | 1,129,07 | Res - Home Energy Products | | | | | 465,733 | | | 525,115 | 11,732,143 | 1,245,832 | 978,032 | 4,400,500 | C&I - Rebates Prescriptive | | | 4,079,000 | 24,910,220 | 38,491,566 | 91,826,921 | 23,782,606 | 25,386,828 | 25,334,528 | 38,223,072 | 22,877,500 | 16,665,00 | C&I - Incentives | | | | | 5,451,966 | 34,832,235 | 15,441,282 | | | | | | R/C/I - School Energy Education | | | 12,000 | 766,479 | 2,063,010 | 4,117,010 | 2,252,528 | 4,962,843 | 4,108,500 | 2,481,388 | 3,179,000 | 3,179,00 | Res - Online Audit | | | | | | 12,257,878 | 2,818,382 | 5,135,088 | 3,214,949 | 2,627,578 | | | Res - New Construction | | | | | | | 369,415 | 719,602 | 679,203 | 1,041,862 | 851,741 | 851,74 | Res - Low Income Weatherization | 471,000 | 291,000 | | | 50,919 | 1,395,949 | 205,265 | 125,105 | 472,814 | 734,847 | 744,84 | Res - Home Energy Reporting | | | 259,000 | | 3,662,381 | 16,698,313 | 23,776,713 | 26,636,044 | 28,721,021 | 28,006,310 | 41,190,745 | 41,629,37 | Res - Renewables & Demonstration | | | | | | 58,978 | 40,315 | 15,000 | | | 180,819 | | C&I Custom | | | | | | 18,571,762 | 20,465,602 | 37,072,689 | 23,934,086 | 34,738,978 | 29,458,023 | 27,648,02 | C&I HVAC Optimization / | | | | | | | | | | | | | C&I Direct Install (Audit) | | | | | 100,691 | 3,780,638 | 4,383,524 | 2,573,902 | 2,690,169 | 2,596,065 | 1,799,550 | 1,599,60 | C&I Rebates | | | | | 687,018 | | | | | | | | C&I Load Management | | | | | | | | | | | 20,125 | 5,911,740 | Res - Peak Reduction | | | 26,331 | | | 213,356 | 62,367 | 31,496 | 88,286 | 16,014 | | | Internal Facility / EECO / Other (VVO) | | 3,299,037 | 1,755,214 | 491,492 | 8,588,707 | | 7,733,573 | 9,328,934 | 18,544,218 | 11,169,905 | 24,794,320 | 30,464,32 | TOTAL | 2,289,000 | 4,474,677 | 18,973,545 | 69,658,577 | 89,567,717 | 214,455,526 | 126,547,716 | 127,000,110 | 120,162,751 | 137,936,897 | 150,471,438 | 148,484,06 |
| June 2018 Forecast - AEP Utility Operations | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DSM Filed Programs - Michigan | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Incremental kWh Reduction | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Year | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| R&C - Home Energy Products | | 690 | 9,670,000 | 5,797,473 | 13,028,293 | 14,553,201 | | | 2,782,700 | 4,049,765 | 5,311,934 | 5,311,934 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Res - Appliance Recycling | | | 590,000 | | | | | | 666,484 | 882,678 | 557,840 | 557,840 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Res - Low Income EE Assistance | | | 1,040,000 | 578,415 | 615,560 | 687,609 | 661,790 | 565,975 | 107,792 | 733,131 | 196,778 | 196,778 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Res - HVAC Rebates | | 3,623 | 190,000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Res - Education | | | 298,000 | | | | 370,272 | 364,913 | 1,732,040 | 5,542,425 | 2,245,000 | 2,245,000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Res - Online Energy Audit | | | 70,000 | | | | | | 2,940,075 | 925,270 | 399,935 | 399,935 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Res - Multi-Family | | | 460,000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Res - New Construction / Education | 13,000 | | 4,000 | | | | | | | 366,016 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Res - Onsite Audit | | | 340,000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Res - Pilot /Weatherproofing | | | 80,000 | | | | 617,119 | 477,637 | 1,290,029 | 44,479 | 452,616 | 437,962 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C&I - Prescriptive | | | 7,660,000 | 10,375,900 | 17,303,847 | 19,329,191 | 17,396,489 | 8,432,371 | 7,360,903 | 9,741,657 | 6,766,700 | 6,770,827 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C&I - Custom | | | 4,440,000 | | | | - | 11,619,760 | 8,867,487 | 7,462,637 | 10,321,143 | 10,321,143 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C&I - Education | | | 260,000 | | | | 330,016 | 276,295 | | | 492,602 | 498,547 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C&I Direct Install (Audit) | | | | | | | | | 456,603 | 1,571,641 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| R/C/I - IVVC Pilot | | | 60,000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Internal Facility / EECO / Other (VVO) | | 542,064 | 162,410 | | | | | 808,741 | 1,358,671 | 959,593 | 2,869,166 | 3,361,432 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Residential Programs | | | | | | | | 12,138,924 | 12,572,861 | 1,303,551 | 6,950,823 | 3,691,890 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C&I Pilot | | | | | | | 60,296 | 525,460 | | 14,311 | 1,402,224 | 1,405,691 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TOTAL | 13,000 | 546,377 | 25,324,410 | 16,751,789 | 30,947,700 | 34,570,000 | 31,574,906 | 35,644,013 | 28,893,905 | 39,603,075 | 34,707,827 | 35,335,241 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| June 2018 Forecast - AEP Utility Operations | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DSM Filed Programs - Indiana | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Incremental kWh Reduction | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Year | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Res - Low/Moderate Income | | | 467,000 | 591,552 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Res - Rebates | | | 9,816,000 | 38,991,004 | (1,411,010) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Res - Appliance Recycling | | | 2,469,000 | 3,030,422 | 4,260,656 | 3,987,730 | 4,029,025 | 3,185,144 | 2,343,112 | 3,391,002 | 3,348,400 | 3,348,400 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Res - Whole House(home energy audit) | | | | 877,408 | 15,295 | 6,333,587 | 2,181,517 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Res - URWP Loans | | | | 779 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Res - Statewide Core Lighting | 18,000 | 9,200 | | | 21,229,646 | 19,606,993 | 15,747,122 | | 8,790,461 | 11,684,436 | 10,796,000 | 8,901,43 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Res - Statewide Core Home Energy Assessments | 1,800,000 | 875,440 | | | 4,237,391 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Res - Statewide Core Income Qualified Weatherization | | | 90,000 | | 1,723,888 | 2,119,206 | 1,529,696 | 30,132 | 328,281 | 308,497 | 1,129,074 | 1,129,07 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Res - Home Energy Products | | | | | 465,733 | | | 525,115 | 11,732,143 | 1,245,832 | 978,032 | 4,400,500 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C&I - Rebates Prescriptive | | | 4,079,000 | 24,910,220 | 38,491,566 | 91,826,921 | 23,782,606 | 25,386,828 | 25,334,528 | 38,223,072 | 22,877,500 | 16,665,00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C&I - Incentives | | | | | 5,451,966 | 34,832,235 | 15,441,282 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| R/C/I - School Energy Education | | | 12,000 | 766,479 | 2,063,010 | 4,117,010 | 2,252,528 | 4,962,843 | 4,108,500 | 2,481,388 | 3,179,000 | 3,179,00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Res - Online Audit | | | | | | 12,257,878 | 2,818,382 | 5,135,088 | 3,214,949 | 2,627,578 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Res - New Construction | | | | | | | 369,415 | 719,602 | 679,203 | 1,041,862 | 851,741 | 851,74 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Res - Low Income Weatherization | 471,000 | 291,000 | | | 50,919 | 1,395,949 | 205,265 | 125,105 | 472,814 | 734,847 | 744,84 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Res - Home Energy Reporting | | | 259,000 | | 3,662,381 | 16,698,313 | 23,776,713 | 26,636,044 | 28,721,021 | 28,006,310 | 41,190,745 | 41,629,37 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Res - Renewables & Demonstration | | | | | | 58,978 | 40,315 | 15,000 | | | 180,819 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C&I Custom | | | | | | 18,571,762 | 20,465,602 | 37,072,689 | 23,934,086 | 34,738,978 | 29,458,023 | 27,648,02 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C&I HVAC Optimization / | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C&I Direct Install (Audit) | | | | | 100,691 | 3,780,638 | 4,383,524 | 2,573,902 | 2,690,169 | 2,596,065 | 1,799,550 | 1,599,60 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C&I Rebates | | | | | 687,018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C&I Load Management | | | | | | | | | | | 20,125 | 5,911,740 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Res - Peak Reduction | | | 26,331 | | | 213,356 | 62,367 | 31,496 | 88,286 | 16,014 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Internal Facility / EECO / Other (VVO) | | 3,299,037 | 1,755,214 | 491,492 | 8,588,707 | | 7,733,573 | 9,328,934 | 18,544,218 | 11,169,905 | 24,794,320 | 30,464,32 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TOTAL | 2,289,000 | 4,474,677 | 18,973,545 | 69,658,577 | 89,567,717 | 214,455,526 | 126,547,716 | 127,000,110 | 120,162,751 | 137,936,897 | 150,471,438 | 148,484,06 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

2018 I&M IRP Website Stakeholder Comment Summary (Volume 2)

| | Stakeholder | Comment | I&M Response |
|-----|------------------------|--|--|
| 49. | MPSC Staff (1/4/19) | DR/EE/DSM - On page 11, what is the reason for the large decline in peaks scenarios in 2020? Is this the result of incremental EE & DSM? | This forecast decline is not the result incremental EE & DSM. This reduction in load reflects FERC Wholesale customers that have opted to select alternative energy suppliers. Therefore, these customers would no longer be a part of the Company's internal load. |
| 50. | MPSC Staff (1/4/19) | DR/EE/DSM - Provide a view of the DR blocks that can be selected referring to P. 19 similar to the information for Volt VAR on P. 20. Identify the data, potential study, etc. that is used to determine the reasonableness of the block cost and DR potential. Confirm that the Company is considering only two programs as shown on P. 19. | The blocks are shown on page 19, and the model can select 4 blocks of each resource per year. I&M has used both direct experience of implementing similar programs including Home Energy Management smart thermostat demand response, residential AC cycling, and the September 2017 State of Michigan Demand Potential Study to inform the DR block modeling reflected on Slide 19 (Dec. 10 th IRP Inputs PowerPoint Presentation). Confirmed, I&M is modeling (2) demand response measure bundles. |
| 51. | MPSC Staff (1/4/19) | DR/EE/DSM - What resources on P. 21, if any, were screened out prior to running the resource expansion model? | Nuclear, Coal with 90% Carbon Capture and Natural Gas Combined Cycle with Carbon Capture. |
| 52. | MPSC Staff (1/4/19) | Renewable Energy - Would the Company please provide a short explanation of the meaning of the term Tranche as it is used for wind and solar? | It is a resource block made available within the model. |
| 53. | MPSC Staff (1/4/19) | Renewable Energy - Regarding solar LCOE, has the Company conducted a request for proposal for solar power purchase agreements? Staff is aware of solar PPA pricing available for Michigan based solar projects significantly less than the \$62 to \$68 per MWh pricing mentioned on slide 25. In Consumers Energy's IRP case, the Company reported that preliminary | No, the Company has not conducted a request for proposal for solar PPAs for this IRP analysis. For this IRP, the Company is confident that all of the resource assumptions are reasonable proxies for an IRP analysis. The differences between the calculated LCOE estimate and the PPA value is most likely driven by the assumptions included in each calculation. Key assumptions impacting this calculation include: cost of capital; installed cost; operating cost, asset life and asset performance to name a few. |

2018 I&M IRP Website Stakeholder Comment Summary (Volume 2)

| | Stakeholder | Comment | I&M Response |
|-----|---------------------|--|---|
| | | analysis of solar proposals indicates an expected weighted average levelized PPA cost of \$49.10/MWh for an up to 20-year contract and up to 100 MW in size. | |
| 54. | MPSC Staff (1/4/19) | Renewable Energy - Would the Company consider a solar PPA with a potential purchase by the Company after the 5 year tax credit period ends? | Yes, but this doesn't rule out other ownership structures that the Company may consider in the future. |
| 55. | MPSC Staff (1/4/19) | Renewable Energy - Would the Company provide some of the background for the DG Forecast on slide 27? What resulted in the increase in 2016? How many DG interconnection requests did the Company receive in 2018? Does the data include Company-owned DG | <p>The DG forecast shown on slide 27 (Dec. 10th IRP Inputs PowerPoint Presentation) is based on PJM's November 27, 2018 Distributed Solar Forecast. The significant increase in IN DG in 2017 is likely due to the deadline established by Indiana Senate Bill 309 for net metering customers to be grandfathered under the net metering rules for 30 years. The Company observed a significant increase in Indiana DG in 2017 ~8MW, consisting of ~1MW Residential; 6MW Commercial, which includes Schools ~5MW, and 1MW Industrial.</p> <p>DG interconnection requests in 2018: MI – 39 interconnection requests; no company owned DG IN - 102 interconnection requests; no company owned DG</p> |
| 56. | MPSC Staff (1/4/19) | Storage -Please provide the information used to generate its cost estimates for energy storage. | As stated on slide 25 (Dec. 10 th IRP Inputs Powerpoint Presentation), the primary data used to develop the Storage Cost estimate are from Bloomberg New Energy Finance Energy Cost Survey, September 4, 2018 and are provided to AEPSC under a subscription service. |
| 57. | MPSC Staff (1/4/19) | Storage - Has the Company done any benchmarking of the costs of co-locating battery storage and renewable resources? | Yes, at a "desk top" or Class V estimate level and it resulted in nothing definitive or conclusive. The Company continues to monitor this resource configuration to further understand opportunities to introduce this to the model. |
| 58. | MPSC Staff | Storage - Was energy storage considered as | Energy storage is considered a resource in the IRP. It has both energy and demand |

2018 I&M IRP Website Stakeholder Comment Summary (Volume 2)

| | Stakeholder | Comment | I&M Response |
|-----|------------------------|---|---|
| | (1/4/19) | a potential demand response resource for this IRP? | characteristics that are reflected in the model, in essence it has a “demand response” characteristic. |
| 59. | MPSC Staff (1/4/19) | Storage - Please explain how the Company decided on 87% efficiency for its energy storage resources. | This is a planning assumption and the value is an estimate based on information from the DOE/EPRI 2015 Electricity Storage Handbook. |
| 60. | MPSC Staff (1/4/19) | Storage - Has the Company done any energy storage pilots to inform its inputs into its model? If so, please provide information about the pilots. | As related to lithium-ion technology, no; however, AEP has extensive experience with NaS battery storage technology. From 2006 to 2008 AEP installed 5 systems: 1Mw/7MWh in Charleston, WV; 2MW/14MWh in Milton, WV; 2MW/14MWh in Churubusco, IN; 2MW/14MWh in Bluffton, OH and 4MW/28MWh in Presidio, TX. From this effort AEP has gained experience in the application, project development, installation and operations of battery storage systems. These systems were initially installed for capacity and reliability reinforcement on the Distribution System. In 2017, the installation in Milton, WV began participating in the PJM Ancillary Services/Frequency Regulation Market. |
| 61. | MPSC Staff (1/4/19) | Storage - Please clarify what is meant by the two battery systems shown on the graph on slide 25 | The red line represents the installed cost over time for energy storage and is what the Company plans to model in the IRP. The blue line was the previous energy storage cost that had been presented to the stakeholders. The lines represent the installed cost on a per unit basis in the corresponding model year. |
| 62. | MPSC Staff (1/4/19) | Modeling - Where there any instances in which storage and solar were modelled as a combined single resource? Please explain how the model handles energy storage in conjunction with renewables. Is the model capable of handling renewable resources and energy storage in conjunction as a single resource or are the two modeled separately? | No, the Company did not include solar and storage as a single resource in the model. Currently, the resources are modeled separately. Yes, the Company would expect the model to be able to model renewables and storage as a single resource. The resource characteristics would need to be defined. |
| 63. | MPSC Staff | Modeling - Is I&M running the Base, Low, | I&M is performing resource optimization runs for the Base, Low, High and Status Quo |

2018 I&M IRP Website Stakeholder Comment Summary (Volume 2)

| | Stakeholder | Comment | I&M Response |
|---|-----------------------------------|---|--|
| | (1/4/19) | High and status quo modeling portfolios under varying load scenarios or are these portfolios independent scenarios? If they are independent staff would suggest running additional scenarios where both the commodity prices and load are varied into new scenarios. Not all combinations would be required only ones that do not stretch the imagination. This would be particularly important if the company seeks cost recovery as this would demonstrate robustness of decisions under changing conditions. | commodity pricing scenarios under the Base load forecast assumption. These commodity price optimizations are performed under a common load forecast assumption in order to isolate the impacts of varying commodity prices on optimal resource selection. The Low and High load forecast optimization runs are performed under Base commodity pricing in order to isolate the impacts of varying load forecast assumptions on optimal resource selection. During the development of the various commodity price scenarios, the Low commodity price forecast is created under lower load growth assumptions than the Base commodity price forecast, while the High commodity price forecast is created under higher load growth assumptions than the Base commodity price forecast. In order to provide additional information to demonstrate the robustness of the Company’s resource decisions, the following additional optimization runs will be performed: <ul style="list-style-type: none"> • High commodity prices with High load forecast assumptions, and • Low commodity prices with Low load forecast assumptions |
| Questions 64 – 72 were submitted by the Indiana Coal Council on January 4, 2019 in response to I&M’s request for comments on its 2018-2019 IRP Inputs & Portfolios Update dated December 10, 2018. | | | |
| 64. | Indiana Coal Council (1/04/19) | Slide 9 – Retail Load Growth by Class <ul style="list-style-type: none"> • Sensitivities on load growth should be incorporated | The slide on Page 11 (Dec. 10 th IRP Inputs Powerpoint Presentation) provides the sensitives to high and low economic growth associated with the load forecast to be used in the IRP. |
| 65. | Indiana Coal Council (1/04/19) | Slide 14 – Long Term Forecast <ul style="list-style-type: none"> • Why is the Base Case referred to as a “consensus case”? Consensus implies agreement among parties. • The basis for each fuel price assumption needs to be disclosed even if only on a confidential basis | The term, “Consensus Case”, has been used internally to recognize that it is distributed ubiquitously to all AEP operating companies after completion and is utilized for a wide variety of applications. It is often referenced for purposes such as fixed asset impairment accounting, capital improvement analyses, resource planning, strategic planning and others. To complement the Base Case Fundamentals Forecast, three associated cases are also created; the Lower Band, Upper Band, and Status Quo cases. The associated cases were designed and generated to define a plausible range of outcomes surrounding the Base Case Fundamentals Forecast. The Lower and Upper Band forecasts consider lower and higher North American demand for electric generation and fuels and, consequently, lower and higher fuels |

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| | Stakeholder | Comment | I&M Response |
|-----|--------------------------------|--|--|
| | | | <p>prices. Nominally, fossil fuel prices vary one standard deviation above and below Base Case values. The Status Quo case assumes there will be no regulations limiting CO₂ emissions throughout the entire forecast period.</p> <p>We agree that it is not intended to imply agreement among I&M Stakeholders.</p> |
| 66. | Indiana Coal Council (1/04/19) | <p>Slides 16/17 – Commodity Price Forecast</p> <ul style="list-style-type: none"> • Supporting detail needs to be provided even if only on a confidential basis • Additional commodity price forecasts need to be disclosed <ul style="list-style-type: none"> o Delivered prices of coal for both PRB and local coals o Gas prices at the relevant trading hubs o Firm Transportation cost assumptions in the analysis o Justification for the CO₂ price forecast | <p>Delivered prices of coal: Projected FOB coal prices for Powder River Basin 8,800 Btu/lb., 0.8# SO₂ are provided in the attachment “2018H2_LTF_FT_Aggregated Annual Pricing_2018 IM IRP Update.xlsx” in both real and nominal dollars. Please clarify this request for delivery costs by specifying the coals, transportation methods, and delivery points (power plants) specific to the I&M IRP.</p> <p>Gas prices at the relevant trading hubs: Projected locational natural gas prices for the Henry Hub, TCO Pool, Dominion South Point and TCO Delivered are provided in the attachment “2018H2_LTF_FT_Aggregated Annual Pricing_2018 IM IRP Update.xlsx.”</p> <p>Firm Transportation cost of natural gas: Please clarify this request for transportation costs utilizing Firm Transportation by identifying the transporting pipeline, receipt and delivery points specific to the I&M IRP. For modeling purposes, pipeline transportation charges are generally the 100% load factor Firm Transportation rate as published in the delivering pipeline’s effective Tariff.</p> <p>Justification of the CO₂ price forecast: The United States Environmental Protection Agency (EPA) has determined carbon dioxide to be a pollutant under the Clean Air Act which makes emissions subject to further limitation. As such, the 2018 Fundamentals Forecast employed a CO₂ dispatch burden (allowance price) on all existing fossil fuel-fired generating units that escalates 5% per annum from \$15 per ton in 2028. This carbon price proxy is intended to reflect the risks and costs associated with the regulation of carbon dioxide emissions from fossil fuel-fired power plants and is not intended to achieve the national mass-based emission</p> |

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| | | | targets similar to those proposed in the Clean Power Plan (CPP). |
| 67. | Indiana Coal Council (1/04/19) | <p>Slide 21 – Supply Resource Options</p> <p>There is inadequate consideration of coal going forward with the sole option being CCS with PRB. While not stated on the table, it appears that the CCS assumption appears to be based upon 90% (per the table on the prior slide). If true, the actual NSPS for GHG would require 30%. Further the proposed replacement NSPS for GHG eliminates the CCS requirement.</p> | <p>The Company has available new coal resource configurations that exclude CCS; however, with the current estimated installed cost between \$2,900 - \$3,300/kW depending on the fuel type, due to the relatively high installed cost levels it is highly unlikely that the IRP model would select/optimize a pulverized coal resource.</p> |
| 68. | Indiana Coal Council (1/04/19) | <p>Slide 22 – Supply Side Cost Assumptions</p> <ul style="list-style-type: none"> • As noted, coal resource costs are need for the 30% CCS option and the option that corresponds to the replacement NSPS for GHG • Costs are not provided for the natural gas with CCS resource option | <p>NGCC with CC costs and performance characteristics are provided on the bottom of page 22 (Dec. 10th IRP Inputs Powerpoint Presentation).</p> |
| 69. | Indiana Coal Council (1/04/19) | <p>Slide 29- Rockport Scenarios</p> <ul style="list-style-type: none"> •(a) The basis for the various retirement dates should be provided •(b) The scrubber technologies under consideration should be provided along with costs. At a minimum, the options should include wet scrubber, dry scrubber, and an ammonia sulfate | <ul style="list-style-type: none"> a. The basis for the retirement dates are the requirements of the Consent Decree and the end date of the Rockport U2 lease. b. The scrubber technology included in this IRP analysis is the Alstom NID FGD system with integral Pulse Jet Fabric Filter, which is a dry FGD technology. <p>In 2011, the Company completed an evaluation of scrubber technologies for Rockport Units 1 & 2. Four technologies were evaluated for detailed comparative analysis for</p> |

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| | Stakeholder | Comment | I&M Response |
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| | | <p>scrubber.</p> <ul style="list-style-type: none"> • (c)The assumption that if a scrubber is retrofit, the basis for limiting its life for 10 years should be explained along with the incremental costs of the shortened life span. • (d)A scenario in which both Rockport units are scrubbed should be included • (e) Options for retaining Rockport 2 if a lease extension cannot be negotiated with current lessors | <p>the Rockport Unit 1 evaluation: (1) Limestone based Forced Oxidized (LSFO) Spray Tower Wet FGD with existing Dry ESP; (2) Lime based NID Dry FGD System with integral Pulse Jet Fabric Filter (PJFF); (3) Lime based Circulating Dry Fluidized Bed Scrubber (CDS) with Pulse Jet Fabric Filter (PJFF); and (4) Lime based Spray Dryer Absorber (SDA) with Pulse Jet Fabric Filter (PJFF).</p> <p>The evaluation recommended the Alstom NID FGD system over the other evaluated FGD technology options because it offers excellent emissions control performance based on the unit’s operating parameters, best minimizes the impact to the unit’s overall environmental footprint, and offers the lowest total evaluated cost. A NID FGD system at Rockport Unit 1 or Unit 2 will effectively control SO₂ emissions while minimizing water usage, auxiliary power consumption, equipment footprint, and reagent usage. In addition, the NID FGD system will allow for effective co-benefit control of emissions such as mercury, SO₃, and other HAPs while mitigating the risk of future NPDES permit compliance.</p> <p>Before this evaluation, AEP evaluated the GE-Marsulex Ammonia Based FGD System. The process produced a fertilizer grade ammonium sulfate $\{(NH_4)_2SO_4\}$. The storage, logistics and marketing did not fit our business model or expertise. Additionally, the process had a number of additional steps on the backend associate with drying and pelletizing. Validating our assumptions is that to-date we don’t believe that any have been deployed on any US coal-fired electric power generating plants. Based on this evaluation this technology was not further considered.</p> <ul style="list-style-type: none"> c. For this IRP, the Company will use a 60-year life for the Rockport units. d. The portfolios already being evaluated in the study provide sufficient information to evaluate the value of scrubbing both units so it is not necessary to evaluate a separate portfolio for this scenario. |

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| | | | e. Options related to Rockport 2 after the lease expires may include a power purchase that is sourced from Rockport 2. |
| 70. | Indiana Coal Council (1/04/19) | <p>Slide 31- Stakeholder Scenarios</p> <ul style="list-style-type: none"> • ICC will recommend additional scenarios for consideration but needs to see the additional information referenced herein to fully construct, e.g., the scrubber assumptions. Generally the scenarios of interest include: <ul style="list-style-type: none"> o Scrubbing of both Rockport units earlier and for longer (type of scrubbing and coal TBD) o No or delayed carbon pricing o Higher load growth | <p>The Rockport 1 and 2 material scrubber assumptions include: installed costs: (2015 \$) \$778/kW & \$784/kW respectively ; total levelized fixed O&M costs are \$13.7M and \$12.5M per year respectively; variable operating costs (2015 \$) \$0.98/MWh and \$1/MWh respectively escalating at 2%; parasitic load: 35 MW and removal efficiency: 98%.</p> <p>In addition, the Company will consider additional specific scenarios that may be proposed by the Indiana Coal Council.</p> |
| 71. | Indiana Coal Council (1/04/19) | <p>Missing Items</p> <p>Complete regulatory assumptions</p> <ul style="list-style-type: none"> o ELG o CCR o Other | <p>The known costs, issues, concerns or operational constraints related to ELG and CCR are included in all scenarios and portfolios.</p> |
| 72. | Indiana Coal Council (1/04/19) | <p>Missing Items</p> <p>Decision metrics. At a minimum, they should include:</p> <ul style="list-style-type: none"> o Five and 20-year NPV calculations o Life Cycle Analysis of Carbon Emissions <ul style="list-style-type: none"> <input type="checkbox"/> Total carbon emissions associated with the full life of any new resource o Risk analysis of associated with irreversible decisions | <p>The IRP process provides an informative planning document based on a snapshot in time updated every three years that evaluates resource decisions based on a number of metrics and factors.</p> <p>These resource decision metrics include:</p> <p>Identifying the resource additions that are common under optimal plans created for various commodity price and load forecast scenarios. Identifying the revenue requirement at risk impacts of selected resources by conducting stochastic risk analysis.</p> |

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| | Stakeholder | Comment | I&M Response |
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| | | | <p>In addition to providing these resource selection metrics, the Company can also provide:</p> <ul style="list-style-type: none"> • Annual CPW curves so that the CPWs of the various optimal plans can be compared at any point in time during the 20 year reporting horizon. • Annual CO2 emissions for the various optimal plans |

Questions 73 – 82 were submitted by the Sierra Club on January 8, 2019 in response to I&M’s request for comments on its 2018-2019 IRP Inputs & Portfolios Update dated December 10, 2018

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| 73. | Sierra Club (1/08/19) | <p>Request to revisit company’s response to Q#40.</p> <p>a. It would be helpful for council members’ names who have written I&M about the 20-year energy plan to be listed in #40 so that people who wrote the utility know this is a response to their request (especially considering multiple letters were sent with different language). b. Additionally, it should be noted the number of public comments filed with the company instead of simply listing "and interested stakeholders".</p> <p>c. I don't feel the request for I&M to meet or exceed efficiency standards outlined by the Daniel's administration was thoroughly addressed. (i)Can some more details be provided please regarding what I&M's goals were under that program for each customer class, (ii)what performance goals I&M will be planning to meet in this 20-year energy plan; and iii)if those goals will meet or exceed the goals that were established under the statewide program?</p> <p>d. For the answer regarding local investments in renewable energy projects in the I&M service area it would be helpful</p> | <p>The following information supplements the Company’s response to question #40:</p> <p>(a) and (b): Over 500 stakeholders provided letters or emails to I&M senior management requesting:</p> <ul style="list-style-type: none"> • Replace Rockport generation with solar, wind, battery storage, and energy efficiency in a cost-effective manner. • Improve energy efficiency programs so they serve more low- and fixed-income residents. Ensure I&M meets or exceeds energy savings goals established under the former statewide Energizing Indiana program. • Invest in renewable energy projects that will transform abandoned spaces while bringing good jobs to our communities and improving the local tax base. • Ensure that this current and future 20-year planning processes are transparent and accessible to all interested customers, especially the people most impacted by I&M's decisions. <p>Letters were submitted by Mayor Pete Buttigieg and various Ft. Wayne, South Bend and Muncie Council Members including Regiana Williams-Preston, Sharon McBride, Jo M. Broden, Jake Teshka, Karen White, Gavin Ferlic, John Voorde, Glynn Hines, Daniel Ridenour, Bradley Polk, Jerry Dishman, Nora Powell, Linda Gregory and others. Letters were also provided by the Executive Committee for People for the Common Good, including Sarah Hyndman, Shane Sullivan, Jain Young, Amanda Vance, Cortney Robbins and Meg Bloom.</p> <p>c. I&M’s goals from the efficiency standards under the Daniel’s administration were differently situated and are now not relevant according to the EE program target determination process used, and required by state law, today. Those prior targets relied heavily upon the “low hanging fruit” available at that time from low, cost high yield savings measures borne out by the programs proffered by statewide third party administrator. Today, I&M implements programs consistent with how state law now requires EE targets to be determined, as part of the optimal resource selection used in the IRP process. The “low hanging fruit” measures, costs, and savings now have different measure characteristics due to technological and efficiency baseline changes which are being modeled in this IRP. Those measures being modeled, as compared with other resource options in the IRP, will determine I&M’s future EE</p> |
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| | | <p>for you all to provide some context about how you're selecting future renewable energy generation sites, if any preference is given to locations in the service area/ local contractors. As well as detailing the scale of renewable investments the utility is considering in this planning time-frame.</p> | <p>savings targets.</p> <p>The level of savings from the optimal resource selection process stemming from this IRP will determine the level of I&M's EE targets going forward.</p> <p>d. The IRP is a planning tool and is not meant to select any particular generation resource. The process of selecting specific new generation resources will occur after the IRP. When the time comes for I&M to select new renewable generation resources, the benefits of siting the resource within I&M's service territory is one factor among many that I&M expects to consider.</p> |
| 74. | Sierra Club (1/08/19) | <p>The Rockport retirement scenarios should be made more robust to further test the going-forward value of these units to customers. In addition to the scenarios that I&M is already intending to model (Slide 29), I&M should model at least two additional Rockport scenarios:</p> <ul style="list-style-type: none"> i) Retire Unit 1 in 2025 (with no FGD) and the Unit 2 lease is not extended; and ii) Retire Unit 1 in 2023 (with no FGD) and the Unit 2 lease is not extended. <p>The scenarios recommended here are to ensure that I&M can independently assess the value to ratepayers of maintaining or retiring Rockport Unit 1 independently of the economics of Rockport Unit 2. I&M must take care not to convolute the value of maintaining these units with the avoided value of deferring or avoiding FGD obligations. Finally, I&M must ensure that the full costs of maintaining either of the Rockport coal units after the analysis period (2037) are fully incorporated into</p> | <p>The portfolios already being evaluated in the study provide sufficient information for I&M to assess using Rockport 1 as a resource for its customers. I&M will clearly identify the assumptions forming the basis for each scenario analyzed, and provide a complete description of the costs and benefits of each, including the time period examined.</p> |

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| | | any assessment in which either of the units continues operation. | |
| 75. | Sierra Club (1/08/19) | I&M should model a “No OVEC” portfolio that assumes that OVEC is not retained to serve Indiana customers beyond June 1, 2019. In this portfolio, retain all other reference case assumptions and assume that at any needed energy and/or capacity is purchased on the PJM markets. For any PJM energy market purchases, use I&M’s base case forecast. For any capacity market purchase, use actual PJM capacity prices through May 2022 and, after that date, use AEP’s lower band PJM capacity price forecast. Assume that the costs and benefits of the OVEC contract are enjoyed by AEP shareholders for as long as AEP wishes to retain that contract, but no OVEC costs are billed to Indiana customers after June 1, 2019. I&M should compare the net present value of this “No OVEC” portfolio to that of its reference case portfolio that includes OVEC. | Under the Ohio Valley Electric Company (OVEC) Inter-Company Power Agreement (ICPA) originally entered into by I&M and the other OVEC sponsoring companies on July 10, 1953 and most recently amended on September 10, 2010 (see FERC Docket ER11-3181), I&M is contractually required to purchase a share of the output of the OVEC plants through 2040. Therefore, I&M’s entitlement under the OVEC ICPA cannot be excluded from I&M’s generation portfolio in this IRP. |
| 76. | Sierra Club (1/08/19) | I&M’s assumptions regarding solar and wind resources prices are unreasonably high and should be corrected. Slides 23 (wind) and 24 (solar) suggest that I&M’s wind and solar price forecasts are derived from the Bloomberg New Energy Finance (BNEF) 2018 Renewable Energy Market Outlook, but the prices reflected on I&M’s slides are much higher than BNEF’s actual 2018 outlook prices, provided below in Chart 1. For wind, BNEF is projecting | <p>The Company believes the renewable estimates provided are reasonable for this IRP analysis and expects to update the values before the final report based on new information from BNEF; however, an initial review of the new BNEF data has not revealed any significant differences from the company’s current estimates.</p> <p>Additionally, the Company is open to considering a stakeholder portfolio that includes discounts to the Company estimated renewables installed costs.</p> <p>Regarding the comment on our current estimates versus the BNEF chart provided by the Sierra Club, the major difference between the two values is that the chart provided is in Real \$s and the Company’s values are in nominal \$s. Furthermore, the Company’s estimates include, its</p> |

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| | <p>Levelized Cost of Energy (LCOE) prices for wind between \$30-\$40/MWh (2018\$) through 2025, not \$50-\$70/MWh as projected by I&M on Slide 23. For solar, BNEF is projecting LCOE prices of \$30-\$40/MWh, not the LCOE prices of \$62-\$68/MWh on Slide 24. Further, while BNEF's wind prices outlook is generally flat through 2025, I&M's price outlook shows substantially increasing prices throughout the forecast period.</p> <p><i>Chart 1 shown in I&M response column.</i></p> <p>Not only are I&M's solar and wind price projections high compared to BNEF's 2018 Outlook prices, I&M's prices are much higher than actual bids received by I&M's neighboring utility NIPSCO in its recent "all source" RFP. In response to its RFP, NIPSCO received 26 solar bids for 2023 (or earlier) delivery with an average price of \$35.67/MWh. And, in response to its RFP, NIPSCO received six wind bids for 2023 (or earlier) delivery with an average price of \$26.97/MWh. I&M must dramatically reduce its forecasted wind and solar prices to reflect these market realities.</p> | <p>cost of capital and expected performance levels and ongoing costs, which are most likely different than BNEF's assumptions. If we take the 2021 value from the chart, ~\$28/MWh and assume 2% inflation in nominal \$s this is equivalent to \$30/MWh, the Company is modeling a \$34.11/MWh resource or the Company's resource is ~15% higher, without knowing all of the details that produced the BNEF LCOE, the Company is confident that the modeled cost for its resources are a reasonable proxy for wind resources for this IRP.</p> <p>Regarding the comparisons to NIPSCO's bids the Company compares favorably to the values in Table 4-16 of the NIPSCO IRP from our perspective. The solar installed cost range from ~5% less or up to 15% higher, this is without knowing many key design considerations that impact this price; such as, expected capacity factor and DC to AC ratio, etc. For the wind resource our estimate is ~1% higher, again without knowing any key design characteristics of the NIPSCO resource.</p> <p>The major differences identified are between a "PPA" resource cost and an owned resource cost. The Company's current assumption is to own generating resources.</p> <p style="text-align: center;">Chart 1: BNEF 2018 Renewable Energy Market Outlook (Provided by Sierra Club)</p> |
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| | | | <p>Estimated mid-Atlantic LCOEs vs PJM power prices</p> <table border="1"> <caption>Estimated mid-Atlantic LCOEs vs PJM power prices (Real 2018)</caption> <thead> <tr> <th>Year</th> <th>Solar (fixed) (\$/MWh)</th> <th>Solar (tracking) (\$/MWh)</th> <th>Wind (\$/MWh)</th> </tr> </thead> <tbody> <tr><td>2015</td><td>60</td><td>60</td><td>35</td></tr> <tr><td>'16</td><td>55</td><td>55</td><td>32</td></tr> <tr><td>'17</td><td>48</td><td>48</td><td>30</td></tr> <tr><td>'18</td><td>45</td><td>45</td><td>28</td></tr> <tr><td>'19</td><td>44</td><td>44</td><td>27</td></tr> <tr><td>'20</td><td>42</td><td>42</td><td>26</td></tr> <tr><td>'21</td><td>40</td><td>40</td><td>27</td></tr> <tr><td>'22</td><td>38</td><td>38</td><td>28</td></tr> <tr><td>'23</td><td>35</td><td>35</td><td>29</td></tr> <tr><td>'24</td><td>40</td><td>40</td><td>32</td></tr> <tr><td>'25</td><td>38</td><td>38</td><td>31</td></tr> </tbody> </table> | Year | Solar (fixed) (\$/MWh) | Solar (tracking) (\$/MWh) | Wind (\$/MWh) | 2015 | 60 | 60 | 35 | '16 | 55 | 55 | 32 | '17 | 48 | 48 | 30 | '18 | 45 | 45 | 28 | '19 | 44 | 44 | 27 | '20 | 42 | 42 | 26 | '21 | 40 | 40 | 27 | '22 | 38 | 38 | 28 | '23 | 35 | 35 | 29 | '24 | 40 | 40 | 32 | '25 | 38 | 38 | 31 |
|------|------------------------|---|---|------|------------------------|---------------------------|---------------|------|----|----|----|-----|----|----|----|-----|----|----|----|-----|----|----|----|-----|----|----|----|-----|----|----|----|-----|----|----|----|-----|----|----|----|-----|----|----|----|-----|----|----|----|-----|----|----|----|
| Year | Solar (fixed) (\$/MWh) | Solar (tracking) (\$/MWh) | Wind (\$/MWh) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2015 | 60 | 60 | 35 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| '16 | 55 | 55 | 32 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| '17 | 48 | 48 | 30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| '18 | 45 | 45 | 28 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| '19 | 44 | 44 | 27 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| '20 | 42 | 42 | 26 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| '21 | 40 | 40 | 27 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| '22 | 38 | 38 | 28 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| '23 | 35 | 35 | 29 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| '24 | 40 | 40 | 32 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| '25 | 38 | 38 | 31 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 77. | Sierra Club (1/08/19) | <p>I&M should remove its arbitrary caps on the amount of renewable energy that its model can select. As noted in slides 23 and 24, I&M has included arbitrary constraints on its model for the amount of wind and solar that the model can select per year and total over the planning period. I&M should remove these constraints entirely or, at a minimum, dramatically raise these caps. I&M appears to have included these caps due to some notion of what would be pragmatically achievable in terms of time needed for construction. But these arbitrary caps prevent I&M's model from selecting the lowest-cost portfolio to serve customers. Instead of these arbitrary caps, I&M should allow the model to select renewable projects without constraint. If the model selects renewables at levels that</p> | <p>The Company will consider a Portfolio with higher annual build levels. Please see slide 31, 4b (Dec. 10th IRP Inputs Powerpoint Presentation).</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| | | I&M considers administratively difficult to execute, it should explain that cost-versus-administration risk tradeoff after the modeling is completed. | |
| 78. | Sierra Club (1/08/19) | I&M should revise downward its projections of storage costs to reflect better data. On Slide 25, I&M shows projected storage prices starting in 2018 at \$450/MWh. But Lazard data shows that a four-hour Lithium Ion battery project has a dramatically lower LCOE of \$200-\$300/MWh today. I&M should either incorporate Lazard’s lower price or explain its choice not to do so. In addition, I&M should consider incorporating the storage prices received by NIPSCO in response to its RFP, or explain its choice not to do so. | <p>The Company is confident that the storage cost and performance characteristics are reasonable for this IRP. The Company may consider lowering the storage cost curve for specific stakeholder Portfolios.</p> <p>While on the surface the NIPSCO storage cost appear to be lower, it is not clear the assumed life or duration of the storage NIPSCO modeled.</p> |
| 79. | Sierra Club (1/08/19) | I&M should completely remove its arbitrary inclusion of new gas plants in its Company Scenarios. The pre-determined “assumed” new gas capacity in the Company scenarios are completely antithetical to any reasonable definition of an optimized or least-cost seeking resource plan. In fact, this pre-determined “assumed” gas capacity violates the Commission’s Proposed IRP Rule that requires a utility to demonstrate how a preferred portfolio balances “cost minimization” against other defined criteria. In the Company Scenarios (Slide 30), I&M should not arbitrarily assume construction of a combustion turbine gas plant in 2022 or any future | <p>The Company believes there is a misunderstanding here. The wording on slide 30 where we stated “Add”... was not meant to imply that we “pre-determined” to add a CT or NGCC. What should be understood is for Company Scenarios 1 “Conventional Portfolio”, the Company is not allowing a NGCC to be selected until 2028, this basically allows for other resources to fill any need other than an NGCC. So in the “12-Year Peaking Plan”, NGCCs are not allowed to be selected until 2034 & 2037 again to allow the model to pick other available resources.</p> <p>The Company is adding a short term market resource and plans to present the initial modeling results at the next stakeholder meeting.</p> |

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| | | <p>assumed gas plants in 2028, 2034, or 2037. For the 2022 timeframe, I&M should instead issue an all-source RFP for delivery year 2022 and use the results of such RFP to inform its modeling. If I&M believes there is insufficient time to engage in such prudent planning, then it should instead model the NIPSCO average bid results from that company’s RFP to fill any capacity need in 2022. In no event, should I&M just assume by proclamation that a combustion turbine should be built in 2022. In addition, I&M should remove the construction of an NGCC in 2028, 2034, and 2037 from its Company Scenarios. Instead, the Company should seek least cost replacement or capacity market purchases for the purposes of this IRP, and state that any capacity shortfalls in those years will be met with an I&M all-source RFP. For the purposes of this modeling exercise, I&M should assume capacity additions are made in those years at the price of AEP’s lower band PJM capacity price.</p> | |
| 80. | Sierra Club (1/08/19) | <p>Sierra Club defines the “No New Fossil Generation” portfolio as one that meets any capacity shortfall with construction of renewable resources, storage, energy efficiency, or interruptible load. In this portfolio, I&M should prevent the model from selecting any new natural gas or coal-burning generation. This Portfolio should use average bid data from the NIPSCO RFP for wind, solar, and storage prices, and</p> | <p>The Company plans to run this Portfolio with the Company’s resource assumptions. See slide 31, 4c.</p> |

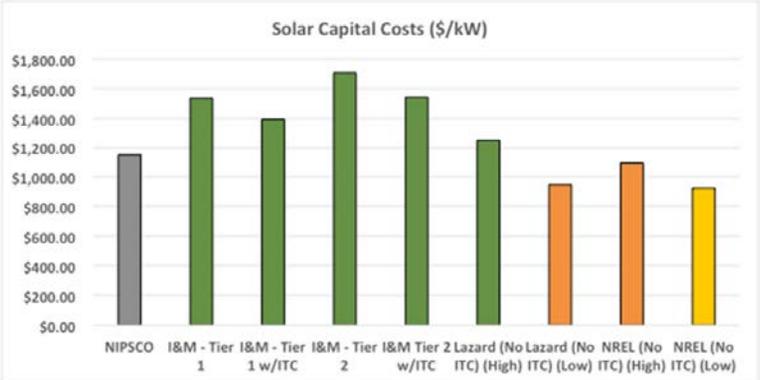
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| | | retain all other reference case assumptions. If necessary to meet capacity needs, the model could be allowed to choose to purchase capacity on the market at the “lower band” forecast price, but not the “status quo” or “higher band” forecasts, for the reasons stated in our eighth point below. | |
| 81. | Sierra Club (1/08/19) | I&M should reject inclusion in its modeling of AEP’s base and high band PJM capacity prices. For years, utilities have wrongly projected a dramatic escalation of PJM capacity prices, approaching the Cost of New Entry (CONE). As I&M is well-aware, these forecasts have always been wrong and always in the same direction—too high. I&M should recognize the reality that PJM capacity prices are never going to reach CONE and should stop relying on assumptions that it knows are incorrect. Assuming these implausibly high capacity prices, could, for example, cause I&M to retain uneconomic generation that should instead be retired. | Please recognize that the reported capacity values across all the scenarios of AEP’s Fundamentals Forecast and are a discrete output of the Aurora energy market model. Capacity prices represent the non-energy revenue necessary for the least-dispatched units to remain economically viable and for the entire fleet to meet required reserve margins. It would be reasonable to infer that low capacity prices mean that the modeled fleet is long in generation and that new generation is not required to maintain reserve margins. Similarly, an increase in capacity prices would indicate that new generation is required to meet reserve margins. |
| 82. | Sierra Club (1/08/19) | I&M should cease using its “high band” and “low band” characterizations of uncertainty, and independently test key uncertain variables. For years, AEP Companies have used a reference case, and “high band” and “low band” for commodity prices, energy prices, capacity prices, and carbon uncertainty. AEP then clusters the highest cost outcomes into a “high band” scenario and the lowest cost outcomes into | Please recognize that I&M is willing to consider the inclusion of reasonably formulated scenarios and/or sensitivities in order to support robust Stakeholder involvement in the IRP process. Also recognize that the consideration of additional scenarios and/or sensitivities should not result in the “rejected inclusion” of previously modeled scenarios. |

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| | <p>a “low band” scenario. This clustering obscures the true range of risk, and denies the Company, regulators, and stakeholders the opportunity to assess outcomes decoupled from the inappropriately clustered assumptions. While the ranges of individual commodities can and should be rigorously reviewed and debated (see comment seven, above), the combination of assumptions simply obscures reasonable risk. For example, AEP typically clusters into a “high band” the highest gas price, coal price, and carbon price assumptions, while clustering into the “low band” the lowest fuel prices, no carbon price, and the lowest projection of capacity market outcomes. While these clusters can be illustrative to demonstrate the highest and lowest cost to consumers of a chosen portfolio, they are nearly useless for the selection of a reasonable range of portfolios and do not represent bookends, and misrepresent real outcomes. For example, in a world with a mass-based carbon constraint, fuel prices might be anti-correlated with carbon prices, as higher carbon prices are needed to drive investments towards non-emitting resources in the presence of low fuel prices. In another key example, as gas prices have fallen, coal volumes have fallen, increasing the fixed cost burden on production and keeping solid fuel prices relatively high. Key commodity price projections – coal, gas, carbon, and</p> | |
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| | | capacity price – must be disentangled and assessed both separately and in concert. | |
| 2018 I&M IRP Website Stakeholder Comment Summary | | | |
| | Stakeholder | Comment | I&M Response |
| <p>Questions 83-92 were submitted by the CAC on 1/11/19. In addition to the specific questions, the CAC noted that as we always do in cases like this, we would encourage I&M to provide this data in spreadsheet format in the future with as much background information and formulae underlying that data as possible. Doing so permits stakeholders to conduct a more thorough review and to understand key details, e.g. whether costs are in nominal or real dollars.</p> | | | |
| 83. | Citizens Action Coalition of Indiana, Inc. (01/11/19) | <p>Load Forecast – While I&M notes that it’s 10-year historical compound average growth rate has been -0.1% in the peak, its forecast is assuming growth in peak demand once load drops in 2020 and 2021. This growth begins with an unexplained increase in peak demand in 2022 and then what appears to be a steady rate of growth through the rest of the planning period.</p> <p>We would encourage I&M to use a peak demand forecast that includes flat to declining peak demand throughout the planning period and not just in the initial years.</p> | <p>While the 2008 through 2017 CAGR was -0.1%, if one looks at the most recent 10 year period of 2009 through 2018, which is the 10-year historical period that will provided in Company’s forthcoming IRP, the CAGR for peak demand is 0.3%. Between 2018 and 2020, the Company will experience some FERC wholesale customers opting to buy energy services from an alternative supplier and therefore the Company’s peak demand and energy requirements will experience declines, with the energy requirements decline being also felt in the 2021 annual data. The CAGR for peak demand during 20-year period of the load forecast is projected to be 0.0%. For the last 15 years of the forecast, the CAGR for peak demand is projected to be 0.4%. Based on the economic forecast from Moody’s Analytics, and the Company’s analysis of energy and peak demand, the Company believes the forecast is reasonable with the modest growth projection. Also, the Company bounds this expectation with high and low forecast scenarios.</p> |
| 84. | CAC (1/11/19) | <p>Commodity Price Forecasts – The wholesale energy and capacity prices shown on slides 16 and 17 appear to show that in all scenarios real price growth is anticipated. This means that none of these forecasts would extend the price trends seen at AEP hubs of sub \$40 and, recently, sub \$30 per MWh power (with the exception during cold snap events like the polar vortex), i.e., real declining prices. At a minimum, a scenario without real price escalation in commodity prices ought to be added. Further, the projected PJM AEP Capacity prices grow significantly to what appears to be market equilibrium or CONE values. This does not make sense as a base case scenario since capacity prices in the RTO zone have typically</p> | <p>Please recognize that I&M is willing to consider the inclusion of additional reasonably formulated scenarios and/or sensitivities in order to support robust Stakeholder involvement in the IRP process.</p> <p>The reported capacity values across all the scenarios of AEP’s Fundamentals Forecast are a discrete output of the Aurora energy market model. Capacity prices represent the non-energy revenue necessary for the least-dispatched units to remain economically viable and for the entire fleet to meet required reserve margins.</p> |

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| | | <p>fallen well short of CONE even when faced with retirement of significant capacity. It is good IRP practice to test a wide arrange of realistic values and such a range ought to include the trends currently faced by the utility. I&M is lacking the data that would allow it to assess its fleet under the conditions it currently faces.</p> | |
| 85. | CAC (1/11/19) | <p>Scenario and Sensitivity Construction – We concur with the Sierra Club in its comments that combining “low” forecasts together in one scenario and “high” forecasts together in another is not necessarily logical. If scenario beyond the reference case are intended to capture a range of possible outcomes, then those scenarios ought to be driven by a narrative of a possible external event that could have significant impact on I&M’s system, e.g., additional loss of wholesale requirements customers, the imposition of a meaningful carbon reduction policy, financial crisis in the natural gas industry, etc. These types of scenarios can be more meaningful than merely bundling high forecasts together or low forecasts together since they convey more meaningful information about the risk that is being considered.</p> | <p>Please recognize that I&M is willing to consider the inclusion of additional reasonably formulated scenarios and/or sensitivities in order to support robust Stakeholder involvement in the IRP process. Also recognize that the consideration of additional scenarios and/or sensitivities should not preclude inclusion of previously modeled scenarios.</p> |
| 86. | CAC (1/11/19) | <p>Energy Efficiency Costs and Savings – We are disappointed to see that I&M intends to replicate key portions of its approach to modeling EE from its 2015 IRP. That IRP resulted in the nonsensical conclusion that residential lighting was the only cost-effective measure. In its 2016 DSM filing, rather than acknowledging the flaws in its approach, I&M argued that “While it is true that the IRP model and</p> | <p>For current IRP DSM/EE measure bundle modeling, I&M is relying on its 2016 Market Potential Study (MPS) performed by Applied Energy Group (AEG). Different from the 2015 IRP bundle attributes modeled, I&M’s 2016 MPS specifically modeled the I&M system and service territory demographics, DSM/EE measure saturation and program history, and each state jurisdiction’s energy and cost attributes for measure bundles and programs. During MPS development, I&M’s DSM/EE Oversight Board stakeholders were engaged and afforded final review of the MPS before completion. As such, current IRP measure bundle costs and savings are directly tied to I&M’s 2016 MPS for</p> |

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| | | <p>Preferred Plan only included the Residential Lighting bundle in 2018 and 2019, this does not imply that a DSM Plan would only include residential lighting.” We hope that I&M does not intend to extend this illogic to the 2019 IRP modeling.</p> <p>Though bundle costs have generally moderated in the Commercial sector, the Residential bundles are still wildly overpriced. And the potential for savings has been dramatically reduced. For example, the so-called Achievable Shell bundle in the 2015 IRP contained 7,585 and 13,699 MWh of savings in 2019 and 2024, respectively. I&M now proposes to reduce savings available for the model to choose from this bundle to just 1,516 MWh per year over a similar period. The levelized cost of this bundle is now much higher as well, \$162.66 per MWh rather than the \$40.27 per MWh assumed in the 2015 IRP. Indeed, it does not appear that it would even be possible to select the same level of savings on an annual basis that are contained in I&M’s current DSM plan. This is a radical revision to an already fatally flawed dataset and will ensure that I&M continues to overstate EE costs and understate EE savings potential. To continue to use this dataset would completely undermine I&M’s selection of a least cost, preferred plan.</p> | <p>cost and savings potential and reflect I&M’s cost of DSM/EE programming (LCOE, or first year annual). I&M worked directly with AEG to ensure consistent and accurate modeling in the IRP using MPS measure bundle attributes.</p> <p>Any specific measure bundle attribute variations between the 2015 IRP and the current IRP modeling are the result of actions taken by I&M to refine DSM/EE modeling based on feedback and lessons learned from the 2015 IRP process.</p> |
| 87. | CAC (1/11/19) | <p>Demand Response – It’s not clear if slide 19 refers to existing DR programs or is the characterization of what I&M believes to be its additional potential.</p> <p>If the former, then these numbers understate what we understand to be I&M current program offerings by a wide margin. If the</p> | <p>Demand response (DR) resources shown on slide 19 are consistent with participant targets set forth in I&M’s current programs, other similar program experience (to the extent applicable) and with the State of Michigan Demand Response Potential Study dated September 2017 which included a survey of DR programs nationwide by program type and technology. For the total of the 4 blocks of each DR resource, the amount of demand savings is consistent with participation levels experienced by I&M.</p> |

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| | | <p>latter, then the C&I potential, in particular, seems extremely limited. Indeed, it is limited just to commercial customers and does not include industrial customers.</p> |
| <p>88.</p> | <p>CAC (1/11/19)</p> | <p>Wind, Solar, and Battery Costs – Most wind, all solar, and battery costs appear to be overstated as shown in the charts below. We would recommend adjusting these costs to approximately the values received in response to NIPSCO’s all-source RFP, assuming I&M will not be performing its own all-source RFP for this IRP as requested by stakeholders in a letter dated December 4, 2018.</p> <p>We recommend that the NIPSCO values be the starting place for capital costs and NREL ATB escalation rates be applied going forward.</p>  <p>Figure 1. I&M’s Estimated Solar Costs are Much Higher than NIPSCO RFP Responses, Lazard,1 or NREL2 Estimates Both With and Without the ITC</p> |
| <p>Please see the Company’s response to Sierra Club question #76.</p> <p>As stated in the Sierra Club Question #76 response the Company is open to considering a stakeholder scenario with lower renewable and storage cost.</p> | | |

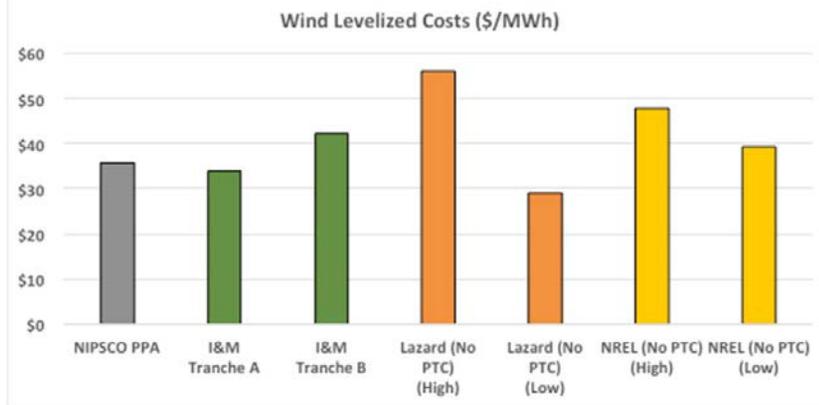


Figure 2. I&M’s Tranche B Estimated Wind Costs are Much Higher than NIPSCO RFP Responses, Lazard, and NREL3 Estimates if PTC were included.

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| 89. | CAC (1/11/19) | <p>Limitations on Resource Selection – In the past I&M has argued that limitations on wind, in particular, were necessary to prevent the model from building wind resources purely for arbitrage purposes. While we agree that this is not a desirable outcome, the limitations on resource selection are so narrow as to prevent the model from choosing a cost-effective portfolio that does not contain a fossil-fuel based resource. As I&M itself, states, it will be in a capacity deficit position with the retirement of the Rockport units. It is good modeling practice to allow the model to consider a wide arrange of portfolio options to meet this deficit. It would therefore be preferable to allow the model to pick unlimited amounts of as many resource options as possible, evaluate that</p> | <p>Please see the Company’s response to Sierra Club question #77. The Company will consider modifying the annual and total build constraints for both wind and solar resources within a stakeholder defined portfolio.</p> |
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| | | <p>result in a transparent fashion, and then decide whether further resource selection limitations make sense.⁴</p> <p><i>⁴ Note that we are also not clear what size increments these resources are modeled. Making the resource options large enough to leverage economies of scale but small enough not to burden ratepayers with overbuilt capacity is very important.</i></p> | |
| 90. | CAC (1/11/19) | <p>Rockport and OVEC Retirements – CAC believes additional portfolios modeling Rockport and OVEC retirements are warranted. Namely, I&M should model the retirement of Rockport 1 in 2025 with no lease extension of Rockport 2 and model the retirement of Rockport 1 in 2023 with no lease extension of Rockport 2. I&M should also consider whether its OVEC contract ought not to be renewed and should model a portfolio where the OVEC contract is not extended. Based on the results of the 2015 IRP, we believe there is a strong likelihood that either of these portfolios would be cost-effective for customers and therefore ought to be included in I&M’s modeling.</p> | <p>Please refer to the response to Sierra Club question # 74 for the Company’s response to the proposed Rockport scenarios.</p> <p>Please refer to the response to Sierra Club question # 75 for the Company’s response to the OVEC comment.</p> |
| 91. | CAC (1/11/19) | <p>Portfolios – As we alluded to above in #7, Limitations on Resource Selection, the portfolios proposed by I&M, are overly limited. We’d like to see portfolios created by using Plexos’ optimization capabilities as much as possible before additional portfolios with fixed resources are created. There is no mention in the slides of creating unconstrained portfolios, but we believe doing so can help inform the development of the constrained portfolios so that they are as</p> | <p>The base, high, low and status quo optimizations are all unconstrained as defined by the Company’s inputs. Please see the company’s response to Question #89.</p> |

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| | | cost-effective as possible. | |
| 92. | CAC (1/11/19) | EE Decrement Approach – In order for this analysis to be meaningful, a much wider level of annual EE savings reduction needs to be assessed, i.e., up to a 2% annual reduction and the limitations on resource selection need to be removed. If they are not, then I&M is putting CAC and its consultants in the frustrating position of doing analysis that it will attribute to CAC and/or its consultants but which is nothing like what we are proposing. Further, it is critical to provide CAC and its consultants an opportunity to review this analysis and make adjustments to the modeling if necessary, before it is published. This is an essential step to help ensure that the modeling comports with our recommendation. | The Company will consider modifying or creating an additional “Decrement” portfolio. The Company plans on making this portfolio and all portfolios as transparent as needed so all stakeholders can understand the results. |
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