

**STATE OF IOWA  
DEPARTMENT OF COMMERCE  
BEFORE THE IOWA UTILITIES BOARD**

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**IN RE:**

**INTERSTATE POWER & LIGHT  
COMPANY**

**DOCKET NO. EEP-2022-0150**

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**DIRECT TESTIMONY  
OF  
JAMES B. MARTIN-SCHRAMM**

1    **Q.     Please state your name and business address.**

2    A.     My name is James B. Martin-Schramm and my business address is 104 Spring Street,  
3           Decorah, Iowa.

4    **Q.     By whom are you employed and in what capacity?**

5    A.     I am employed by the Clean Energy Districts of Iowa (CEDI) as a consultant. I recently  
6           retired from Luther College where I served as a tenured member of the faculty for 28  
7           years and as the Director of Luther's Center for Sustainable Communities.

8    **Q.     Can you provide more information about the Clean Energy Districts of Iowa  
9           (CEDI)?**

10   A.     CEDI is an Iowa non-profit corporation and an association of clean energy districts in  
11           Iowa. There are currently ten legally incorporated energy districts located in Allamakee,  
12           Clayton, Delaware, Dubuque, Howard, Jackson, Johnson, Linn, Polk, and Winneshiek  
13           County.

1 Energy Districts provide local leadership to energy customers and communities during  
2 the clean energy transition. Activities include community engagement, market  
3 transformation, and technical assistance to households, farms, and businesses covering  
4 energy efficiency, building electrification, solar site assessments, distributed generation,  
5 and electric transportation.

6 A sizable number of Interstate Power & Light (IPL) customers live in the ten  
7 counties that have a Clean Energy District. These customers and their communities will  
8 be affected by IPL's next five-year energy efficiency program.

9 **Q. Please describe your educational background and professional work experience.**

10 A. I hold a B.A. from Pacific Lutheran University, an M.Div. from Luther Seminary, and a  
11 Ph.D. in Christian Ethics from Union Theological Seminary in the City of New York. I  
12 am an ordained member of the Evangelical Lutheran Church in America (ELCA) and on  
13 the retired clergy roster of the Northeastern Iowa Synod of the ELCA.

14 Most of my scholarship has focused on ethics and public policy—especially  
15 energy and climate policy. I served on the Population and Consumption Taskforce of the  
16 President's Council on Sustainable Development during the Clinton administration and  
17 have chaired the national board of the ELCA's Division for Church and Society. In 2007-  
18 2008, I was the lead author of a national energy policy statement for the Presbyterian  
19 Church (U.S.A.), *The Power to Change: U.S. Energy Policy and Global Warming*. I am  
20 currently serving as the lead author of a social message on climate change for the ELCA.  
21 I served on the inaugural board of the Iowa Wind Energy Association and recently joined  
22 the board of Future Energy Iowa, which promotes policies and provides education related  
23 to clean energy, energy efficiency, and the energy sector. I also currently serve on the

board of the Winneshiek Energy District (WED) and as a director of Luther College Wind Energy Project, LLC.

**Q. Have you previously testified before the Iowa Utilities Board (“Board”)?**

A. I represented WED and posed questions to representatives of Black Hills Energy during the Board’s hearing regarding BHE’s proposed energy efficiency plan, Docket No. EEP-2013-0001. I authored multiple submissions on behalf of Luther College and Luther College Wind Energy Project, LLC in the Board’s distributed generation Docket No., NOI-2014-0001. More recently, I submitted three rounds of public and confidential testimony on behalf of the Decorah Area Group in Alliant Energy’s most recent electric rate case, Docket No. RPU-2019-0001. I testified under oath before the Board in public and confidential sessions during the Board’s hearing of that rate case. Most recently, I submitted testimony on behalf of the Clean Energy Districts of Iowa regarding the petition by Black Hills Energy to increase rates, Docket No. RPU-2021-0002.

**Q. What did you do to prepare your testimony?**

I reviewed IPL’s Application and exhibits filed in this docket. I also reviewed IPL’s responses to data requests filed by intervenors in this docket. In addition, I did research on various subjects addressed in IPL’s proposed energy efficiency plan. (Plan)

**Q. What is the purpose of your Direct Testimony?**

A. As an ethicist, my primary concerns revolve around home energy burdens and the impact of IPL’s Plan on low- and limited-income households. I am also concerned about the greenhouse gas emissions associated with energy consumption and their impact on future generations. In addition, as a co-founder of the Winneshiek Energy District and a current board member, I want to ensure that ratepayers have maximum access to the

benefits of Iowa's rate-payer funded energy efficiency programs and that these programs contribute to the clean energy transition. This includes the critical need for technical assistance for all customers so that they can best discern how to make the best use of energy efficiency programs offered by their utility along with a growing number of state and federal incentives. My testimony focuses on the following topics in IPL's Plan:

I. The Inflation Reduction Act

II. Beneficial Electrification and Decarbonization

III. Technical Assistance

IV. Comprehensive Income Qualified Program

V. Demand Response Program

VI. Plan Ambition

**Q. Have you filed any exhibits with your Direct Testimony?**

A. Yes, the following exhibits have been filed in support of my Direct Testimony:

Exhibit Number	Exhibit Title
CEDI Martin-Schramm Direct Exhibit 1:	IPL Responses to Data Requests: <ul style="list-style-type: none"><li>• OCA DR 16</li><li>• CEDI DR 05</li><li>• CEDI DR 07</li><li>• CEDI DR 10</li><li>• CEDI DR 14</li><li>• CEDI DR 15</li></ul>
CEDI Martin-Schramm Direct Exhibit 2	CEDI High Level Suggestions for Energy Efficiency Programs

**Q. To the extent you do not address a specific item in your testimony, should it be construed to mean you agree with IPL's proposal?**

A: No. Excluding any topics, issues or items IPL proposes does not indicate my agreement with those topics, issues, or items. Rather, the scope of my testimony is limited to the specific items addressed herein.

## I. Inflation Reduction Act

**Q. How does IPL summarize the aspects of the 2022 Inflation Reduction Act (IRA) that pertain to energy efficiency?**

A. IPL provides the following summary of the IRA in its proposed 2024–2028 Energy Efficiency Plan (Plan):

On August 16, 2022, the Biden administration passed the Inflation Reduction Act (IRA, H.R. 5376), a wide-ranging law that represents the largest U.S. investment in addressing the climate crisis in history. The IRA will provide financial benefits to help decarbonize energy systems, improve the efficiency and comfort of homes and businesses, accelerate the adoption of renewable energy resources, and reduce the energy burden for lower-income Americans.<sup>1</sup>

The company also summarizes key aspects of the IRA that pertain to energy efficiency:

The IRA relies on two primary mechanisms to achieve these goals: tax credits and grants to state energy offices.

Tax Credits. IRA tax credits will be available to consumers who install a range of renewable energy systems, energy efficiency measures, electrical improvements, and commercial building efficiency improvements, and who build new single-family and multifamily homes that meet ENERGY STAR or Zero Energy Ready Home program qualifications. Tax credits will be available beginning in 2023 and are expected to supplement utility program incentives for applicable projects, and potentially boost utility program uptake.<sup>2</sup>

<sup>1</sup> IPL Application, Exhibit 1, pg. 15.

<sup>2</sup> Ibid., pg. 16. The Inflation Reduction Act of 2022 amended the credits for energy efficient home improvements under § 25C of the Internal Revenue Code (Code) and residential energy property under § 25D of the Code. See IRS Fact Sheet, [“Frequently asked questions about energy efficient home improvements and residential clean energy”](#)

1  
2 State Grants. The IRA includes \$4.3 billion in grants for state energy  
3 offices to implement rebate programs for whole-home retrofits (single-  
4 family and multifamily), with the rebates doubled for qualifying low- and  
5 moderate-income residents. Grants are also earmarked for efficient home  
6 electrification measures in existing and new construction applications for  
7 low- and moderate-income residents and installers. It will require a full  
8 regulatory process to establish and promulgate state grant program rules  
9 before the states will be able to apply for grant funds, which is not  
10 anticipated until at least the second quarter of 2023.<sup>3</sup>  
11

12 While IPL does mention that the IRA includes \$4.3 billion to award grants to state  
13 energy offices to develop and implement the Home Energy Performance-Based, Whole-  
14 House Rebates (HOMES) rebate program, it is not clear why IPL does not mention that  
15 the IRA also provides a nearly identical amount (\$4.275 billion) for state energy offices  
16 to implement the High-Efficiency Electric Home Rebate (HEEHR) program.

17 Both of these programs are focused on beneficial electrification and whole-home  
18 improvements. Online summaries and fact sheets abound.<sup>4</sup> It is clear that the programs  
19 are especially designed to assist lower-income households with the adoption of whole-  
20 home efficiency and electrification practices, especially the adoption of heat pumps for  
21 whole-home heating and cooling needs. The goals of energy use reduction, energy cost  
22 savings, safety and air quality improvements, as well as emissions reductions mesh very

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[property credits](#),” December 22, 2022. This publication provides detailed answers regarding frequently asked questions about both programs—including how a government or utility subsidy (for example, an incentive, grant, or rebate) affects the value of either tax credit for taxpayers who purchase or install qualifying property.

<sup>3</sup> Id. See also, Congressional Research Service, “[The Inflation Reduction Act: Financial Incentives for Residential Energy Efficiency and Electrification Projects](#),” November 28, 2022. This publication provides more information about the two rebate programs the IRA funds through State Energy Offices: The Home Energy Performance-Based, Whole House Rebates (HOMES) and the High-Efficiency Electric Home Rebate Program (HEEHR). See also, ACEEE Policy Brief, “[Home Energy Upgrade Incentives: Programs in the Inflation Reduction Act and other recent federal laws](#),” February 2023.

<sup>4</sup> See, Clean Energy Districts of Iowa, “[IRA Fact Sheet: Efficiency and Electrification Incentives](#).”

1 well with the goals and guidelines for Iowa's energy efficiency programs that are  
2 mandated for rate-regulated utilities in Iowa Code § 476.6 (13) and (15).

3 That said, the federal programs also come up short in key areas, and they are areas  
4 that the IPL Plan could complement and support through quality technical assistance for  
5 all households, the provision of supplemental assistance to low- and limited-income  
6 households for the installation of heat pumps, and through an open-door policy on fuel  
7 switching. I discuss each of these topics later in my testimony.

8 **Q. In what ways do IPL witnesses and the company discuss how the Inflation**  
9 **Reduction Act may impact the company's proposed energy efficiency plan?**

10 A. In his Direct Testimony, IPL Witness Ellsworth states that the IRA "could potentially  
11 bring benefits to IPL's customers and provide additional incentives for them to adopt  
12 energy efficiency measures; however, *the IRA also brings uncertainty.*"<sup>5</sup> Ellsworth  
13 discusses this matter in more detail:

14 A significant portion of the IRA calls for grants to be distributed to state  
15 energy offices for the development of rebate programs for whole-home  
16 retrofits (single-family and multifamily), with the rebates doubled for  
17 qualifying low- and moderate-income residents. Grants are also earmarked  
18 for efficient home electrification measures in existing and new  
19 construction applications for low- and moderate-income residents and  
20 installers. Regulations regarding how grant funds will be allocated, spent,  
21 measured, and tracked are under development and not expected to be  
22 finalized until the second quarter of 2023 at the earliest. State energy  
23 offices will then need to design and develop qualifying rebate programs.<sup>6</sup>  
24

25 IPL also discusses the potential impact of the IRA on its proposed Plan at various points  
26 in its application. First, the company notes that:  
27

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<sup>5</sup> Ellsworth Direct, pg. 5. (Emphasis added)

<sup>6</sup> Ibid., pp. 5-6.

1 [The IRA] will direct significant new funding toward a range of energy  
2 efficiency, electrification, and carbon reduction programs that may overlap  
3 with utility programs, *creating potential uncertainty around IPL's ability*  
4 *to claim all cost-effective energy savings.*<sup>7</sup>  
5

6 Second, the company emphasizes that:  
7

8 It remains unknown whether state grant programs will be designed to  
9 complement utility programs, potentially filling utility program gaps or  
10 allowing customers to “stack” rebates, or if it will operate alongside  
11 (potentially competing with) utility programs, and whether grant program  
12 administrators will be required to claim savings, conduct third-party  
13 evaluation, or adhere to state-level cost-effectiveness or other regulatory  
14 rules.<sup>8</sup>  
15

16 Third, despite these concerns, the company states that IPL is committed to:  
17

18 Working closely with the Iowa Energy Office, the Office of Consumer  
19 Advocate, and other stakeholders to help design a state grant program that  
20 leverages IRA funds and complements the Plan to the greatest benefit for  
21 customers, stakeholders, ratepayers, IPL, and the state of Iowa.<sup>9</sup>  
22

23 Fourth, in the section on “Other Plan Considerations”, the company states:  
24

25 IPL recognizes that aspects of this Plan may require adjustments due to the  
26 implementation of the state grant programs included in the IRA. IPL is  
27 committed to collaborating with the Office of Consumer Advocate and  
28 other interested parties to address any significant changes to this Plan  
29 through the regulatory approval process, the modification process as  
30 outlined in 199 IAC Chapter 35, or annual program updates.<sup>10</sup>  
31

32 Finally, in its response to OCA Data Request 16, the company states:  
33

34 IPL continues to evaluate the components of the Inflation Reduction Act,  
35 implementation at the state level and the interplay with its Energy  
36 Efficiency Plan. IPL has requested the Iowa Utility Association to  
37 coordinate collaboration efforts among its Iowa electric and natural gas

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<sup>7</sup> IPL Application, Exhibit 1, pg. 8. (Emphasis added)

<sup>8</sup> Ibid, pg. 16.

<sup>9</sup> Ibid., pg. 18.

<sup>10</sup> Ibid., pg. 82.



1 member utilities as well as the Office of Consumer Advocate staff and the  
2 State of Iowa Energy Office. Collaboration activities are expected to begin  
3 in Q1 2023.

4  
5 (See CEDI Martin-Schramm Direct Exhibit 1, IPL Response to OCA DR 16.)  
6

7 **Q. Do you have any recommendations regarding how IPL can help its customers**  
8 **maximize the benefits offered by the energy efficiency provisions in the IRA in**  
9 **conjunction with IPL's proposed energy efficiency plan?**

10 A. I recommend the Board hold IPL accountable to its stated desire to “work closely with  
11 the Iowa Energy Office, the Office of Consumer Advocate, and other stakeholders to help  
12 design a state grant program that leverages IRA funds and complements the Plan to the  
13 greatest benefit for customers, stakeholders, ratepayers, IPL, and the state of Iowa.”<sup>11</sup>

14 I also think the Board should require IPL to adjust its Plan once the details of the  
15 state grant programs included in the IRA are finalized “through the regulatory approval  
16 process, the modification process as outlined in 199 IAC Chapter 35, or annual program  
17 updates.”<sup>12</sup> The Board has the authority to require such changes under Iowa Code §476.6  
18 (15)c(3), which states that “the board may approve, reject, or modify the [energy  
19 efficiency] plans and budgets.” In addition, Iowa Code §476.6(15)e(2) empowers the  
20 Board to “periodically conduct a contested case proceeding to evaluate the  
21 reasonableness and prudence of the utility’s implementation of an approved energy  
22 efficiency or demand response plan and budget.”

23 To the best of my knowledge, nothing in the IRA requires state energy offices to  
24 dovetail the HOMES and HEEHR programs with existing or proposed utility energy

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<sup>11</sup> Ibid., pg. 18

<sup>12</sup> Ibid., pg. 82

1 efficiency programs. Thus, the onus for doing so rests with the rate-regulated utilities in  
2 Iowa that are required to provide these programs to their customers. *It is up to the*  
3 *utilities* to figure out how best to maximize the co-benefits of the federal programs  
4 funded by the IRA in relation to the energy efficiency programs they offer their  
5 customers. The best way to do this is through consultation with the state energy office  
6 and interested stakeholders.

7 There are at least three critically important ways to do this:

- 8 1. Ensure the IPL's energy efficiency programs and incentives align with the state goals  
9 in the IRA rebate programs by strongly incentivizing home electrification, especially  
10 heat pumps for space heating/cooling and hot water production, even if that results in  
11 fuel switching.
- 12 2. Provide in-person technical assistance to customers in all ratepayer classes—  
13 especially LMI households and multi-family building owners—to assist those  
14 households in planning and implementing whole-household energy efficiency  
15 projects that combine both IPL and IRA financial opportunities.
- 16 3. Establish a Plan alignment review process. Given the uncertainties and specific  
17 concerns IPL flags in the excerpts above, I recommend the Board require IPL file a  
18 report in this docket regarding its consultation with the Iowa Energy Office, the  
19 Office of Consumer Advocate, and other stakeholders and explain whether and how it  
20 proposes to revise its Plan “to the greatest benefit for customers, stakeholders,  
21 ratepayers, IPL, and the state of Iowa.”<sup>13</sup> This report should discuss each of the  
22 concerns IPL has raised, along with others that may surface during the consultations.

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<sup>13</sup> Ibid., pg. 18.

1 The report should explain how these concerns have been mitigated or resolved to the  
2 benefit of IPL customers—especially low- and moderate-income households. I  
3 recommend the Board require IPL file this report and its revised Plan in this docket  
4 no later than the end of the 2nd quarter of 2024. I further recommend, per Iowa Code  
5 §476.6(15)e(2) that the Board open this docket or create a new docket to invite all  
6 intervenors to comment on IPL’s report and proposed revised Plan.

7 I offer additional remarks about beneficial electrification and in-person technical  
8 assistance in the following sections of my testimony.

## 9 10 **II. Beneficial Electrification and Decarbonization**

11  
12 **Q. In what ways does IPL discuss “beneficial electrification and decarbonization” in its**  
13 **proposed Plan?**

14 A. IPL states in its application that one of its guiding principles is to “[e]mphasize beneficial  
15 electrification and decarbonization while continuing to give customers a choice of  
16 fuels.”<sup>14</sup> All other direct references to electrification, however, are found in the sections  
17 noted above that deal with the expected impact of the Inflation Reduction Act (IRA).

18 IPL discusses beneficial electrification and decarbonization indirectly insofar as it  
19 proposes modest rebates for heat pumps. Many federal agencies and think tanks are  
20 extolling the virtues of air-source and ground-source heat pumps as key strategies to  
21 achieve beneficial electrification and decarbonization. Unfortunately, IPL takes a less  
22 optimistic view of heat pumps in its application:

23 Many new and emerging electric energy-saving measures that initially  
24 showed promise, such as heat pumps and smart technologies, have been

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<sup>14</sup> Ibid., pg. 5.

hindered by persistently high costs, inconsistent performance, and slow market adoption.<sup>15</sup>

**Q. Do you agree with IPL's assessment regarding heat pumps?**

A. No, I do not. I read IPL's general assessment as an excuse not to offer significant incentives for heat pumps at exactly the time when such a commitment is most needed. Increased heat pump incentives that align utility rebate programs with the federal incentives funded by the IRA will help overcome the challenges the company identifies and better serve lower-income Iowans who are in a position to benefit the most. There is growing and persuasive evidence that the challenges IPL identifies are changing for the better with the introduction of cold-climate air source heat pumps, generous financial incentives, and improved contractor training.

The Minnesota-based Center for Energy and Environment (CEE) conducted a Cold Climate Air Source Heat Pump (ASHP) Field Assessment in 2017-18. The study was commissioned by the Minnesota Department of Commerce, Division of Energy Resources.<sup>16</sup> Key partners included the American Council for an Energy-Efficient Economy, Great River Energy, and the Electric Power Research Institute. According to CEE:

The project found that the efficiency and capacity of older ASHPs drops significantly for outdoor temperatures below 40°F. However, the newest generation of ASHPs can operate down to 0°F to -13°F. The efficiency of these technologies in moderate climates is also two to three times more efficient than standard electric heating systems. Research project staff monitored field performance tests to help confirm the operation of newer generation ASHP technologies to support their use in Minnesota's utility Conservation Improvement Program (CIP).<sup>17</sup>

<sup>15</sup> Ibid., pg. 14.

<sup>16</sup> Minnesota Commerce Department, "[Cold Climate Air Source Heat Pump](#)," November 1, 2017.

<sup>17</sup> Center for Energy and Environment, "[Cold Climate Air Source Heat Pump Field Assessment 2017-2018](#)." See also this [CEE slide deck](#) produced in February 2018 summarizing the results of the study.

1 Air-source heat pump technology continues to improve. Major manufacturers like  
2 Mitsubishi, Fujitsu, LG, Daikin, and others offer both ducted and ductless air source heat  
3 pumps capable of achieving 100% of their rated heating output at temperatures down to -  
4 13°F or -22°F with coefficient of performance values (efficiency relative to electric  
5 resistance heating) in excess of 1.75. Cutting-edge models offered by major brands have  
6 equipment without thermal cutoffs that provide near capacity heat down to -22°F or -  
7 30°F.<sup>18</sup> The Northeast Energy Efficiency Partnerships (NEEP) [Cold Climate Heat Pump](#)  
8 [List](#) includes over 40,000 models and model configurations of heat pumps capable of  
9 meeting NEEP's standard for cold climate performance. The [EPA's Energy Star website](#)  
10 is another helpful resource because it enables users to search for cold-climate Energy Star  
11 certified heat pumps.

12 A 2017 fact sheet on Residential Energy Efficiency Potential in Iowa produced by  
13 the National Renewable Energy Laboratory (NREL) found that replacing an electric  
14 furnace when it has worn out with a high-efficiency heat pump would, on average, save  
15 each Iowa household \$1,380 per year. If only 5% of Iowa homes implemented this  
16 measure each year, NREL calculated the collective annual savings would have been  
17 588.7 million kWh and \$65.2 million.<sup>19</sup>

18 A more recent study by the Minnesota non-profit, Fresh Energy, examined the  
19 rollout of air-source heat pumps in Maine, Massachusetts, and New York.<sup>20</sup> These states  
20 were chosen because they have cold-weather climates that are similar to Minnesota's  
21 long and harsh winter. It is worth noting that, based on the map below of average heating

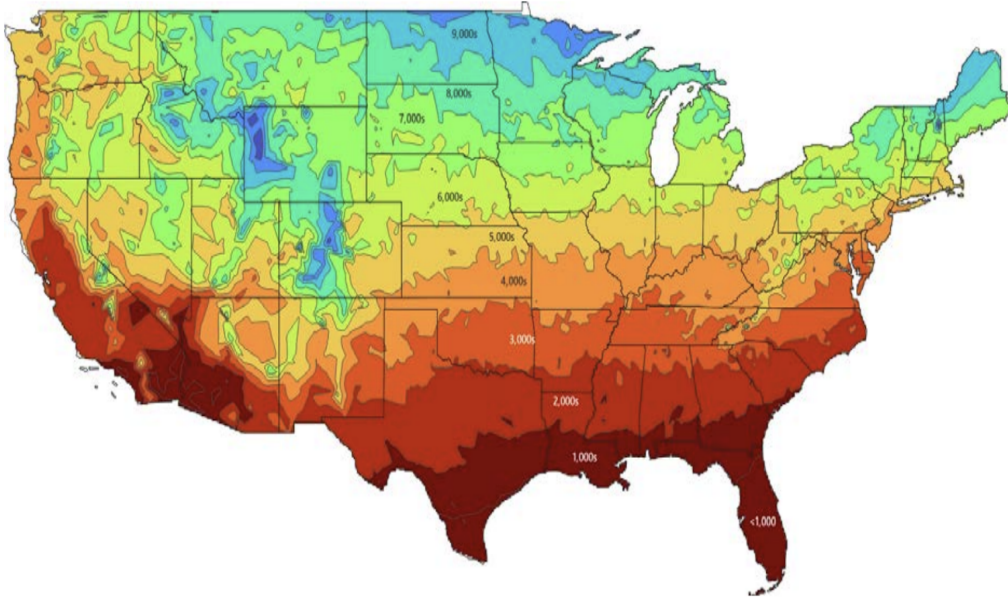
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<sup>18</sup> Briana Kerber, "[What's up with heat pumps?](#)," Fresh Energy, July 26, 2021.

<sup>19</sup> National Renewable Energy Laboratory, "[Iowa: Residential Energy Efficiency Potential](#)," 2017.

<sup>20</sup> Dat Nguyen, "[Case Study: Framework for Minnesota's Heat Pump Transition](#)," Fresh Energy, December 14, 2021.

1 degree days over the 2006-2020 period, Massachusetts and New York also have heating  
2 degree ranges that are similar to those in Iowa.



3  
4 **Figure 1. Average heating degree days (HDDs) at various locations in the**  
5 **United States based on averages over the 2006–2020 period.**  
6 **Source: [ACEEE 2022](#)**  
7

8 Maine, New York, and Massachusetts are offering significant heat pump  
9 incentives because they have demonstrated that the systems provide significant energy  
10 cost savings while also providing sufficient space heating needs.

11 According to the independent implementer for the state's efficiency programs,  
12 Efficiency Maine, heat pumps have helped residents of Maine save, on average, \$812 a  
13 year on energy compared to using a fossil gas furnace and up to \$2,930 when switching  
14 from propane.<sup>21</sup> It is worth noting that, based on data drawn from IPL's Home Energy  
15 Assessments Program, it appears that most of IPL's customers rely on natural gas and

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<sup>21</sup> Id.

1 some of IPL's customers are dependent on propane as their primary fuel for space  
2 heating.<sup>22</sup>

3 In Massachusetts, the Department of Energy Resources offers incentive rebates  
4 for homeowners that help them make the switch to more efficient heat pump models. In  
5 New York, the New York State Energy Research and Development Authority offers heat  
6 pump incentives over five program areas and partners with certified contractors to carry  
7 out heat pump installation and services for customers.

8 Finally, a recent study of 5,000 U.S. homes by the American Council for an  
9 Energy-Efficient Economy (ACEEE) recommended popularizing cold-climate heat pump  
10 models in places that are both cold (4,000 HDD to 6,000 HDD) and super cold (6,000-  
11 plus HDD) but acknowledged that a backup heating source was advised when  
12 temperatures drop below 5 degrees Fahrenheit. The same study found that electric heat  
13 pump water heaters (HPWHs) have the lowest life-cycle costs in all parts of the United  
14 States. Given the relatively low cost of fossil fuels, the study concluded that multiple  
15 policies, including incentives and grants, would be necessary to achieve the transition to  
16 beneficial electrification.<sup>23</sup>

17 In summary, heat pumps are an efficient, climate-aligned solution for space  
18 heating and cooling that can perform well in Midwest states. High-performance cold-  
19 climate heat pumps function well in Iowa's colder climate zones and have been  
20 successfully field tested in cold climate states like Minnesota and Maine.<sup>24</sup> Installing heat

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<sup>22</sup> IPL Response to CEDI DR 7.

<sup>23</sup> Nadel, S., and L. Fadali. 2022. [Analysis of Electric and Gas Decarbonization Options for Homes and Apartments](#). Washington, DC: ACEEE, pg. iv.

<sup>24</sup> Michael Gartman and Amar Shah, "[Heat Pumps: A Practical Solution for Cold Climates](#)," Rocky Mountain Institute, December 10, 2020.

1 pumps also improves access to air conditioning. Iowa is getting hotter and people need  
2 efficient cooling that will not lead to peak electricity demand causing grid blackouts.<sup>25</sup>  
3 Heat pumps are up to three times more efficient than their electric resistance counterparts  
4 for heating and can efficiently deliver cooling to Iowa homes that are currently heating  
5 only.

6 **Q. Do you think IPL's proposed rebates for heat pumps are adequate?**

7 A. No, I think the company's proposed rebates should be more generous. Table 1 and Table  
8 2 below compare Alliant's current and proposed rebates for heat pumps with those  
9 offered and proposed by MidAmerican Energy (Iowa) as well as a select list of other  
10 electric utilities and state energy efficiency programs.

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<sup>25</sup> Lacey Tan and Mohammad Hassan Fathollahzadeh, "[Why Heat Pumps Are the Answer to Heat Waves](#)," Rocky Mountain Institute, August 12, 2021.



**Table 1. Select Residential Utility Rebates for Air-Source Heat Pumps**

	<b>Alliant (<u>Current</u>)</b>	<b>Alliant (<u>Proposed</u>)</b> <sup>26</sup>	<b>MidAmerican (<u>Current</u>)</b>	<b>MidAmerican (<u>Proposed</u>)</b>	<b><u>Xcel Minnesota</u></b>	<b><u>Xcel Colorado</u></b>	<b><u>State of Maine</u></b>	<b><u>State of Massachusetts</u></b>
<b>Whole Home/ Ducted ASHP Rebate</b>	Lower Tier Efficiency \$500 per unit  Higher Tier Efficiency \$800 per unit	\$300 for unit ≤65k BTU capacity  \$60/ton of capacity for units >65k BTU capacity	Lower Tier Efficiency \$400 per unit  Highest Tier Efficiency \$600 per unit	\$240-\$925 per unit based on efficiency ratings	\$300 per unit  \$600 per unit for customers with electric resistance as primary heat source	\$1,500 non-cold climate ASHP <sup>27</sup>  \$2,000 for cold-climate ASHP	Any income: \$800 for first indoor unit, \$400 for second indoor unit, up to \$1,200  Income eligible: \$2,000 for first indoor unit, \$400 for second indoor unit, up to \$2,400 <sup>28</sup>	Partial Home Applications: \$1,250/ton of capacity up to \$10,000  Whole Home Applications: \$10,000
<b>Ductless ASHP Rebate</b>	\$50 per unit (supplemental)  \$200 for whole house ductless	\$200 per unit	\$200 or \$300/ton capacity for whole home ductless,  \$100 or \$150/ton capacity for supplemental ductless	\$240-\$925 per unit based on efficiency ratings	\$300 per unit  \$600 per unit for customers with electric resistance as primary heat source	Same as above	Same as above	Same as above

<sup>26</sup> IPL Application Exhibit 3 Cost of Effectiveness (Excel).<sup>27</sup> Northeast Energy Efficiency Partnerships, [Cold Climate Air Source Heat Pump Product List](#)<sup>28</sup> Income eligibility: <https://www.efficiencymaine.com/income-based-eligibility-verification/>

**Table 2. Select Residential Utility Rebates for Other Heat Pump Systems**

	Alliant ( <a href="#">Current</a> )	Alliant ( <a href="#">Proposed</a> )	MidAmerican ( <a href="#">Current</a> )	MidAmerican ( <a href="#">Proposed</a> )	<a href="#">Xcel Minnesota</a>	<a href="#">Xcel Colorado</a>	<a href="#">State of Maine</a>	<a href="#">State of Massachusetts</a>
<b>Ground Source Heat Pump Rebate</b>	\$1,320 single speed heat pump  \$1,750 variable speed heat pump	\$1,320 single speed heat pump  \$1,750 variable speed heat pump	N/A	\$2000	\$500/ton of capacity up to \$2,500	\$300/ton of capacity, up to \$1,500, for customers replacing electric resistance heat  \$400/ton of capacity for customers replacing natural gas heat	\$3,000 per unit	Partial Home Applications: \$2,000/ton of capacity up to \$15,000  Whole Home Applications: \$15,000
<b>Electric Heat Pump Water Heater Rebate</b>	\$300	\$300	N/A	\$600	\$500	\$800	\$850	\$750

1 It is clear from these tables that IPL's proposed heat pump rebates lag behind the  
2 others.

3 This is unfortunate because a recent comprehensive assessment of IPL's  
4 Agricultural Solutions, Custom Solutions, and Nonresidential Prescriptive Rebates  
5 programs found that "[f]inancial barriers are the primary factor that inhibits customers  
6 from investing in energy efficiency."<sup>29</sup> The assessment recommended that IPL  
7 "[c]ontinue to offer robust rebates tailored to customer needs and interests" while noting  
8 that "HVAC and process improvements are of high interest to participants."<sup>30</sup>

9 Financial barriers are also a primary factor for homeowners. I encourage IPL to  
10 offer more generous rebates for heat pumps to all customers and to subsidize installations  
11 for low- and moderate-income households through its Comprehensive Income Qualified  
12 Program.

13 I want to emphasize that recent technological improvements especially make  
14 electric heat pump hot water heaters a good investment. According to the Midwest  
15 Building Decarbonization Coalition:

16 States such as Maine have demonstrated success in transforming the water  
17 heating market to majority heat pump water heater deployment. One of  
18 their programs support homeowners with instant rebates while another  
19 offers free water heaters to those in low income weatherization programs.  
20 Bulk buying, job training and maximum guaranteed price approaches used  
21 in Maine can also be used in Iowa to accelerate deployment locally.  
22 Energy burden will not increase for anyone whose water heater is powered  
23 with electric resistance or other delivered fuel oil.<sup>31</sup>  
24

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<sup>29</sup> Interstate Power & Light, Annual Report for 2021 Energy Efficiency Plan, (EEP-2018-0003), [Appendix F, filed May 25, 2022, Opinion Dynamics, Nonresidential Cross-Cutting Process Evaluation Report, Final, January 27, 2022, pg. 4.](#)

<sup>30</sup> Id.

<sup>31</sup> Information furnished by Jacob Serfling, Co-Director, [Midwest Building Decarbonization Coalition](#), March 22, 2023.

1           The Vernon County Energy District in Wisconsin recently completed a  
2           Comprehensive Energy Plan for Vernon County, Wisconsin. The study was funded by  
3           Wisconsin's Energy Innovation Grant Program. The study found ~42% of the homes in  
4           Vernon County have an electric water heater. Since heat pump water heaters use about  
5           25% of the energy of a standard electric water heater, the study found that use of this  
6           technology would could heat the water in 100% of the homes in Vernon County for  
7           almost half (56%) the electricity that the 40% using electric water heaters currently  
8           consume.<sup>32</sup>

9   **Q.   Do you have any specific recommendations regarding IPL's proposed rebates for**  
10 **heat pumps?**

11 A.   Yes, I enumerate my recommendations below:

- 12       1. Make whole-home ductless systems eligible for IPL's "Air Source Heat Pump  
13       Rebate."
- 14       2. Ducted and ductless systems eligible for IPL's "Air Source Heat Pump Rebate"  
15       should meet the [Northeast Energy Efficiency Partnerships \(NEEP\) standards](#) for cold  
16       climate air source heat pumps.
- 17       3. Multi-zone ductless heat pumps that do not meet NEEP's cold climate standards  
18       should be rebated under IPL's proposed "Mini Split Heat Pump Rebate" standards
- 19       4. Provide a larger financial incentive for customers switching from electric resistance  
20       heating or propane-fuel space heating to air source or ground source heat pumps.

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<sup>32</sup> Vernon County Energy District, "[Comprehensive Energy Plan for Vernon County](#)," October 2022, pg. 41.

5. Rebates for cold climate air source heat pumps should be at parity or close to that of ground source systems, as the seasonal coefficient of performance (COP) levels of air-source heat pumps are approaching those of ground-source systems.

6. Regardless of ducting configuration, IPL rebates for heat pumps should match or exceed those offered for air conditioners.

7. Consider discontinuing rebates for air conditioners as MiEnergy Cooperative has done recently. Every new air conditioner is a missed opportunity to install a high efficiency heat pump that can provide both cooling and heating.

**Q. Would larger rebates for heat pumps promote fuel switching?**

A. Yes, in some cases, depending on the current heating fuel source, but the State of Iowa does not have a prohibition against ratepayer-funded energy efficiency programs incentivizing fuel switching. The State of Iowa does mandate in Iowa Code 476.6 (13) and (15) that rate-regulated utilities offer energy efficiency programs that seek to achieve cost-effective energy and energy cost savings for their customers.

Based on their interpretation of these parts of Iowa Code 476.6, the rate-regulated utilities have limited their rebates only to customers they supply with energy. For example, IPL states in its application that “IPL will offer prescriptive and custom incentives for a broad range of energy-efficient technologies. To be eligible, a measure must save energy that is supplied by IPL.”<sup>33</sup>

It is worth noting however that Iowa Code 476.6 (13) does not state that an energy efficiency measure must save energy *that is supplied by the rate-regulated utility*. It just

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<sup>33</sup> IPL Application, Exhibit 1, pg. 41.

1 says: “Electric and gas public utilities shall offer energy efficiency programs to their  
2 customers through energy efficiency plans.”

3 If Iowa ratepayers conclude they can save energy and reduce energy costs by  
4 switching to electric heat pumps, that is their prerogative and choice. Insofar as utilities  
5 confirm that heat pumps do, in fact, result in energy efficiency and cost savings, then the  
6 utilities have an obligation to incentivize their customers to invest in heat pumps to reap  
7 the energy efficiency savings. An incentive, however, is not a mandate; customers retain  
8 their choice over fuels.

9 Fuel switching has been a recurring issue over previous cycles of the five-year  
10 energy efficiency programs. The rate-regulated utilities have been hesitant about or  
11 resistant to fuel switching, but the current energy efficiency and energy cost savings  
12 provided by new cold-climate heat pump technology, coupled with the new federal  
13 incentives discussed above, should override that historical hesitancy.

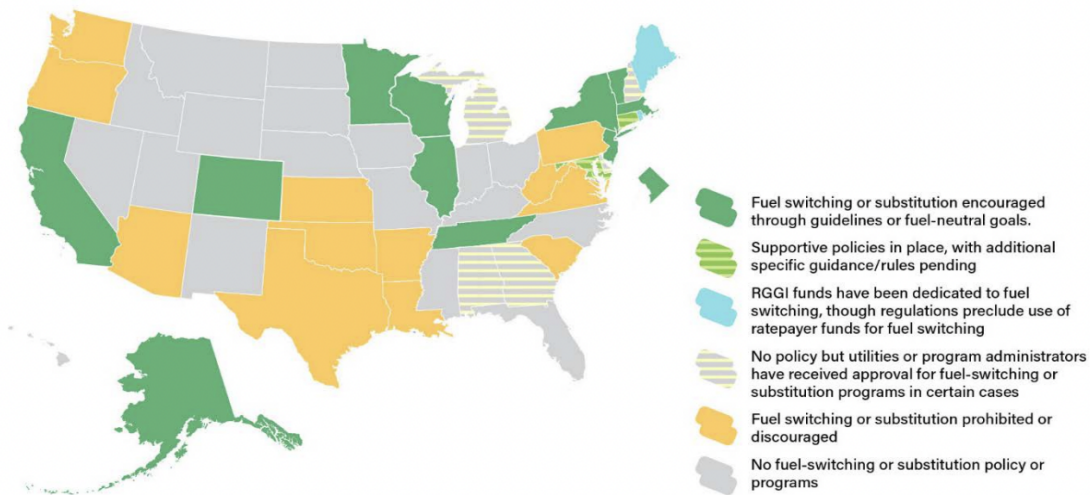
14 **Q. Where do other states stand regarding beneficial electrification and fuel-switching?**

15 A. A recent ACEEE study explored how states are revising state policies and rules to enable  
16 beneficial electrification through fuel switching. It found that “a small but growing  
17 number of states are updating policies to enable beneficial electrification and customer  
18 adoption of heat pumps, reducing dependence on fossil fuel heating in support of state  
19 climate goals.”<sup>34</sup> The following figure from the study provides a quick summary of fuel-  
20 switching policies by state. It is worth noting that Iowa’s neighbors to the north and east  
21 encourage fuel-switching.

22  

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<sup>34</sup> ACEEE Policy Brief: “[State Policies and Rules to Enable Beneficial Electrification in Buildings Through Fuel Switching](#),” July 2022, pg. 1.



**Figure 2. Fuel-Switching Policy Status by State.**

Source: [ACEEE](#) (July 2022)

The leading states—mostly located in the northeast—are situated in climates where a high reliance on natural gas, fuel oil, and propane for home heating make electrification a wise strategy for slashing emissions and reducing energy costs.

This is especially true from low-income households. IPL reports that approximately 25% of their residential customers have a household income that is 0-200% of the Federal Poverty Level (FPL) and that another 18% have household incomes that range from 200-300% FPL.<sup>35</sup>

The Midwest Building Decarbonization Coalition argues that fuel switching would be very beneficial to poorer households in Iowa. The following is excerpted from their remarks to the Iowa Department of Human Rights regarding electrification and home energy burdens:

<sup>35</sup> Interstate Power and Light Company, "[Response to 11-14-22 IUB EEP Additional Info Request](#)," December 2, 2022, Table 1.

1 Historically, the relatively low cost of natural gas compared to residential  
2 electric rates has prevented state weatherization agencies from seriously  
3 considering electrification measures, either due to the potential for  
4 increased energy burden or not meeting the required Savings to  
5 Investment Ratio (SIR). However, Iowa's natural gas prices have risen  
6 85.8% between January and May 2022. The Energy Information  
7 Administration (EIA) forecasts indicate that DHR should plan on natural  
8 gas prices continuing to be volatile and not reverting back to their previous  
9 lows indicating that the state can no longer rely on gas prices to be low  
10 and steady. On the other hand, Electricity retail prices in Iowa didn't see  
11 as significant a price increase or volatility, only rising 13.4% between  
12 January and May 2022. The historical and expected impacts on electricity  
13 and gas prices indicate that switching to electric appliances can help  
14 families keep their utility bills stable and protect them from rising gas  
15 prices.

16  
17 Additionally, a Roosevelt Institute study indicates that in some months  
18 over the past year energy-related expenses could account for as much as  
19 70% of household cost inflation, largely due to fossil fuel cost increases.<sup>36</sup>  
20 Lower income households are harder hit by these price spikes, projected to  
21 experience a 3% increase in household energy burden compared to 0.3%  
22 for high-income households. These spikes are driven by a variety of  
23 factors including extreme cold weather events and international turmoil.  
24 Due to the wider variety of fuels, including renewables, used in the  
25 electricity generation electric heating customers are more shielded from  
26 these types of energy cost spikes.<sup>37</sup>

27  
28 IPL's low- and moderate-income households could see significant savings with  
29 generous heat pump incentives but many will have to switch fuels to do so. I encourage  
30 IPL to offer more generous rebates for heat pumps to all customers in their Residential  
31 and Non-Residential Prescriptive Incentives Programs. I also recommend later in my  
32 testimony that IPL subsidize installations for low- and moderate-income households

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<sup>36</sup> Lauren Melodia and Kristina Karlsson, "[Energy Price Stability: The Peril of Fossil Fuels and the Promise of Renewables](#)," Roosevelt Institute, May 2022.

<sup>37</sup> Information furnished by Jacob Serfling, Co-Director, [Midwest Building Decarbonization Coalition](#), March 22, 2023.



1 through its Comprehensive Income Qualified Program, regardless of existing fuel type,  
2 while prioritizing homes that use propane-fueled or electric resistance heating systems.

3 The clear benefits to LMI households justify the departure from past norms.

4 **Q. Do you have any other recommendations regarding the adoption of heat pumps?**

5 **A.** Yes, contractor training is key since heat pump technology is changing rapidly. In  
6 addition, home heat pumps are more complex to install than traditional gas or oil boilers.  
7 They must be sized correctly and installed properly while also being tailored to the size  
8 and insulation levels of the property. A recent article in *Consumer Reports* asks: “Can  
9 Heat Pumps Actually Work in Cold Climates?” The answer is “Yes, they can—if<sup>38</sup>  
10 carefully chosen and properly installed.”

11 IPL recognizes the importance of contractor training in its plan. One of their  
12 channels for Efficient Services is “ongoing education and outreach to equipment dealers,  
13 installation contractors, and distributors” for residential, non-residential, and commercial  
14 new construction.<sup>39</sup> Similarly, one of the company’s channels for Energy Awareness and  
15 Education is to reach out to “[t]hird-party dealers (such as efficiency consulting and  
16 engineering firms, equipment dealers, and program design and implementation  
17 contractors)” in the residential and non-residential sectors.<sup>40</sup>

18 A recent assessment of IPL’s Low-Income Weatherization Program by Opinion  
19 Dynamics found that contractors face “a steep learning curve” and “a lack of access to  
20 weatherization-specific training or training for emerging technologies like heat pump

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<sup>38</sup> Liam McCabe, “[Can Heat Pumps Actually Work in Cold Climates?](#)”, *Consumer Reports*, August 22, 2022. See also, *Consumer Reports*, “[Heat Pump Buying Guide](#),” May 26, 2022.

<sup>39</sup> IPL Application, Exhibit 1, pg. 54.

<sup>40</sup> *Id.*

1 water heaters.”<sup>41</sup> Opinion Dynamics recommended “offering more local weatherization  
2 or related emerging technologies (e.g., heat pump water heater) trainings in Iowa;  
3 offering those trainings at a discount or no cost.”<sup>42</sup>

4 Given IPL’s own commitments and the recommendation of Opinion Dynamics, I  
5 recommend the Board require IPL consult the Minnesota Air Source Heat Pump  
6 Collaborative<sup>43</sup> (and other similar initiatives like Elevate’s Contractor Accelerators  
7 program<sup>44</sup>) to learn about the trainings they hold for contractors and to work with the  
8 Iowa Energy Office to develop identical or similar programs for equipment dealers,  
9 installation contractors, as well as consulting and engineering firms.

10 IPL should also collaborate with the Iowa Energy Office because Section 50123  
11 of the IRA appropriates \$200 million for State Energy Offices to provide training and  
12 education to contractors and organizations involved in the Home Energy Performance-  
13 Based, Whole-House Rebates (HOMES) and the High-Efficiency Electric Home Rebate  
14 (HEEHR) programs.<sup>45</sup>

15 In Massachusetts, a state program has trained hundreds of technicians to install  
16 heat pumps, exceeding projections for its first year. Since its launch in early 2022, the  
17 network has enrolled nearly 850 contractors who completed more than 18,000 heat pump  
18 installations last year, more than doubling the numbers from the previous year.<sup>46</sup>

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<sup>41</sup> Interstate Power and Light Company, Annual Report for 2021 Energy Efficiency Plan, (EEP-2018-0003) Appendix F, filed May 25, 2022, [Opinion Dynamics, 2019–2023 Low-Income Weatherization Program Evaluation, Final](#), September 28, 2021, pg. 2.

<sup>42</sup> Id.

<sup>43</sup> Minnesota Air Source Heat Pump Collaborative, [“For HVAC Contractors.”](#)

<sup>44</sup> Elevate, [“Contractor and Workforce Development.”](#)

<sup>45</sup> Congressional Research Service, [“The Inflation Reduction Act: Financial Incentives for Residential Energy Efficiency and Electrification Projects,”](#) November 28, 2022, pg. 2.

<sup>46</sup> Sarah Shemkus, [“Massachusetts Heat Pump Installer Network has Momentum in Second Year,”](#) Energy News Network, March 3, 2023.

1 A valuable resource for any contractor training program is the aforementioned  
2 [Cold Climate Air Source Heat Pump List](#), which is maintained by the [Northeast Energy](#)  
3 [Efficiency Partnerships](#).

4 If IPL is serious about emphasizing beneficial electrification and decarbonization,  
5 this is all the more reason for the company to be required by the Board to revise its  
6 proposed Plan once details related to the implementation of programs funded by the IRA  
7 are finalized and after consultation with interested stakeholders. This is, after all, a five-  
8 year plan, which is all the more reason to get it right from the outset.

9 **Q. Do you have any other recommendations regarding beneficial electrification and**  
10 **decarbonization?**

11 A. Yes, I recommend the Board open a Notice of Inquiry (NOI) docket to explore how  
12 electrification and decarbonization can benefit Iowa citizens and ratepayers.

13 The Iowa Legislature has expressed its desire “to manage carbon emission  
14 intensity in order to facilitate the transition to a carbon-constrained environment.” (Iowa  
15 Code 476.53). In addition, the legislature has declared that “it is the intent of the general  
16 assembly to encourage the development of renewable electric power generation” and “to  
17 encourage the use of renewable power to meet local electric needs.” (Iowa Code  
18 476.58A)

19 One of the things I think the Board should require be addressed in this NOI  
20 docket on decarbonization is the value of using the social cost of carbon to evaluate  
21 strategies to decarbonize the use of energy in Iowa, for example, in these energy  
22 efficiency dockets. I think such a tool is consistent with the definition of the Societal  
23 Test in IAC 199.35.2:

1 “Societal test” means an economic test used to compare the present value  
2 of the benefits to the present value of the costs over the useful life of an  
3 energy efficiency or demand response measure or program from a societal  
4 perspective. Present values are calculated using a 12-month average of the  
5 10-year and 30-year Treasury Bond rate as the discount rate. The average  
6 shall be calculated using the most recent 12 months at the time the utility  
7 calculates its cost-effectiveness tests for its energy efficiency or demand  
8 response plan. Benefits are the sum of the present values of the utility  
9 avoided supply, *non-energy benefits*, and *energy costs including the*  
10 *effects of externalities*. Costs are the sum of the present values of utility  
11 program costs (excluding customer incentives), participant costs, and any  
12 increased utility supply costs for each year of the useful life of the  
13 measure or program. The calculation of utility avoided capacity and  
14 energy and increased utility supply costs must use the utility costing  
15 periods. (Emphasis added)  
16

17 In my view, the social cost of carbon is an appropriate tool to quantify the effects of  
18 externalities like greenhouse gas emissions and other forms of pollution. Insofar as these  
19 emissions are avoided, the result is a variety of non-energy benefits—chief of which are  
20 improvements to human health and welfare.  
21  
22

### 23 III. Technical Assistance

24

25 **Q. Does IPL’s proposed Plan include the provision of technical assistance to help**  
26 **customers identify energy efficiency saving opportunities?**

27 A. IPL says it is committed to “continuing to provide technical resources (such as  
28 assessments, audits, and feasibility studies) that help customers identify and prioritize  
29 energy-savings opportunities and encourage them to invest in deep building and home  
30 retrofits and comprehensive measure packages that increase savings per customer  
31 interaction.”<sup>47</sup>

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<sup>47</sup> IPL Application, Exhibit 1, pg. 17.

1 IPL proposes to provide technical assistance through its Efficient Services  
2 Program, which “will provide customers in all sectors with a wide range of energy  
3 efficiency technical support services coupled with incentives for installing targeted  
4 energy-saving technologies and receiving education about energy-savings behaviors and  
5 opportunities to increase their homes’ and businesses’ energy efficiency.”<sup>48</sup>

6 The reality, however, is that IPL offers in-person comprehensive energy  
7 assessments only to larger commercial and industrial customers. It does not offer in-  
8 person technical assistance to its residential and small business customers who are most  
9 in need of such guidance in order to take advantage of the financial incentives offered by  
10 the Inflation Reduction Act as well as the incentives in IPL’s proposed Plan.

11 **Q. Doesn’t IPL provide comprehensive in-person energy assessments to some**  
12 **homeowners?**

13 A. Yes, IPL will provide comprehensive energy assessments via in-person energy audits to a  
14 few low-income and limited-income households through its Comprehensive Income  
15 Qualified Program. The audits for low-income households are conducted by contractors  
16 hired by Community Action Program agencies for participants in Iowa’s Weatherization  
17 Assistance Program.<sup>49</sup> Limited-income program participants in IPL’s pilot program will  
18 receive such assessments via a local implementation vendor.<sup>50</sup>

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<sup>48</sup> Ibid., pg. 49.

<sup>49</sup> Ibid., pg. 59.

<sup>50</sup> Ibid., pg. 60.

Given the assumption that these comprehensive energy assessments will have a positive impact for low-income households, it is not clear why IPL is not willing to offer this level of technical assistance to all homeowners.

**Q. Does IPL analyze the cost-effectiveness of the technical services it provides under its Energy Awareness and Education program?**

A. No, it does not:

Due to increasing cost pressures, IPL has consolidated its customer awareness and education initiatives under a single program umbrella. This program will include all energy awareness, outreach, and education initiatives as well as facility audits, assessments, and feasibility studies. *The Company will not claim savings from the program and has not analyzed its cost-effectiveness.* The primary program objectives are to increase customer awareness of the benefits of energy efficiency and demand response, provide technical support to help customers prioritize investments in energy efficiency, and serve as a platform to promote all IPL programs.<sup>51</sup> (Emphasis added)

**Q. Do you think IPL should provide similar levels of technical assistance to residential and commercial customers as it provides to non-residential customers?**

A. Yes, given the fact that IPL has decided not to analyze the cost-effectiveness of technical assistance, that eliminates cost-effectiveness as an excuse not to provide the same level of technical assistance to all customer classes. There is no substitute for in-person, high-quality technical assistance that identifies specific and cost-effective energy efficiency investment opportunities.

In fact, the company acknowledges in its 2021 Annual Report in EEP-2018-0003 that “[h]istorically, approximately 85 percent of [non-residential] customers that conduct an energy audit go on to participate in [an energy efficiency] program because of the

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<sup>51</sup> Ibid., pg. 23.

1 audit."<sup>52</sup> Alternatively, only 9 percent of IPL homeowners that complete the company's  
2 free online home energy assessment participate in one of the company's current rebate  
3 programs.<sup>53</sup> This is not surprising since the firm that assessed IPL's Home Energy  
4 Assessments [HEA] Program found that "[t]here is no follow-up survey after completion  
5 of the assessment. Once customers receive their assessment, their participation and  
6 involvement with IPL's HEA activities end."<sup>54</sup>

7 Further evidence that in-person energy audits are valuable can be found in a  
8 recent comprehensive assessment of IPL's Commercial and Industrial (C+I) Audit  
9 Program:

10 Based on discussions with IPL and implementation staff, it is clear C&I  
11 Audits serve as an effective gateway for larger commercial customers into  
12 the other nonresidential programs. However, just one-quarter (26%) of  
13 dealers said they completed a project with a customer that had an audit  
14 and one-fifth (21%) of participants reported receiving an audit. *Increasing*  
15 *enrollment in C&I Audits can help IPL achieve its goals to promote cross-*  
16 *program participation and address multiple barriers to customer*  
17 *participation in energy efficiency.*<sup>55</sup> (Emphasis added)  
18

19 It is clear that high-quality, in-person technical assistance (assessments, audits, planning  
20 support) has been beneficial to IPL's larger commercial and industrial customers. A  
21 similar level of in-person technical assistance should be available to all of IPL's  
22 customers—especially its residential and small business customers.  
23

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<sup>52</sup> Interstate Power and Light Company, "[Annual Report for 2021 Energy Efficiency Plan](#)," (EEP-2018-0003), May 2, 2022, pg. 25.

<sup>53</sup> Interstate Power and Light Company, "2021 Annual Report (EEP-2018-0003), [Appendix F, 2019–2023 Home Energy Assessments Program Evaluation Report](#)," August 25, 2021, pg. 1.

<sup>54</sup> Ibid., Appendix F, [Opinion Dynamics, 2019–2023 Home Energy Assessments Program Evaluation Report](#), August 25, 2021, pg. 15.

<sup>55</sup> Ibid., Appendix F, filed May 25, 2022, [Opinion Dynamics, Nonresidential Cross-Cutting Process Evaluation Report](#), Final, January 27, 2022, pg. 15.

1 CEDI included “Full Scope, Locally-Led Energy Planning” in its response to the  
2 invitation to propose program suggestions for the 2024-2028 energy efficiency plans.  
3 (See CEDI Martin-Schramm, Direct Exhibit 2) IPL declined all three of IPL’s program  
4 proposals. It offered the following terse rationale for its stance regarding “Full-Scope,  
5 Locally-Led Energy Planning.”

6 Declined. IPL has offered robust service to low-income and disadvantaged  
7 customers for many years and will continue to do so. In this Plan, IPL  
8 will also extend Comprehensive Income Qualified program services to  
9 customers at a higher income level. Proposal included insufficient data on  
10 savings, costs, or cost-effectiveness to demonstrate its performance  
11 claims.<sup>56</sup>  
12

13 It was disingenuous for IPL to dismiss CEDI’s proposal that the company offer “Full  
14 Scope, Locally-Led Energy Planning” on cost-effectiveness grounds since it must have  
15 known at the time that it would not be analyzing the cost-effectiveness of their technical  
16 assistance just as it knew it would be expanding its Comprehensive Income Qualified  
17 program through a pilot to limited-income customers.

18 **Q. Is there evidence that comprehensive technical assistance is helpful for the**  
19 **residential and small commercial customer segments?**

20 A. Yes, and it comes in many forms. One important and valid form is the combination of  
21 common sense and anecdotal evidence of the Clean Energy Districts of Iowa (CEDI) and  
22 many others working in the field. Energy is a complicated topic, and while most home  
23 and business owners realize there are likely significant energy savings opportunities, few  
24 know where to start, and many never start because they’re worried about making wrong  
25 decisions and wasting money. Plus, many people—especially lower-income and  
26 otherwise disadvantaged households—have so little available time and energy that

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<sup>56</sup> IPL Application, [Exhibit 5. Coordination/Collaboration](#), pg. 7.



1 without significant help from trusted sources, energy improvements rarely rise to the top  
2 of the priority list other than in cases of emergency.

3 The gold standard in energy technical assistance is what CEDI describes as energy  
4 planning. Energy planning is a customer-centered process designed for impact, rather  
5 than previous utility audit programs that have produced a quick review of a property with  
6 no follow-up on its recommendations. The more effective energy planning process  
7 broadly includes:

- 8 ● Building a relationship with the customer that includes understanding  
9 customer needs and priorities (e.g., financial savings, comfort, air quality,  
10 emissions reductions)
- 11 ● Assessing the building envelope and insulation levels as well as the age  
12 and status of existing equipment that use significant amounts of energy,  
13 including a combustion safety check
- 14 ● Analyzing energy use by drawing on at least the previous 12 months of  
15 energy data
- 16 ● Identifying measures that can result in reduced energy consumption and  
17 increased energy cost savings through the use of modeling software
- 18 ● Providing customers with financial analysis that provides cost, payback,  
19 and related information by measure, without and with all available  
20 financial incentives
- 21 ● Engaging customers through discussion, decision support, and plan  
22 development

- Following-up with customers regarding the implementation of recommended measures, advising as necessary, securing documentation, and offering next step planning depending on the customer's situation and goals

The best-practice nature of this holistic approach is demonstrated in two national programs, as well as in CEDI-documented outcomes.

The federal Weatherization Assistance Program (WAP) is the nation's oldest program for home energy efficiency retrofits. Iowa's rate-regulated utilities have long provided supplemental funding to the Iowa Department of Human Rights to augment the WAP program in the state. Multiple national evaluations have proven the positive impacts of WAP.<sup>57</sup>

The WAP program is administered in Iowa by the state's Community Action Agencies. Homes are prioritized based on many factors, and the work in every home begins with a comprehensive evaluation and planning process not dissimilar to that described above. WAP program energy auditors receive extensive training,<sup>58</sup> and follow national guidelines for comprehensive whole-home energy assessments, including the use of approved energy modeling software packages.<sup>59</sup>

Home Performance with ENERGY STAR® (HPwES) is another national program common to energy efficiency programs in at least 24 states.<sup>60</sup> It is a collaborative program between the U.S. Department of Energy and the U.S. Environmental Protection

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<sup>57</sup> U.S. Department of Energy, Weatherization Assistance Program, "[National Evaluations: Summary of Results](#)," August 2015.

<sup>58</sup> U.S. Department of Energy, State and Community Energy Programs, "[Guidelines for Home Energy Professionals Accredited Training](#)."

<sup>59</sup> Ibid., "[Weatherization Energy Audits](#)."

<sup>60</sup> EnergyStar.gov, "[Full List of Home Performance with ENERGY STAR Programs](#)."

1 Agency that includes a network of 32 utility and nonprofit sponsors. The program “offers  
2 a trusted approach to home upgrades that includes a comprehensive evaluation, with  
3 recommended work being performed by trained and qualified networks of contractors.”<sup>61</sup>  
4 From the beginning, the HPwES program has emphasized the critical importance of  
5 comprehensive technical assistance as foundational to an impactful program. This  
6 includes a homeowner interview, energy bill review, evaluation, safety check and testing,  
7 recommendations, and a prioritization and implementation process.<sup>62</sup>

8 The provision of high quality, comprehensive technical assistance to homes,  
9 farms, and businesses has always been a top priority for the Clean Energy Districts of  
10 Iowa, though funding has not been available for all energy districts to provide the  
11 services. The Winneshiek Energy District has provided technical assistance since  
12 inception, and one of the earliest programs it offered was with funding in 2010-2012 by  
13 the federal Energy Efficiency and Conservation Block Grant Program. Energy planning  
14 to HPwES standards was offered to local homeowners and business owners. Of 55  
15 participating businesses, 49 completed one or more recommended measures, which  
16 yielded a conversion rate of 89%.<sup>63</sup> Of 84 participating homeowners, 64 completed  
17 recommended measures, which yielded a conversion rate of 76%.<sup>64</sup>

18 IPL and the other Iowa rate-regulated utilities have described in-person technical  
19 assistance services to homeowners and small business owners as having low impact, and  
20 not being cost-effective. It is hard to see how IPL could assess the effectiveness of the in-

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<sup>61</sup> U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, “[Home Performance with ENERGY STAR®](#).”

<sup>62</sup> EnergyStar.gov, “[Home Performance with ENERGY STAR: Your Guide to Getting Started](#).”

<sup>63</sup> Winneshiek Energy District, EECBG Grant Final Report, Section 3: Project Impact Spreadsheet.

<sup>64</sup> The conversion rate jumped to 90% when comprehensive direct install services were included.

1 person energy audits they offered in the past because the company acknowledged in its  
2 response to a CEDI data request that it collected no data on whether recommended  
3 measures by these audits were ever adopted. In addition, IPL acknowledged that the  
4 company “has not studied in-person technical assistance programs for residential  
5 customers offered by utilities in other states.” (See CEDI Martin-Schramm Direct Exhibit  
6 1, IPL Response to CEDI DR 10)

7 Nevertheless, IPL says it is committed to “continuing to provide technical  
8 resources (such as assessments, audits, and feasibility studies) that help customers  
9 identify and prioritize energy-savings opportunities and encourage them to invest in deep  
10 building and home retrofits and comprehensive measure packages that increase savings  
11 per customer interaction.”<sup>65</sup>

12 IPL deserves praise for its recognition that quality technical resources are critical  
13 to helping customers identify and prioritize opportunities, that encouraging investment in  
14 “deep” retrofits and comprehensive packages is important, and that program investment  
15 in technical assistance that achieves such customer investment in improvements is worth  
16 the cost. That said, IPL’s past in-person energy audit/assessment program for residential  
17 customers was largely ineffective because it was a “quick and dirty” program-driven  
18 product (without diagnostics, modeling, collaborative plan development, or follow-  
19 through) rather than the customer-centered process described above. The same can be  
20 said for similar programs offered by the other rate-regulated utilities in Iowa.

21 **Q. How do you think high quality, in-person, comprehensive energy assessments can**  
22 **best be offered to all of IPL’s customers?**

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<sup>65</sup> IPL Application, Exhibit 1, pg. 17.

1 A. The path of least resistance would likely be for IPL to offer programs that provide free,  
2 comprehensive, technical assistance/energy planning services as described in the previous  
3 section to every customer class. If this is the route taken, establishing the standards for  
4 technical assistance, credentials for providers, and ensuring open participation by local,  
5 qualified providers in Iowa should be developed through a stakeholder approach  
6 involving at a minimum the Office of the Consumer Advocate, the TRM workgroup, the  
7 State Energy Office, and all interested technical assistance providers in the state.

8 I think Iowa Code 476.6 (13) supports the provision of energy planning services  
9 to all Iowa ratepayers:

10 Energy efficiency programs for qualified low-income persons and for tree  
11 planting programs, educational programs, *and assessments of consumers’*  
12 *needs for information to make effective choices regarding energy use and*  
13 *energy efficiency* need not be cost-effective and shall not be considered in  
14 determining cost-effectiveness of plans as a whole.

15  
16 In my view, high-quality, in-person, and comprehensive energy planning services fall  
17 within “assessments of consumers’ needs for information to make effective choices  
18 regarding energy use and energy efficiency.”

19 It appears that IPL recognizes the value of such an approach that utilizes local  
20 expertise. It states the following regarding its new outreach to Limited Income  
21 households through its Comprehensive Income Qualified Program: “IPL will issue a  
22 request for proposals to select *an implementation vendor with a local presence* that can  
23 qualify participants, conduct assessments, and leverage relationships with local installers  
24 and community agencies to deliver the program.”<sup>66</sup> (Emphasis added)

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<sup>66</sup> IPL Application, Exhibit 1, pg. 60. I think Iowa Code 476.6 (15)a(1)(a) supports this preference for local contractors. It states: “Rate-regulated gas and electric utilities shall utilize Iowa agencies *and Iowa contractors* to

1 I suggest, however, that there is a better way to serve Iowa ratepayers than relying  
2 on a utility to control the delivery of technical assistance programs to its ratepayers. I  
3 encourage IPL to work with CEDI and the aforementioned parties to develop an effective  
4 framework for a new statewide technical assistance fund and implementation structure to  
5 provide all IPL customers with high-quality, comprehensive energy planning services in a  
6 revised version of its proposed Plan. Independent energy efficiency program  
7 implementers are common across the country from Washington to Wisconsin to Maine.  
8 In this case I'm only recommending an independent administrator for the provision of  
9 technical assistance, not an administrator for the entire energy efficiency program.

10 The energy efficiency programs implemented by Iowa's rate-regulated utilities  
11 have long struggled to provide effective technical assistance to residential and small  
12 business customers for two main reasons. First, the technical assistance has too often  
13 been of low quality and, as a result, ineffective. As described above, comprehensive  
14 technical assistance and energy planning services work, and should be the focus of  
15 funding in the programs going forward.

16 The second reason previous efforts to provide in-person technical assistance to  
17 residential and small business customers has failed is largely due to challenges related to  
18 program implementation. These challenges include:

- 19 • Lack of coordination: The programs offered by Iowa's rate-regulated utilities  
20 function largely independently of each other, despite the fact that there is  
21 significant customer overlap in situations where one utility provides electricity

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the maximum extent cost-effective in their energy efficiency plans or demand response plans filed with the board.”  
(Emphasis added)

and another provides natural gas. In most cases, the technical assistance provided did not cover all sources of energy.

- The selection of one vendor to provide technical assistance statewide was an inefficient way to serve customers across a large geography. It undoubtedly led auditors to limit their time on-site so as to conduct other audits that day.
- The use of a single vendor also precluded and excluded local qualified energy professionals from accessing the funds provided by local ratepayers to provide in-person technical assistance.
- While quality assurance and quality control were the reasons given for using just one statewide vendor, those vendors varied between the utility programs and, as noted above, in IPL's case there was never any follow-up to determine whether customers implemented any of the measures recommended by the audit.

As noted above, the challenges associated with in-person energy audits in the past can be remedied through the energy planning approach discussed above. Today, however, we face new (and welcome) challenges associated with helping home and business owners discern how they can best take advantage of the federal incentives offered through the Inflation Reduction Act.

The various challenges associated with delivering high quality technical assistance, achieving high rates of recommended measure adoption, and enjoying significant energy and energy cost savings can best be addressed through the development of a state technical assistance fund that would be managed and administered by a third party. Key features should include:

- 1           ● Creation of a new quasi-government or non-profit entity charged with  
2           implementing the fund.
- 3           ● Creation of a robust customer database allowing tracking of customers by utility,  
4           technical assistance provider, level of assistance provided, plan development and  
5           implementation, and measured impacts.
- 6           ● Creation of a state technical committee to establish standards regarding high  
7           quality, comprehensive technical assistance services, using best practices from  
8           around the country.
- 9           ● Establishment of a workforce development group to establish technical assistance  
10          provider qualifications and credentials, and to ensure the opportunity for  
11          professional development throughout the state.
- 12          ● Contributions into the fund from each of the three rate-regulated utility energy  
13          efficiency plans, including the opportunity for municipal utilities and rural electric  
14          cooperatives to participate and also make contributions, if they wish to do so.
- 15          ● Fund management of other revenue sources when available (such as federal  
16          programs).

17          To be sure, the creation of a statewide technical assistance fund and management entity  
18          would be a significant undertaking. Nevertheless, the near- and long-term return on this  
19          investment would be dramatic. Iowa ratepayers would have a clear opportunity to receive  
20          high quality technical assistance that is comprehensive, and they would also have the  
21          opportunity to work with a local, trusted, and qualified technical assistance provider. The  
22          technical assistance/energy planning process would include follow-through to ensure the



greatest probability of success, and the system would track implementation and impacts to allow for continuous improvement.

**Q. In what ways could high quality, in-person, comprehensive energy assessments help all IPL customers benefit from the new HOMES and HEEHR programs?**

A. Unfortunately, the IRA rebate programs provide no direct funding for technical assistance, even though one of them (HOMES) actually requires a whole-home energy assessment with modeling to qualify and to verify incentive levels.

The energy planning approach that is central to the energy district model will help customers acquire the technical assistance they need to make the best use not only of the HOMES and HEEHR programs but also the incentives in IPL's Plan.

Offering high quality, comprehensive energy planning services to all residential customers (and at no cost for lower-income households) through IPL's Plan or, better yet, through a new statewide technical assistance fund, would be the best way to help all of IPL's customers utilize the federal programs and maximize the benefits associated with the incentives in IPL's Plan.

**Q. How would you summarize your recommendations regarding the provision of technical assistance to IPL customers?**

1. High quality, comprehensive, in-person technical assistance and energy planning should be provided to all customer classes, including all residential and small commercial customers.

2. These services should be provided to customers through qualified, independent, and local energy planners to the greatest degree possible. This approach is critical to support the principle of customer choice (the freedom to choose a trusted, local

provider); the importance of the development of a technical assistance workforce throughout Iowa; and efficiency in program delivery.

3. The above goals can be best met by the creation of a state level technical assistance fund managed by a third party, as described in detail above. This would likely entail a level of Board and/or OCA oversight as well as coordination with the State Energy Office and other entities. Nevertheless, I believe strongly that it would also be the most effective, innovative, efficient, and impactful approach to serving all rate-regulated utility customers, and (through the inclusion of other potential funding streams and the participation of other consumer-owned utilities), possibly all Iowans.

CEDI is prepared to collaborate fully with IPL, the Board, the OCA, and all other stakeholders on the development of effective, innovative, and highly impactful technical assistance and energy planning solutions, so that all IPL ratepayers and all Iowans have an opportunity to participate in and prosper from the accelerating clean energy transition.

#### IV. Comprehensive Income Qualified Program

**Q. How does IPL propose to expand it's offerings to limited-income households?**

A. IPL has created a new Comprehensive Income Qualified Program that is comprised of three major components—Single Family Low-Income, Multifamily and Institutional Low-Income, and Single-Family Limited-Income.<sup>67</sup>

The primary change to the suite of offerings for low-income households is the addition of the Single-Family Limited-Income component. The development of such a

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<sup>67</sup> IPL Application, Exhibit 1, pg. 59.

program was recommended by Opinion Dynamics in their 2021 assessment of IPL's current Low-Income Weatherization Program.<sup>68</sup>

**Q. Do you have any concerns about the proposed Comprehensive Income Qualified Program?**

A. Yes, I think IPL's offerings are insufficient given the huge financial needs many of their residential customers face.

In the company's response to Board staff's request for additional information, IPL estimates that almost 25% of its residential electric customers (101,997) and natural gas customers (49,709) have a household income that falls within 0-200% of the Federal Poverty Level (FPL). Another 18% of IPL's residential electric customers (75,264) and natural gas customers (36,680) have a household income that ranges from 200-300% FPL.<sup>69</sup>

Despite the fact that 43% of IPL's residential customers are low-income or are the working poor on limited incomes, the \$16,484,340 total budget for the Comprehensive Income Qualified Program represents only 7% of the \$236,724,318 total Plan budget.<sup>70</sup>

What makes matters worse is that this \$16,484,340 will only serve a tiny fraction of these households over the next five years through IPL's Comprehensive Income Qualified program. In response to a data request from CEDI, IPL provided the following information:

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<sup>68</sup> Interstate Power and Light Company, Annual Report for 2021 Energy Efficiency Plan, (EEP-2018-0003) Appendix F, filed May 25, 2022, [Opinion Dynamics, 2019–2023 Low-Income Weatherization Program Evaluation, Final](#), September 28, 2021, pg. 2.

<sup>69</sup> Interstate Power and Light Company, "[Response to 11-14-22 IUB EEP Additional Info Request](#)," December 2, 2022, pg. 1.

<sup>70</sup> IPL Application, Exhibit 1, Table 2-2, pg. 11.

CEDI: How many households per year and in total does IPL intend to serve through each of these three components over the course of this EEP? (IPL Application Exhibit 7 only provides numbers per measure.)

IPL Response: IPL intends to serve the following projected number of households for each program during the Plan:

- Single Family Low-Income: 760
- Single-Family Limited-Income: 76
- Multifamily and Institutional Low-Income: The number of apartments units per building and the number measures installs vary per apartment unit. The approximate number of buildings in 2019 was 76 and the basis for the number of units installed.

(See CEDI Martin-Schramm Direct Exhibit 1, IPL Response to CEDI DR 14)

IPL's proposed programs for low-income and limited-income households will serve less than 1% of their low-income and limited-income customers over the course of the company's five-year Plan. Given the enormity of the need, the Board should require the company to do more.

**Q. Do you have any recommendations regarding IPL's Single-Family Low-Income Component?**

A. Yes, at a minimum, IPL needs to work with its partners to improve this program. What IPL is proposing in its Plan is nothing new:

IPL will implement the low-income pathway jointly with other Iowa IOUs through the Iowa Utility Association. IPL will contribute program funding through the Iowa Department of Human Rights in conjunction with the federal Weatherization Assistance Program. The Iowa Department of Human Rights will direct Community Action Program agencies to perform energy assessments and install qualifying energy efficiency measures in residences occupied by low-income families, at no-cost to the customer.<sup>71</sup>

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<sup>71</sup> IPL Application, Exhibit 1, pg. 59.

1 Sadly, according to Opinion Dynamics, “approximately 85,000 households apply for fuel  
2 assistance each year [in Iowa], and the weatherization program completes upgrades on  
3 around 2,000 homes per year.”<sup>72</sup> Only 266 projects were completed in IPL’s territory  
4 over the evaluation period (January 2020 - March 2021), which, to be fair, was during the  
5 height of the Covid pandemic. Nevertheless, the collective utility response to low-  
6 income Iowa households with high home energy burdens is grossly inadequate. The  
7 Board should require all of Iowa’s rate-regulated utilities and the Iowa Utility  
8 Association to collaborate more successfully with their state and federal partners to  
9 achieve better results.

10 More specifically, at a minimum, I urge IPL to implement the following  
11 recommendations by Opinion Dynamics in their recent assessment of IPL’s Low-Income  
12 Weatherization (LIW) Program:

- 13 ● Discuss current price ceilings and measure eligibility with [Community  
14 Action Programs] CAPs to further understand which rules cause the  
15 greatest barriers to using utility funds and the most deferments of  
16 customers in need.  
17
- 18 ● Convene statewide stakeholder discussions to determine if there are  
19 options for avoiding deferment, such as opportunities to establish  
20 partnerships with community-based organizations or other non-profits to  
21 support program participants in the event of a home deferral. For instance,  
22 some CAPs have access to additional funding sources, such as private  
23 donations or local housing trust funds, to pay for home repairs and  
24 remediation that would otherwise cause program deferrals. It could be  
25 particularly beneficial to find ways to provide replacement of knob-and-  
26 tube wiring, as this would allow contractors to comprehensively install  
27 insulation in those homes and better serve their needs.  
28  
29

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<sup>72</sup> Interstate Power and Light Company, Annual Report for 2021 Energy Efficiency Plan, (EEP-2018-0003) Appendix F, filed May 25, 2022, [Opinion Dynamics, 2019–2023 Low-Income Weatherization Program Evaluation, Final](#), September 28, 2021, pg. 7.

- Investigate whether there is a need to raise the \$200 rate that CAP agencies can collect on energy audits resulting in a deferred home to better align with the market-rate for retaining in-house, qualified auditors. Further, consider commissioning statewide research to better understand the market costs of all measures and labor for weatherization services in Iowa against the existing IPL price ceilings.<sup>73</sup>

In addition, I applaud the IPL program staff who think “it may be helpful to look for alternative avenues beyond the core LIW program for expanding its reach into income-qualified markets, such as the partnership with [Green Iowa AmeriCorps] GIAC.”<sup>74</sup> The Winneshiek Energy District has hosted a GIAC team since its inception in 2010. The GIAC’s First Step Home Energy Assessment Program is free to low-income households and has helped over 1,000 homes in northeast Iowa become more energy-efficient, saving the average homeowner over \$120 on utility bills annually.<sup>75</sup>

**Q. Do you have any additional recommendations regarding IPL’s proposed Comprehensive Income Qualified Program?**

A. Yes, apart from the provision of electric heat pump water heaters at no cost to 1,195 (~1%) of their electric low-income households, and at 75% of cost to 120 (.002%) of their electric limited-income households over the five-year life of their proposed Plan, there are no other measures for the installation of heat pumps to serve low- and limited-income customers in single family, multi-family, or institutional settings.<sup>76</sup>

Given the exceptional energy efficiency (noted earlier) of electric heat pump hot water heaters, IPL should significantly increase the number they intend to install for low-

<sup>73</sup> Ibid., pg. 2.

<sup>74</sup> Ibid, pg. 13.

<sup>75</sup> Winneshiek Energy District, “[Green Iowa AmeriCorps First-Step Home Efficiency Program](#).”

<sup>76</sup> IPL Application, Exhibit 7, Measure Level Detail (Excel), lines 60-61, columns F; L-P. See also Table 4-16, Comprehensive Income Qualified Program Measure and Incentive Summary, IPL Application, Exhibit 1, pp. 61-63.

1 and limited-income households in single-family, multi-family, and institutional settings.<sup>77</sup>

2 I recommend a ten-fold increase in ambition in IPL's proposed Plan, which would yield  
3 significant energy and energy cost savings for many eligible households.

4 In addition, given the annual and long-term energy cost savings associated with  
5 cold-climate heat pumps discussed earlier, IPL should add value to Iowa's  
6 Weatherization Assistance Program by providing supplemental funding to ensure heat  
7 pumps are installed in low- and limited-income households in all settings when a furnace  
8 replacement or the replacement of an electrical resistance heating system is  
9 recommended on the basis of the comprehensive energy assessment.

10 Collaboration and coordination with the Iowa Energy Office will be essential  
11 since it will manage the IRA-funded Home Energy Performance-Based, Whole-House  
12 Rebates (HOMES) program and the High-Efficiency Electric Home Rebate Program  
13 (HEEHR). Iowa's share of the federal funding for these programs amounts to  
14 \$60,827,450 for the HOMES program and \$60,473,810 for the HEEHR program.<sup>78</sup>

15 It is also important to note that Iowa's Weatherization Assistance Program will  
16 receive an additional \$44,904,534 from the Bipartisan Infrastructure Law, which should  
17 enable it to weatherize an additional 2,658 homes over the life of the grant which runs  
18 from July 1, 2022 through June 3, 2027. The program has not yet received the funds,

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<sup>77</sup> CEDI asked IPL for data from its Home Energy Assessment program about the type of heating systems its customers use for space heating, water heating, and clothes drying. IPL provided data for assessments conducted between February 8 and December 31, 2022. (See Martin-Schramm Direct Exhibit 1, IPL Response to CEDI DR 7) Approximately 1% of IPL's residential customers (4,271) completed an assessment during this period of time. Of these, 2,760 have a natural gas-fueled water heater; 1,321 have an electric water heater; and 148 have a propane-fueled hot water heater. If 43% of these households that have an electric or propane-fueled water heater fall in the low- and limited-income categories, that would yield 634 households that could benefit from a high-efficiency, heat pump hot water heater. It is important to note that these numbers are based on data from only 1% of IPL's residential customers.

<sup>78</sup> U.S. Department of Energy, "[Biden-Harris Administration Announces State And Tribe Allocations For Home Energy Rebate Program](#)," November 22, 2022.

1           however, so it expects to utilize the funding over 4 years instead of 5 years, which will  
2           require weatherizing an additional 664 homes per year.<sup>79</sup>

3                   IPL should work with the Iowa Energy Office, Community Action Agencies, and  
4           its network of implementation vendors to help eligible low-income and limited-income  
5           customers in all settings learn about these federal financial incentives as well as the Iowa  
6           Weatherization Assistance Program.

7  
8   **Q.    Why do you think it is vital for IPL to provide supplemental funding to ensure heat**  
9   **pumps are installed in low- and limited-income households?**

10   A.    CEDI estimates that the cost to install a cold climate air source heat pump system in an  
11   Iowa home ranges from \$12,000 to \$20,000.<sup>80</sup> Assuming the “stacking” of federal  
12   incentives (WAP + IRA-funded programs) is not possible, a low-income household that  
13   is lucky enough to be selected by Iowa’s Weatherization Assistance Program (WAP) will  
14   be eligible for \$12,000 for weatherization measures including the cost of installing a heat  
15   pump system, if one is recommended. Assuming other measures might require \$4,000 in  
16   expenditures, this might leave only \$8,000 available for the heat pump system. This  
17   deficit would rule out the heat pump option without supplemental funding from IPL. If  
18   the household is not selected by WAP and elects to tap the HEEHR or HOMES program,  
19   it will face an \$8,000 cost cap for a heat pump system. As a result, the low-income  
20   household will face a similar \$4,000 - \$12,000 gap in funding.

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<sup>79</sup> Information provided by Christine Taylor, Bureau Chief, Iowa Weatherization Assistance Program, via email communication on March 27, 2023.

<sup>80</sup> According to the Winneshiek Energy District’s Energy Planner, the average sized home in Iowa has a heating load that requires 3-4 tons (1 ton = 12,000 Btu) of capacity. On average, cold climate ASHP equipment costs \$4,000-\$5,000/ton. See Less, Brennan D., Núria Casquero-Modrego, and Iain S. Walker, "[Home Energy Upgrades as a Pathway to Home Decarbonization in the US: A Literature Review](#)," *Energies*, Vol. 15, no. 15, August 1, 2022.



1           Simply referring low- and limited-income residential customers to IPL's  
2           Residential Prescriptive Incentives Program will be insufficient because the currently  
3           proposed level of rebate will leave eligible customers with an insurmountable cost  
4           burden.

5           For those customers that utilize these state and federal programs, I recommend  
6           IPL's Plan pay 100% of the remaining cost for low-income households to install the kind  
7           of heat pump system recommended on the basis of the comprehensive energy assessment,  
8           and 75% of the cost for recommended systems in limited-income households. I further  
9           encourage IPL to prioritize funding to households with expensive and less efficient  
10          propane-fueled and electric-resistance heating systems.<sup>81</sup>

11          While it is not reasonable nor feasible for IPL to meet the needs of all of their  
12          low- and limited-income customers over the course of this proposed Plan, the Board  
13          should require the company to increase its support for these customers in a significant  
14          way. I have offered two specific ways the company could do so 1) by paying the full cost  
15          to install more electric heat pump water heaters and 2) by subsidizing the installation of  
16          heat pump systems for space heating at no or reduced cost by supplementing the  
17          contributions of the WAP and the IRA programs.

18   **Q.    Do you have any concerns about IPL's new limited-income component?**

19   **A.**   It is not clear from IPL's application how much it intends to spend on this new outreach  
20          to limited-income customers. Table 4-18 in IPL's application provides the overall budget

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<sup>81</sup> Id. Drawing on the data provided in CEDI DR 7: Of the 4,271 of IPL's residential customers that took the home energy assessment, 3,186 IPL customers use natural gas as their primary fuel for space heating; 706 use electricity; and 263 rely on propane. If 43% of these households fall in the low- and limited-income categories, that would yield 417 households that could benefit from a high-efficiency, cold-climate heat pump. It is important to note that these numbers are based on data from only 1% of IPL's residential customers.

1 for the Comprehensive Income Qualified Program Budget but it does not explain how  
2 and where these budget items are allocated to the three components in the program.

3 IPL's new limited-income component is only a pilot that will, at most, benefit 76  
4 households over the life of the Plan. While there is no question that the 18% of IPL's  
5 residential electric customers (75,264) and natural gas customers (36,680) that are the  
6 ultimate focus of this new limited-income program undoubtedly have higher energy  
7 burdens than the majority of IPL households, the fact is that these energy burdens are  
8 even higher for the larger number of low-income households in IPL's service territory.  
9 Without a detailed budget, it is hard to know whether to recommend that the amount  
10 spent on the new limited-income pilot program be spent on serving low-income  
11 households instead.

## 12 **V. Demand Response**

13  
14  
15 **Q. What are the benefits of demand response (DR) programs?**

16 A. In addition to lowering the price of power and avoiding the construction of large new  
17 power plants, demand response programs also strengthen grid resilience in extreme  
18 weather conditions, and increase the integration of high levels of wind and solar  
19 renewable energy resources on the grid.

20 **Q. Do you believe IPL's Plan fully captures the benefits of new approaches to**  
21 **demand-response programs?**

22 A. No, in order to increase the value of demand response for Iowa ratepayers, I think IPL  
23 needs to expand the offerings in its Demand Response program.<sup>82</sup> As in the past, IPL's

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<sup>82</sup> I draw heavily here on [comments submitted by the Environmental Law & Policy Center and the Iowa Environmental Council](#) on November 7, 2022 in Docket NOI-2022-0001.

1 primary strategy is to incentivize large energy users to reduce their energy use during  
2 times of peak demand. To a far lesser extent, the company enables smaller commercial  
3 and residential customers to participate in demand response load shedding via the  
4 continuation of its Direct Load Control program and via its new residential Behavioral  
5 Demand Response program that utilizes smart thermostats and pricing signals to  
6 encourage customers to reduce energy consumption during peak periods. As distributed  
7 energy resources (DER) drive changes in energy consumption, IPL needs to expand its  
8 demand response program offerings to increase the role of residential and commercial  
9 customers.

10 The International Energy Agency (IEA) discusses the growing relationship of  
11 distributed energy resources and demand response in a recent report:

12  
13 Distributed energy resources and connected devices have the potential to  
14 contribute significantly to demand response, reduce peak demand and  
15 support net zero pathways, if coupled with smart meters and digital  
16 management systems that allow the aggregation and remote control of  
17 smaller and more numerous resources. In the Net Zero Emissions by  
18 2050 Scenario, around 250 GW of demand response capacity is in  
19 buildings, and another 50 GW comes from electric vehicles. This  
20 capacity is made available to the market thanks to the deployment of  
21 enabling digital technologies across key end-uses, and is complemented  
22 by the expansion of distributed electricity storage.<sup>83</sup>  
23

24 The recently enacted Inflation Reduction Act (IRA) is going to accelerate  
25 investment in distributed energy resources in the residential and small commercial  
26 sectors.

27 **Q. What are the implications of the IRA and high penetration of DERs for demand**

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<sup>83</sup> International Energy Agency, "[Demand Response](#)", September 2022.

**response programs?**

A. Distributed energy resources include distributed rooftop solar, electric vehicles, heat pumps, and other customer-controlled equipment and actions. These DERs are complimentary and many can be paired with demand response programs for additional benefits. The IRA incentivizes the purchase and use of these DERs. With these new incentives principally aimed at the residential and commercial sectors, it is important that IPL design and expand demand response programs to incorporate new technologies rather than rely primarily on existing demand response programs, which are principally aimed at large industrial customers.

The IRA will accelerate and amplify the predictions from previous studies on the potential of demand response in the residential sector. A June 2019 study on load flexibility potential forecasted that most of the load flexibility potential in 2030 will be in the residential segment as customers adopt smart automated home technologies.<sup>84</sup> Additionally, as noted in a 2019 Utility Demand Response Market report by the Smart Electric Power Alliance:

Both Mass Market and Commercial & Industrial (C&I) demand response (DR) programs are incorporating advanced technologies and tools to create increased flexibility and savings. Legacy programs are being phased out, utilities are offering suites of options, diverse technology types are being integrated, and cutting-edge technology is being tested. As programs are expanded and new options are added, DR stands to potentially deliver \$15 billion in savings each year by 2030.<sup>85</sup>

Given these trends, IPL should increase its residential and commercial DR programs to capture cost-effective DR potential. For example, the company should tap the capacity

<sup>84</sup> Ryan Hledik, et al., "[The National Potential for Load Flexibility](#)," The Brattle Group (June 2019), pg. 26.

<sup>85</sup> Smart Electric Power Alliance, "[2019 Utility Demand Response Market Snapshot](#)."

1 for residential direct load control of EV chargers and heat pump water heaters to cost-  
2 effectively reduce system demand. The Plan should also include a way to actively ensure  
3 that it is capturing the system demand reduction opportunities offered from free riders  
4 and free drivers through increased communication and outreach encouraging program  
5 participation.

6 **Q. Do you have any other suggestions for how IPL could improve and expand its**  
7 **Demand Response program?**

8 A. Yes, given the fact that 43% of IPL's residential customers are low- or limited-income  
9 households, I encourage the company over the course of this new Plan to donate blocks in  
10 their community solar projects to a significant number of low-income households and to  
11 offer other blocks to a similarly significant number of limited-income households at a  
12 75% discount. The number of blocks should correspond to at least 50% of each  
13 household's annual electricity consumption over the past year. Doing so would help  
14 reduce the high energy burdens these households experience and it would have the added  
15 benefit of providing a measure of peak demand reduction.

16 A 2018 ICF study conducted a meta-analysis of a geographically diverse and  
17 broad selection of studies from 15 states that explored the costs and benefits of  
18 distributed solar.<sup>86</sup> Almost all of these studies included an avoided generation/capacity  
19 value, which the ICF study says can reliably contribute to peak load generation needs and  
20 reduce peak demand.

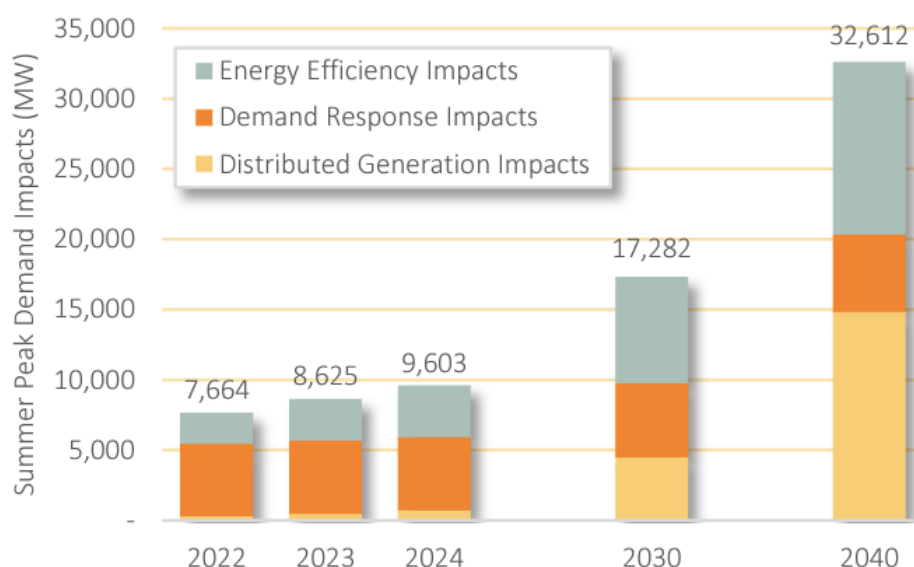
21 A more recent study by the Applied Energy Group for the Midcontinent  
22 Independent System Operator (MISO) explored the potential benefits to MISO posed by

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<sup>86</sup> ICF, "[Review of Recent Cost-Benefit Studies Related to Net Metering and Distributed Solar](#)," May 2018.

1 demand response, energy efficiency, and distributed generation.<sup>87</sup> While distributed  
 2 generation (DG) currently offers the least amount of summer peak demand impact  
 3 compared to demand response and energy efficiency programs, in less than twenty years  
 4 DG capacity is expected to provide the largest amount of summer peak demand by  
 5 2040.<sup>88</sup> The following figure is reproduced from the study:

*Figure-ES 2 Summer Peak Demand Impacts (MW) by Program Category*



7  
 8 IPL's proposal to develop three new renewable energy programs, including its  
 9 Community Solar program, was approved by the Board in Docket RPU-2019-0001. One  
 10 of the issues discussed in that docket was how to equitably include LMI households in  
 11 solar access. My recommendation would address this issue through IPL's Demand

<sup>87</sup> Applied Energy Group (AEG), "[DR, EE, DG Potential Assessment, \(Volume 1: MISO\) Final Report](#), August 11, 2021.

<sup>88</sup> Ibid., pg. iii.

Response program. The result is that income qualified households would have reduced energy burdens and all customers would benefit from the reduced demand on the grid. If this helps stimulate demand for more community solar projects, all the better, because that would provide more peak load reduction.

## VI. Plan Ambition

**Q. Do you think IPL's proposed Plan is ambitious enough?**

A. No, the Plan falls short of the high potential determined by ICF in its Assessment of Energy Efficiency Potential both in terms of electrical energy efficiency and in terms of demand response. IPL acknowledges these facts in its application and in its response to a CEDI data request.

IPL offered the following response to CEDI's data request regarding electrical energy efficiency:

CEDI: Table 1-2 in the IPL Application projects 506 GWh of electric savings, whereas Figure 7 in the ICF Study projects cumulative GWh savings for Alliant Energy [IPL] that range from 464 GWh in the Reference - Existing Scenario to 669 GWh in the High scenario. Why is IPL not pursuing greater electricity savings as reflected by the 669 GWh High potential in the ICF study?

IPL Response: The High potential scenario in the ICF study assumes the addition of new and expansions of existing programs. The IPL Plan does include new programs (e.g., midstream and demand response program components) as well as expanding existing programs (e.g., online marketplace and income-qualified program components). Details of IPL's redesigned programs are described in IPL Application Exhibit 1 section 2.2 Plan Schedule and Changes. While the IPL Plan may not reach the ICF high scenario, it does exceed the existing reference case.

(See CEDI Martin-Schramm Direct Exhibit 1, IPL Response to CEDI DR 5)

1 The company does not explain why its ambition for electrical energy efficiency (506  
2 GWh) only slightly exceeds the Reference-existing scenario (464 GWh) and stops well  
3 short of the ICF high scenario (669 GWh).

4 Regarding demand response, IPL explicitly acknowledges that its “demand  
5 response program components will provide IPL with average dispatchable load  
6 management capability of 276 to 291 MW annually over the five-year Plan. This is  
7 equivalent to 74 percent of the Assessment’s average identified potential in the High  
8 scenario [366 MW] across the Plan period (Table 3-2).”<sup>89</sup>

9 Again, it is not clear why IPL’s Plan is not more ambitious given the fact that the  
10 ICF study identifies higher potential both in terms of electrical energy efficiency and  
11 demand response.

12 **Q. Is IPL’s Plan less ambitious because the costs have to be limited by the statutory**  
13 **caps?**

14 A. No, IPL confirmed in its response to a CEDI data request that its Plan program costs as a  
15 percentage of annual retail rate revenues for electric efficiency range from 1.04% - 1.25%  
16 over the five-year span of the Plan, which is well below the 2% statutory cap. The same  
17 is true for demand response. IPL’s Plan program costs as a percentage of annual retail  
18 rate revenues for demand response range from 1.01 to 1.18% over the five-year span of  
19 the Plan, which is well below the 2% statutory cap. (*See* CEDI Martin-Schramm Direct  
20 Exhibit 1, IPL Response to CEDI DR 15)

21 **Q. Given the fact that IPL’s Plan costs for electric efficiency and demand response**  
22 **both fall well below the statutory caps, do you have any recommendations?**

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<sup>89</sup> IPL Application, Exhibit 1, pg. 29.



1 A. Yes, I think the Board should require IPL to use this extra capacity to fund the major  
2 recommendations I have made in my testimony. Since I discuss them in detail earlier, I  
3 will simply summarize them here:

- 4 1. Provide high quality and comprehensive technical assistance to all customer classes  
5 through qualified, local providers wherever possible.
- 6 2. Offer more generous heat pump incentives to all customers.
- 7 3. Provide supplemental funding to help low-income and limited-income families enjoy  
8 the energy and energy cost savings of efficient heat pump technology.
- 9 4. Donate blocks in their community solar projects to a significant number of low-  
10 income households and offer other blocks to a similar number of limited-income  
11 households at a 75% discount. The number of blocks should correspond to at least  
12 50% of each household's annual electricity consumption over the past year.

13 It is worth noting that recommendations 3 and 4 do not need to meet the cost-  
14 effectiveness test because the benefits accrue to low-income households and  
15 recommendation 1 similarly is not subject to cost-effectiveness, which IPL acknowledges  
16 in its Plan.

17 **Q. Does this conclude your testimony?**

18 A. Yes, it does.