
IOWA UTILITIES BOARD
Policy Development and Energy Sections

Docket No.: NOI-2014-0001
Memo Date: April 8, 2015

TO: The Board

FROM: Brenda Biddle
Leslie Cleveland
Barb Oswalt
Gary Stump

SUBJECT: Recommendation to Solicit Additional Responses for Net Metering

I. Background

On January 7, 2014, the Iowa Utilities Board (Board) issued an order commencing an inquiry into distributed generation (DG), inviting participants to comment on broad general questions related to the benefits and challenges of DG, both for utilities and their ratepayers, on policies that should be examined with respect to DG, and to identify the technical, financial, regulatory, and safety aspects of DG that participants would like to address in this inquiry docket. Participants were also invited to comment on other issues they considered relevant to DG, such as whether there were any technical hurdles to implementing DG. The Board also welcomed any policy recommendations for the Board, other state agencies, or the General Assembly to consider. Comments were received from over 170 participants, including utilities, utility associations, environmental groups, renewable energy advocates, energy-related organizations, businesses, and individuals.

Because of the breadth of topics identified by participants in the initial comments, the Board, in its May 12, 2014, order, suggested the inquiry focus on the topics of net metering;¹ interconnection of DG (including safety and reliability); and customer awareness/protection. The Board requested the participants respond to specific questions outlined in the order with responses due June 24, 2014. There were 47 participants that filed comments.

Staff reviewed the responses to the May 12, 2014, order and drafted additional questions intended to get participants' opinions and additional information on specific issues related to net metering and interconnection. The Board issued an order on September 19, 2014, which requested that the participants respond to additional questions and reply to each other's comments. Responses and reply comments were due October 24, 2014. Appendix A is a list of the 28 participants

¹ Avoided-cost issues are the subject of a separate investigatory docket, Docket No. INU-2014-0001.

that filed written comments in response to the Board's September 19, 2014, order and provides acronyms used to identify participants where applicable. Not all participants responded to all net-metering-related questions. Appendix B is a summary of the comments filed in response to the net-metering-related questions in the Board's September 19, 2014, order.

II. Legal Standards

A summary of the net-metering statutes and Board rules is provided below.

Alternate Energy Production (AEP) Net-Metering Policy

Iowa's AEP statute² does not explicitly authorize the Board to mandate net metering; however, this authority is implicit through the Board's enforcement of Public Utilities Regulatory Policy Act of 1978 (PURPA) and the AEP statute. Using this authority, the Board has required rate-regulated utilities to offer net metering to AEP facilities. The definition of AEP facilities included in Rule 199 IAC 15.1 identifies the types of generation that are eligible for net metering. These include: 1) an electric production facility which derives 75 percent or more of its energy input from solar energy, wind, waste management, resource recovery, refuse-derived fuel, agricultural crops or residues, or wood burning; and (2) a hydroelectric facility at a dam.

Rule 199 IAC 15.11(5) states:

Net metering. Each utility shall offer to operate in parallel through net metering (with a single meter monitoring only the net amount of electricity sold or purchased) with an AEP facility, provided that the facility complies with any applicable standards established in accordance with these rules.

This rule describes net-metering service as "a single meter monitoring only the net amount of electricity sold or purchased." The AEP customer draws electricity from and provides excess electricity back to the utility over the same meter making the meter run both forwards and backwards, thus netting one against the other. This "netting" of AEP kWh production against retail kWh usage is economically equivalent to the AEP customer selling electricity back to the utility at the utility's retail rate. However, net metering does not involve separate purchase and sale transactions – net metering is essentially a metering arrangement that nets kWh against kWh. Also, since net metering involves a single meter, it does not allow for the netting of an AEP facility's kWh production against retail kWh usage from multiple separate meters.

² Iowa Code §§ 476.41 - 476.45 was enacted in 1983. The statute's stated purpose was to encourage AEP development by requiring utilities to purchase electricity from AEP facilities at special incentive rates that would be just and reasonable for utility ratepayers.

The Board adopted the net-metering subrule in 1984 as part of its AEP rules (Docket No. RMU-83-30). In describing the applicability of its AEP rules, the Board drew a clear distinction between renewable AEP facilities and non-renewable PURPA qualifying facilities (QFs) (or cogeneration), explaining why the rules (including net metering) would apply only to AEP facilities. Initially, the net-metering subrule applied to all electric utilities. However, in the court challenge of the AEP statute, the Iowa Supreme Court ruled in 1987 that the Board's AEP requirements (including net metering) could not be applied to non-rate-regulated utilities (i.e., municipal utilities and rural electric cooperatives (RECs)).

In 1999, in a renewed court challenge by MidAmerican Energy Company (MidAmerican), the Polk County District Court stayed the Board's net-metering rule based on federal preemption. Separately, the Federal Energy Regulatory Commission (FERC) declined to rule that federal law preempted the net-metering rule (FERC Docket No. EL99-3). To resolve the litigation and the conflicting results, MidAmerican proposed a settlement net-metering tariff (settlement tariff) supported by the Office of Consumer Advocate (OCA), a division of the Iowa Department of Justice (Docket No. TF-01-293). The main features of the MidAmerican settlement tariff were: 1) limiting net metering to 500 kW of capacity per AEP facility; and 2) carrying forward any net excess generation for net metering in future months, rather than purchasing it from the AEP facility. The Board approved the settlement tariff with modifications. Later, the Board approved a similar net-metering tariff for Interstate Power and Light (IPL) (Docket Nos. TF-03-180 and TF-03-181).

The Energy Policy Act of 2005 required state commissions to consider implementing five additional ratemaking standards under PURPA Section 211, one of which related to net metering. In the order³ issued on August 8, 2006, the Board explained that it had considered and adopted, in prior state actions, a net-metering standard for Iowa's rate-regulated electric utilities, having previously made specific policy determinations in various dockets that were consistent with the description of net metering under the PURPA Standard. The Board had defined "eligible on-site generating facilities" as being limited to AEP facilities; and for MidAmerican and IPL, the Board had further limited the definition to a 500 kW cap per AEP facility and had added a requirement to carry-forward net excess generation for net metering to future months, consistent with the PURPA Standard.

III. Analysis

Early on in this inquiry, many commenters noted that net metering was a topic of interest. For this reason, it is one of the specific topics the Board identified for further exploration in the NOI. There have been two rounds of comments on

³ "Order Regarding PURPA Standard 11," Docket No. PURPA Standard 11 199 IAC15.11(5), page 5, (August 8, 2006).

questions regarding the different aspects of net metering. The Board sought this additional information so that it could balance the wants and needs of potential DG customers and other DG stakeholders and the issues and concerns of the utilities and their non-DG customers, while keeping in mind that the Board's mission is to ensure that reasonably priced, reliable, environmentally responsible, and safe utility services are available to all Iowans.

The issue of net metering divides the commenters. Those who wish to expand net metering have provided several proposed changes such as to increase the size cap, allow for aggregated net metering, allow for virtual net metering, provide a cash-out option, and allow combined heat and power (CHP) and waste heat and power (WHP) to become eligible facilities under the AEP rules. Anticipating the utilities' issues with net metering, many suggested that a study should be performed quantifying the costs and benefits of DG to the utility to show what the actual level of cross-subsidization is to non-DG customers, if any. Due to the limited level of DG penetration currently in Iowa, most agree that performing a study at this time is premature.

On the other hand, the utilities are concerned that they are essentially paying a retail rate for energy that they would otherwise purchase at a wholesale rate. This also means that the customers that have installed DG (DG customers) are not paying all of the fixed costs of the system that was built to serve their needs. Thus, the lost revenue would eventually be collected from the non-DG customers which creates a cross-subsidization issue. MidAmerican and IPL believe it would be appropriate to review the net-metering rate design issues before expanding net-metering rules.

Staff appreciates the utilities' concerns with passing on additional costs to the non-DG customers; however, based on the current penetration levels the impacts will likely be minimal in the near future. According to ELPC et al, customers from all classes that net meter account for 0.057 percent of total utility customers.⁴ Furthermore, staff understands that cross-subsidies between DG and non-DG customers are not the only cross-subsidies that exist in a regulated environment. Some existing cross-subsidies are accepted because of the social, economic, or political benefits. Staff suggests that there may be valid concerns about the impact of cross-subsidization but notes that the utilities have not quantified the level of cross-subsidization with current data.

In order to move forward and explore potential options, staff proposes that the Board consider communicating its goal related to the future of DG in Iowa which could then guide the Board's actions concerning the specific topic of net metering in this inquiry. As a starting point, staff has drafted the following policy goal for the Board's consideration.

⁴ ELPC et al. October 24, 2014, comments, Table 2. Summary of Net Meter Customer and Capacity Penetration, page 4.

To provide a regulatory framework that allows distributed generation to grow in an equitable manner that balances the interests of regulated utilities and all utility customers.

Staff believes this statement communicates the Board's desire for equity while allowing for the potential growth of DG. Additionally, staff suggests that while balancing the concerns of all participants, it may be necessary to consider both short-term and long-term options for net metering and the impacts that result from those options.

As the Board continues to study net metering and attempts to balance the interests of all parties, it is apparent that there are several options presented within the net-metering comments, some of which need to be fully evaluated.

Option 1 – No changes are made to the current net-metering policies.

There were many participants that argued in their initial comments that the Board should maintain or preserve the current net-metering policies. These participants support the status quo for net-metering policy.

Generally speaking Iowa's net-metering policies do not seem out of line with what other states currently offer. One source, "Freeing the Grid," has given Iowa a "B" rating for net metering. Compared to other states that offer net metering, Iowa's size cap of 500 kW is somewhere in the middle.

One change recommended by Freeing the Grid was to expand net metering to all utilities including the RECs and the municipals. This recommendation was also echoed by numerous participants via the initial comments filed in this inquiry. However, the Board has already addressed this option in its "Order Soliciting Additional Comments and Scheduling Workshop," dated September 19, 2014, stating:

"The Board will not seek to assert jurisdiction over the net metering policies of non-rate-regulated utilities at this time but strongly encourages those utilities that have not done so to adopt net metering policies on a voluntary basis." (page 6)

The other recommendation by Freeing the Grid was to remove size limitations so that customers could meet all on-site energy needs. Staff is not aware of any state that does not limit to some extent the size of the system eligible for net metering. A handful of states limit the size of the system to a percentage of the customer's annual consumption/load, such as a system size not to exceed 125 percent of customer total connected load. This approach would allow any renewable DG customer to build enough generation to fully meet its needs.

However, the Board previously stated in the "Order Granting Waiver and Approving, with Clarifications, Tariff," dated March 8, 2002 (Docket No. TF-01-293/WRU-02-8-156), that:

"It is important to note that the Board's net billing rules, even though they do not contain a size limit, were originally intended for small customer installing AEP or other renewable generation, not large commercial AEP or renewable facilities."

While net metering is not currently available to all Iowans, net metering is offered by the investor-owned utilities (IOUs) and some of the municipal utilities and RECs. The current net-metering policies appear to balance the interests of most customers and utilities and seem to be serving the intended purpose.

Option 2 – Make select changes to the net-metering policy.

Another option presented in net-metering-related comments is that the Board should make select changes to the current net-metering rule to expand it beyond the current levels. Staff has reviewed the numerous net-metering-related comments and responses filed during the course of this docket and notes that there are different positions presented with respect to each proposed change with little agreement among all the commenters. Many participants in this docket recommend that Iowa's net-metering policy be updated by increasing the 500 kW cap, allowing aggregate or virtual net metering, allowing customers to cash out their generation in excess of their consumption, or allowing non-renewable CHP/WHP facilities to be net metered. Others suggest that net metering results in cross subsidies and that net metering should be redesigned to eliminate or lessen the cross subsidies. While these are all possible alternatives for net metering, staff suggests that before the Board consider revisions to net-metering policy, the Board should evaluate the (short-term and long-term) impact that such changes would have on the customer rates within the various customer classes or on the financial health of the utilities that provide service.

The details of the existing net-metering policies⁵ as they apply to MidAmerican and IPL were the product of settlements and implemented via tariffs approved by the Board. If the Board wishes to change any of the net-metering parameters, it is unclear how that might impact the settlements.

⁵ Limiting net metering to 500 kW of capacity per AEP facility and carrying forward any net excess generation for net metering in future months, rather than purchasing it from the AEP facility.

Below is a summary of recommended changes made by various commenters:

1) Cash-Out Option

The cash-out option was first presented as part of this inquiry by Iowa Nebraska Equipment Dealers Association (INEDA). It suggested that the DG customer should be able to select its annual anniversary date to cash out its credits to maximize the value of their generation production. The Board requested additional information on the cash-out option, and, of the ones that responded, many agreed a cash-out option is a reasonable change to make to the net-metering rules. The IOUs weighed in: IPL believes this is a good option under the current rate design; and MidAmerican initially expressed legal concerns as well as concerns that DG customers would have an incentive to overbuild if they are allowed to cash out. Some RECs and municipals currently offer the cash-out option.

The following sub-issues became apparent after reviewing the various commenters' responses: 1) make it required or optional; 2) cash-out paid monthly or annually; 3) at what rate is the excess bill credit paid to the customer; 4) whether to cap the amount of cash-out to prevent an overbuild of the system; and 5) what legal issues exist.

Required or Optional - Of the parties that addressed this option, many propose that cashing out excess bill credits be optional to the DG owner/customer. One reason noted was the DG customer may find there are negative tax consequences to receiving payment instead of rolling bill credits forward. IPL suggests that it be required, and MidAmerican agrees if the cash-out rate does not contain a subsidy or if there is a cap on the amount of cash out. To note, the Board supported bill credits over the cash-out option when the net-metering rules were first developed. A mandatory cash-out requirement would signal a significant change in the Board's historical position. Additionally, of the states that offer a cash-out option, it appears that more make it optional.

Monthly or Annually - Commenters do not agree whether the cash out should occur monthly or annually. The IOUs support a monthly cash out of bill credits. They believe this better matches the value of the power during a given month to the price paid by the utility. IPL states that the customer can receive compensation in excess of the full retail rate for banking excess kWh for use in future months. The OCA suggests annually to smooth out the variability of balances from month to month and to minimize administrative costs. One commenter recommended that the DG customer should be able to pick the anniversary date for the cash out. Staff finds that most states that offer the cash-out option offer the annual cash-out option.

Rate of Payment - Almost all commenters agree that the rate paid to the customer for their generation in excess of their consumption should be the

avoided-cost rate and not the retail rate in order to comply with PURPA regulation. This is consistent with what most other states pay when the customer utilizes the cash-out option. Some pay something other than an avoided-cost rate, but it is less than the retail rate. One issue though is what to include in determining the avoided-cost rate. ELPC et al. argues that the avoided-cost rate needs to reflect the benefits of DG to the utility. Also, staff believes some commenters supported the cash-out option thinking they would be paid the retail rate for the excess bill credits.

Cap the Cash-Out - MidAmerican expressed concern that the cash-out option may encourage customers to overbuild their DG systems and suggested the payment be limited to 5 percent or less of the customer's annual DG production. Based on this concern, the Board asked additional questions about this sub-issue. MidAmerican later acknowledged the need is lessened when the avoided-cost rate is used instead of the retail rate. IPL also pointed out that the Database of State Incentives for Renewable and Efficiency (DSIRE) Web site did not report any states having a specific cap for cash-out payments. However, there are states that cap the size of the system based on annual consumption for the system. IPL recommends a cap of 110 percent of the customer's annual consumption. The Board could cap the size of the system to a percentage of consumption if it agreed it is necessary. If the Board decides to include cash-out provisions and sets the price at the avoided-cost rate, there would be fewer concerns about the issue of a cash-out cap.

Legal Concerns - The Board may first want to consider whether net metering should continue to be a billing arrangement as originally envisioned. If a purchase is involved, it could have legal implications especially if the Board wishes to expand net metering to include aggregate or virtual net metering at some point.

The Iowa Association of Electric Cooperatives (IAEC) explained the following:

The lawfulness of the IUB's required net metering for IPL and MEC is premised on the fallacy that net metering does not involve a purchase or sale; but rather is merely a metering arrangement that nets kWh against kWh. Requiring a cash-out clearly changes that nature of the transaction. (June 24, 2014, Response, page 6).

The IAEC also said that the settlement with MidAmerican and IPL regarding net metering stated that net metering is a billing arrangement and would not constitute a purchase or a sale. It would be difficult to support the conclusion that the net-metering arrangement did not constitute a purchase transaction if the cash-out option is available.

Another Consideration – If the Board allowed the cash-out option it may be able to divert the customers' generation in excess of consumption accumulated during the previous year to be used for a special cause, such as a low-income customer assistance fund, rather than to pass the proceeds onto the DG customer. This alternative would also minimize any incentives for customers to overbuild their systems. MidAmerican stated the following in a footnote:

Although some commenters presume all state NEM programs have a cash out with proceeds paid to the NEM customer, in the experience of MidAmerican and the other Berkshire Hathaway Energy Company utilities, that structure is actually in the minority of state NEM programs. A majority of the NEM programs either roll the excess forward as a credit, as does MidAmerican's Rate NB, or require forfeiture of the excess. A few state NEM programs cash out the excess, but contribute the proceeds to a fund or cause rather than pay the proceeds to the NEM customer. (October 24, 2014, Comments, page 3).

If the Board wished to include the cash-out option as part of net metering, MidAmerican believes this can be done through a Board order.

2) Aggregate Net Metering

Aggregate net metering is not specifically addressed in Iowa's net-metering rules. IPL states that it "currently supports meter aggregation for customers with more than one meter on an existing premise through its primary metering policy, and related terms of service." (June 24, 2014, Response, page 14). Additionally, Industrial Energy Applications (IEA) states that IPL already allows meter aggregation for some of its large industrial customers. However, INEDA claimed, in its initial comments, that Iowa's IOUs and RECs do not currently offer aggregate net-billing arrangements for power from renewable DG. Currently the energy outflow from one meter cannot be applied to another meter which creates economic inefficiencies. INEDA suggested that the rules be changed to allow for aggregate net metering.

Both IPL and MidAmerican agree that aggregate net metering needs to take place behind the meter; any aggregate net metering in front of the meter would be considered retail wheeling and is prohibited by Iowa law. IPL further explains that a customer with multiple meters can own the secondary transformation and secondary lines outright moving the metering to the high side of the customer-owned transformer to accomplish this objective, or the customer can pay IPL an excess facilities charge for the dedicated distribution facilities to allow the consolidation of the metering. MidAmerican suggests something similar. MidAmerican claims that for aggregating meters on a customer's premise, it is

appropriate to aggregate them for billing purposes under standard retail rates. It is "somewhat" problematic to credit the amount of DG production to each meter separately. However, MidAmerican points out that aggregating metering information for billing purposes could make other customers that also have multiple meters believe that they are being subjected to discriminatory treatment. Therefore, MidAmerican believes DG customers should install its own distribution facilities to have the separate loads combined to flow through one meter.

The OCA and other commenters say that this is not necessary and would make it too expensive for the DG customer. It is simply a billing arrangement or administrative function where excess bill credits are applied to the bills of the other meters. As pointed out by Luther College, it is not asking for the energy to literally be wheeled to the other meters and mentions that other states are aggregating meters. INEDA provided examples of rules from other states that allow aggregate net metering. After staff review, it does not appear in those examples that the utilities required physical connection of the meters. The customers were required to rank the meters in the order that they would receive the excess kWh.

The IAEC recommends that before the Board adopts any meter aggregation policy, it needs to monitor the success in other states that dealt with the complexities that may impose costs on utilities, the difficulty of tracking customers that move between service territories, the issues with sales tax treatment of the accounts, and the added financial concerns associated with net metering.

When the Board asked the commenters to consider what other states (i.e., Minnesota, Illinois, Arizona, and Colorado) are doing with respect to aggregate net metering, ELPC et al. suggested the Board consider the Interstate Renewable Energy Council (IREC) Net-Metering Model Rules and approaches from other states like Minnesota and Colorado. MidAmerican suggests that if the Board chooses to pursue aggregate net metering, the following provisions should be included:⁶

Contiguous parcels: Most of these states required aggregated meters to be on contiguous parcels. For example, the state of Minnesota requires aggregated meters to be contiguous, not even separated by easements, to the parcel on which the distributed generation facility is located.⁷ This is necessary to avoid the potential for retail wheeling.

Common ownership: Most states require some level of common ownership, such as requiring the

⁶ MidAmerican's Response, October 24, 2014, pages 12-13.

⁷ 2013 MN Statutes 216B.164, Subd. 4a.

aggregating customer to be named on all bills or the aggregated facilities to be located on customer-owned or leased property. A lack of a common ownership requirement could lead to a variety of complex issues, such as ownership of any credits and responsibility for unpaid bills.

Same rate schedule: In order to avoid cross-subsidization of the aggregating customers, there should be no opportunity for the composite group to pay a lower total cost for electric service than it would if its usage was not aggregated.

Applies only to charges using kWhs as billing determinants: This requirement helps ensure that customer charges will continue to recover appropriate costs associated with each aggregated meter. It also ensures that there will be no possibility of a demand ratchet that allows a combined load to pay a lower rate than it would otherwise have paid.

Reasonable fee for meter aggregation: Meter aggregation adds a new level of complexity to utility service, and it is appropriate to add a specific cost-based charge for its implementation instead of requiring all customers to bear these costs.

Limited to customer load only: The limits of the underlying net-metering rules on the amount of load that can be served via net metering should apply to the aggregated load. In other words, aggregated metering should not provide a greater opportunity for the owner of a QF to earn credits or compensation than the owner would receive under standard net metering. QFs have the opportunity to sell all output to the utility instead of net metering.

Staff believes allowing aggregate net metering would benefit a few customers although it would not likely impact the DG penetration level. If the penetration level does increase, then ultimately additional costs will be recovered from the remaining non-DG customers. Under this option, the additional cost would likely be low, but it is a factor to consider when balancing the advantages and disadvantages of this option. Staff believes further research (reviewing information from other states and best practices from those states) is needed to determine whether aggregate net metering is something the Board should

pursue. This option would also be a good candidate for a pilot project, an option discussed later in this memo.

3) Virtual Net Metering

Virtual net metering provides all customers an opportunity to become a DG customer and is utilized in at least 11 states. IEA argues that virtual net metering allows for larger projects which could reduce the cost per kW, supports better land use management, and displaces more fossil fuels. But there is some opposition regarding virtual net metering. MidAmerican and IPL are concerned that moving virtual net-metered power over their lines would violate Iowa law. MidAmerican claims that this is a form of retail wheeling, and IPL states:

Jointly-owned renewable system would be considered a public utility under Iowa Code § 476.1, which provides a limited exemption from the public utility definition if the renewable facility is furnishing electricity to five or fewer customers either by secondary line or from an alternate energy production facility or small hydro facility, from electricity that is produced primarily for the person's own use.

To qualify for this exemption, the renewable facility would need to construct and own the distribution lines from the generation source to the load, and use the majority of the power generated itself. The electricity produced clearly would not be primarily for an individual customer's use since multiple parties would have some type of ownership in the facility. Therefore 'virtual net metering' is beyond the scope of the Board's rules and may require a change to Iowa's laws regarding the definition of a public utility as well as Iowa's exclusive service territory laws. (June 24, 2014, Response, page 12).

MidAmerican and IPL further argue that virtual net metering creates additional cross-subsidization issues. It allows power flows onto the system without compensation. There should be further discussion regarding rate design before discussing changes to net-metering policy such as allowing virtual net metering. The IAEC suggests that the Board monitor the "success" of the aggregate and virtual net-metering programs in other states prior to making changes in Iowa.

Some commenters argue that other states offer virtual net metering and do not appear to have retail wheeling concerns. OCA, Luther College, and others agree that electrons are not wheeled over the grid since it is considered virtual. It is a billing arrangement where bill credits are given based on the fraction of

ownership of the DG system. For this reason the OCA believes there are no legal issues. Luther College is not sure whether virtual net metering can be done legally without a legislative change. It noted that Colorado and Minnesota had to enact legislation to overcome the legal barriers that the IOUs identified in this docket. However, Luther College believes that the Iowa Supreme Court ruling on the Eagle Point Solar case⁸ suggests that jointly-owned renewable energy systems are not considered public utilities.

The Iowa Association of Municipal Utilities (IAMU) explains that one municipality, Traer Municipal Utility (TMU), offers virtual net metering. However, the project is owned by TMU and the generation and transportation of the power is within TMU's service territory and over its distribution lines, so the issues MidAmerican and IPL are concerned with do not apply here. The IAMU also states that:

IAMU agrees that if a third party were allowed to wheel electricity from outside a particular service territory to serve a customer in another service territory without the permission of the utility serving the territory, it would raise questions in regard to the state's service territory law. (October 24, 2014, Response, page 5).

To note, MidAmerican recognizes some benefits with virtual net metering (and OCA agrees) such as: 1) removing problems for customers related to DG ownership, 2) making DG investment more economical, 3) allowing for better utilization of tax credits by a utility or third party as individual customers may not be able to take full advantage of them, 4) allowing for placement of DG facilities in places other than on a customer's premises, where there may be restrictions or issues related to attachment to a customer's home or business, and 5) allowing for DG facilities to be placed in areas where changes in power flows caused by DG facilities would be less of a concern.

It remains unclear to staff whether the Board could modify the net-metering policy by modifying the existing net-metering rule or whether a legislative change would be required in order for utilities to be able to offer virtual metering to its DG customers. Also, this issue is tied to the size cap. The current size cap limits the amount of energy from each DG system eligible to be net metered. For eligible DG facilities with total nameplate capacity greater than the 500 kW cap, the amount of energy exceeding the cap can be purchased by the utility at its avoided-cost rate.

Virtual net metering, as with aggregate net metering, would likely require more research before the Board considers adopting this net-metering policy.

⁸ SZ Enterprises, LLC, dba Eagle Point Solar v. Iowa Utilities Board, a Division of the Department of Commerce, State of Iowa, et al. Iowa Supreme Court No. 13-0642.

4) Increase Size Cap

Although the net-metering rules are silent on the size limits of an eligible system, the settlements with MidAmerican and IPL in Docket Nos. WRU-02-8-156/TF-01-293 and TF-03-180/TF-03-181 respectively, include a 500 kW size cap which has been incorporated into the utility tariffs. The FERC stated it would not take jurisdiction over individual households and farmers so the 500 kW size cap seemed the appropriate size limit for those customers at that time.

Several commenters in this NOI have asked the Board to consider raising the cap to either 2,500 kW or 5,000 kW to allow more customers to be able to participate in net metering. A few commenters have pointed out that some states do not cap the size of the system but rather set a limit on the size based on the average annual consumption of the customer. This option would open net metering up to any size system as long as the system was eligible under the net-metering rules. This option could have a significant impact on the penetration level of DG in Iowa. Both IOUs argue against raising the size cap. IPL provided past Board language that denies including larger-sized systems because the intent of net metering was for small customers as mentioned above.

IPL points out that the Board's position regarding size caps was also presented in Docket No. FCU-03-28 where an industrial customer requested net metering for a 6 MW facility. The Board's order dismissing the complaint states:

While it is not necessary for the Board to address other arguments supporting and opposing the motion to dismiss, it should be noted that even though the Board's rules do not contain a specific limit on net metering, the Board reiterated in the March 8, 2002, MidAmerican order cited by IPL in its motion to dismiss that "net billing was designed for small customers installing renewable generation for their own use, rather than for large customers or commercial application." In orders and during the pendency of proceeding before the Federal Energy Regulatory Commission regarding net metering rules, the Board has consistently stated and followed this policy. While the rules do not contain specific limits on net-metered facilities, the Board does not envision a 6 MW commercial facility would qualify for net metering arrangements under the Board's rules. (September 17, 2003, Order, pages 5-6).

Of the states that have set a net-metering size cap, Iowa's cap is somewhere in the middle.⁹ Most states that have a higher cap compared to Iowa have a cap of 1,000 to 2,000 kW, which is lower than the levels requested by commenters in this inquiry. Iowa would have one of the highest caps in the United States if the Board raised the cap to the levels proposed by the commenters.

MidAmerican believes that the Board could increase the size cap through a Board order since there is no statutory or Board rule requirements related to the size cap on net metering, assuming the FERC does not take jurisdiction over such a net-metering arrangement.

Staff believes the Board should evaluate the impact (short-term and long-term) that increasing the cap may have on customers and the utilities before deciding to raise the cap.

5) Include CHP and WHP as Eligible Facilities

Only a few commenters encourage the inclusion of CHP and WHP as eligible facilities for net metering. According to the Midwest Cogeneration Association (MCA), "net metering is a simple, straight forward means of selling power back to the grid for any distributed generation system." It supports a 3 MW cap on net metering.¹⁰ For CHP systems above that cap, "a power purchase agreement may appropriately apply standby charges that reflect the actual cost to the utility." The Alliance for Industrial Efficiency states that "without net metering, CHP and WHP project developers are forced to enter complicated interconnection and power purchase agreements (PPA), increasing the transaction costs associated with these projects." (October 24, 2014, Response, page 2).

Other commenters focused on other barriers to CHP and WHP facilities outside of net metering including issues with the standby tariff. Many agree that the standby tariff is the appropriate way or one option to support CHP and WHP development.¹¹ However, most that discussed the standby tariff have expressed frustration with IPL's standby tariff. Specifically, ELPC et al. explains that the Environmental Law & Policy Center and the Iowa Environmental Council worked with MidAmerican to revise its standby tariff to be more transparent, flexible, and provide incentives for economically efficient consumption. Although it is not perfect, there were significant improvements made to the tariff. IPL's standby tariff, on the other hand, provides barriers to the development of CHP and WHP facilities.

⁹ DSIRE provides the following summary map on net-metering policies and size caps.
<http://ncsolarcen-prod.s3.amazonaws.com/wp-content/uploads/2015/03/Net-Metering-Policies.pdf>

¹⁰ MCA supports a cap of 5 MW for CHP facilities located in grid constrained areas and for critical infrastructure facilities.

¹¹ MidAmerican, IPL, the OCA, ELPC et al., Luther College, Golden Renewable Energy, LLC, and others.

There are legal concerns with allowing CHP and WHP facilities to net meter. CHP and WHP facilities use mostly natural gas as a fuel source which is not one of the energy sources eligible for net metering under the AEP rules. However, MCA states CHP and WHP facilities are eligible to participate in net metering if they use renewable sources for energy. IPL points out that the given the size of the CHP customers, the delivery of excess power under net metering could be considered a wholesale transaction subject to the FERC's jurisdiction. There could also be a violation of PURPA if a utility is required to purchase the excess power at retail rate instead of the avoided-cost rate.

MidAmerican suggests that CHP and WHP facilities may not be what the FERC was considering as eligible facilities since they are not individual farms or homes, and the OCA does not recommend the Board make net metering available to generators that do not meet Iowa's renewable AEP definition.

Finally, the OCA stated that "the Board drew a distinction between renewable AEP facilities and non-renewable PURPA QFs (or cogeneration), in making the net-metering rule available only to renewable AEP facilities. (IUB Staff Gold Memo, page 4, (dated April 18, 2014, issued May 12, 2014))."

Two major changes would need to occur in order for CHP and WHP facilities (fueled by non-renewable fuels) to take advantage of net metering:

- The net-metering policy would need to include CHP and WHP as eligible technologies. Currently Iowa allows solar PV, wind, biomass, and hydroelectric to qualify for net metering. CHP and WHP facilities that are fueled by natural gas are not considered renewable PURPA QFs.
- The size cap would need to be increased. According to some of the comments the current cap size of 500 kW is too small to encourage additional CHP or WHP projects. Most projects are in excess of 500 kW.

If the Board does not increase the size cap, it may not make sense to make changes to the AEP definition to include CHPs and WHP facilities since the cap would limit the eligibility of these projects to participate in net metering. Also, as mentioned above, many commenters agree that these projects are better served under the standby tariff.

Option 3 – Explore long-term solutions.

Aside from making select changes to the current net-metering rule, commenters also suggested that the Board look at net metering from a long-term perspective. In the comments filed, the IOUs recommend that the Board explore long-term solutions for net metering before expanding net-metering requirements and that it would be more appropriate to address these options in the context of a rate case.

Although net metering has been offered by Iowa IOUs for a number of years, current participation levels are low. Finding an immediate solution to the issue of potential rate impacts of net metering on other customers does not appear to be pressing. As mentioned earlier, ELPC et al. pointed out the customers from all classes that net meter account for 0.057 percent of total utility customers which equates to 0.11 percent of utility-owned generation.¹² Therefore, even if utilities are interested in proposing a rate design change that provides proper price signals, it may be several years before any further work is done - simply because of the low penetration rates and minimal amount of cross-subsidization that may exist.

The IOUs suggest that if net-metering penetration reaches a significant level, it could have a substantial impact on the non-DG customers and, therefore, propose creating a rate design for the DG customers that would provide proper pricing signals. IPL recommends that pricing signals be modified before expanding or revising net metering and suggests that pricing signals should distinguish between fixed and variable costs. MidAmerican believes that the current net-metering rate will not continue to achieve the needed alignment of costs and benefits and would result in potentially significant rate impacts to non-DG customers if DG were to become more widespread. The IAEC notes that the impact of net metering can vary from utility to utility depending upon the utility's rate design and rate structure. The IAEC also states that any evaluation of an appropriate net-metering policy must take into consideration the existing rate structure and potential concerns for a utility's ability to recover costs from its customers in an equitable manner.

The OCA cautions the Board about making any major change to net-metering policy absent a clear showing of significant cross-subsidization but notes time-of-use rates could be a reasonable alternative to address these concerns. The OCA also recommends that the Board evaluate the extent to which DG causes material cross-subsidization and the extent to which it then significantly interferes with utility recovery of fixed costs before instituting any major rate design change.

ELPC et al. recommends stakeholders work together to identify new, mutually-beneficial regulatory models and ratemaking principles that will work better than the traditional cost-of-service paradigm to maximize clean DG and energy efficiency. Additionally, ELPC et al. advocates that the Board be proactive and develop the data and the understanding necessary to evolve a future framework which would include investigating rate design options that: 1) fairly compensates DG customers, and 2) ensures utility customers pay reasonable cost-based rates for utility service.

Luther College said that "any proposal to replace net metering needs to provide similar financial benefits to the owners of DG systems and to fairly compensate

¹² ELPC et al. October 24, 2014, comments, Table 2. Summary of Net Meter Customer and Capacity Penetration, page 4.

these owners for the grid services they provide." February 20, 2014, Comments, pages 4-5.

Staff believes the Board should explore long-term options by asking the participants to propose various alternatives with the specific goal of allowing growth in DG - guided in a way while balancing the interests of regulated utilities and all utility customers.

Option 4 – Explore pilot projects.

In this option the Board could consider implementing pilot projects where significant changes (to net metering or rate design) can be explored on a limited basis while maintaining the existing net-metering rules, policies, and tariffs for the bulk of the DG customers. Under this alternative current net-metering rules and policies would remain in place with the recognition that they serve the purpose they were established to provide – a way for small customers to generate electricity for their own use by installing renewable energy facilities.

The second component of this option would be to establish pilot projects with the specific goal of allowing growth in DG- guided in a way that balances the interests of regulated utilities and all utility customers.

Without the parameters of the existing net-metering rules and policies, pilots could be developed with a view of the desired "end state," to encourage DG in the areas where it is needed, to encourage the types of generation that will provide energy at the times when it is needed, at pricing that is equitable to the utility and all utility customers. Presumably, there would be more value to the utility and the utility customers associated with generation placed where it is needed and producing energy when it is needed.

The pilot option would also provide a forum to explore many approaches including some of the options proposed by the NOI participants such as:

1. compensation based on time-of-use rates; and
2. investment opportunities created in a way that might appeal to the advocates of community solar and virtual net-metering projects.

An advantage to the pilot approach is that it creates an opportunity for innovation and the exploration of best practices within the context of the proposed policy goal. By separating existing net metering from the further expansion of DG, this approach also reduces the likelihood of net metering being expanded to the point where its limitations create problems that have to be addressed down the road.

IV. Recommendation

Staff recommends the Board direct General Counsel to draft an order asking the parties to respond to the following items:

1. Staff has proposed the following policy goal for the Iowa Utilities Board:

"To provide a regulatory framework that allows distributed generation to grow in an equitable manner that balances the interests of regulated utilities and all utility customers."

Comment on the advantages and disadvantages of the Board adopting such a policy goal, specifically related to net metering.

2. Would it constitute a "sale" if the Board were to determine that at the end of each year, unused kWh credits are to be diverted and used for a special cause?
3. Since the net-metering facility size cap and carry-over provisions were established through settlements between the IOUs and OCA, should any changes to those provisions be addressed via a rule-making docket, or through modification of the tariff provisions, or does the forum matter?
4. If the Board decides to change the cap for eligible net-metered facilities, one option would be to allow customers to net meter 110 percent of their average annual electricity consumption up to 1 MW or 2MW. Comment on the short-term and long-term financial impact such a change would have on non-DG customers and the utilities. Would this have an impact on grid reliability? Would it impact the way utilities do their resource and system planning? Identify any other concerns associated with this change.
5. Propose innovative and well-developed ideas that address long-term net-metering options as discussed in Option 3. These options should identify the associated advantages and disadvantages and also allow for the growth of DG while balancing the interests of the regulated utilities and all utility customers.
6. Propose innovative and well-developed ideas that could be implemented as net-metering pilot projects as discussed in Option 4. Identify the advantages and disadvantages associated with each potential project. For each potential pilot project provide detailed elements including, but not limited to, the goal of the project, timelines, eligible participants, responsibilities of the utility and participants, potential impacts on non-DG customers, an explanation of how the proposal meets the specific needs

of the utility, how each option would meet the objectives expressed in the draft policy goal, and possible results.

7. Participants should indicate their preferences for addressing net metering going forward based on the options 1-4 presented in the memo. Participants should also explain the basis for their preferred options and address how their preferred approach achieves the draft policy goal.

Staff recommends the Board allow participants at least 45 days to file their responses to give them time to develop detailed proposals and responses. Staff also recommends the Board allow participants the opportunity to file reply comments.

RECOMMENDATION APPROVED

IOWA UTILITIES BOARD

/bkb

<u>/s/ Elizabeth S. Jacobs</u>	<u>4-27-15</u>
	Date
<u>/s/ Nick Wagner</u>	<u>4/28/15</u>
	Date
<u>/s/ Sheila K. Tipton</u>	<u>4-21-2015</u>
	Date

Participants Responding to the Board's September 19, 2014, Order

Utility/Regulatory

- Interstate Power and Light Company (IPL)
- MidAmerican Energy Company (MidAmerican)
- Iowa Association of Electric Cooperatives (IAEC)
- Iowa Association of Municipal Utilities (IAMU)
- Missouri River Energy Services (MRES)
- Office of Consumer Advocate (OCA), a division of the Iowa Department of Justice

Organizations

- Alliance for Industrial Efficiency
- Environmental Law and Policy Center, Iowa Environmental Council, Sierra Club, Iowa Solar Energy Trade Association, Solar Energy Industries Association, and the Vote Solar Initiative (ELPC et al.)
- Iowa Nebraska Equipment Dealers Association (INEDA)
- Midwest Cogeneration Association (MCA)
- The Alliance for Solar Choice (TASC)

Individuals/Small Business

- Andrew Johnson – Winneshiek Energy District
- Chris Bair – Grinnell College
- Chris Hoffman – Moxie Solar
- Elizabeth Queathem – Grinnell College
- Golden Renewable Energy, LLC
- Jason Hall
- Jean Marie Hall
- Jennifer Hall
- John E. Carpenter
- Kami Ahrens
- Kayla Koether
- Landon Corlett
- Larry Grimstad - Decorah Solar Field, LLC
- Luther College
- Maureen McCue MD PhD – Iowa Chapter–Physicians for Social Responsibility
- William H. Ibanez
- William J. Pardee

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3. MidAmerican Energy Company (MidAmerican) suggests that if combined heat and power (CHP) or waste heat to power (WHP) facilities were considered eligible for net metering, the Board should retain the 500 kW size cap and the requirements that they be at one site and used primarily to serve the facility owner, as it is in its Rate NM. Do you have any additional comments on this proposal? 29
4. As with virtual net metering, there are legal issues discussed by both IPL and MidAmerican such as whether the delivery of excess power from a CHP facility would be considered a wholesale transaction subject to Federal Energy Regulatory Commission (FERC) jurisdiction and the claim that CHP and WHP facilities are not included in Iowa's alternate energy production (AEP) definition. Provide any comments you have on this topic..... 31
5. MidAmerican and IPL believe that it is more appropriate for larger CHP and WHP facilities to be served under the standby tariff. Do you agree? Explain why or why not. 32

Questions for Utility Participants 34

6. Several commenters assert that including CHP and WHP projects as eligible facilities in the net metering rules would encourage the development of small CHP and WHP projects. Assuming it is legally possible, would you object to including these types of projects as facilities eligible for net metering if they fall under the 500 kW size cap? Explain why or why not..... 34

Questions for All Participants 35

7. MidAmerican states that a cash-out option may require Federal Energy Regulatory Commission (FERC) approval because it may be considered a wholesale transaction instead of a net metering arrangement. Do you agree? Explain. 35
8. Provide comments on MidAmerican's assertion that a cash-out option encourages overbuild of a DG system..... 37
9. Some commenters recommend setting a cap on the amount of cash-out the customer could receive. 39
10. If the customer is allowed to cash-out a net balance, should it be: 40
11. Comment on the potential impact of IPL's suggested rule change that would consider net metered kWh as a cost of purchased power recoverable through the energy adjustment clause. 41
12. Although there was no consensus, the commenters discussed whether a cash-out rate should be based on the utility's avoided cost rate or the utility's retail rate. Explain which one you believe is the appropriate rate and why. 43
13. IPL and MidAmerican discuss connecting the meters on a DG customer's premises in order to aggregate meters, while the Iowa Nebraska Equipment Dealers

Association (INEDA) believes no physical connection is necessary. Comment on this..... 44

14. MidAmerican suggests that meter aggregation needs to occur behind the meter and the utility's distribution system cannot be used to aggregate the meters; otherwise, FERC would consider it retail wheeling. Do you agree? Explain why or why not. 46

15. For more accurate reporting to the Board, the U.S. Energy Information Administration, and FERC, IPL suggested changing 199 IAC 20.9(2) to reflect that all energy produced in excess of that used by the net metering customer would be considered an energy purchase. Do you agree with this suggested change? Explain your response. 47

16. IPL, MidAmerican, and the Consumer Advocate suggested a rate design change for DG customers such as a time-of-use (TOU) or demand rate. According to MidAmerican, this would remove any possible cross-subsidization between DG customers and non-DG customers. Is this a reasonable solution to this issue? Explain. 48

17. Comment on IPL's suggestion that DG customers should have their own specific customer class for rate design purposes since their load profiles and service needs differ from non-DG customers..... 51

18. Some parties suggest that a study be done showing the benefits of DG compared to the costs of DG to determine if there is cross-subsidization..... 53

19. INEDA points to Minnesota, Illinois, Arizona, and Colorado meter aggregation rules for Board consideration. Could any of these approaches be appropriate for Iowa? 56

Questions for Iowa Association of Municipal Utilities (IAMU)..... 58

20. The IAMU notes that at least one municipal utility offers virtual net metering. How is this being done, given the legal concerns expressed by some commenters? 58

Questions for Electric Cooperatives and Municipal Utilities 58

21. For those electric cooperatives and municipal utilities that do not currently offer net metering, explain why you do not offer net metering, whether you intend to offer net metering in the future, and if so, when..... 58

Questions 22 through 34 are addressed in the Interconnections Memo. 59

35. For MidAmerican and IPL: What number of DG customers would be required before you would be able to conduct cost of service studies to determine DG class rates? Does either utility have a cost study today to show that the true interconnection costs exceed the current fees? 59

36. MidAmerican has indicated that a DG owner is a different type of customer and should be treated as a separate class. Provide comments on how this should be done, if it should be done, or if there is a different way to account for differences between customers. 60

Question 37 is addressed in the Interconnections Memo. 61

Questions 38, 39, and 40 are addressed in the DG Data Memo. 61

41. On July 11, 2014, the Iowa Supreme Court issued its opinion in No. 13-0642, SZ Enterprises, LLC d/b/a Eagle Point Solar v. Iowa Utilities Board, a Division of the Department of Commerce, State of Iowa, et al. What are the legal impacts, if any, of this decision on DG policies or practices in general and particular policies or practices such as net metering (both traditional and virtual)? Does the decision impact any of your prior comments or responses in this docket? If so, explain. 61

Summary of General Net-Metering Comments

Iowa Association of Municipal Utilities (IAMU)

The preservation of local control and local regulation is important to the IAMU's electric members. Answers to questions in regard to DG must take into account that a one-size-fits-all approach does not work with municipal electric utilities. The size of Iowa's municipal electric utilities ranges from the city of Ames (nearly 25,000 customers) to the city of Westfield (fewer than 100 customers). Over 75 percent of Iowa municipal electric utilities serve 1,500 or fewer customers. Power supply arrangements vary greatly depending on the unique characteristics of each, including factors such as the size of the utility, access to transmission facilities, and its ownership of those facilities.

Midwest Cogeneration Association (MCA)

The suggestion that interconnection and net metering of DG may result in cost shifting from DG to other customers is a fallacy that needs to be closely examined. The guiding principle should be that rates are fair for all customers and reflect costs that are attributable to serving the customer. Rates can be unbundled into energy use, capacity, transmission and distribution, and administrative costs.

Kayla Koether

The simple and elegant system of net-metering needs to be preserved, because it improves the utility's bottom line by generating a discount source of energy at peak times. Lowering the price for DG would be unfair to the DG owners and dangerous for the future of the grid. As energy storage becomes more efficient and less expensive, individuals will turn to energy storage rather than connecting to the grid which will adversely affect those who remain on the grid. Net metering should be extended to allow remote installations to be net metered, crediting the energy bill of those that invest in the installation.

Landon Corlett

The IUB should continue net metering and ensure DG facilities can easily connect to the grid. Virtual net metering should also be available so people can invest in remote renewable installations and have their electric bills credited.

Luther College

Luther College responds to statements by MidAmerican and IPL about advantages, disadvantages, and regulatory changes needed to increase the net-metering cap by pointing out that several states have net-metering caps that vary depending on the customer class and many also have much higher caps. Luther College encourages the Board to consider adopting caps based on customer class or types of system and to review the net-metering program structures in Colorado and Pennsylvania.

Additionally, MidAmerican and IPL encouraged the Board to address the cross-subsidization issue regarding net metering. Luther College notes that cross-subsidization is a legitimate concern but cuts both ways since net-metered alternate energy systems provide benefits and cost savings to the grid, other utility customers,

and society in general. Minnesota's Value of Solar approach quantifies some of the economic and environmental benefits of solar DG systems which neither IPL nor MidAmerican fully acknowledge. Although net-metered customers are not paying certain system costs, they are providing economic and environmental cost savings. Fairness is essential, and the Board must consider all factors if the net-metering rule is revised.

Questions for Non-Utility Participants

1. **Many of the utilities state there are legal issues associated with virtual net metering if retail energy from an off-site DG is wheeled over the utilities' systems.**
 - a. **Do you agree? Explain.**
 - b. **If yes, provide examples of how other states that offer virtual net metering have addressed these legal concerns.**

Iowa Association of Electric Cooperatives (IAEC)

The utilities' argument that virtual net metering could create issues related to Iowa's service territory law hinges on a shared renewable program falling under the definition of a public utility in § 476.1. The definition requires "furnishing...electricity to the public for compensation." ELPC et al. points out that net metering is a billing arrangement and not a sale that provides compensation; the Board has stated it is essentially a metering arrangement, and FERC has stated that no sale has occurred if the homeowner that installs generation is practicing netting with its utility. Virtual metering also does not involve a sale since it is a billing arrangement that involves multiple customers that share ownership of a single renewable energy facility. Therefore, it should not fall under Iowa's definition of public utility and should not cause issues with Iowa's service territory statute.

Utilities' concern may be that the use of the grid that is different than the manner used by the traditional net-metering customer. "It is reasonable to value the energy from a shared renewable energy system in a way that fairly credits the utility for the use of the grid while at the same time fairly crediting the program participants for the full value of the distributed energy created. IREC's Shared Renewable Model Rules provides a good discussion about how to strike this balance."

OCA

The OCA does not interpret the virtual net-metering concept as necessarily entailing wheeling. If the net metering is performed virtually, then the transmission of such DG to the customers could also occur virtually. Thus, the legal issues with wheeling identified by the utility respondents do not necessarily arise. Among other potential benefits, MidAmerican points out that virtual net metering could be a means for locating DG in areas where positive attributes are enhanced and negative attributes are minimized. Similarly, virtual net metering could be utilized to help lower income customers more directly experience the benefits of net energy. Since virtual net metering is often

associated with community solar projects, it will be interesting to see if IPL's planned community solar installation will include virtual net metering.

ELPC et al.

The renewable generation option provided by the utility is a welcome option, but customers should have the freedom to choose how to pursue renewable energy. Virtual net metering (also referred to as shared renewable energy programs) provides customers with a choice to pursue renewable generation that otherwise is not available to them, it stimulates innovation, and it takes advantage of economies of scale.

The key difference between the utility option and the shared renewable energy program is that the customer using shared renewable energy program will have a direct economic benefit of a reduced electric bill.

The following "guiding principles" for the shared renewable energy program is offered by IREC:

- Shared renewable energy programs should expand renewable energy access to a broader group of energy consumers, including those who cannot install renewable energy on their own properties.
- Participants in a shared renewable energy program should receive tangible economic benefits on their utility bills.
- Shared renewable energy programs should be flexible enough to account for energy consumers' preferences.
- Shared renewable energy programs should be additive to and supportive of existing renewable energy programs, and not undermine them.

Andrew Johnson – Winneshiek Energy District

Virtual net metering (for this docket) takes place within the local distribution system and is simply another metering agreement. Other states have virtual net-metering policies.¹³

Chris Bair – Grinnell College

Virtual net metering, especially for a community solar project, is a more efficient means to deploy renewable technologies; is more affordable due to economies of scale; and easier to site near larger substations or load centers.

Chris Hoffman – Moxie Solar, Jason Hall, Jean Marie Hall, Jennifer Hall, Kami Ahrens, Larry Grimstad – Decorah Solar Field, LLC, and William H. Ibanez

There are many legal issues that need to be addressed to encourage off-site DG.

Luther College

Luther College found no provision in Iowa Code chapter 476 that expressly prohibits wheeling power at retail rates but rather found that wheeling power from alternate

¹³ Institute for Local Self Reliance -See <http://www.ilsr.org/virtual-net-metering/>

energy facilities is compelled under certain conditions.¹⁴ Retail wheeling is not synonymous with virtual net metering as MidAmerican and IPL suggest.

Based on the Iowa Supreme Court's recent ruling in the Eagle Point Solar case, jointly-owned renewable energy systems are not public utilities if their sole purpose is to offset consumption via bill credits like on-site net-metered renewable systems. The owners of these systems want to wheel/transfer bill credits based on a fractional ownership of production, not electrons.

Although MidAmerican suggests virtual net metering would undermine its ability to offer "coordinated, cost-effective electrical service" in its service territory, the same would be true for any net-metered facility connected to MidAmerican's system since both result in lost sales to the utility. Net metering is legal in Iowa for most ratepayers and virtual net metering is simply a way to extend this option to those who live in or own properties not well-suited for a DG system.

According to The Institute for Local Self Reliance, eleven states have some version of virtual net metering.¹⁵ Both Colorado and Minnesota enacted legislation that allows virtual net metering to community solar gardens. Luther College is unsure whether the Board could revise the current net-metering rules to incorporate a community solar garden provision or whether legislation is needed to promote community-owned renewable energy systems.

Community solar gardens would allow Iowans to invest in renewable energy even though their home or business may not be ideally suited for a solar system and can provide these opportunities at a lower cost due to economies of scale. Utilities can also benefit from well-planned community solar gardens located near large loads or substations. Issues related to virtual net metering and retail wheeling can be resolved in Iowa as done in Colorado and Minnesota.

Maureen McCue MD PhD – Iowa Chapter of Physicians for Social Responsibility
Virtual net metering would allow Iowans, who do not have facilities that are well-suited for on-site renewables, to invest in systems elsewhere and receive a credit on their monthly electric bill based on their percentage of ownership. Virtual net metering should be made available and accessible to all interested Iowans at the earliest time possible.

¹⁴ Iowa Code 476.43.1a(1), [http://coolice.legis.iowa.gov/CoolGICE/default.asp?category=\(billinfo&service=iowaCode&ga=83&input=476.43](http://coolice.legis.iowa.gov/CoolGICE/default.asp?category=(billinfo&service=iowaCode&ga=83&input=476.43); Iowa Code 476.44.1, <http://coolice.legis.iowa.gov/CoolGICE/default.asp?category=billinfo&service=iowaCode&ga=83&input=476.44>.

¹⁵ John Farrell, "Virtual Net Metering," *Institute for Local Self Reliance*, February 2014, <http://www.ilsr.org/virtualGnetGmetering/>

2. Is virtual net metering necessary if the utilities offer mechanisms for their customers to participate in renewable energy programs as discussed by Interstate Power and Light Company (IPL) and the Iowa Association of Electric Cooperatives (IAEC)?

OCA

OCA's understanding of the utilities' renewable energy programs is that customers may pay a premium to purchase renewable energy through the renewable energy programs. These programs do not allow customers the option to own or derive benefits from DG ownership that are available to DG owners through net metering or direct QF sales to the utility. Due to these differences, the utilities' renewable programs are not as effective in advancing Iowa's renewable energy policy as net metering and are not an equivalent participation option for customers.

ELPC et al.

See response to number 1.

Andrew Johnson – Winneshiek Energy District

Virtual net metering is different from renewable energy purchase programs because it extends existing net-metering rights to own and generate power to those that cannot feasibly have behind-the-meter generation.

Chris Hoffman – Moxie Solar, Jason Hall, Jean Marie Hall, Jennifer Hall, and Kami Ahrens

Virtual net metering must be available to all customers. A full service utility has the capacity to offer both virtual net metering and renewable energy purchase programs; they are not mutually exclusive.

Larry Grimstad – Decorah Solar Field, LLC and William H. Ibanez

Virtual net metering must be available to all customers. Customers who do not have a good site for DG should be allowed to own their production facilities at an off-site location.

Luther College

There is a substantial difference between owning a net-metered alternate energy system and purchasing environmental attributes of a system. Luther illustrates that in the long term it makes more economic sense for Iowans to invest in and own a renewable energy system either located at their home, business, or in a community solar garden. The renewable energy purchase program may be more attractive to non-profits that cannot take advantage of the federal or state tax credits.

Maureen McCue MD PhD – Iowa Chapter of Physicians for Social Responsibility

Purchasing power through the utilities' renewable programs is not the same as allowing Iowans to own their own systems. Utility approaches to control, cap, manage, or block virtual net metering are barriers slowing the rapid installation of DG systems across Iowa.

- 3. MidAmerican Energy Company (MidAmerican) suggests that if combined heat and power (CHP) or waste heat to power (WHP) facilities were considered eligible for net metering, the Board should retain the 500 kW size cap and the requirements that they be at one site and used primarily to serve the facility owner, as it is in its Rate NM. Do you have any additional comments on this proposal?**

OCA

The OCA does not recommend expansion of the 500 kW net-metering cap or making net metering available to generators that do not meet Iowa's AEP definition.

MidAmerican has taken positive steps to improve its standby and supplemental power tariff rate design through more favorable terms for demand ratchets. MidAmerican's current rate structure for standby service is a significant step forward for the development and promotion of CHP and WHP in Iowa. Any additional steps to improve the development of CHP in Iowa is better served by eliminating barriers in the current rate design for standby tariff than through net-metering programs. Net metering was adopted by the Board in order to advance Iowa policy that seeks to encourage alternative energy production facilities. Net metering is presently available only to AEPs as defined in Iowa Code § 476.42. The Board drew a distinction between renewable AEP facilities and nonrenewable PURPA QFs (or cogeneration) in making the net-metering rule available only to renewable AEP facilities.¹⁶

While CHP and WHP offer potential energy efficiency benefits, they do not necessarily involve renewable energy AEPs. CHP/WHP facilities are frequently much larger than the 500 kW cap approved for investor-owned utilities' net-metering tariffs. The 500 kW limit is a compromise between utility concerns about net metering and Iowa policy that seeks to encourage renewable energy development. The compromise has been successful in advancing renewable energy policy by making net metering available to residential and small commercial customers. With net metering, it is not necessary for residential and small commercial owners of QFs to negotiate PURPA purchase agreements, whereas larger QFs are typically in a better position to negotiate appropriate long-term PURPA purchase rates with the utility.

ELPC et al.

The existing net-metering rules appear to allow net metering of CHP if it uses a fuel source included in the definition of an AEP facility for at least 75 percent of its fuel needs. ELPC et al. has also encouraged removing the cap on net-metered projects and suggested, instead of limiting the system size to 100 percent to 120 percent of customer load or average annual consumption to help prevent building oversized systems.

¹⁶ IUB Staff Gold Memo, page 4, dated April 18, 2014, issued May 12, 2014.

Alliance for Industrial Efficiency

The Board should lift the existing 500 kW cap on net metering for DG and should expand net-metering policies to include CHP and WHP technologies. Without net metering, CHP/WHP project developers must pursue interconnection and power purchase agreements which increase the transaction costs for these projects. Net metering is a simple mechanism that allows CHP/WHP projects to maximize their efficiency by sizing the system to meet thermal load while simultaneously improving the financial viability of a project. MidAmerican's suggestion to cap net metering to 500 kW for CHP/WHP projects would not encourage CHP/WHP projects in Iowa. There are a number of states¹⁷ that have a higher cap that are for CHP/WHP projects. Net metering can provide a crucial incentive for many CHP/WHP projects.

MCA

CHP facilities that are fueled with an eligible resource under the Alternate Production Standard are eligible for net metering, and WHP facilities are fueled by recovered waste heat from production processes and are also eligible. Iowa should adopt a net-metering provision for all qualifying cogeneration production similar to that provided for alternate energy production and establish a cap of 3 MW.

MCA believes net metering is a simple, straight forward means of selling power back to the grid for any DG system but is particularly appropriate for CHP systems because excess electric energy is often generated and sales to the grid help offset CHP system costs. To maximize efficiency, CHP systems are sized to meet the host's thermal load but where thermal loads are proportionately greater than electric loads, excess electricity may be produced. It is possible for the CHP facility to be reduced in size so no power is exported, but then the system would not be optimized. Optimizing the CHP system to provide as much thermal energy as possible and being able to sell any accompanying excess electricity helps determine whether the system is financially viable for the host facility.

MidAmerican's proposed 500 kW cap is arbitrary and too low to encourage additional CHP/WHP development in Iowa. Many states across the U.S. have included CHP/WHP as eligible technologies under net-metering rates and have expanded their net-metering cap to the capture benefits provided. Iowa should follow Maryland's example and raise the net-metering threshold to 3 MW and even higher thresholds for CHP systems located in grid constrained areas.

Andrew Johnson – Winneshiek Energy District

Mr. Johnson supports comments from Luther College which encourage the Board to consider allowing net metering for cogeneration and raising the 500 kW cap to levels more appropriate for customer classes. Raising the cap to reflect customer class usage and providing a cash-out option will continue to maintain simplicity and fairness,

¹⁷ Florida and Utah allow net metering for CHP projects up to 2 MW; Pennsylvania allows net metering for non-residential CHP projects up to 3 MW and up to 5 MW for emergency systems. Minnesota raised the limit to 1,000 kW (from 40 kW).

maximizing customer benefits with minimal utility impact, and may avert the need for Iowa to adopt a feed-in tariff in the near future.

Chris Bair – Grinnell College

The cap for net metering should be based on the average amount of consumption, preferably 100-120 percent.

John E. Carpenter

Mr. Carpenter generally supports MidAmerican's position since DG sites with high capacity require significant cooperation with the utility.

Luther College

Prior comments by Luther College have addressed the merits of a CHP system to serve the college but not in relation to net metering since the system would be fueled by natural gas which currently does not qualify for net metering.

Maureen McCue MD PhD – Iowa Chapter of Physicians for Social Responsibility

Rather than a specific cap, the goal should be flexibility and should remove barriers to established and emerging energy options that lower carbon intensity while increasing the efficacy of non-fossil fuel based sources. CHP and WHP that reduce greenhouse gas and environmental pollution within a specific location should be encouraged.

- 4. As with virtual net metering, there are legal issues discussed by both IPL and MidAmerican such as whether the delivery of excess power from a CHP facility would be considered a wholesale transaction subject to Federal Energy Regulatory Commission (FERC) jurisdiction and the claim that CHP and WHP facilities are not included in Iowa's alternate energy production (AEP) definition. Provide any comments you have on this topic.**

OCA

See the OCA's response to Question 3.

ELPC et al.

Since net metering is not a sale, energy produced by a CHP or WHP facility under net metering would not be considered a wholesale transaction. Cogeneration is included as a QF under 18. C.F.R. pt. 292, sub-point B, so it fits under Iowa's statutory alternative energy production definition. However, the alternative energy facilities' eligible fuels are limited by the Board's chapter 15 rules which do not include natural gas. Therefore, many CHPs would not be eligible under the net-metering rules since natural gas is the most common fuel for CHPs. Some members of this coalition would support the inclusion of natural gas, "provided minimum efficiency levels are required along with other appropriate requirements."

MCA

This legal question is not limited to CHP systems, but rather to all systems that deliver excess power to the utility. MCA does not believe the sale of excess power to a utility

via net metering is a wholesale transaction regulated by the FERC. Iowa has exercised its authority to regulate CHP systems by adopting: 1) regulations that govern the interconnection and sale of power from cogeneration facilities to Iowa utilities (199 IAC chapter 15); 2) regulations embodying an energy efficiency resource standard that include CHP systems (See 199 chapter 36); and 3) an Alternative Energy Production law that requires IOUs to own or contract a total of 105 MW of power from alternate energy producers (See Iowa Code § 476.41). Additionally, Iowa affirmatively regulated net metering which applies to CHP systems that qualify as an alternate energy production facility. MCA recommends Iowa expand its net-metering regulations to include all qualifying cogeneration production as defined under 199 IAC chapter 15 which would bring Iowa in line with a number of other states.

Luther College

The delivery of excess power from a qualified CHP facility does not result in a wholesale transaction if the excess power simply results in a bill credit.

- 5. MidAmerican and IPL believe that it is more appropriate for larger CHP and WHP facilities to be served under the standby tariff. Do you agree? Explain why or why not.**

OCA

The OCA agrees that it is more appropriate for larger CHP and WHP facilities to be served under the standby tariff.

There are significant differences between small DG facilities eligible for net metering and the much larger CHP and WHP facilities that warrant different tariff and policy approaches. The energy and demand savings offered by a net-metered customer represents a very small share of overall utility resource planning. On the other hand, CHP/WHP customers are much larger and contribute much more significantly to utility resource planning and investment. In the past, utilities have designed supplemental power and standby service tariffs in order to assure recovery of costs for supplemental capacity when the CHP system is not operating. Now, instead of carrying capacity needed to meet such periodic or unexpected CHP/WHP demands, utilities have access to regional energy and capacity markets that allow them to more efficiently meet periodic or unexpected CHP/WHP customer demands. These changed market opportunities have allowed some utilities, MidAmerican in particular, to relax the demand charges in supplemental and standby tariff rates that otherwise pose significant barriers to CHP/WHP development. CHP/WHP installations also present significant energy efficiency opportunities that should be supported. The revised supplemental and standby service tariff structure adopted by MidAmerican helps support these efficiency opportunities. Further support of CHP/WHP should be done through:

1. Early identification and development of CHP/WHP opportunities in new industrial facilities, which can be incorporated in utility resource planning processes and offers greater efficiency benefits and less risk of stranded

utility investment as compared to CHP/WHP projects undertaken at existing facilities; and

2. The elimination of unnecessary tariff barriers that impede CHP projects from being economically viable.

ELPC et al.

Standby tariffs can present a barrier to CHP development. The ELPC and IEC wanted these tariffs to be more transparent, flexible, and provide incentives for economically efficient consumption, and they have worked with MidAmerican to make improvements to the standby tariff. Although not perfect, it can support the development of CHP in some circumstances. IPL's standby tariff provides barriers by including high demand charges, high standby charges, and a peak summer demand ratchet along with other problems, and it does not recover costs from standby customers in a way that is consistent with how those customers incur costs. As an example, Luther College, as a customer of Alliant Energy, could not do CHP project because it was not financially viable with a 55-year payback. However, if it were MidAmerican's customer, the payback would have been 15 years.

Alliance for Industrial Efficiency

Net-metering rates and full requirement rates include provisions for a utility to recoup demand-related costs. A utility should not be able to impose standby rates to net-metered customers. For CHP projects that exceed the net-metering cap, the utility may incur additional cost to provide supplemental, backup, and maintenance service. Where a utility can demonstrate such costs exist, standby charges are appropriate. The Alliance for Industrial Efficiency supports the approach used in MidAmerican's standby rider which represents a fair compromise between the utility's interest in recouping costs and the state's desire to encourage CHP/WHP development.

MCA

Under current Iowa law, net-metered customers are not required to be on a standby rate. A utility should not be able to impose a standby rate on a net-metered facility or under a power purchase agreement if the charges exceed the actual costs incurred by the utility. The Board should review the unbundled elements of the standby charges to determine when they are appropriate. MCA supports elements of the MidAmerican's standby rider which appears to be a compromise between the utility's interest in recouping costs and the DG owner's interest in recouping its costs. However, MCA believes IPL's standby rider is burdensome for CHP/WHP customers, because it does not tie the monthly reservation charge to a unit's forced outage rate and the transmission reservation charge assumes all standby customers will be offline simultaneously at the utility's coincident peak. The Board should address the inequity in IPL's region.

Golden Renewable Energy, LLC

Standby rates can be a barrier for CHP development in Iowa. Golden Renewable Energy, LLC, endorses comments made previously by the Alliance for Industrial Efficiency and supports MidAmerican's standby rider.

John E. Carpenter

DG facilities over 500 kW should be served by the standby tariff.

Luther College

It is more advantageous for the utilities if CHP/WHP facilities are served by standby tariffs because the rates are less attractive financially for the DG facility than the net-metered rate. Prior comments from Luther College focused on the significant disparity between the standby tariffs of MidAmerican and IPL. Luther recommends the Board require IPL to revise their standby tariff and bring it in line with MidAmerican's rates. Luther urges the Board to endorse CHP and WHP systems as ways to "conserve our finite and expensive energy resource and provide for their most efficient use."¹⁸

Questions for Utility Participants

- 6. Several commenters assert that including CHP and WHP projects as eligible facilities in the net metering rules would encourage the development of small CHP and WHP projects. Assuming it is legally possible, would you object to including these types of projects as facilities eligible for net metering if they fall under the 500 kW size cap? Explain why or why not.**

IPL

Very large CHP facilities should continue to take service under the Standby and Supplementary Service tariff. However, if legal, IPL believes that CHP and WHP facilities could be eligible for net metering if under the 500 kW cap. Expansion of any provisions under net metering should not occur prior to resolving the rate design and net-metering issue.

(Note: Extensive discussion was provided on transmission costs being passed on to DG customers whether they use it or not; a throw in comment under this question.)

MidAmerican

MidAmerican does not believe an expansion of net metering to include CHP and WHP projects in its current form is appropriate since net metering does not result in rates for utility service provided to DG customers recovering the full costs of that service; and only by coincidence would it result in DG customers being compensated for DG energy delivered to the grid commensurate with the value of that DG energy at the time of delivery.

IAEC

¹⁸ Iowa Code § 476.41

RECs likely extend net metering to CHP or WHP facilities to the extent that they are a QF and the REC has net metering as part of its PURPA implementation plan. These facilities would be subject to the same limitations that apply to all generators under the REC's policies. With respect to the rate-regulated utilities, the Board has limited the net-metering policy to AEPs, which excludes CHP or WHP facilities. The Board needs to determine the rationale or goal behind net metering before including these facilities.

IAMU

Municipal electric utilities are not subject to the jurisdiction of the IUB in regard to net metering. The local governing body of the municipal utility is in the best position to make a determination as to the type and size of facility eligible for net metering.

Questions for All Participants

- 7. MidAmerican states that a cash-out option may require Federal Energy Regulatory Commission (FERC) approval because it may be considered a wholesale transaction instead of a net metering arrangement. Do you agree? Explain.**

IPL

The cash-out option could be viewed as a wholesale sale under the Federal Power Act. The D.C. Circuit Court held that if the energy is supplied for resale, a wholesale sale takes place. However, utilities cannot be compelled to buy energy at wholesale other than from QFs under PURPA. Therefore, a customer who chooses a cash-out option may be required to have FERC-approved market-based rate authority or exemption as a QF to be able to sell power at wholesale. IPL notes, however, that at least 19 states have a cash-out provision in their net-metering rules.

MidAmerican

FERC has created a specific and limited exception for net metering from FERC's exclusive jurisdiction over sales for resale. In FERC's view, no sale for resale is deemed to occur under net metering during the billing cycle, as long as the net-metering customer is not paid for any DG production in excess of personal use. However, at the time of net-metering reconciliation, a sale for resale does occur if the net-metering structure provides for a cash-out of any DG/net-metering production in excess of personal use existing at the time of the reconciliation. This sale for resale will not require the net-metering customer to have a FERC-approved rate on file, as long as the sale price is at a state-approved avoided-cost rate. That said, a state cannot compel a regulated utility to pay more than its avoided cost for power purchased from a net-metering customer. More specifically, a customer-generator, whether a net-metering customer or not, may make a wholesale sale of power without being subject to FERC regulation under circumstances, which vary depending on its size.

IAEC

Some RECS allow customers to cash out using the avoided-cost rate. The Board net-metering rule was determined through a settlement where it was declared that the net-metering arrangement is not a purchase or sale; therefore, it does not violate PURPA's prohibition of a utility paying more than the avoided cost for the excess output. It will be difficult to support that the net-metering arrangement does not constitute a purchase if cash-out is required. If the cash-out was allowed, using a retail rate would violate PURPA.

IAMU

Municipal utilities are not subject to FERC jurisdiction.

OCA

Net metering is an accounting mechanism. As long as the cash-out takes place at the end of the approved net-metering accounting period, this should not cause net metering to result in wholesale transactions subject to FERC jurisdiction.

ELPC et al.

To avoid FERC jurisdiction issues, the cash-out needs to be the utility's avoided-cost rate. However, the avoided-cost rate needs to quantify the many benefits from DG such as reduction in system losses, avoidance or deferral of distribution and transmission investments, localized grid support, fuel-price certainty and reduced air emissions and water use. Based on recent studies, many of the benefits exceed residential retail rates. Rolling over energy credits also works well; however, it does not provide an incentive for the customer to pursue energy efficiency.

MCA

The fact that there is a cash-out option is not relevant to the question of the division of state and federal jurisdiction. Five other states¹⁹ provide a cash-out option in the case of net excess generation.

The Alliance for Solar Choice (TASC)

TASC supports the current, indefinite rollover of excess net-metering credits but also supports allowing net-metered customers to decide to cash out a net balance annually if they prefer to do so. According to the FERC, any sale of excess electricity generated over the state-determined net-metering period must be compensated at the utility's full avoided-cost rate.²⁰ Approval from the FERC is not required for the cash-out process.

Chris Hoffman – Moxie Solar, Jason Hall, Jean Marie Hall, Jennifer Hall, Kami Ahrens, Larry Grimstad – Decorah Solar Field, LLC, and William H. Ibanez

Iowa utilities should seek approval from the FERC to provide a cash-out option if needed; and if the FERC does not approve, the utilities should provide the cash-out option independently because it is what customers want. The cash-out option

¹⁹ Ohio, Minnesota, Wisconsin, North Dakota, and Nebraska.

²⁰ 18 C.F.R. § 292.304

encourages development of clean energy and can provide the capital to fund that development.

Luther College

The cash-out option is driven by the uncertainty of what happens when a property owner sells a home/business with a net-metered system. Currently, the surplus is associated with the bill-payer not the property which means a surplus is forfeited when a sale takes place. If the surplus was transferred to the bill of the new property owner, then that value could be factored into the property sale price.

8. Provide comments on MidAmerican's assertion that a cash-out option encourages overbuild of a DG system.

IPL

If there is no cap on a cash-out option, customers may overbuild their DG system. The payback period will be lower if the cash-out is at the utility's retail rate. This leads to higher cash flows once the payback is complete.

MidAmerican

To the extent the cash-out price paid to the net-metering customer exceeds the value of the energy at the time it was produced, the net-metering customer is encouraged to overbuild. Further, overbuild is encouraged if the overbuild allows the net-metering customer to avoid paying the full costs of the utility service that the net-metering customer uses. MidAmerican's comment is made in the context of the current net-metering situation, where customer production is being subsidized by a credit equal to the full retail rate. This concern would be lessened if the cash-out option is constructed using the rate structure described in MidAmerican's response to Question 16 and the cash-out amount is based on the value of that energy at the time it was purchased by the utility.

IAEC

The cash-out option could reward consumers who over build their DG system. The Board should not encourage excess production.

IAMU

Net-metering policies adopted by municipal electric utilities are typically intended to accommodate small DG systems that are sized to offset the electrical usage of individual customers, and not to sell any significant quantity of electricity to the utility. If a DG system is designed and sized appropriately to offset the customer's electrical usage, there should be little or no net excess energy delivered to the utility over the course of the year. Some municipal utilities that have adopted a net-metering policy have included a cash-out policy, often priced at the utility's avoided cost.

Issues related to DG rates, charges, and pay-out options are best decided at the local level through the municipal electric utilities' local governing bodies.

The IAMU contends that DG energy providers should not be over compensated and rates paid to DG owners should reflect avoided costs of the utility. Anything more creates a subsidization of DG customers by other customers of the utility.

OCA

Iowa has not utilized a monthly cash-out option, so it is difficult to assess MidAmerican's assertion. The OCA does not believe that a cash-out option creates inappropriate or misplaced incentives to DG participants. Excess generation priced at the utility's avoided cost should be considered by the utility system in planning and properly compensated.

ELPC et al.

If the avoided-cost rate properly accounts for benefits that DG provides the electric utility system, the net excess generation would be compensated at the value the systems provide to the utility and all ratepayers. Any concern about existence of net excess generation is alleviated if the compensation is fact-based. Cash-out encourages energy efficiency because any reduction in energy use can produce excess credits. ELPC et al. believes Iowa needs to conduct an independent valuation of DG to address these issues.

TASC

A cash-out option that involves an annual payment at the utility's avoided-cost rate will not encourage oversizing of DG systems because avoided-cost rates are insufficient to support that result.

Andrew Johnson – Winneshiek Energy District and Maureen McCue MD PhD – Iowa Chapter of Physicians for Social Responsibility

There is no such thing as an overbuilt DG system. The common challenge is adapting to the physical, regulatory, and market structures to handle it.

Chris Hoffman – Moxie Solar, Jason Hall, Jean Marie Hall, Jennifer Hall, Kami Ahrens

To suggest that Iowa utilities could reach an overbuilt DG situation any time in the near future is misleading.

Larry Grimstad – Decorah Solar Field, LLC and William H. Ibanez

The DG system is far from being overbuilt. Once the smart grid system has been developed (including the use of power storage) and all power comes from renewable energy, there may be a need to cap the capacity of production facilities or there may need to be a reduced price paid to DG owners.

Luther College

If the cash-out is at the retail rate, that may encourage overbuilding of the DG system, but that can be mitigated by limiting the amount of surplus that can be cashed out.

9. **Some commenters recommend setting a cap on the amount of cash-out the customer could receive.**
- a. **Do you agree that a cap is needed?**
 - b. **If yes, at what level and why that level?**

IPL

IPL supports a cap of 110 percent of the customer's annual energy requirements if using the current rate design with a cash-out option. This reduces the incentive to overbuild the system. No states report a specific cap for cash-out payments but cap the system capacity. (See the Database of State Incentives for Renewable and Efficiency website).

MidAmerican

A size cap would be helpful in removing the incentive to overbuild. Previously MidAmerican suggested a size cap set at 5 percent or less of the customer's production.

IAEC

Because the IAEC does not support a mandated cash-out option, it is not commenting on this further and notes that the Board does not have jurisdiction over the RECs.

IAMU

See response to Question 8.

OCA

The OCA would not be opposed to a reasonable cap if circumstances warrant, but does not have a recommended cap at this time. To answer these questions, the OCA would want to consider more detailed utility information about the frequency and degree to which cash-out would arise for net-energy metering customers and the extent to which cash-out could hinder the utility's ability to recover its fixed costs.

ELPC et al.

See ELPC et al.'s response to Question 8.

TASC

There is no legal basis under PURPA for setting a monetary limit on the amount of payments a QF customer may receive.

INEDA

There should be a cap on the cash-out amount to create a disincentive for DG developers/owners to overbuild. INEDA is willing to participate in a discussion to determine the details of a cash-out option.

Andrew Johnson – Winneshiek Energy District

If net-metering caps are raised and set by customer class, but the Board desires a cash-out cap, it could be set at 120 percent of total annual usage – at retail rates.

Chris Hoffman – Moxie Solar, Jason Hall, Jean Marie Hall, Jennifer Hall, Kami Ahrens, Larry Grimstad – Decorah Solar Field, LLC, and William H. Ibanez

No cap is necessary. Customers should be allowed to build larger DG systems and receive larger cash-out payments so clean energy systems are built faster.

Luther College

Luther College supports a cash-out option only if it is paid at retail rates – not avoided-cost rates. If the cash-out is paid at the net-metered rates, a cap of 20 percent above a three-year average of annual consumption may be reasonable since system owners can't control production of a wind or solar system.

- 10. If the customer is allowed to cash-out a net balance, should it be:**
- a. On a monthly basis or an annual basis? Explain why.**
 - b. Required or optional? Explain why.**

IPL

To compensate the customer appropriately, IPL supports requiring a cash-out of the net balance at an avoided-cost rate. "The timing of the payout is a function of administrative burden and customer expectations."

MidAmerican

The cash-out should occur each billing cycle, which corresponds to a monthly basis. This would better match the likely value of the power produced with the prices used for the cash-out. If the cash-out rate does not contain a subsidy or if the amount of cash-out is limited so that overbuilding would not result, then it would be beneficial to require cash-out on a monthly basis.

IAMU

See response to Question 8.

OCA

Due to the significant variations in DG generation by month and season, cash-out should be on an annual basis. An annual cash-out would smooth out large variations and minimize administrative expenses.

ELPC et al.

The cash-out should be done on an annual basis if the goal is to have the customer size its DG to meet its annual load, and it would allow a DG system to take advantage of seasonal differences to smooth out energy production over the whole year. Customers should be given the option to cash out for the maximum flexibility.

TASC

TASC supports allowing net-metered customers to choose an annual cash-out option which would allow DG customers to utilize the full value of the electricity they generate throughout a one-year cycle, mitigating seasonal or monthly production variances. An annual cash-out would also be less administratively burdensome and more consistent

with other states. A cash-out option would be beneficial to residential PV customers with energy needs that change over the life of the system.

Andrew Johnson – Winneshiek Energy District

Both the letter and spirit of net-metering rules intend for an annual balancing, not monthly. Cash-out options should be available to the customer.

Chris Hoffman – Moxie Solar, Jason Hall, Jean Marie Hall, Jennifer Hall, Kami Ahrens, Larry Grimstad – Decorah Solar Field, LLC, and William H. Ibanez

A monthly electronic payment system would be simple and inexpensive. There is no need for the utility to maintain a customer's account payable and hold customer funds.

John E. Carpenter

Accounts between the DG facility and the utility should be settled monthly and paid in full upon termination.

Luther College

The system owner should be given the option to cash-out on an annual basis or when a net-metered property is sold.

Maureen McCue MD PhD – Iowa Chapter of Physicians for Social Responsibility

Those that install and contribute to DG should be given the option of whether to roll over or cash out at the end of the year.

11. Comment on the potential impact of IPL's suggested rule change that would consider net-metered kWh as a cost of purchased power recoverable through the energy adjustment clause.

IPL

It is appropriate to have a rule change since this energy is no different than any other energy purchased by the utility for customer use.

MidAmerican

MidAmerican would support IPL's suggested rule change. MidAmerican believes these costs would meet the Board's requirements for costs to be included for energy adjustment clause recovery.

IAEC

For the not-for-profit RECs, any increased costs from net metering will be recovered from its members who also are the consumers; there is no other source to recover the expenses. For IPL, the total purchase power would increase and that would increase rates.

IAMU

Municipal utilities are not subject to the IUB's regulations regarding the types of expenses that can be recovered through energy adjustment clauses.

OCA

Net metering does not result in discrete sales of electricity from the AEP facility to the utility during the net-metering accounting period and, thus, does not give rise to FERC jurisdiction. Treating net metering as a cost of purchased power would violate this accepted definition of net metering. Consistent with FERC's guidance on this matter, IPL ceased recovering net-metering costs through its energy adjustment clause and indicated its intention to addressing cost recovery for AEP contracts through base rates in future rate cases.²¹ In past rate cases, IPL has proposed modest adjustments to reflect lost margins associated with net metering.²² Additionally, net metering reflects an offset of avoided utility costs and it would be inappropriate to recover "avoided costs" through the EAC. The OCA is not aware of IPL proposing similar lost margin adjustments in more recent rate cases.

ELPC et al.

It is inconsistent to consider net-metered energy as purchased power when DG is not treated as a resource for planning purposes. The process for the utilities to recover actual costs should consider both the costs and benefits of DG and should be determined by conducting an independent value of solar study.

TASC

Banked kWh under a net-metering arrangement should not be considered a cost to the utility and not recovered through the energy adjustment clause.

Chris Hoffman – Moxie Solar, Jason Hall, Jean Marie Hall, Jennifer Hall, Kami Ahrens

IPL's suggestion would create additional confusion for customers and would open the possibility for utilities to manipulate the rules and compensation parameters of net metering.

John E. Carpenter

IPL's proposal would result in an opaque and confusing monthly statement.

Luther College

The rollover of bill credits for net-metered customers does not constitute electricity sales so there is no purchased power cost to recover through the energy adjustment clause.

²¹ IES Utilities Inc., and Interstate Power and Light Company n/k/a IPL, Order Approving Tariffs with Modification and Granting Waiver, Docket Nos. TF-03-180, TF-03-181, WRU-03-30-150 (WRU-99-38-150, WRU-99-39-151), page 6, (January. 20, 2004).

²² IPL, Docket No. RPU-04-1, (Direct Testimony of David Berentsen, page 11, Exhibit_DEB-1, Schedule D-34).

- 12. Although there was no consensus, the commenters discussed whether a cash-out rate should be based on the utility's avoided-cost rate or the utility's retail rate. Explain which one you believe is the appropriate rate and why.**

IPL

IPL supports the avoided-cost rate because a retail rate includes related costs that are not offset by distributed generation, and the avoided-cost rate is the appropriate price to pay since it could be considered an energy purchase of excess generation under PURPA rules. As support, IPL states that the 19 states that allow the cash-out option use an avoided-cost rate or factor less than the full retail rate such as the unbundled commodity energy supply rate. Additionally, by paying the retail rate, the customer is being compensating for costs that were not avoided (i.e., transmission and distribution charges).

MidAmerican

MidAmerican recommends that cash-out should be conducted by time-of-use (TOU) period assuming that TOU rates are in place for DG customers and that cash-out should be based on the utility's retail rate for generation service. Cash-out at retail rates for generation service signal that the utility's generation and the DG customer's generation are of equal value, that the utility's generation is not more valuable than the DG customer's generation, and vice versa. This arrangement provides for a direct comparison of the retail costs of utility versus distributed generation service that the DG customer can self-provide, while separating out the costs of other services that will continue to be provided by the utility.

IAEC

The avoided-cost rate should be used so the cash-out option is not challenged as unlawful for paying more than the avoided-cost rate for the energy. A source states that DG is more likely installed in rural areas which will put more upward pressure on electric rates for utilities that serve those areas.

IAMU

A cash-out rate, if available, should be based on avoided costs.

OCA

In order to abide by PURPA avoided-cost requirements, cash-out must be at the utility's avoided-cost rate.

ELPC et al.

The cash-out rate should be based on a properly calculated avoided-cost rate that considers the benefits that DG provides the electric utility system as discussed above.

TASC

Consistent with PURPA, the annual cash-out should be paid at the utility's avoided-cost rate, not the utility's retail rate.

Andrew Johnson – Winneshiek Energy District

The letter and spirit of net metering strongly suggest that the cash-out should be at the retail rate.

Chris Hoffman – Moxie Solar, Jason Hall, Jean Marie Hall, Jennifer Hall, Kami Ahrens, Larry Grimstad – Decorah Solar Field, LLC, and William H. Ibanez

DG customers need to be paid the retail rate to encourage the development of clean power.

Luther College

The cash-out should be retail rate. Cash-out rates at current avoided-cost rates would have a drastic impact on net-metered system owners – especially if the cash-outs were mandated.

William J. Pardee

The avoided-cost rate has many ambiguities. Mr. Pardee suggests paying based on the retail rate since it is unambiguous and transparent.

- 13. IPL and MidAmerican discuss connecting the meters on a DG customer's premises in order to aggregate meters, while the Iowa Nebraska Equipment Dealers Association (INEDA) believes no physical connection is necessary. Comment on this.**

IPL

IPL supports meter aggregation through its primary metering policy where the meters are located on contiguous pieces of property. This is where the customer is located at the same point on the distribution system and receives service from the same distribution line. The customer pays any additional costs for incremental service lines and transformers needed to consolidate metering. If the customer uses IPL's system to move electricity to different points on the distribution system that is retail wheeling, and the customer would be using distribution poles, wires, transformers etc. to accomplish this. IPL's investment in this equipment would be under recovered since the customer would be reducing energy provided at its load center. If there is retail wheeling across the transmission system, that system is owned by ITC Midwest and would be subject to FERC jurisdiction.

MidAmerican

INEDA and MidAmerican simply approach net metering from different perspectives. INEDA advocates expanding net-billing options to optimize customer-owned renewable energy generation. Although INEDA suggests there will be no revenue impact from meter aggregation, this may only be the case with a customer at multiple locations on a rate where customer charges are recovered equally from each block of the rate and there are no demand charges or other provisions that are triggered by a certain level of usage.

One of MidAmerican's key concerns is to make the practice consistent with its rate structure, tariffs and current business practices which ensure that there is no additional cross-subsidization by utility customers who choose not to net meter. MidAmerican's Rate NB applies net metering to facilities at any one geographic location or point of service which are intended to serve the owner of the net-billed facility. If aggregation is permitted under Rate NB, in order to meet the "one geographic location" standard, the properties would need to be contiguous, under common ownership, and all on the same rate. As a customary practice, MidAmerican typically has allowed aggregation of multiple secondary services to a primary metering point if owned by one entity. The load would need to be served off of one feeder line, all services would need to be charged the same rate, and the customer would need to own the secondary transformation and secondary lines to move the metering to the high side or pay excess facilities charges for dedicated facilities to consolidate the metering. These are the provisions upon which MidAmerican's revenue requirement is based.

IAEC

If the meters are not physically connected: 1) it is similar to virtual net metering, 2) the customer is not paying for the use of the utility's system, and 3) it could create a situation of wholesale wheeling which creates additional jurisdictional issues.

OCA

Net metering is an accounting mechanism that can be accomplished administratively without the need to connect meters on the DG customer's premises.

ELPC et al.

It is costly and unnecessary to build distribution lines to connect the meters on the same property for aggregate net metering. One benefit of aggregate net metering is that excess generation is consumed nearby and does not need to be transmitted long distances. Aggregate net metering can still work for one customer with multiple meters on different properties as long as the utility is compensated for the use of its distribution system.

INEDA

Connecting meters on a DG customer's premise might be a solution for some customers interested in aggregate metering. However, it would be cost prohibitive for large farm operations that would need additional infrastructure to connect the buildings and need to provide a conversion between single and three-phase consumption on the same site.

Andrew Johnson – Winneshiek Energy District

Mr. Johnson agrees with INEDA that meter aggregation does not require physical connection.

Chris Hoffman – Moxie Solar, Jason Hall, Jean Marie Hall, Jennifer Hall, Kami Ahrens, Larry Grimstad – Decorah Solar Field, LLC, and William H. Ibanez

DG facilities should be allowed to be in an off-site or on-site location and should be credited as aggregated meters for a utility customer. Limiting the number of meters aggregated discourages the development of clean, renewable energy.

Luther College

Luther College supports INEDA's aggregate metering recommendations.

- 14. MidAmerican suggests that meter aggregation needs to occur behind the meter and the utility's distribution system cannot be used to aggregate the meters; otherwise, FERC would consider it retail wheeling. Do you agree? Explain why or why not.**

IPL

IPL agrees with MidAmerican that meter aggregation needs to occur behind the meter to avoid violating state law. The Energy Policy Act states that no order requiring transmission service may be issued which is inconsistent with any state law which governs the retail marketing areas of electric utilities. The effect is that FERC cannot order retail wheeling if it would be inconsistent with state law that provides utilities with exclusive franchise areas.

MidAmerican

Meter aggregation involves using one renewable facility to serve multiple premises and using utility facilities to deliver the power. Unless the use of utility facilities to distribute power in this manner is already authorized under the utility tariff and the Board rules, it is retail wheeling under the Board's definition.

IAEC

The IAEC agrees.

OCA

Net metering is an accounting mechanism. Meter aggregation does not necessarily require actual connection of meters or wheeling of DG generation such that it would trigger federal jurisdiction.

ELPC et al.

ELPC et al. disagrees with MidAmerican's suggestion that aggregate net metering may be considered a wholesale sale subject to FERC regulation. It is not a purchase, so no sale occurs. The fact that there are several meters owned by one customer does not change that. For aggregate net metering to violate the service territory statute, it would have to fall under the public utility definition in Iowa Code 476.1 where the utility furnishes electricity to the public for compensation. The net-metering arrangement does not produce a sale that provides compensation.

INEDA

INEDA does not believe the FERC would consider aggregate net metering as retail wheeling. The question is how billing can be accomplished for a single customer with multiple meters. INEDA is willing to discuss how an additional billing fee might be applied to assist with costs associated with changes to the utilities' billing processes.

Andrew Johnson – Winneshiek Energy District

Mr. Johnson does not agree with MidAmerican's suggestions that virtual meter aggregation would be considered retail wheeling. Virtual meter aggregation within one customer is a metering arrangement between the customer and utility. Additionally, Mr. Johnson recommends the Board adopt virtual net metering that allows meter aggregation for a single customer with meters located on non-contiguous properties, as is common with local government and school districts.

Luther College

The owners of DG systems want to apply their production from a net-metered system to their total consumption, not just the consumption where that net-metered DG facility is connected. These owners want the surplus bill credits to be applied to their bills for other meters.

- 15. For more accurate reporting to the Board, the U.S. Energy Information Administration, and FERC, IPL suggested changing 199 IAC 20.9(2) to reflect that all energy produced in excess of that used by the net-metering customer would be considered an energy purchase. Do you agree with this suggested change? Explain your response.**

IPL

IPL agrees and references its response to Question 11.

MidAmerican

It is consistent with the Board's rules, as well as PURPA, to include any purchase costs associated with net metering as an energy purchase because net metering is no more than a method for facilitating energy transactions from small customers under PURPA.

IAEC

There could be legal issues if the excess energy produced by a customer is considered an energy purchase. The purchase is to be no greater than the avoided-cost rate under PURPA, but the credit is at the retail rate. Therefore, the Board may want to continue assuming the excess is not purchased.

OCA

Net metering is an accounting mechanism. Meter aggregation does not necessarily require actual connection of meters or wheeling of DG generation such that it would trigger federal jurisdiction.

ELPC et al.

If IPL's suggested change, to treat all energy exported as a utility purchase, was approved, Iowa's reporting would be inconsistent with the approach used by FERC for net metering. If IPL is suggesting that the kWh purchased under the cash-out option would be reportable, ELPC et al. agrees.

TASC

For net-metered customers who choose an annual cash-out payment at the utility's avoided-cost rate, those payments could be considered an energy purchase. Otherwise, there is merely an exchange of kWh between the DG customer and utility.

Andrew Johnson – Winneshiek Energy District

Mr. Johnson does not agree with IPL's suggestion because net metering is designed to allow an energy user to generate their power in a positive and fair relationship with the grid. Policy adjustments discussed in this docket would not change that.

John E. Carpenter

Mr. Carpenter agrees that electricity produced in excess of usage by the DG customer and delivered to the utility should be counted as an energy purchase by the utility.

Luther College

The rollover of bill credits for net-metered customers does not constitute electricity sales so there is no energy purchase to be reported.

- 16. IPL, MidAmerican, and the Consumer Advocate suggested a rate design change for DG customers such as a time-of-use (TOU) or demand rate. According to MidAmerican, this would remove any possible cross-subsidization between DG customers and non-DG customers. Is this a reasonable solution to this issue? Explain.**

IPL

Unbundling the energy and capacity charges for DG customers via a demand charge could have several positive effects. Rocky Mountain Institute (RMI) stated in an August 2014 report that "a demand charge more closely allocates cost of service based on a customer's load profile. Under this structure, energy charges are reduced (i.e., closer to wholesale energy costs) while the fixed costs associated with maintaining adequate capacity are separately recovered... A demand charge also begins to reduce intra-class cross-subsidies created between customers with different load factors." This report also suggests that TOU rates better aligns "the value of energy services provided by-and-to-the grid" where the customer interaction with the grid more closely matches the cost to generate, transmit, and distribute energy. This TOU tool reduces cross-subsidization when tied to net metering.

MidAmerican

If a rate design can be demonstrated to fairly and adequately recover the cost of providing utility service to DG customers, implementing that rate design will reasonably resolve cross-subsidization issues between DG and non-DG customers.

IAEC

To address the issue of cross-subsidization, there needs to be a modification of rates. Historically, fixed charges have been included in the volumetric charges to keep rates low for low-use customers. However, with "partial" requirement customers using the system, this business model needs to change with demand rates and TOU rates being two options to consider. If fixed costs could be recovered regardless of the amount of kWh consumed, that would lessen the chances of cross-subsidization.

OCA

If the Board determines that net metering is or will likely present significant cross-subsidization concerns, the OCA supports TOU rates as a reasonable and preferred approach for addressing such concerns. TOU sends appropriate pricing signals for consumers and customer-owned DG and thereby encourages appropriate DG installations. TOU rates are relatively straight-forward and more easily understood by residential and small commercial customers than a demand rate. Before making major rate design changes (particularly any increase in fixed customer charges) the Board should evaluate the extent to which material cross-subsidization is actually resulting from net metering of DG and significantly interfering with utility recovery of fixed costs. The appropriate policy response will likely depend on unique utility circumstances. Until then, the investor-owned utilities are required to offer the functional equivalent of non-time-differentiated net metering for all AEP facilities, in accordance with 199 IAC 15.11(5).²³

ELPC et al.

Before any rate design change is made, there needs to be evidence that cross-subsidization exists, the direction, and the magnitude. There are no data available in Iowa to determine whether DG customers have usage patterns that are different from residential customers generally or whether DG customers impose costs that are out of sync with their average fixed cost recovery through rates. ELPC et al. referenced a Utah Commission decision where PacifiCorp did not provide evidence "showing that the level of usage or the load characteristics of net-metered customers are materially different from the typical residential customer." Therefore, the Utah Commission rejected the utility's proposed rate design changes. Given the small number of net-metered customers on MidAmerican's system, there is no urgency to make rate design or policy changes. However, ELPC et al. does not oppose TOU rates, which have long been recognized as consistent with fairness and cost-causation principled, as long as it is done for the right reasons. It should be offered to all customers on a voluntary basis.

²³ IES Utilities Inc., and Interstate Power and Light Company n/k/a IPL, "Order Approving Tariffs with Modification and Granting Waiver," Docket Nos. TF-03-180, TF-03-181, WRU-03-30-150 (WRU-99-38-150, WRU-99-39-151), page 5, (January 20, 2004).

TASC

Both Iowa and Federal law prohibit discrimination against DG customers.²⁴ Under PURPA, rates are nondiscriminatory to the extent that the rates charged to a QF also apply to other customers with similar load or cost-related characteristics. The utility would have to demonstrate that the cost of serving customers that self-supply electricity with on-site generation varies significantly from the cost of serving customers with similar load characteristics that do not have on-site generation. TASC is not aware of any cost of service study or cost-benefit analysis conducted in Iowa that would justify such discrimination.

Andrew Johnson – Winneshiek Energy District and Maureen McCue MD PhD – Iowa Chapter of Physicians for Social Responsibility

Creating a new rate design or a customer class will be another cumbersome and arbitrary regulatory process that will not be an improvement compared to net-metering policy.

Chris Hoffman – Moxie Solar, Jason Hall, Jean Marie Hall, Jennifer Hall, Kami Ahrens
TOU and demand rates are more difficult for customers to understand and a less accurate method of measuring production of the DG facility.

John E. Carpenter

Electricity delivered in times of heavy demand might be worth more so there may be an upside to having a more flexible rate for DG customers. Mr. Carpenter is skeptical about cross-subsidization claims, because DG customers are utility customers and pay the same fees and taxes as the non-DG customers.

Luther College

Limiting the rate design to these two factors would be incomplete and unfair. The Board would benefit from studying Minnesota's Value of Solar tariff. The Board should also consider the consequences of increasing the fixed charges to recover demand-related expenses. With decreasing energy storage costs, a change in the net-meter rate design may encourage grid defection over time. Since the Energy Policy Act of 2005, TOU pricing is already available to all IOU ratepayers so no action is required by the Board.

William J. Pardee

Recent studies across the nation substantiate the fact that current net metering does not create cross-subsidization. TOU rates should only be applied if applied to all customers. Punitive actions against DG customers to protect utility profits will encourage people to go off-grid rather than working with the utilities.

²⁴ Iowa Code § 476.21 and 18 C.F. R. § 292.305(a)(1).

17. Comment on IPL's suggestion that DG customers should have their own specific customer class for rate design purposes since their load profiles and service needs differ from non-DG customers.

IPL

Placing DG customers in their own customer class is consistent with the Board's current ratemaking standards. Rule 199 IAC 20.10(2) states, "Rates charged by an electric utility for providing electric service to each class of electric consumers shall be designed, to the maximum extent practicable, to reasonably reflect the costs of providing electric service to the class." Section (b) states, "Customer classes shall be established on the primary basis of reasonably similar usage patterns within classes, even if this requires disaggregation or recombination of traditional customer classes." IPL believes that the load data for a DG customer will show that it warrants a separate class. However, it notes that rate design changes are normally handled in a rate case.

MidAmerican

MidAmerican agrees that the Board should consider approving separate rates and a separate rate group for DG customers (not just net-metered customers), whether as a separate class or a separate rate group within the DG customer's current rate class. It is a generally accepted principle in cost of service and rate design that groups of customers with demonstrably different load shapes and service requirements can be segregated into separate rate groups or classes for the purpose of cost of service. It can be clearly demonstrated that DG customers have different load shapes than regular residential customers. An alternative strategy is to develop an appropriate DG rate from current residential load data and demonstrate that those rates adequately recover the cost of providing utility service to DG customers. If it can be shown that a single rate design developed from current residential cost of service data adequately recovers the cost of providing service to both DG and non-DG customers, separation into separate classes is not needed, and the disadvantages of separating DG customers into a separate class would be avoided.

IAEC

Placing DG customers in their own customer class would be one way to deal with the cross-subsidization issue. Another option is unbundling rates to allow recovery of fixed costs regardless of the kWh consumed. Establishing appropriate rate design could resolve some the issues with DG expansion but the Board needs to ensure there are no unintended consequences of such a rate design change.

OCA

Based on current information, it is not clear that DG participants have load characteristics sufficiently different to warrant separate classes. A separate DG class may be justified depending on the results of class cost-of-service studies.

ELPC et al.

IPL provided no evidence that showed DG customers' load profiles and service differs from non-DG customers. Placing DG customers in their own customer class would

discriminate against renewable generation which would violate Iowa law. Iowa Code section 476.21 states:

A municipality, corporation or cooperative association providing electrical or gas service shall not consider the use of renewable energy sources by a customer as a basis for establishing discriminatory rates or charges for any service or commodity sold to the customer or discontinue services or subject the customer to any other prejudice or disadvantage based on the customer's use or intended use of renewable energy sources.

There are many examples where customers may have different load profiles such as customers implementing energy efficiency options, customers working from home versus the office, and the different sizes of homes. The following guiding principle was provided by several members of the Joint Commenters (i.e., ELPC et al.):

Insist Upon Non-Discriminatory Rate Practices and Policies: Utility rates should treat reductions in energy sales and utility revenues due to net metered solar and other [distributed solar systems] in a manner that is fully comparable to, and non-discriminatory relative to, reductions due to other consumer behaviors including energy efficiency and demand response. Any rate treatment not generally applied to all similarly situated customers must be cost-justified and seek to avoid unintended consequences. Furthermore, any utility charges created specifically for the purpose of recovering embedded fixed costs from customers with [distributed solar systems] systems must be cost-based, and should only recover *net* fixed costs, after accounting for all benefits and offsetting cost reductions due to the distributed solar. Similarly, any utility *credits* created for the purpose of assuring that economic benefits resulting from the deployment of [distributed solar systems] systems are properly assigned back to the [distributed solar systems] customer(s) should only reflect *net* benefits, after accounting for all utility costs.

TASC

Under both Iowa and Federal law, a utility may not establish separate rate classes for net-metered customers unless it can prove that the discrimination is justified.

Chris Hoffman – Moxie Solar, Jason Hall, Jean Marie Hall, Jennifer Hall, Kami Ahrens

A separate customer class for DG customers would discriminate against those interested in improving the environment, wanting to save money, or producing their own energy.

John E. Carpenter

Mr. Carpenter sees no real alternative to IPL's suggestion that DG customers should be a separate customer class and is open to separate rates for DG customers.

Luther College

Not all DG customers are alike. If unique rate classes are assigned to DG customers, then relevant differences need to be acknowledged and respected.

- 18. Some parties suggest that a study be done showing the benefits of DG compared to the costs of DG to determine if there is cross-subsidization.**
- a. Is this an appropriate approach to resolve this issue?**
 - b. Is this the appropriate time to expend the resources to conduct such a study or should the study be done when DG penetration reaches a level where it becomes a bigger issue for utilities?**
 - c. a level where it becomes a bigger issue for utilities?**
 - d. If your response to part (b) is that a study should be delayed until DG penetration increases, what level of penetration do you believe would justify the study?**
 - e. Who should perform the study?**
 - f. Who should pay for the study?**

IPL

- a. IPL believes that a study is not the way to determine whether cross-subsidization exists since the Board's rules, as discussed above, are based on the cost-based pricing structure where revenues by class are based on embedded cost determinations. The reported benefits are not yet or not able to be monetized. A report by the Edison Electric Institute states that the benefits to the utility through DG should be determined "...using a directly quantifiable approach that measures the net-cost impact of DG to the utility." It also states the benefits to society should not be directly accounted for in utility rates. Finally, IPL suggests that the Board change its current rate design rules explaining the process for monetizing benefits if it wished to utilize a benefit-based pricing approach.
- b. IPL suggests that if a benefits-based pricing approach is allowed that it be done within a rate case; this allows the parties to vet the issues and is consistent with past practice of other pricing issues.
- c. n/a
- d. n/a
- e. The customers will pay for studies through rates charged them unless done by third parties.

MidAmerican

MidAmerican is concerned that the results would be far from definitive. A look at outcomes of such studies in other jurisdictions makes it clear that depending on the assumptions that are made (which have wide variations and are hotly contested) the degree of cross-subsidization found can be significantly different. If the Board determines that such a study is needed, MidAmerican believes it is probably not cost-effective to use the resources to conduct it at this time. MidAmerican currently has fewer than 200 DG customers. The study should be performed when there is enough DG penetration that the discrepancy between the price paid and the value received is material. MidAmerican believes 10 MW of installed residential and small commercial DG would be a reasonable threshold for performing the study. This corresponds to

roughly 1,000 typical residential and small commercial DG systems. The study should be performed by a reputable third party with substantial relevant utility industry experience. Depending on the cost of the study, it may be appropriate to recover the costs through a rider assessed to all electric customers in Iowa.

IAEC

If there is to be a study examining the costs and benefits from DG, the utility is best suited to complete the study. The increasing penetration of DG can impact each utility differently. The IAEC points out that the Board, through an ALJ decision, found that a cooperative violated Iowa Code § 476.21 by establishing a separate rate for co-generators. The ALJ stated, "...if the electric utility is able to prove cost-based justification for serving any particular class of customers pursuant to different terms and conditions, then the utility is treating differently-situated customers in a different manner, an appropriate situation. It is only when the utility is not able to establish a neutral, cost-based rationale for its differing treatment that it may be said to discriminate among consumers in an unlawful manner." The Board needs to explain further what type of evidence would be sufficient to treat DG consumers differently.

IAMU

The IAMU supports policies that encourage financially sustainable methods for compensating DG owners for energy and other benefits that are supplied to the utility grid, while ensuring that non-DG customers are not required to subsidize those DG owners. The IAMU has been working to educate municipal electric utilities on the potential costs and benefits of DG to the grid and will continue to do so. While the benefits and costs of DG to the grid may be generally applied to all utilities, the magnitude of any costs and benefits may vary significantly between utilities. For example, the costs and benefits of a given DG system are likely to be different for small municipal utilities with an all requirements power supply contract serving several hundred customers compared to a municipal utility that owns generation and transmission assets and serves several thousand customers. Municipal utilities and their joint action agencies are best situated to determine the costs and benefits of DG to the grid.

OCA

This is a valid approach for evaluating cross-subsidization and may shed additional light on the merits of net-metering policy. It is appropriate to evaluate the extent to which cross-subsidization presents a real and material issue before implementing significant changes to net metering or other renewable energy policies in order to address concerns about cross-subsidization. It is not clear that DG penetration levels in Iowa will reach levels that make cross-subsidization a real issue that demands a change in net metering or other renewable energy policy which is partly due to Iowa's relatively low electricity rates. The OCA does not currently have an opinion on what DG penetration level would justify the study. Any study should be conducted by an independent entity commissioned by the Board and the costs should probably be shared between utilities and ratepayers.

ELPC et al.

- a. There needs to be an independent study to determine if there is actually cross-subsidization, the direction of the cross-subsidization, and, if there is any, the amount of cross-subsidization. Any rule change or rate design change could have an adverse impact on renewable energy development, so any change should address a "real, well understood concern."
- b. Current DG penetrations levels are low in Iowa to justify a study. The penetration level is 0.57 percent of total utility customers. However, a study should be done before any significant policy or rate changes are made.
- c. LBNL has conducted a study modeling impacts on two different types of utilities over a 20-year period. It found the impacts on revenues and costs for a vertically integrated utility are almost equivalent at a 2.5 percent PV penetration scenario. LBNL suggests that when Iowa reaches a 1 percent penetration level, a study should be done. Distributed PV would need to reach 120 MW to reach this penetration level; the solar PV level is 7.4 MW for IPL, MidAmerican, the IAEC, and the IAMU collectively as of the end of 2013, with a few systems included from 2014.
- d. An independent consultant, selected by the Board, should do the study, such as Crossborder Energy, Clean Power Research, Synapse Energy Economics, and Black & Veatch.
- e. The utilities should fund the study if they are pushing for rate design and/or policy changes in the short term. They should have the study conducted independently. If there is more time to fund a study, ELPC et al. and other stakeholders could encourage the legislature to fund an independent study.

TASC

Although TASC supports conducting a study to compare and analyze the costs and benefits of customer-sited DG systems in Iowa, the DG market in Iowa has not developed sufficiently to justify the resources needed to conduct that study. It would be more appropriate to conduct the study when the DG market has exhibited broader growth.

TASC notes that a study of the costs and benefits of Nevada's net-metering program concluded that net metering will present a net benefit for non-participants in 2014 and 2015, with a nearly neutral impact in subsequent years.²⁵ Currently Nevada ranks sixth among U.S. states in terms of installed PV capacity, with a total of 424 MW.²⁶ TASC suggests it would be appropriate to conduct a study when the aggregate capacity of net metering in either MidAmerican's or IPL's service territory reaches 3 percent of the utility's previous year's peak demand or three years from the date of the Board's final order in this proceeding. A rigorous examination of the costs and benefits of DG

²⁵ *Nevada Net Energy Metering Impacts Evaluation*, Prepared for the Nevada Public Utilities Commission by Energy + Environmental Economics, July 2014. Available at http://puc.nv.gov/uploadedFiles/pucnvgov/Content/About/Media_Outreach/Announcements/Announcements/E3%20PUCN%20NEM%20Report%202014.pdf?pdf=Net-Metering-Study.

²⁶ *U.S. Solar Market Trends 2013*, Interstate Renewable Energy Council, Inc., page 29, July 2014. Available at <http://www.irecusa.org/wp-content/uploads/2014/07/Final-Solar-Report-7-3-14-W-2-8.pdf>.

requires an unbiased analysis conducted either by the Board's staff or an outside consultant.

Andrew Johnson – Winneshiek Energy District

Based on the utility data submitted in this docket, the market penetration of DG does not suggest urgency in policies restricting DG growth or net metering even if cross-subsidization were a valid issue. If the bulk of future net-metered DG is solar PV, then Iowa could look at Minnesota's Value of Solar methodology and tariff rather than create a new study. However, Minnesota does not account for the positive value of distributed investment/distributed risk from DG which is the value of capital invested by DG owners that non-DG ratepayers will not need to cover and regulators will not have to approve. If cross-subsidization is to be a serious issue of study, Mr. Johnson suggests that subsidization of industrial and large commercial customers by the residential class be analyzed at the same time, independently of DG.

Chris Bair – Grinnell College

Based on the current DG penetration there is likely no cross-subsidization occurring. When cross-subsidization is quantified, both the costs and benefits should be included, similar to Minnesota's Value of Solar approach.

John E. Carpenter

There are many opportunities for more study of DG architecture within an electrical grid maintained by the utility. An electrical engineering graduate student studying power distribution or utility engineer could model various scenarios. The utilities should fund and publish these studies and file them with the Board.

Luther College

Minnesota has explored the cross-subsidization issue with respect to solar DG systems and has found that, on average, the economic benefits associated with solar systems are very similar to the costs to deliver power to other customers. The same is likely true for wind turbine systems. When these factors are considered, it is clear that owners of net-metered alternate energy systems are subsidizing other grid customers. Based on data filed in this docket, net-metered systems do not represent a significant amount of market penetration. This low level of net-metered DG market penetration does not justify the expense of a study focused on cross-subsidization. If and when a study is conducted, it should be done and paid for by the Board.

19. INEDA points to Minnesota, Illinois, Arizona, and Colorado meter aggregation rules for Board consideration. Could any of these approaches be appropriate for Iowa?

IPL

Aggregation rules in Minnesota and Colorado are consistent with the requirement for the aggregation to be associated with a contiguous property of the same owner. This allows IPL to apply its primary metering policy to meter aggregation. Illinois is a retail

choice state so IPL assumes that since customers have choice of the generation provider, distribution charges are unbundled and would be recovered by the customers.

MidAmerican

MidAmerican believes that aggregated net metering should involve facilities "behind the utility meter" to avoid cross-subsidization of other customers, unnecessary complexity in billing, and the need for retail wheeling. Should the Board wish to pursue meter aggregation, the following provisions that are reflected in some of the states' rules should be part of any program in order to be consistent with those principles:

- Aggregated meters should be on contiguous parcels.
- Some level of common ownership.
- Aggregating customers should be on the same rate schedule.
- Applies only to charges using kWh as billing determinants.
- Include a reasonable fee for meter aggregation.
- Limited to customer load only.

IAEC

There are several states that allow meter aggregation, but no standard exists for its treatment. "Common to many meter aggregation eligibility requirements are the requirement that such meters are all in the name of one customer, are each on a rate with the same utility, and that the customer prioritize the meters with regard to application of excess production credits." Before the Board adopts any meter aggregation policy, it needs to monitor the success in other states that dealt with the complexities that may impose costs on utilities, the difficulty of tracking customers that move between service territories, the issues with different sales tax treatment of the accounts, and the added financial concerns associated with net metering.

OCA

The OCA does not have an opinion whether the approaches in these or other states is appropriate for Iowa.

ELPC et al.

There are 17 states that allow meter aggregation including Minnesota and Colorado according to Freeing the Grid. Arizona's aggregation rules are considered marginal, and Illinois is not listed as having functional meter aggregation rules. ELPC et al. believes that the best starting point is IREC Net Metering Model Rules for a rule making in Iowa.

INEDA

INEDA encourages the development of any additional framework that allows aggregate net metering and offers further small wind and solar energy incentives. INEDA appreciates that the Board asked about other states that offer aggregate net metering.

Questions for Iowa Association of Municipal Utilities (IAMU)

- 20. The IAMU notes that at least one municipal utility offers virtual net metering. How is this being done, given the legal concerns expressed by some commenters?**

IAMU

Traer Municipal Utilities (TMU) built and sold certificates of ownership for a community solar array with 52 participants. Under the agreement each customer owns a particular solar panel for a period of 20 years. After that, the ownership of the panel reverts back to TMU. TMU maintains and insures the array. TMU measures the energy produced and deducts that amount from the customer's bill. The array was limited to the use of only those TMU customers, so there is no impact to the provision of service to customers outside of the service territory or on other Traer customers who chose not to participate in the project. Generation and transportation of kWh only takes place over TMU's distribution system exclusively within TMU's service territory. This array is under the local control of TMU, and is more akin to TMU's local generation than a third-party DG scenario rather than a third-party DG facility forcing TMU to purchase the power and wheel it over TMU's distribution lines.

ELPC et al.

ELPC et al. does not believe there are legal issues with municipals offering virtual net metering.

Questions for Electric Cooperatives and Municipal Utilities

- 21. For those electric cooperatives and municipal utilities that do not currently offer net metering, explain why you do not offer net metering, whether you intend to offer net metering in the future, and if so, when.**

IAMU

The IAMU developed model interconnection standards and a net-metering policy for adoption by municipal utilities which have accelerated the adoption of policies by municipal utilities. Many municipal electric utilities are concerned about cross-subsidization. Most municipal electric utilities include fixed costs, such as the cost of the distribution system, in their energy rates. If a DG customer receives net metering, they effectively receive compensation for energy and fixed costs even though they only supplied energy to the utility.

IAEC

The following are examples of the reasons why some of the IAEC members do not offer the net-metering option (for a full list see pages 11-12 of the IAEC's October comments):

1. REC is compensating the excess at average power supply cost.

2. Other cooperative programs exist to promote renewable energy without net metering.
3. Viewed by local board as cross subsidization.
4. Local REC Board balances needs of those with DG and those without.
5. Net metering harms low-income customers.
6. Lack of member interest.
7. Net metering sends an inappropriate price signal in compensating the DG owner at a retail rate and can cause the over sizing of the DG installation.

ELPC et al.

There are 23 RECs and 17 municipals offering net metering based on June filings by the IAEC and the IAMU. Many, if not all, of their net-metering tariffs and policies are more restrictive compared to the tariffs offered by MidAmerican and IPL. ELPC et al. provided several examples such as low system caps that could be met by a few customers. ELPC et al. is also requesting that the IAEC and the IAMU file copies of the applicable tariffs for each utility, because it was not able to locate many of them on the Board's electronic filing system or on the individual utility Web sites.

MRES

MRES-member utilities in Iowa do not offer net metering for reasons that vary based on the individual utility's distribution and wholesale cost structure, customer characteristics, load profile, and related matters. Each utility is unique and its governing body/utility management is responsible for considering the issues in their community and establishing rates responsive to the needs of its customers. MRES defers to the local retail utility on this question.

Questions 22 - 34 are addressed in the Interconnections Memo dated 12/1/2014.

- 35. For MidAmerican and IPL: What number of DG customers would be required before you would be able to conduct cost of service studies to determine DG class rates? Does either utility have a cost study today to show that the true interconnection costs exceed the current fees?**

IPL

IPL suggests the number of customers is based on uniqueness of the customer set – the more unique, the fewer number of customers required for the study. IPL is willing to formally demonstrate true interconnection costs.

MidAmerican

It depends on whether DG customers are to be separated into a separate class. It would be helpful for the Board to include an interconnection requirement that allows the utility to install interval demand and production meters and to possess and use that production data to gain a more complete understanding of the cost of service for the DG customers. If DG customers are separated into a separate class for the cost of service analysis, MidAmerican estimates that approximately 1,000 customers with a revenue

requirement of approximately \$1 million would be needed to make a viable class. If DG customers are not in a separate class, the sample size could be significantly less.

MidAmerican does not currently have a detailed study to show interconnection costs but has developed cost estimates based on typical Level 1 and Level 2 interconnection requests involving UL741 certified inverter-based installations over the past couple of years. These estimates for Level 1 and Level 2 interconnections are \$900 and \$1,140 respectively.

IAEC

The IAEC notes that the question is confusing in that it talks about DG class rates, interconnection costs, and current fees (presumably DG application fees).

ELPC et al.

There is a difference between cost of service and cost of interconnection studies. A study of the cost of interconnection should properly account for who is causing the need for distribution upgrades. Some utilities are taking advantage of the DG interconnection process to charge DG customers for distribution system upgrades that the utility would have made anyway. A cost of service study would look at the total cost to serve customers. DG Customers should not be singled out for a separate cost of service study because discriminating on the basis of DG would violate Iowa law. It is appropriate to do a comprehensive valuation study that addresses the costs and benefits of DG.

- 36. MidAmerican has indicated that a DG owner is a different type of customer and should be treated as a separate class. Provide comments on how this should be done, if it should be done, or if there is a different way to account for differences between customers.**

IPL

A separate class is not necessarily required to develop alternative rate designs. A three part rate, consisting of a customer, demand, and commodity charge can be developed based on embedded costs and known load profiles.

MidAmerican

See the response to question 17.

IAEC

Different types of customers can be subject to different rates without violating the unreasonable discrimination rules, but appropriate data are needed to support the different treatment.

IAMU

The IAMU believes DG policy, including ratemaking, should not cause owners of DG to be subsidized by non-DG customers. Because municipal utilities are governed by local boards and councils, they are well-positioned to set equitable rates.

ELPC et al.

See the response to questions 16 and 17.

TASC

In order to establish a separate rate class for DG customers, the utility must prove through utility data and statewide costing principles that such discrimination is justified. That burden has not been met.

Andrew Johnson – Winneshiek Energy District

There has not been convincing evidence of the immediate need for separate rate classes for DG customers and creating more rate classes would be a confusing and bureaucratic solution in search of a problem.

Question 37 is addressed in the Interconnections Memo dated 12/1/2014.

Questions 38, 39, and 40 are addressed in the DG Data Memo dated 12/19/2014.

- 41. On July 11, 2014, the Iowa Supreme Court issued its opinion in No. 13-0642, SZ Enterprises, LLC d/b/a Eagle Point Solar v. Iowa Utilities Board, a Division of the Department of Commerce, State of Iowa, et al. What are the legal impacts, if any, of this decision on DG policies or practices in general and particular policies or practices such as net metering (both traditional and virtual)? Does the decision impact any of your prior comments or responses in this docket? If so, explain.**

IPL

IPL is guided by six DG principles and plans to make sure these principles are maintained in light of the decision to ensure that its customers have access to DG opportunities that protect both participating and non-participating customers' interests.

IPL also notes that this decision was based on a particular set of facts and future third-party developer/customer/utility relationships may be different. A Board rule or procedure that promulgates the *Serv-Yu* factors could provide a more streamlined and less burdensome process. The Board should also review the interconnection rules and application templates found at IAC chapter 45 and consider how to incorporate the inclusion of a third-party power producer. The chapter 45 interconnection rules should identify duties, responsibilities, and liability of utility customers who are also parties to third-party power purchase agreements. IPL also suggests that all future power purchase and interconnection-related agreements²⁷ be filed with the Board and communicated to the utility in whose service territory the agreements are effective. IPL request that the Board's review applicable net-metering policies to consider potential impacts of this decision. IPL believes that clear definition of applicable rules and regulations is critical to provide safe and reliable service fairly and consistently for customers.

²⁷ Including those to which third-party power providers are party to.

MidAmerican

The ruling does not affect the obligation of lessees as public utility customers and does not provide lessors with any other advantages not available to other providers of electrical equipment to public utilities.

IAEC

The IAEC believes that all parties would benefit from some direction from the Board with respect to the following questions:

- Who should submit and execute the interconnection application and be responsible for compliance with the interconnection requirements?
- If the third-party owned facility generates more energy than can be used by the customer, does the third-party owner bill the customer for the entire output or just what is utilized?
- If the utility has an obligation to purchase any excess generation, from whom is the energy purchased – the third-party owner or the utility customer?
- If the customer fails to pay its retail bill, does the utility have the ability to disconnect the retail customer if such disconnections also impact the operation of the third-party owned generation?
- Can the utility require a separate interconnection with the third-party owned generator?
- If the applicable interconnection policies require insurance to be obtained by the generator, who must obtain and carry that insurance?

IAMU

The IAMU is unclear whether the decision has had any impact on virtual net-metering policies or whether it will impact current DG policies or practices, except to the extent that a purchase power agreement with the terms that were used and the fact scenario that was in this case can be allowed.

MRES

MRES suggests that one of the biggest impacts of this decision that was not raised during the preceding is consumer protection. All utilities in Iowa give the customer a place to take complaints²⁸ and provide recourse for poor service, unsatisfactory rates, or other complaints. Utilities must also comply with federal requirements of FERC, NERC and the RTOs that govern their interstate activities. Because of this decision, customers or quality of service may not be protected. The contract (usually 20 years) between the customer and the non-utility entity selling electricity is not subject to review by the IUB or other governmental entity and may allow the solar provider to raise the kWh rate without review by the Board or despite customer objections.

The difference between a lease agreement and a purchase agreement is that a lease agreement cannot allow for the waiver of the protections of the Uniform Commercial

²⁸ Municipal and cooperative customers can go to the local board while investor-owned customers can go to the IUB with complaints.

Code or civil products liability statutes. With a lease, if there is a problem with the panels, there is legal recourse. However, in a purchase agreement, if there is a problem with the purchase of the kWh, the customer may have no claim to be brought before the Board. MRES states, "It is disconcerting that the one entity that has experience in the sale of electricity and protection of electricity customers has no authority over such transactions because the entity is not a utility." (page 3)

OCA

This decision makes DG more accessible to consumers by giving them more financing and implementation options. The decision also generally supports Iowa's renewable energy policy. The OCA is unsure whether the decision will have a significant impact on net metering.

ELPC et.al

The decision to allow third-party purchase agreements as a financing mechanism does not impact DG policies or practices. The DG system will be identical and will have to comply with all other Iowa DG policies. The IUB should ensure that utilities are implementing the law and not discriminating against DG systems based on ownership or financing mechanism.

Andrew Johnson – Winneshiek Energy District

The decision supports our past and current positions on the rights of energy users to fair, reasonable, grid-connected power generation, and the importance of enabling policies.

Chris Hoffman – Moxie Solar, Jason Hall, Jean Marie Hall, Jennifer Hall, Kami Ahrens, Larry Grimstad – Decorah Solar Field, LLC, and William H. Ibanez

The decision creates an opportunity for tax-exempt, government, and for-profit entities to buy power from clean energy producers who can use the tax credits to reduce project costs.

John E. Carpenter

The decision appears to allow third parties to provide DG energy to a utility customer.

Luther College

This ruling appears to provide non-profits entities an alternative way to invest in and utilize renewable energy.