

COLORADO AT A CROSSROADS: NET ENERGY METERING

COLORADO RURAL ELECTRIC ASSOCIATION

By Craig N. Johnson, Director of Government Relations and General Counsel

August 2023





CONTENTS

Introduction	1
CREA and Colorado's Electric Cooperatives	1
Summary and Conclusions.....	2
Background	2
The Genesis of Net Metering in the United States	2
The Evolution of Net Metering in Colorado	2
The Current State of Net Metering in Colorado.....	5
Colorado's Experience with Net Metering Over the Past Two Decades.....	5
Responses to Net Metering Concerns.....	6
Conclusions	7

INTRODUCTION

Net Energy Metering (“NEM” or “net metering”) is a system that allows retail electric customers to generate electricity on the customer’s side of the electric meter (referred to as “behind-the-meter generation”) to offset their electric usage, and to put any excess energy generated back to the grid. Excess energy generated by the customer may be carried forward to offset a customer’s electric consumption in successive months. Ultimately, the customer is compensated by the retail electric utility for the excess energy put on the grid. Net metering was seen as a way to incentivize the development of renewable energy in the state, as consumers could utilize the credits from net metered energy to offset the cost of installing rooftop solar, and was largely accepted by electric utilities as a way to add clean energy to their systems.

Initially, the amount of distributed generation subject to net metering in Colorado was not great enough to cause a substantial impact

to rates or resource planning. Now, however, after more than 25 years of net metering in Colorado, the number of net metering customers and amount of energy derived through net metering are exposing the shortcomings of existing net metering programs. Among other things, questions have arisen as to the equity of current net metering programs, including whether net metering customers who use little energy from the grid are paying their fair share for the upkeep of the distribution systems they use to put energy on the grid and whether owners of net metering systems (who are often more affluent) are being subsidized by less affluent customers who do not own behind the meter generation and cannot take advantage of net metering.

This white paper is intended to provide an overview of the development of Colorado’s net metering regime and to provide context for the discussion of potential reforms of net metering in Colorado.

CREA AND COLORADO’S ELECTRIC COOPERATIVES

The Colorado Rural Electric Association (“CREA”) is the statewide trade association representing Colorado’s electric cooperatives. CREA’s members include 21 distribution cooperatives and Tri-State Generation and Transmission Association, the wholesale electric supplier to 42 cooperatives in Colorado, Wyoming, New Mexico, and Nebraska. Colorado’s electric cooperatives provide power to approximately 1.5 million consumers in a service territory covering roughly 70% of Colorado’s landmass, including some of the most economically challenged regions of the state. The economics of Colorado’s electric cooperatives are different from municipal or investor-owned utilities, largely due to the low density of consumers and limited revenue generated through electric sales. On average Colorado’s electric cooperatives serve 7.9 consumers per mile of line, compared to 48 consumers per mile of line for municipal utilities and 34 customers per mile of line for investor-owned utilities.

Unlike investor-owned utilities, electric cooperatives are not-for-profit entities owned by the customers they serve. The cooperative model is successful because electric cooperatives are governed by locally elected boards which develop programs to provide affordable, safe, reliable, and sustainable energy based on the unique needs and desires of the customers they serve. Although electric cooperatives were initially formed to provide service to customers in rural areas in the mid-1930s, today’s cooperatives employ more than 2,500 individuals and have a network of nearly 80,000 miles

of distribution and transmission lines that serve a diverse customer base including farms and ranches, towns and suburbs, businesses and ski resorts across Colorado.

Colorado’s electric cooperatives are focused on maintaining reliability and affordability, advancing innovative solutions, and enhancing community resilience of our electric system.



WHAT IS NET METERING:

Net Energy Metering (“NEM”) is a system that allows retail electric customers to generate electricity on the customer’s side of the electric meter (referred to as “behind-the-meter generation”) to offset their electric usage, and to put any excess energy generated back to the grid.



SUMMARY AND CONCLUSIONS

As set forth below, the current net metering law in Colorado has fostered a robust and vibrant solar industry in the state, as evidenced by the significant year-over-year growth in interconnection requests. The law strikes the correct balance: it allows local electric cooperatives the flexibility to determine net metering rates appropriate to their unique cost and rate structures while providing protection to customers to ensure that net metered energy rates are just and reasonable. Customers who disagree with their cooperative's net

metering policy can seek redress from their elected board of directors under state-mandated complaint procedures, and they can (and do) vote for directors who support their favored rate structures. Finally, customers can petition the Colorado PUC to review rates or regulations if they feel they are unjust or unreasonable. Accordingly, CREA believes that Colorado's net metering statutes should not be changed, and any necessary revisions to net metering policy should be addressed at the local cooperative level.

BACKGROUND

THE GENESIS OF NET METERING IN THE UNITED STATES

In 1978, the United States adopted a policy encouraging the development and interconnection of small generation resources to bolster domestic energy supply with the enactment of the Public Utilities Regulatory Policies Act ("PURPA").¹ Among other things, PURPA required electric utilities to purchase electricity from "qualified facilities" (facilities meeting certain specified standards with a cap of 80MW capacity)² at a rate equal to the utility's "avoided costs", i.e. the costs it would have incurred to generate such energy through its lowest cost resources.³ Although PURPA did not contemplate utility purchases of net metered energy from behind the meter customer generation, distributed energy generation systems may constitute "qualified facilities", and PURPA plays an important role in customer generation.

Shortly after PURPA was adopted, the first truly "net metered" solar system was installed in Massachusetts in 1979, when an architect and solar pioneer installed 7.3 kW of solar panels on an apartment complex, causing the electric meter to "run backwards" as excess energy was put onto the utility's system.⁴ In 1983, Minnesota became the first state to adopt a net metering law, allowing any customer producing excess energy from generating facilities smaller than 40 kW to either roll over any credit to the next month, or be paid for the excess (revised in 2000) "at the average retail utility energy rate".⁵

In 2005, all U.S. utilities were required to "consider" adopting rules offering net metering "upon request" by consumers under the Energy Policy Act of 2005, although this did not include excess energy. Today, only three states — Alabama, South Dakota, and Tennessee — do not have any form of net metering or any source of compensation for excess energy, while the rest of the states

make metering mandatory, offer alternatives, or allow utilities to provide metering.

Although there has been widespread adoption of net metering across the U.S., there is considerable variation among the states as to what types of generation qualify for net metering, the size of generators eligible for net metering, and how consumers are compensated for excess energy put on the grid. A 2017 study showed that only 3% of U.S. utilities offer full retail compensation for net metering with the remainder offering less than retail rates, having credit expire annually, or some form of indefinite rollover.⁶

THE EVOLUTION OF NET METERING IN COLORADO

Investor-owned utilities in Colorado began net metering in the mid-1990s pursuant to PUC-approved tariff rates. Under these initial tariffs, systems were limited to 10kW of capacity, and customers were allowed to carry over net electric generation from month to month. There was no provision for compensation for excess net electric generation.

In 1997, state representative Mark Udall proposed House Bill 97-1305, which was intended to encourage investment in renewable energy resources and diversification of the state's resource mix by requiring utilities (including electric cooperatives) to compensate customer generators with systems up to 20kW for net electric generation. This bill was killed in committee and never made it to the floor.

In the late 1990s and early 2000s, Holy Cross Energy and the City of Glenwood Springs began offering net metering options to customers with photovoltaic systems. Although there was no system size limit in the Holy Cross program, the program was limited to 50kW of



total photovoltaic capacity. Customers would not receive compensation for excess generation during the normal billing cycle.

House Bill 02-1415 - Concerning Net Metering by Electric Utilities

In 2002, CREA and other stakeholders sought to limit potential cost exposure for metering, including the costs of meters and other equipment required for net metering. Working with a number of legislators in both houses, CREA proposed House Bill 02-1415, which included a legislative declaration stating that “The general assembly... finds that implementation of a net metering program should not result in cost shifting from customer-generators to other electric utility customers.” Although CREA attempted to negotiate a broader bill applicable to all utilities, ultimately HB 02-1415 was limited solely to electric cooperatives.

Under HB 02-1415, electric cooperatives were required to establish net metering rules and make net metering service available to any customer, provided that the customer would pay any costs for the acquisition and installation of the necessary metering equipment. Net metering was limited to solar, wind, biomass, and hydropower up to 25 kW capacity (although a cooperative could permit more) located on premises owned by the customer-generator (customers were not permitted to offset consumption with generation at another location). The total generating capacity under the net metering program was capped at 1% of the cooperative’s monthly peak demand; after that the cooperative was not required to offer net metering service to any additional customers. These limitations on the size and amount of interconnected customer generation reflected the intent to allow customers to offset their own consumption with behind-the-meter generation without overwhelming smaller utility systems with excess energy.

To address the concern of who would bear the additional costs of equipment necessary to facilitate net metered generation, HB 02-1415 allowed electric cooperatives to install metering equipment and recover other costs of integration from the customer. Electric cooperatives were also permitted to charge a just and reasonable backup or standby fee to “avoid any cost shifting from customer-generators to any other electric customers.”⁷

Electric cooperatives were required to provide a credit to consumer generators for their excess generation at a rate not less than the cooperative’s avoided costs. The bill provided:

Unless the electric utility chooses to pay more to the customer-generator, the electric utility shall provide a credit to the customer-generator for its generation equal to the electric utility’s avoided cost. The avoided cost shall be the average cost of power to the electric utility for the immediately preceding calendar year as published in the utility’s annual report. The average cost of power shall not include the utility’s own transmission, metering, and distribution costs. The average cost of power shall include the capital and expense costs associated with generation facilities for those utilities that generate some or all of their own power needs as well as purchased capacity and energy costs. If the customer-generator’s net aggregate bill is less than zero, credits shall be carried over to future bills of the customer-generator until the credit balance is zero.

Any remaining unused credits accumulated during the prior billing year were to be paid to the consumer generator.

HB02-1415 was adopted by the General Assembly and signed into law by then Gov. Bill Owens. The law was codified as C.R.S. § 40-9.5-301, et. seq.

Amendment 37 - Renewable Energy Sources for Utilities Initiative

In 2004 Colorado voters passed Amendment 37, the country’s first renewable energy standard adopted by public initiative. Among other things, Amendment 37 allowed the Colorado Public Utilities Commission to adopt standards for net metering of solar generation and interconnection with the grid. Specifically, Amendment 37 provided that qualifying retail utilities shall:

...allow customer’s retail electric consumption to be offset by the solar electricity generated. To the extent that solar generation exceeds the customer’s consumption during billing month, such excess energy shall be carried forward as a credit to the following month’s consumption. To the extent that solar electric generation exceeds the customer’s consumption during a calendar year, the customer shall be reimbursed by the qualifying retail utility at its average hourly incremental cost of electricity supply over the prior twelve month period.



Because this was a statutory amendment, rather than an amendment to the state constitution, the General Assembly has the ability to amend these provisions, and it has done so on several occasions.

House Bill 08-1160 - Concerning Net Metering for Customer-Generators of Electric Utilities

In 2008, the question of net metering was again before the Colorado General Assembly with HB 08-1160, which was intended to create some degree of uniformity regarding how investor owned, municipally owned, and cooperative electric utilities implemented net metering. During testimony before the House Transportation and Energy Committee on HB 08-1160, the bill's prime sponsor, Rep. Judith Solano, explained that the General Assembly had approved uniform standards for interconnection of distributed generation in 2007, but inconsistencies still existed among the net metering policies of various utilities. The purpose of HB 08-1160 was to create uniformity among utilities regarding how customer generated energy would be credited against customer consumption, how excess energy would be "rolled over" to future months, and the utilities' obligations to "true up" accounts at the end of the year. However, with respect to how customer generators would be credited for excess energy put on the grid, Rep. Solano stated that "House Bill 1160 allows each utility the flexibility to decide how to handle that excess generation at the end of each year."⁸ In testimony before the Senate Agriculture, Natural Resources and Energy Committee, director Tom Plant of the Governor's Energy Office (now a member of the Colorado PUC) described the bill as having "specificity" — it created a uniform standard while allowing individual cooperatives "the ability to set [the annual] true up in a way that is most appropriate for their utility."⁹ Ray Clifton, general manager of CREA, testified that this flexibility was key to the electric cooperatives' support of the bill, which "recognizes the diversity of all our cooperatives," as what works in one part of the state "will not necessarily work" in other part of the state.¹⁰

HB 08-1160 codified net metering requirements for investor owned utilities and municipally owned utilities and repealed and replaced the provisions of HB 02-1415 with respect to electric cooperatives. As it pertained to electric cooperatives, HB 08-1160 included the following requirements:

- Cooperatives must permit residential customers to net meter up to 10 kW and commercial and industrial customers up to 25 kW, although cooperatives may allow more.


- Cooperatives "shall allow a customer-generator's retail electricity consumption to be offset by the electricity generated from eligible energy resources on the customer-generator's side of the meter..."
- Monthly net excess generation (NEG) "...expressed in kilowatt-hours, shall be carried forward from month to month" and credited against consumption in subsequent months.

HB 08-1160 further provided that electric cooperatives "shall provide net metering service at nondiscriminatory rates" and must comply with interconnection standards adopted by the Colorado PUC. However, cooperatives were permitted to credit annual NEG "in a manner deemed appropriate" by the cooperative. Thus, while the bill provided uniformity regarding the handling of net metered energy, it was intended to allow flexibility regarding how cooperative customers were to be compensated for any excess net metered energy. These provisions, which remain in place today, are codified at C.R.S. § 40-9.5-118.

During the House committee hearing on the bill, the question of subsidization of net metered customers by non-net metered customers was discussed at length. Geoff Hier, testifying on behalf of CREA, stated that the parties had negotiated limitations on the size of distributed generation to be interconnected in order to minimize such subsidies. Hier stated that "[t]he amount [of such subsidies] when you keep the systems at a smaller size is fairly minimal, which is where we do have agreement at keeping [net metered systems] down at the 25 kW level."¹¹ Acknowledging that some distributed generation customers may generate excess energy which would be put on the grid, Rep. Solano stated that the intention of HB 08-1160 was not to have everyone "create their own little utility."¹²

The Senate sponsors of HB 08-1160 provided similar testimony in the Senate Agriculture, Natural Resources and Energy Committee hearing on February 28, 2008. Specifically, Sen. Isgar testified that "one of the reasons we were able to come to a compromise was because we reduced the amount on how large the residential installations could be."¹³ He further went on to explain why limiting the size of the net metered installations was significant to the cooperatives:

Even though we are trying to have a standard policy that applies across the state it is difficult because these co-ops don't have the same rate structure and that was one of the things we were initially trying to clarify by letting them have



the ability to change the service charge to recover some of the costs, the non-power costs, that go on whether or not power is being supplied [to the customer]. And that's more significant in rural areas as opposed to the metropolitan areas where you have so many people, you have a lot more people per mile. You go out in these rural areas and, you know, where you've got perhaps a couple of people and if that customer runs the meter backwards and ends up at zero and doesn't owe anything how does the co-op recover the expense to maintain the poles and lines ... and that's the part we need to recognize, there are costs other than power. And yet when you end up with a zero bill because the meter ran backwards then you can't recover those costs.

...

I know eventually as we move ahead we are going to increase the amounts [of net metered energy] we are looking at today and we ended up at 10 kW on the residential and 25 on the commercial and the co-ops agreed to that without a service charge, you know a different service charge, because the amounts were small, not because there's not a subsidy but because they're small and they are trying to be progressive and move ahead.¹⁴

Sen. Isgar further testified that before the statutory caps on net metering can be increased, “we have to put a mechanism [sic] where the co-ops can recover on, in a fair way, a larger portion of their costs so we don't have a, really a, there's a cost shift now but small but as you get bigger you have to [inaudible] that surcharge or else you start shifting more and more costs to the degree that it becomes unacceptable.”¹⁵

THE CURRENT STATE OF NET METERING IN COLORADO

Below is a summary of the current net metering law in Colorado:

1. What types of generation are eligible for net metering?

Electric energy generated from “eligible energy resources,” including geothermal electric, solar thermal electric, solar photovoltaics, wind (including small wind projects), biomass, small hydroelectric, and fuel cells using renewable fuels, are eligible for net metering.

2. How much can a retail customer net meter?

Residential retail customers of electric cooperatives and municipally owned utilities can net meter up to 10 kW, while commercial and

industrial customers can net meter up to 25 kW, although cooperatives and municipalities may allow more. Many electric cooperatives have elected to allow more than the maximum amount of consumer generation required by law.

Retail customers of investor owned utilities may net meter up to 200% of the customer's average annual consumption (this was increased from 120% in 2019).¹⁶ Customers of investor owned utilities are permitted to interconnect 500 kW off site for single-meter facilities and 300 kW per meter for multi-meter facilities.

It is worth noting that customers who have behind the meter generation exceeding the limits of Colorado law or the policies of an individual utility may nevertheless require a utility to purchase that energy as a “qualified facility” under PURPA. Customer generators would be paid based on the utility's avoided costs for such excess energy.

3. How is a customer compensated for net metered energy?

For customers of electric cooperatives and municipally owned utilities, excess electric generation in a given month is credited against the customer's consumption in that month, with excess energy carried forward to the following month at a 1:1 ratio, effectively providing full retail credit for the consumer's consumption. Each electric cooperative and municipally owned utility must provide a reconciliation and compensate the customer at a rate deemed “appropriate” by the cooperative or municipality at the end of each annual period. Because the net metering statute requires a “full retail” credit against consumer consumption, many electric cooperatives have carried this forward to net electric generation as well, providing credit for excess energy at the full retail rate, even though this is not required by statute. Other utilities have compensated customers for excess energy at an “avoided costs” rate based on the cost the utility would have incurred to generate or purchase the energy from alternative sources. The amount of compensation provided, however, is left to the discretion of the individual cooperative or municipality.

Customers of an investor owned utility may opt to roll over credit or to receive payment for the excess generation. Compensation for excess energy is to be paid at the investor owned utility's average hourly incremental cost. There is no annual “true up” requirement for investor owned utilities as there is for electric cooperatives or municipally owned utilities.



If a consumer generator sells excess energy to a utility as a “qualified facility” under PURPA, the consumer would be entitled to a payment based on the utility’s “avoided costs” had it generated the energy or purchased the energy from a third party.

COLORADO’S EXPERIENCE WITH NET METERING OVER THE PAST TWO DECADES

There is no doubt that net metering has played a significant role in the development of behind the meter customer generation in Colorado. Currently, Colorado is 14th in the nation in the amount of installed solar generation, with approximately 1,700 MW of installed solar online. The vast majority of Colorado’s 81,000 solar installations are rooftop solar systems, providing just under 5% of Colorado’s total electric supply.¹⁷ This has also had a significant impact on reducing greenhouse gas emissions in Colorado.

Moreover, the current net metering statute continues to foster growth of interconnections of solar and other distributed energy resources within territories served by electric cooperatives. Based on data provided by CREA member cooperatives, applications for new solar installations increased 67% from 2020 to 2022, and actual interconnections have increased by nearly 50% over that same period. Year to date data from 2023 shows that this growth is continuing at a rapid pace.

However, along with the benefits of green energy, the growth of solar in the state has revealed inequities with the current system of net metering.

As an initial matter, a net metering customer that offsets all of its consumption with behind the meter generation does not pay its share of the costs to maintain and operate the utility’s distribution system. Most utilities subsidize a significant portion of their operating expenses through energy charges, and base service or membership fees are usually insufficient to cover all of the fixed costs that the utility incurs to maintain the customer’s connection, which the utility must maintain given its obligation to serve all customers with its certificated territory. Thus, a customer that does not pay for energy is not compensating the utility for the full cost of maintaining its system. This problem is magnified if the customer is paid a full retail credit for excess energy put back onto the system, as the customer will be receiving a credit based on the cost of energy as well as the cost to maintain the utility’s distribution system, meaning the customer is actually paid to use the distribution system. As a result, customers that do not have net metering systems are

subsidizing those that do. As noted above, this was a concern of the General Assembly when the first net metering statutes were adopted in 2002.

This subsidy results in significant inequities, as behind the meter solar installations are generally installed and operated by more affluent customers. The average cost of a 5 kW rooftop solar system is between \$13,515 and \$18,285. Not surprisingly, the customers that are most able to afford such an investment are generally homeowners in higher income brackets. A study conducted by the Lawrence Berkeley National Laboratory, which analyzed roughly 2.8 million residential rooftop solar systems installed nationwide through 2021, found that the median solar adopter’s annual income was about \$110,000, compared to the U.S. median annual income of about \$63,000 for all households and \$79,000 per year for all owner-occupied households. About half of the solar adopters had household incomes over \$100,000.¹⁸ This means that lower income customers without solar installations and renters who have not option to install solar are subsidizing higher income homeowners with net metered solar systems.

Further, net metering programs that pay full retail rates for excess energy may actually hinder efforts to reduce greenhouse gas emissions by sending the wrong price signals. The highest energy production for rooftop solar installations occurs between the hours of 10:00 a.m. and 3:00 p.m. During these hours, residential electric usage tends to be lowest, so net metered energy is being fed onto the system at times when the need is lowest. When residential usage is highest, between the hours of 4:00 p.m. and 8:00 p.m., solar systems are producing little or no energy. However, the net metered customer’s consumption during these peak hours is set off by the net metered energy put on the system during the off-peak hours. This eliminates disincentives to use electric energy during peak hours.

RESPONSES TO NET METERING CONCERNS

The concerns described above are not unique to Colorado. Recognizing these issues, attempts have been made to modify or even eliminate net metering across the United States. For example, in 2022 the Florida legislature passed House Bill 741, which would have phased out net metering in Florida entirely by 2024, on the grounds that, due to cost shifts in favor of net metering customers, customers with net metered solar systems were not paying their fair share of the costs to maintain the grid that serves everyone. This bill was ultimately vetoed by Gov. Ron DeSantis due to the potential



impacts the bill would have had on homeowners who currently had such systems.

California has similarly gone through several attempts at net metering reform aimed at eliminating cost shifts. After several years of discussion and stakeholder proceedings, on December 15, 2022, California adopted “NEM 3.0” which changed the net metering credit from a full retail rate to a lower rate based on avoided costs, with the exact rate varying depending on the hour of the day, the day of the week (weekday versus weekend), and the month during which net excess energy is put on the grid in an attempt to provide appropriate price signals. This has resulted in a complex crediting system with 576 possible rates for compensation. The average compensation will be approximately 25 percent of the full retail rate for electricity.¹⁹

In Colorado, attempts to change net metering rates to address the above issues have been met with significant resistance by owners of existing rooftop solar systems as well as solar installers and environmental interests that have labeled such efforts as “anti-solar.” For example, in 2022, Sangre de Cristo Electric Association (SDCEA)

proposed to adopt a new rate structure that would create a multi-part rate, including increased membership fees to cover common costs, a “delivery charge” for the cost of delivering energy to a customer from the distribution system, and an energy cost reflecting the cost of energy purchased or generated. Net-metering customers would have been credited only for the energy charge amount for excess energy put on SDCEA’s system. Following significant backlash, SDCEA suspended its proposed rate change and began a process to re-evaluate its proposed rate structure. Subsequently, in 2023, Holy Cross Energy announced plans to adopt a similar rate structure that would have created a multi-part rate, including increased membership fees, a “delivery charge” for the cost of energy delivered to or from a customer on the utility’s distribution system, and an energy cost reflecting the cost of energy purchased or generated. Net metering customers would have been credited only the energy charge amount for excess energy put on the Holy Cross system. Following a public meeting to discuss the proposed rate change in May 2023 and a request from the Colorado Energy Office, Holy Cross elected to suspend implementation of the new rate at least through 2023.

CONCLUSIONS

As described above, the landscape for behind-the-meter customer generation is changing with new technologies and increasing installed capacity, and there are growing concerns about equity and subsidization in rates paid for electric generation net of the consumer’s retail usage. On the one hand, increasing the amount of renewable generation behind the meter helps to meet Colorado’s greenhouse gas reduction goals, while on the other hand it may force consumers without DERs to bear a greater share of the common costs to operate the distribution system. Clearly, changes will be required to existing net metering practices to address these issues and ensure a sustainable and equitable system for the future.

Acknowledging that change is required, the question becomes whether a change in existing law is required. CREA believes that the existing law, embodied in HB08-1160, provides the necessary flexibility for electric cooperatives to implement the changes they require at the local level, which is most appropriate given the unique nature of each cooperative’s load and customer base.

As an initial matter, the current statute guarantees customers the right to install DERs of a size sufficient to cover their average load, with a margin for additional energy to be sold back to the grid under

net metering programs. The average residential consumption of a home in Colorado is approximately 706 kWh per month.²⁰ Depending on a number of factors, including the technology, location and orientation of panels, and weather conditions, a well-maintained, south-facing, 10 kW rooftop solar system can be expected to generate between 1000 kWh and 1500 kWh per month, assuming 5 hours of sun per day.²¹ Thus, every residential customer of an electric cooperative is guaranteed the right to install behind-the-meter net metered generation sufficient to cover the average residential load requirements in the state. Electric cooperatives are given the flexibility under HB08-1160, if desired, to permit larger systems to be interconnected to their distribution systems. Moreover, as noted above, consumers wishing to “super size” a DER installation have the ability to require their local utilities to purchase their excess output under PURPA, although the rate paid for excess energy may be less than under net metering programs. Accordingly, the current law is sufficient to ensure a vibrant and robust solar and DER industry in Colorado.

Further, current law allows electric cooperatives the flexibility to determine the rate paid for net metered energy, which can reward customers for putting additional clean energy resources on the



grid while avoiding a financial burden that might potentially cripple the utility and pass excessive costs on to non-DER-owning customers. The critical consideration here is that the customer base, cost structure, and load requirements of each electric cooperative are different. Cooperatives serving mountain communities with a higher percentage of second homes, which may consume electricity for short periods during the year while putting excess energy on the system year round, are in a much different position from cooperatives serving plains communities with a higher percentage of low income consumers and more full-time residents. Moreover, each cooperative has a unique rate structure intended to recover the costs specific to its own system; there is no uniformity among rate or cost structures of CREA's 21 distribution cooperative members. As the sponsors of HB08-1160 noted, the current law was intended to allow individual utilities to determine a structure appropriate for their unique needs, and this concern remains as valid today as it was when the General Assembly adopted HB08-1160 fifteen years ago. A "one-size-fits-all" approach would create substantial difficulty in ensuring cost recovery and would unnecessarily burden customers, particularly in the most economically challenged areas of the state served by electric cooperatives.

Finally, the current legal and regulatory system provides protection for customers of electric cooperatives to ensure that the rates paid for net metered energy are just and reasonable. As member-owned electric utilities, consumers elect the boards of directors that are responsible for establishing the rates and regulations of their cooperatives. Aggrieved customers have the ability, through statutorily mandated complaint processes, to register complaints and be given the opportunity to be heard by the board regarding rates.²² This process works, as evidenced by consumer complaints regarding proposed changes to net metering rates in two Colorado cooperatives, which resulted in the revocation or suspension of the proposed changes. If consumers are unable to resolve their disputes through the cooperative's complaint process, they may petition the Colorado Public Utilities Commission to review whether such rates are unjust or unreasonable.²³

While CREA agrees that change is necessary to ensure that net metering is beneficial and sustainable over the long run, CREA submits that the current statutory and regulatory framework is sufficient to support the required changes where they are needed — at the local utility level.

ENDNOTES

¹ 16 U.S.C. §824a-3(a)

² See 16 U.S.C. §796(18)(A); 18 CFR 292.203.

³ 16 U.S.C. §824a-3a.

⁴ <https://cleantechnica.com/2015/09/06/net-metering-history-logic-part-1/>

⁵ See Minn. Stat. Ann. § 261B.164.

⁶ <https://www.academia.edu/35065588>

⁷ HB02-1415, Sec. 2, 49-9.5-303.

⁸ Colorado State Archives, Recording of House Transportation and Energy Committee Proceedings, January 29, 2008, 3:59 p.m. (testimony of Rep. Judith Solano).

⁹ Colorado State Archives, Recording of Senate Agriculture, Natural Resources and Energy Committee, February 28, 2008, 2:16 (Testimony of Tom Plant). Senator Isgar, one of the senate sponsors of the bill, noted in his testimony that the members of each cooperative will drive the direction of the cooperative, "which is appropriate ... because they own the business." *Id.*, 1:52 (Testimony of Sen. Isgar).

¹⁰ *Id.*, 2:21 (Testimony of Ray Clifton).

¹¹ House Transportation and Energy Committee, *supra.*, at 4:13 p.m. (testimony of Geoff Hier).

¹² *Id.*, at 4:37 (testimony of Rep. Solano).

¹³ Senate Agriculture, Natural Resources and Energy Committee, *supra.*, 1:52 p.m. (Testimony of Sen. Isgar).

¹⁴ *Id.*

¹⁵ *Id.*

¹⁶ C.R.S. § 40-2-124(1)(a)(VIII).

¹⁷ <http://www.electricrate.com/solar-energy/colorado>

¹⁸ http://eta-publications.lbl.gov/sites/default/files/solar-adopter_income_trends_nov_2022.pdf

¹⁹ <http://news.energysage.com/net-metering-3-0/>

²⁰ <http://www.electricitylocal.com/states/colorado>

²¹ <http://www.solarproguide.com/how-much-electricity-does-a-10kw-solar-system-produce/>

²² C.R.S. § 40-9.5-109.

²³ C.R.S. § 40-9.5-106.

