

**Electric Cooperatives and Power Supply Contracts in Minnesota**  
**Testimony before the Minnesota House of Representatives Energy and Climate Finance and**  
**Policy Division**  
**Hearing on “[Cooperative electricity generation and distribution](#)”**  
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Thank you Madam Chair and members of the committee for the opportunity to speak with you today about electric cooperatives in Minnesota. My name is Gabriel Chan. I am an Assistant Professor at the University of Minnesota’s Humphrey School of Public Affairs where I chair the area on Science, Technology, and Environmental Policy. I am here today in my own capacity as a researcher and private citizen, not as a representative of the University of Minnesota.

This morning I would like to offer some insights into electric cooperatives in Minnesota based on a three-year research project that I conducted with Dr. Stephanie Lenhart, Prof. Elizabeth Wilson, and two of my former students, Matthew Grimley and Lindsey Forsberg. These utilities are not-for-profit utilities owned by the energy users they serve, their “member-owners,” as they’re called. There are 44 cooperatives that primarily serve Minnesota, which is the second-highest number of cooperatives of any state in the country. Minnesota’s electric cooperatives provide electricity service to 30% of electricity customers and sell 22% of all electricity in the state (by kWh). To understand the whole landscape, Minnesota is also served by 3 investor-owned utilities (54% of customers and 61% of energy) and 124 municipal utilities (14% of customers and 14% of energy). Much of what I will say today generally also applies to municipal utilities, but there are significant contrasts with the investor owned utilities.

### **Diversity**

Minnesota’s electric cooperatives are diverse, and it is generally impossible to generalize about all 44 at once. Some cooperatives are seeing growth in the amount of electricity they sell, but others are seeing decline. Some are seeing rapid increases in the number of member-owners they serve and the revenue they collect, most are seeing more incremental growth, and a few are seeing decline. And very

importantly for a utility, some cooperatives are seeing their “peak demand” (a measure of the necessary service they must provide at the highest period of a year) growing and some are seeing decline.

In addition to this operational diversity, Minnesota’s electric cooperatives are also in diverse situational contexts. Cooperatives cover the vast majority of the state by land-area. They also are part of different “power-supplier networks.” This is a core theme of what I would like to talk about today.

### **Power Supplier Networks**

Many of the electric cooperatives that serve Minnesotans today were created around the New Deal era as part of the federal effort for “rural electrification.” Electric cooperatives were created to serve parts of the country that for-profit investor-owned utilities were not able to profitably serve. Instead, with large federal support, consumer-owned, locally controlled rural electric cooperatives were established. These utilities were much smaller than the investor-owned utilities and adopted principles of “concern for community” and “democratic member control” to stay grounded in their local contexts.

In the decades that followed, the electricity system started to change. With advances in electric-power-generation technologies, large power plants, particularly coal plants, became the cheapest way to generate power. The “economies of scale” of large power plants, made it such that the most economic manner to generate power was to build larger and larger. For the small electric cooperatives, the only way to take advantage of these changing economics was to band together and co-invest in these large plants. To do this, electric cooperatives formed “generation and transmission cooperatives,” or “G&Ts.” G&Ts are like “a cooperative of cooperatives.” They are controlled by the member cooperatives and own the power plants and transmission lines for a “family” of member cooperatives who then deliver power through smaller distribution lines and manage all customer relations (e.g. billing, outage complaints, etc.).

The structure of G&Ts was a solid economic decision at the time they were formed. They allowed cooperatives to procure cheaper power and also to share some of the large “fixed costs” associated with building technical capacity. Moving forward in time, G&Ts allowed cooperatives to nimbly participate in the newer institutions that shape the electricity system, such as wholesale market trading (in our region MISO), and adopt smart technologies, like controllable thermostats. This structure serves electric cooperatives, particularly smaller cooperatives very well.

### **Power Supply Contracts**

Foundational to the G&T model is the establishment of power supply contracts. Because G&Ts were primarily predicated on creating the ability for small distribution cooperatives to co-invest in larger power plants, the relationships of distribution cooperatives with their G&Ts was formalized through power supply contracts. To get a general sense, a G&T's members might have chosen to invest in a coal power plant with an expected lifetime of 50 years. The debt on that power plant would also be tied to the expected lifetime of the plant, and therefore, to make the G&T financially viable, distribution cooperatives would be asked to sign power-supply contracts that would guarantee that the power plant would have a reliable base of customers for a similar 50-year length.

These power-supply contracts formalize the relationship between distribution cooperatives and the G&Ts and allowed for the financeability of large power plants.

### **Changes to the Energy System**

In the last ~10 years, the energy system is undergoing profound change. Two very important changes for electric cooperatives have been the rapidly declining costs of **renewables, other distributed energy technologies (e.g. storage), and natural gas** and the changing reliance on the sources of **federal finance** that initially supported co-ops.

On the cost side, natural gas and renewables have economics that are really different than large coal plants. Both have much weaker economies of scale, particularly renewables, and both have very different fixed to variable cost ratios (renewables are almost all capital costs and gas is almost all variable costs).

### **Pressures to Power Supply Contracts**

The changing landscape of energy has put pressure on the power supply contracts that are foundational to the relationship of distribution cooperatives and their G&Ts. However, just as there is significant diversity among Minnesota's 44 electric cooperatives, the responses to these pressures has also been diverse. Minnesota is not unique in this regard. Across the over 900 electric cooperatives in the country, these pressures are also being felt.

I characterize the way these pressures are affecting these relationships on a spectrum from unilateral action on one end to collective action on the other.

At the far extreme of unilateral action, there are some electric cooperatives (e.g. in Colorado) who are working to leave their power supply contract with their G&T. These utilities have decided to buy out their contract and procure all of their own power from a private company.

A less extreme case on this end of the spectrum has been the development and re-negotiation of so-called “self-supply” limits in distribution cooperatives. Some power supply contracts allow distribution utilities to build their own power supply. For example, many distribution cooperative members of the G&T Great River Energy are allowed to supply up to 5% of their generation with their own facilities, such as small scale wind and solar. We are seeing examples in Minnesota where distribution utilities are in some cases asking for the ability to do even more.

On the other end of the spectrum, collective action among distribution cooperatives in their G&Ts is being strengthened. At the far extreme on this end of the spectrum, we are seeing power-supply contracts being extended through the year 2075. These contract extensions bind together distribution cooperatives with their G&Ts for another 50+ years.

A less extreme case on this end of the spectrum have been examples of distribution cooperatives working closely with their G&T and other distribution members to co-invest in renewables projects together.

### **How is Change Happening?**

Across the spectrum of unilateral action to collective action, decarbonization is possible. Change can happen when cooperatives work alone in the sole interest of their member owners or when they work together in the interest of the whole cooperative family. Electric cooperatives must simultaneously balance their principles of “concern for the community” and “cooperation among cooperatives”

In some cases, unilateral action may actually harm other distribution cooperatives in the G&T family. In some cases, collective action may lock in distribution cooperatives and limit their ability to serve their communities as effectively as they would like. This is an important tension and will not be easily resolved. Some small cooperatives simply do not have the capacity to act unilaterally and are very well served by their G&T.

And so I believe it is important to keep in mind that electric cooperatives in Minnesota are facing very different circumstances, and as the system changes, and new pressures are applied--such as the importance of addressing climate change--policy will need to carefully take into account the diversity of cooperatives we have and allow for **multiple different pathways of change**. This may require more of a scalpel than a broad brush and a respect for local control and listening to the perspectives of cooperatives across the state as they grapple with the push and pull of operating in such a dynamic environment. We believe there is a lot that can be learned from talking to practitioners and there is also a need to work together toward our common goals.

Thank you and I would be happy to take any questions.