CORDOVA
ELECTRIC
COOPERATIVE, INC

Written Testimony of Clay Koplin
CEO of Cordova Electric Cooperative, Inc. and Mayor of Cordova, Alaska
On behalf of Cordova Electric Cooperative and The City of Cordova
Before the Senate Energy and Natural Resources Committee
Hearing to Receive Testimony on Opportunities to Improve American Energy Infrastructure
10:00AM, Tuesday March 14, 2017

Good morning Chairman Murkowski and ranking member Cantwell. I am Clay Koplin, Mayor of Cordova Alaska and CEO of Cordova Electric Cooperative (CEC) with expertise in power lines, power plants, and the value that energy infrastructure investments deliver locally and nationally.

Cordova is located in Prince William Sound in southcentral Alaska about 150 air miles from Anchorage with a population of 2,300. The community's time-tested resilience in reinventing it's excellence in the wake of disasters can be likened to a phoenix that keeps rising from the ashes. From the closure of the world's largest Kennecott Copper Mine and longest private railroad Copper River and Northwest in 1938, to the resurrection as the world's largest razor clam industry destroyed by the 1964 great Alaska earthquake uplift, to the more recent globally ranked Prince William Sound fisheries' devastation by the 1989 Exxon Valdez oil spill, Cordova bounds to its feet when knocked flat. Current status includes a ranking as the 13th largest seafood delivery port in the US, the largest commercial fishing fleet in Alaska, and a world-class intelligent energy grid boasting 100% LED street lighting, 100% underground power lines, 77% renewable energy supply, and leading and innovating micro grid technology. Socially, Cordova is ranked as the best high school, safest community, and third best city for young families in Alaska. It ranks in the top ten communities in Alaska in nearly every positive metric and continues to grow its population despite a statewide recession. This ascension has resulted from state and federal grants and loans for energy infrastructure and private sector fishing and processing infrastructure investments. It has been aided by the resilience and agility of CEC and other community organizations partnering to navigate the financial, regulatory, and business challenges of developing and operating energy infrastructure with lean resources and a formidable logistical environment. These successes have attracted the interest of the national laboratories.

Every Alaskan community has a story about a tsunami, an avalanche, an earthquake, a volcano, a changing climate, a charging grizzly bear, or some other random inconvenience requiring extreme and often unconventional solutions to restore order to their world. For Cordova, the damage caused to the Humpback Creek Hydroelectric Project by 48"of rainfall over a span of three days in October of 2006 contributed to a federal disaster declaration by "lead agency" FEMA to "make you whole" if rebuilt to exactly pre-flood design and function. Enter "lead agency" and licensor FERC stipulating redesign and reconstruction to current safety standards; not the design that failed. The ensuing regulatory dogpile of permitting agencies left Cordova Electric at the bottom clutching the football and wondering why we had been tackled by our own team. Thanks to the assistance of Senator Murkowski and her staff, we were able to peel the players off the pile, line them up on the same side of the ball, and get the project reconstruction moving down the field and finally to the goal line in summer of 2012. The federal funding from FEMA essentially covered the excessive component of the regulatory costs while the

balance of State of Alaska Renewable Energy Fund grants and CEC financing were able to overwhelm the remaining financial and logistical barriers. Of particular note is what didn't present a challenge during the flooding: power outages. Thanks to 100% underground and submarine power cables, a local policy initiative since 1978, even equipment submerged under seven feet of water continued to deliver service - except to flooded homes and businesses disconnected for safety.

What are ways we can improve the Federal Government's role in energy infrastructure projects? Build underground power lines or other local initiatives to add resiliency and value, invest in projects, and facilitate delivery of the highest possible value from those investments.

Building underground rather than overhead power lines is an example of a locally vetted and implemented policy that adds resiliency and is welcomed by consumers. This is a way in which federal technical assistance sent to the playing field learns and disseminates best practices yielding low-hanging fruit for others investing in infrastructure. Keeping all quarterbacks and salary cap stars on the sidelines strategizing with coaches while assigning only linemen to the field diminishes the game but not the cost.

The language of the federal roles in developing infrastructure; "regulating" and "permitting", tells the story of a process rather than product directed influence. In the case of the Humpback Creek disaster in Cordova, the $5.3 million received as emergency aid barely offset the financial resources consumed by the total regulatory process, while the $16.7 million balance invested by CEC and the State of Alaska was the actual infrastructure investment. Policy changes that bring both the funding and the representatives of the Federal agencies right onto the game field to observe, participate, and facilitate the projects as value-adding partners will result in true team efforts and higher game scores. Consequently, I believe this will actually improve agency performance in achieving their missions of contributing to environmental, financial, social, and cultural excellence. These are now shared goals between regulators and industry. The current paradigm of lobbing regulatory grenades at infrastructure developments every time there is an appearance of non-compliance or the insurgence of innovations that do not fit the boxes on a dusty checklist is no longer successful in a complex, uncertain global environment. More agility and resilience is necessary to overcome modern barriers to infrastructure investment.

CEC has had similar development experiences with the initial development of the Humpback Creek Hydroelectric Project in 1992, the Power Creek Hydroelectric Project in 2002, and our current Crater Lake Water and Power Project in 2017 – project development timelines and costs doubled primarily as a result of an ineffective regulatory framework. Each of these projects could have been developed as a team effort that required each stakeholder; CEC, community, agencies, NGOs, and ratepayers to take the field and work together as a team from the kickoff through the final whistle. The traditional approach to this type of teamwork is to evaluate the opponent and craft a perfect play-by-play game plan for success. The problem with this approach is that injuries, fouls, and adjustments by the other team undermine that plan. An agile approach to the game expects fouls and injuries and tricks by the other team, and relies on the agility, talent, and close communication between team members and coaches to quickly adapt to changing conditions. There is a football team a little north of here in Foxboro that has perfected this game, and applying this Agile Project Management approach to energy infrastructure development can reduce the costs and timelines of projects while improving and expanding the value streams they deliver.

As an example, Cordova is currently poised to proceed with the rebuild of an end-of-life harbor to sustain our fishing industry and with the development of the Crater Lake Water and Power Project to provide the water necessary to accommodate the growth and full utilization of half a billion dollars of seafood fishing and processing infrastructure.

The Crater Lake project would likely already be under construction if the Energy Bill you crafted last year had passed, declaring hydro a renewable resource in the IRS tax code and other federal definitions. CEC could have accessed nearly a billion dollars of leftover 1.5% Clean Renewable Energy Bonds for construction. Regardless, a non-jurisdictional determination by FERC allowed CEC to proceed with implementation of an Agile project management plan, which we hope to demonstrate with or without federal assistance. We prefer federal financial assistance and close engagement (in the field) to collaboratively execute, evaluate, and capture the process and the limitations of its application.

The Federal Grant and loan programs are critical for developing infrastructure if only to offset the current regulatory costs. Unfortunately, the public-private partnership concept probably isn't going to work for energy infrastructure investments like we would hope. Private equity prices to risk, and frankly, the greatest risk to developing energy infrastructure is often regulatory uncertainty.

Once a partnering and collaborative environment of teamwork has been established, the value streams from an investment can be maximized. In addition to economic benefits, social, educational, and adjacent value streams can be derived. For example, the Crater Lake Water and Power Project is primarily a clean water supply adequate to meet the needs of the growing seafood industry in Cordova, which has exceeded the current water supply. The resulting employment, state and federal tax revenue growth, and tsunami and earthquake tolerant emergency capabilities of this project are just of a few of the downstream values of just the water component. By harvesting the energy from the high pressure water source before it is delivered to the City, CEC can directly elevate the renewable share of Cordova energy to 90%. The energy storage capacity of the project charts a path to 100% renewable contribution by making intermittent renewables like solar, wind, and tidal feasible. In this particular case, the dam provides direct protection against historical ice dam flooding of a downstream adventure lodge, and the same general protection that all reservoirs provide against drought and flooding. In addition, the power plant/water plant can be designed and located to complement, rather than detract, from the adjacent adventure lodge. A third story could be added to serve as a small restaurant or other small business opportunity at low incremental cost. A large picture window on an exterior wall and a glass portal on the electric generator can allow schoolkids and tourists to physically see the inner workings of a hydroelectric plant. A small tribal hatchery could enhance commercial, subsistence, and recreational salmon fishing opportunities downstream of the project. A tidewater pipeline could allow the project to deliver hundreds of millions of gallons of excess or emergency water for disaster relief and/or commercial markets. Construction roads could be repurposed as community hiking or skiing trails after project completion. The carbon, nitrous oxide, and sulfur dioxide emissions offset by the reduced use of diesel power generation creates a value stream for organizations seeking to contribute to a cleaner globe.

In summary, federal participation in energy infrastructure development is, perhaps, more essential than ever. It can be improved by directly encouraging such initiatives as broader implementation of underground power lines and continuing to work toward formal adoption of hydropower as a renewable resource. By changing the federal agency posture from regulator/permitter to facilitator and assigning agents to project development teams, the grants and loans are more likely to contribute financially to building the projects and delivering better social, economic, and environmental value streams.

Thank you for this opportunity to testify. I would encourage any questions you might ask, and strongly encourage a field hearing to Cordova where you can see rather than hear of these opportunities.

Respectfully,

Clay Koplin