

Monday, March 11, 2024

Esteemed Members of the Energy, Utilities and Technology Committee

My name is Kat Taylor and I am a resident and property owner in Argyle Twp., located approximately 20 miles north of Bangor and close to the proposed route of the scrubbed Aroostook Renewable Gateway. I gave **oral testimony** at the **public hearing on February 20, 2024** and this is my written testimony in greater detail than time allowed.

The following is my written testimony in neither for nor against ***LD 2205 - Resolve, to Require the Public Utilities Commission to Initiate a Feasibility Study to Evaluate Transmission Technologies and Siting Locations for Any Future Electric Transmission Line Proposed Pursuant to the Northern Maine Renewable Energy Development*** and how my following recommendations for *the Searsport Loring pipeline* also apply to ***LD 1963 An Act Regarding the Future of Renewable Energy Transmission in Northern Maine*** and ***LD 2087 An Act to Protect Property Owners by Preventing the Use of Eminent Domain to Build Transmission Lines Under the Northern Maine Renewable Energy Development Program***

As a side note my comments address ***LD 2077 An Act Regarding Customer Costs and the Environmental and Health Effects of Natural Gas*** and how we can phase out a major natural gas pipeline by repurposing it for clean renewable energy.

I am **combining my comments** since each of these bills affect the others. My focus is how we can **begin using an existing clean energy underground transmission corridor** that satisfies **Senator Curry's comment of "...what we can do now."**

The *Searsport Loring Pipeline (SLP)* is **200 miles of pipeline** from Searsport to Limestone and the decommissioned *Loring Air Force Base (LAFB)*. **40 miles** of the pipeline is currently **leased by Bangor Natural Gas (BNG)**.

**Loring Holdings, LLC** currently holds the rights to develop this corridor for new natural gas, biofuels and electric transmission infrastructure that **runs roughly parallel to the I95 and Route 2 routes through most of the major communities in Aroostook County**. The *Aroostook Renewable Gateway (ARG)* route would have come **within 50' of the SLP**. (See maps below)

With the recent drop in natural gas prices, and the state's movement towards renewable energy, now might be the time to consider using the pipeline as an underground clean energy corridor. There are already renewable energy projects in development on the old **Loring Air Force Base (LAFB)** as well as existing wind, solar and hydroelectric projects along the route. (See maps) ( <http://www.loringenergy.com/loring> )

Since **Loring Energy is already in place**, the state may not have to look any further in finding an operator and the **project may even be financed through TIF funding** rather than ratepayers. **Limestone is looking for economic development** opportunities since the closing of Loring AFB and is currently developing biofuels for aerospace and clean energy generation and distribution.

The passage of ***LD 1981: An Act to Extend and Expand the Loring Job Increment Financing Fund***, may provide the opportunity for funding to promote renewable energy development to and from the base bringing renewed economic vitality to the area.

Retrofitting the pipeline to accept electrical lines and any substations, new or upgraded, needed along the way might **facilitate the building of new, smaller wind, solar and river generation facilities instead of waiting years for the permitting and construction of new corridors and giant wind farms** which are a more expensive approach with a larger impact on the environment.

Instead, **RFP's** could be offered for constructing **shorter, underground transmission corridors connecting** to the existing pipeline from **local energy generation projects rather than a hundreds mile long new corridor** through controversial, privately owned land **to connect to one massive foreign owned wind farm** that provides only one form of sporadic renewable energy generation.

Mainers would benefit from an in-state partner rather than invest in privately owned for-profit entities, achieving in part, a locally owned utility.

As we've seen from recent historical storms this winter, above ground energy transmission lines are vulnerable. If feasible, **using the Searsport Loring pipeline for renewable energy generated in Aroostook County reduces the risk of energy interruption, puts transmission lines underground in existing easements** and infrastructure with perhaps **minimal expense and controversy** and **brings economic development into the LAFB, Limestone, and Aroostook County areas** which I believe was the main focus of the *Northern Maine Renewable Energy Development* effort.

## Conclusion

The two sticking points on renewable energy from Aroostook County for Mainers were the above ground transmission line and the King Pine Wind Farm which is owned by foreign interests with no ongoing income, such as from Renewable Energy Credits, going to local hosts.

Instead ratepayers were **offered a paltry \$2.33 off our monthly electric bills** and **years of paying for a transmission corridor we would never own**. The **King Pine Wind Farm is 92% foreign owned with only 50 permanent jobs** after construction. Not a good return on investment.

(<https://www.themainewire.com/2024/01/rural-mainers-urge-ban-on-seizing-private-land-via- eminent-domain-for-wind-project-backed-by-foreign-asset-funds/> )

There is no need to build a new underground transmission corridor if we consider using the SLP. Instead **a study could focus on connecting proposed and existing renewable energy generation sources to the SLP**, including the proposed offshore wind farm at Searsport and the budding *Loring Energy* projects, **while providing renewable, reliable energy to the municipalities and rural towns along the route**. (<http://www.loringenergy.com/> )

**Mainers could have two way transmission of renewable energy nearly the entire length of the state without the need of major new construction** which would take years to attain.

The **Aroostook Renewable Gateway and King Pine Wind Farm projects were promoted as *Maine Energy for Mainers***, yet gave little in return for the sacrifices asked of us. The SLP would keep our locally generated, renewable energy resources home for Mainers first and provide an energy buffer for the ISO-NE region second.

Maine's commitment to the ISO-NE could eventually be satisfied by the **two locations at each end of the SLP connecting when natural gas is phased out**. Then we would have renewable energy flowing back and forth as needed, along a single, secure, locally owned underground corridor, while fulfilling our commitment to the New England grid.

**Mainers want underground energy transmission**. We're tired of paying for projects that line the pockets of outside interests while defacing our iconic landscape, and do nothing to ensure the reliability and affordability of our electricity.

**If we have to pay for it, we should do it once right** and put transmission lines underground **using existing infrastructure when possible** and **evaluating the best**, not the necessarily the cheapest, **solutions where new construction is necessary**.

**We should also own, in full or part, the benefits from local generation and transmission infrastructure we pay to build**.

**Using the SLP could jumpstart renewable energy efforts while saving Mainers money** that could be **reinvested back into bolstering our aging and vulnerable grid** instead of padding the bottom line of profit driven interests.

I've also included information on a different type of hydroelectric generation.

**Hydrokinetic devices have brought power generation to remote areas** of Alaska, Maine and South America and **are being developed here in Maine** at the defunct Millinocket Great Northern paper mill and Eastport.

These devices could be the answer to Maine's renewable energy needs.

**Firm in Millinocket to make turbine shafts for ORPC underwater power systems**

*“Earlier this year, ORPC, also known as Ocean Renewable Power Co., announced its plans to create a testing center at One North to support design and development of the next-generation Modular RivGen”.*

<https://www.mainebiz.biz/article/firm-in-millinocket-to-make-turbine-shafts-for-orpc-underwater-power-systems>

I hope you find these comments and information useful in your deliberations.

Respectfully,

Kat Taylor  
Argyle Twp.

## Pros and Cons of using the Searsport-Loring Pipeline for a clean energy underground transmission corridor

Pros	Cons
<ul style="list-style-type: none"> <li>• <b>Already Built</b> – 6” pipe with a 50’ wide easement. Eliminates eminent domain over private property issues</li> <li>• <b>Cheaper</b> than building new corridor</li> <li>• <b>No need to hire outside contractors</b></li> <li>• Already <b>permitted for energy transmission</b></li> <li>• <b>Long established easement</b> locally owned by <b>Loring Holdings, LLC</b></li> <li>• Routed over mostly <b>uninhabited land</b></li> <li>• <b>Easily accessible</b> from existing roads and waterways</li> <li>• <b>Recently retrofitted</b> for natural gas up to Lincoln</li> <li>• <b>Safe from the effects of weather</b></li> <li>• <b>Revenue</b> from pipeline could be <b>reinvested</b> back into infrastructure lessening the need for ratepayer investment</li> <li>• <b>100% of energy generated and Renewable Energy Credit’s could belong to a Maine-based development company</b></li> </ul>	<ul style="list-style-type: none"> <li>• Study needed of suitability of pipe for electrical transmission lines</li> <li>• Feasibility Study needed for retrofitting and modification of the pipeline for                             <ul style="list-style-type: none"> <li>○ Two-way transmission capability</li> <li>○ Substation construction and modification</li> <li>○ Contracting local construction</li> <li>○ Connecting to existing clean energy projects</li> </ul> </li> <li>• Return on Investment and reduction of ratepayer contribution if any</li> </ul>

## Searsport Loring Pipeline

This map is created by screen captures so is not entirely accurate. But it is close enough to warrant further study of using the SLP.

The red line is the pipeline.

This map shows existing wind farms that parallel the SLP showing MW output. Underperforming wind farms could be “Repowered” to boost output and connected to the SLP clean energy corridor. (See link below)

Some Hydroelectric dams are situated below Howland and just above Bangor on the Penobscot River. I was unable to capture a clear map of dams online.

<https://www.maine.gov/dep/land/dams-hydro/index.html>

Solar farms are located mainly below Bangor and to the south.



THE FACTS    WIND PROJECTS    OUR ECONOMY    OUR INDEPENDENCE



1. Mars Hill (First Wind): 42MW
2. Stetson I & II (First Wind): 83MW
3. Kibby (TransCanada): 132MW
4. Oakfield (First Wind): 150MW
5. Vinalhaven (Fox Islands Wind): 4.5MW
6. Beaver Ridge (Patriot Renewables): 4.5MW
7. Rollins (First Wind): 60MW
8. Record Hill (Independence Wind): 50MW
9. Spruce Mountain (Patriot Renewables): 20MW
10. Bull Hill (First Wind): 34MW
11. Passadumkeag (Quantum): 42MW
12. Hancock Wind (First Wind): 54MW
13. Saddleback Wind (Patriot Renewables): 34MW
14. Canton (Patriot Renewables): 23MW

### Repowering and Recycling wind turbines:

[https://grist.org/energy/how-to-recycle-the-giant-magnets-inside-wind-turbines-these-scientists-have-a-few-ideas/?utm\\_medium=email&utm\\_source=newsletter&utm\\_campaign=daily](https://grist.org/energy/how-to-recycle-the-giant-magnets-inside-wind-turbines-these-scientists-have-a-few-ideas/?utm_medium=email&utm_source=newsletter&utm_campaign=daily)



The following articles and website information show the potential public benefits of acquiring the pipeline and utilizing multiple forms of current and future renewable energy, with little or no opposition.

We could **eliminate a current two hundred mile long natural gas pipeline**, with few if any major customers north of Bangor and repurpose it for renewable energy. (See map at: Natural Gas Service) <https://www.maine.gov/meopa/natural-gas>

## **Hydrokinetics – an alternative solution to large energy development**

**Hydroelectric has long been a mainstay of Maine’s renewable energy system.** In recent years an increasingly **damaging climate has made large wind and solar projects risky** and **residents want a permanent solution that does not include above ground transmission corridors.**

**ORPC is a company in Maine** developing **hydrokinetic turbines** which sit under the water level but float above the river/sea bed. The devices are **low impact on the environment with little to no impact on wildlife or recreation.**

ORPC’s RivGen devices have been **tested in harsh environments like Alaska and Maine.** They offer an **alternative to large development**, harnessing the power of our many rivers **without obscuring our views or impeding use of the land or water.**

**Most devices are less than 1 MW** in generation, yet scalable, which may make them **eligible for NEB generation without major upgrades to existing infrastructure.** The **Penobscot River**, with a history of hydroelectric generation, **runs parallel and over the Searsport Loring Pipeline** making connection to the grid feasible.

### **RivGen® Power System & Integrated Microgrid Solutions**

<https://orpc.co/rivgen-power-system-integrated-microgrid-solutions/>

### **Portland company enters deal with Shell to generate renewable energy from Mississippi River currents**

<https://www.pressherald.com/2023/10/24/portland-renewable-power-company-enters-deal-with-shell-on-mississippi-river-project/>

Seen here are 2 RivGen devices in Millinocket that are heading to South America. The forklift gives perspective to the size. These are an elegant scalable solution for Maine’s river renewable power generation **using existing delivery infrastructure.**



## Loring Energy Projects

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### **ORPC Video - Maine Conservation Voters and Maine Conservation Alliance**

*Lunch & Learn: Tidal and River Hydrokinetics' Role in the Clean Energy Transition with ORPC Nathan Johnson, VP of Development*

<https://www.youtube.com/watch?v=YZJfiaRR6Wk>

**Please watch this video – it is full of information on ORPC's devices, permitting, siting, regulations, affiliations and partnerships.**

### **ORPC, INC.**

**Nathan Johnson** – (born and raised in Maine from a multi-generational commercial fishing family)

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### **Learn more about community driven local energy networks:**

The DOE Communities LEAP (**Local Energy Action Program**) aims to facilitate sustained community-wide economic and environmental benefits primarily through DOE's clean energy deployment work.

### **UMaine**

<https://umaine.edu/mitchellcenter/event/talk-the-maine-community-resilience-partnership-supporting-local-climate-and-energy-action/>

### **State and Local Energy Efficiency Action Network (SEE Action)**

<https://www.energy.gov/scep/slsc/state-and-local-energy-efficiency-action-network-see-action>

### **DOE Communities LEAP (Local Energy Action Program)**

<https://www.energy.gov/communitiesLEAP/communities-leap>

# MILLINOCKET, MAINE

## MODULAR RIVGEN®

### TEST PROJECT

Ocean Renewable Power Company (ORPC), a developer of tidal and river power systems that generate electricity from free flowing tidal and river currents without dams, has partnered with Our Katahdin to test the new Modular RivGen power system in Millinocket, Maine.



*The Modular RivGen devices utilize ORPC's proven cross-flow turbine technology.*

The Modular RivGen system is designed for integration into existing infrastructure including hydroelectric facilities, irrigation canals and bridges, piers, breakwaters and flood controls systems.



*Modular RivGen Test Site*

Development of the Modular RivGen system has been funded by the U.S. Department of Energy and utilizes ORPC's proven turbine generator unit technology.

ORPC is headquartered in Portland, Maine, with an engineering lab in Brunswick, and a test site in Eastport, Maine. International subsidiaries are located in Montreal (ORPC Canada), Dublin (ORPC Ireland) and Punta Arenas (ORPC Chile).

ORPC has the longest operating hydrokinetic project in all of the Americas, with its commercialized RivGen device deployed in the Kvichak River and providing power to the remote village of Igiugig, Alaska.



## PROJECT PLANNING

ORPC will test two Modular RivGen devices within Millinocket Stream at a site located at the former Great Northern Paper Company mill. The devices will connect horizontally, just downstream of the mill walking bridge and below the Penobscot Mills powerhouse.



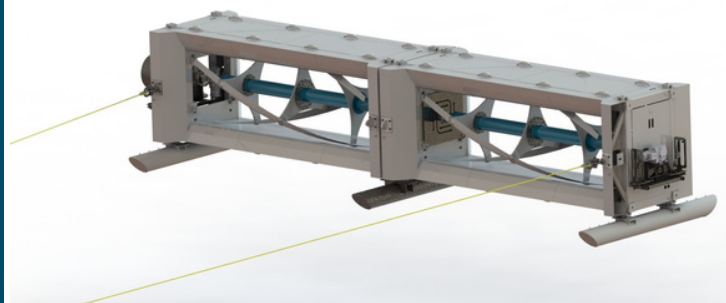
Millinocket Fabrication and Machine has been contracted to fabricate the Modular RivGen components. The devices will arrive to the site pre-assembled, placed into the stream via the use of a crane, and held in place via a mooring system consisting of one anchor point. A temporary shore station will be placed on the east side of the stream to house controls and monitoring equipment.

The Modular RivGen devices will be installed for testing from September 2022 to April 2023.

Reach ORPC at [info@orpc.co](mailto:info@orpc.co).

## RECREATION & SAFETY

Recreational use may occur around the Modular RivGen devices which will be approximately 1.5 feet under the water surface. The devices' corners will be marked by four buoys. One additional buoy will be used to mark location of an upstream anchor.



*Proposed Modular RivGen Configuration*

The width of the two devices when connected will be about 51 feet; this particular area of Millinocket Stream is approximately 100 ft wide. Paddlers will be able to paddle around the device set up. Fishermen can fish around the device but are not advised to cast within the marked device area.

Safety signage will be posted on both sides of the mill walking bridge and at Kermit Crandall Park by the boat launch.