



February 5, 2025  
Senate Energy and Natural Resources Committee  
State Capitol  
600 East Boulevard Avenue  
Bismarck, ND 58505

Distinguished Chairperson and Committee Members,

I am Moones Alamooti, CEO of GeoTinkers Inc., a North Dakota-based startup specializing in energy and geotechnical solutions. I hold a Ph.D. in Geophysics and a second Master's degree in Energy Engineering, both from the University of North Dakota.

I express my strong support for Senate Bill 2360, which proposes a comprehensive legislative study on geothermal energy development in North Dakota. This initiative is not merely a study – it represents a strategic opportunity to position North Dakota at the forefront of America's energy evolution.

### **North Dakota's Unique Geothermal Advantage**

Our state possesses extraordinary geothermal potential, particularly within the Williston Basin. With over 30,000 inactive oil and gas wells, we have a pre-existing infrastructure that can be transformed into a sustainable energy network. This transformation presents three primary opportunities:

1. Power Generation Through Enhanced Geothermal Systems (EGS)
  - The Williston Basin's temperature gradient of 25-50°C per kilometer creates ideal conditions for geothermal development
  - Each repurposed well could generate 2-5 MW of electricity
  - Allows for energy volumes to be interconnected to Medium Voltage 34.5 - 69kV or High Voltage 115 - 345 kV transmission power lines.
  - Converting just 10% of our inactive wells could:
    - Generate 6,000 MW of installed capacity, capable of powering up to 2 million homes (~26,000 kwh annually per home). This capacity significantly exceeds our state's current residential demand, as North Dakota's population is under 800,000. This excess capacity positions us perfectly to support growing industrial needs and export power to neighboring states.
    - Create \$1.5 billion in annual electricity revenues at current wholesale rates
    - Save \$500 million in well-plugging costs

### **Meeting North Dakota's Growing Data Center Demands**

Our state has emerged as a premier destination for data centers, with electricity consumption from these facilities reaching 3,915,720 MWh in 2023 — representing 15.42% of the state's total electricity consumption. Between 2019 and 2023, North Dakota experienced the nation's fastest relative growth in data center energy demand, increasing by 37% (2.6 BkWh). This growth trend is expected to continue, making our abundant geothermal potential particularly valuable for:

- Supporting the expanding data center infrastructure
- Providing reliable, 24/7 baseload power

- Offering sustainable energy solutions that align with corporate environmental goals
- Strengthening North Dakota's position as a leading data center hub

## 2. District Heating Systems

Drawing from successful international models like Iceland and France, where geothermal district heating has reduced costs by 50%, we can implement similar systems for:

- Educational institutions (University of North Dakota, Bismarck State College, North Dakota State University)
- Municipal facilities in major cities (Fargo, Bismarck, Grand Forks, Minot)
- State government buildings
- Industrial complexes

## 3. Direct-Use Applications

- Agricultural Innovation: Year-round greenhouse operations
- Aquaculture Development: Temperature-controlled fish farming
- Industrial Processing: Paper production, biofuels, and refrigeration

## **Economic Impact and Investment Strategy**

Other notable states demonstrate the economic potential of geothermal development:

Texas Model:

- \$10 million feasibility study attracted \$5 billion in private investment
- Secured \$84 million in Department of Energy funding
- Estimated 20 GW geothermal potential from oil and gas fields

Oklahoma Success:

- \$50 million federal pilot investment
- 6:1 return on investment
- \$300 million in economic benefits over a decade

Proposed Investment for North Dakota: A \$5-10 million feasibility study would enable:

- Scientific mapping of optimal geothermal sites
- Comprehensive infrastructure analysis
- Economic modeling for well conversion
- Strategic planning for power generation and heating systems

## **Federal Support Framework**

Recent federal initiatives have provided unprecedented support for geothermal development:

1. HEATS Act (H.R. 7409) – Expands federal tax credits for geothermal energy projects, incentivizes private R&D investment, and promotes the use of enhanced geothermal systems (EGS) and direct-use applications.



2. CLEAN Act (H.R. 1449) – Provides loan guarantees for geothermal development, offers federal grants for exploratory drilling and well repurposing, and supports state-level geothermal infrastructure projects.
3. REGROW Act by Senator Cramer: Provides \$25 million for well repurposing
4. National Energy Emergency Declaration (January 2025) by President Donald J Trump: Recognizes geothermal heat as a critical domestic resource

### **Strategic Implementation Plan**

1. Immediate Actions:
  - Commission a comprehensive \$5-10 million feasibility study
  - Establish public-private partnerships with energy sector stakeholders
  - Apply for available DOE innovation grants (\$84 million pool)
2. Legislative Framework:
  - Implement state tax credits for well repurposing
  - Mandate geothermal consideration in public infrastructure projects
  - Create streamlined permitting processes for geothermal development
3. Long-term Development:
  - Foster collaboration between oil and gas companies, universities, and energy innovators
  - Develop workforce training programs and balance labor availability between oil and gas vs. geothermal jobs.
  - Create geothermal technology innovation hubs

### **Economic and Environmental Benefits**

This initiative will:

- Diversify North Dakota's energy portfolio
- Generate substantial private investment and create skilled jobs
- Reduce energy costs for residents and businesses
- Strengthen our state's energy independence
- Support national clean energy goals while maintaining our energy leadership

### **Conclusion**

Senate Bill 2360 represents more than a study – it is a gateway to North Dakota's energy future. By leveraging our existing infrastructure, skilled workforce, and natural resources, we can pioneer a new era of sustainable energy development while maintaining our position as a national energy leader. I strongly urge this committee to support Senate Bill 2360 and help launch North Dakota's geothermal revolution.

Thank you for your consideration. I welcome your questions.

Respectfully submitted,

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