



March 19, 2025
House Agriculture Committee
State Capitol
600 East Boulevard Avenue
Bismarck, ND 58505

Distinguished Chairman Beltz and Members of the House Agriculture Committee,

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 Master's degree in Energy Engineering from the University of North Dakota.

I strongly support Senate Bill 2360, which will establish a comprehensive legislative study on geothermal energy development in North Dakota, creating a strategic framework to position our state at the forefront of both energy innovation and agricultural advancement.

What Senate Bill 2360 Will Deliver

This bill authorizes a comprehensive study that will:

- Map optimal geothermal sites across North Dakota for power generation and direct-use applications
- Develop a framework for repurposing inactive oil and gas wells into geothermal energy systems
- Create regulatory pathways for electricity generation and transmission
- Establish funding mechanisms that leverage federal support opportunities
- Design pilot programs for both power production and agricultural applications
- Assess infrastructure needs for connecting geothermal resources to the grid

North Dakota's Geothermal Potential: Power and Agriculture

North Dakota possesses extraordinary geothermal potential, particularly within the Williston Basin. With over 30,000 inactive oil and gas wells, we have pre-existing infrastructure that can be transformed into both a sustainable energy network and an agricultural innovation platform.

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
- Converting just 10% of our inactive wells could:
 - Generate 6,000 MW of installed capacity, capable of powering up to 2 million homes
 - Create \$1.5 billion in annual electricity revenues at current wholesale rates
 - Save \$500 million in well-plugging costs

This abundant clean energy resource creates a unique opportunity to transform North Dakota agriculture through reliable, low-cost power for agricultural operations.

Year-Round Agricultural Production

Geothermal energy can fundamentally transform our agricultural calendar:

- **Greenhouse Agriculture:** Geothermal-heated greenhouses enable:
 - Year-round production of high-value crops
 - Extension of growing seasons by 3-4 months annually
 - 60-75% reduction in heating costs compared to conventional greenhouses
- **Controlled Environment Agriculture:** Temperature-controlled facilities allow for:
 - Protection from increasingly unpredictable weather patterns
 - Significant reduction in water usage (up to 50% compared to traditional farming)
 - Enhanced crop protection from pests and diseases

Agricultural Processing and Livestock Operations

- **Crop Drying and Processing:** Direct geothermal heat application reduces energy costs by 30-50%
- **Aquaculture Development:** Temperature-controlled fish farming operations
- **Livestock Facility Heating:** Improved feed conversion efficiency and reduced mortality rates

Case Studies: Agricultural Success with Geothermal Energy in the USA

- **Fish Breeders of Idaho (Hagerman, Idaho)**
 - 150-acre operation using 95°F geothermal water
 - 1.2 million pounds of tilapia produced annually
 - 70-75% energy savings compared to conventional systems
 - 15-18 full-time jobs created
 - Source: Geo-Heat Center Bulletin, Oregon Institute of Technology; Idaho Department of Water Resources
- **Milgro Nursery (Wabuska, Nevada)**
 - 8-acre greenhouse using 168°F geothermal water
 - 4.5 million potted plants produced annually
 - \$350,000-400,000 annual energy cost savings
 - 60-65% carbon footprint reduction
 - Source: Great Basin Center for Geothermal Energy; Nevada Division of Minerals case studies
- **Imperial Valley Geothermal District (California)**
 - 15 acres using direct geothermal applications
 - 20-25% higher yields compared to conventional farming
 - 3-4 month growing season extension
 - 40-50% water savings
 - Source: California Energy Commission; Imperial Irrigation District renewable energy reports

Economic Impact for North Dakota Agriculture

Implementation of Senate Bill 2360's recommendations would enable:

- Creation of 1,500-2,000 new year-round agricultural jobs
- Generation of \$250-350 million in annual agricultural revenue
- Reduction of energy costs for existing operations by 40-60%



- Decreased dependence on imported produce during winter months

Federal Support Available

Recent federal initiatives have created unprecedented support for geothermal development:

- **REGROW Act** by Senator Cramer provides \$25 million for well repurposing
- **National Energy Emergency Declaration** (January 2025) recognizes geothermal heat as a critical domestic resource
- **Bipartisan Infrastructure Law**: Allocated \$84 million specifically for geothermal energy demonstration projects, with priority for repurposed oil and gas infrastructure
- **DOE Frontier Observatory for Research in Geothermal Energy (FORGE) Initiative**: Ongoing \$220 million program focused on developing enhanced geothermal systems technologies
- **DOE Enhanced Geothermal Shot**: Recently announced initiative aiming to reduce EGS costs by 90% to \$45 per megawatt hour by 2035
- **DOE Wells of Opportunity Program**: Provides funding for converting existing wells to geothermal use, with \$20 million allocated for 2024-2025 projects

Specific Legislative Actions Needed

I respectfully request that the committee:

1. Vote in favor of Senate Bill 2360 to authorize this critical study
2. Recommend appropriation of \$5-10 million for comprehensive feasibility assessment
3. Support the specific inclusion of agricultural applications in the study parameters
4. Establish an expedited timeline for study completion to capitalize on current federal funding opportunities
5. Consider a parallel regulatory review to streamline permitting for agricultural geothermal applications

Conclusion

Senate Bill 2360 represents North Dakota's gateway to agricultural innovation and energy leadership. The proposed study will provide the roadmap for transforming our existing well infrastructure into a geothermal resource that powers year-round agricultural production despite our challenging climate.

I urge you to vote in favor of Senate Bill 2360 to unlock North Dakota's geothermal potential for our agricultural future. Your support today will help launch a new era of agricultural productivity and rural economic development for generations to come.

Thank you for your consideration. I welcome your questions.

Respectfully submitted,

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