WHITEPAPER ON

THE NON-RENEWABLE ENERGY PRODUCTION TAX POLICY

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I. INTRODUCTION

The world continues to face challenges in controlling and distributing earth's resources effectively. There continues to be reliance on fossil fuels and other raw materials that, once consumed, cannot be replenished, which will inevitably lead to drying out our reservoir of materials. Specific actions throughout the world are taking effect to build and increase renewable energy production and move away from relying on non-renewable sources. In the America, much of the work begins at the state level, focused on developing actions specific to environments, residents and government.

Building and increasing renewable energy at a state-level requires educating the public and promoting the use of renewable energy to its residents. While there is certainly a movement, many of the goals set out by states are dependent on funding through grants provided by the United State federal government. Minnesota is no different. It depends on these grants, while depending on its own renewable resources to drive implementation and improvement. In other words, these grants are not being driven by state funding, yet dependent on state resources.

The current actions by the state of Minnesota set out to increase state-use of renewable energy through updating building codes for new constructions, promoting clean industry, including both private and public transportation. These actions by the state continue to have a positive effect, except there is no significant action in place to improve overall renewable energy consumption by its property owners. The reliance on federal funds might drive the state as a whole, through educating the public and promoting clean energy, but none of these plans directly promote individual improvement – specifically, property owners. Therefore, Minnesota needs state funding to implement new strategies to promote and incentivize individual production of renewable energies.

In fact, Minnesota property owners who produce renewable energy are taxed, and the funds from those taxes are not equally applied to state renewable energy projects. This is counterintuitive to increasing overall renewable energy production. And while there is no doubt that many of these actions by the state are having definitive, positive effects, there is no action promoting the use of renewable energies by property owners, or even significant state self-funding. From an economic perspective, property owners are dissuaded from using renewable energy sources. The state is missing an opportunity to improve overall funding of state renewable energy projects while improving overall property owner energy consumption.

This Whitepaper on the Non-Renewable Energy Production Tax Policy (herein referred to as "whitepaper") sets out a new State of Minnesota policy that will incentivize property owners to increase renewable energy production on all properties, not just new constructions. It outlines how the state will not only increase overall property owner renewable energy production, but expand its funding for all state-funded renewable energy projects that focus and improve upon the same objectives set out in its current action plans.

II. STATE OF MINNESOTA & RENEWABLE ENERGY

a. Renewable Energy

Renewable energy reduces dependence on limited resources such as coal, oil, and natural gas. The burning of these fossil fuels releases carbon dioxide into the atmosphere, resulting in a slow but measurable rising of the earth's temperature. This process, called global warming, can only be managed by converting energy systems to renewable energy. The most common residential uses of renewable energy are solar, wind, and hydropower.

Renewable energy is defined as energy that is derived from a renewable, natural energy resource. It comes in many forms: solar, wind, hydro, bio-fuels, ocean, and geothermal. These resources may be used alone or combined and converted into useful energy like electricity. Other common applications include water heating, solar cooling, and various other home and commercial uses.

Solar Energy is energy harnessed from the sun and transferred into a useable form. Common applications include electricity production, water heating, or battery charging. Two ways to use solar energy are: photovoltaic (PV), which processes rays through semiconductors like silicon, and solar thermal (ST), where heated water creates steam to power a generator.

Wind Energy is energy harnessed from the wind, usually through the blades of turbines. Wind pushes the blades and that energy is transferred into a rotor, which pushes a shaft that powers a generator. From there, it can be converted to either electricity or more specific uses such as a grain grinding or water pumping. Normally, a wind turbine produces electricity while a windmill produces physical energy.

Hydropower is energy captured from moving water. This type of energy collection relies on the downward flow resulting from gravity; the greater the difference in elevation levels, the greater the amount of energy created. This type of renewable energy is less common to residential areas as it relies on proximity to a water source.

b. Advances in Renewable Energy

As renewable energy technology becomes less expensive and more advanced, aggressive energy goals should be implemented to keep up the pace. For example, battery technology is advancing constantly. According to a Bloomberg New Energy Finance Report (BNEF), improvements in battery technology has resulted in an eighteen percent (18%) competitive increase against non-renewable energy sources.

c. Current Landscape

Minnesota's natural landscape provides ample resources for renewable resources; prairies are exceptional for capturing wind energy, while its soil provides ample cornfields for biomass production. Although Minnesota does not produce fossil fuels, it plays a crucial role in crude oil transportation through the Mississippi River. The Mississippi River runs from Minnesota to Louisiana, providing a suitable source for hydropower production.

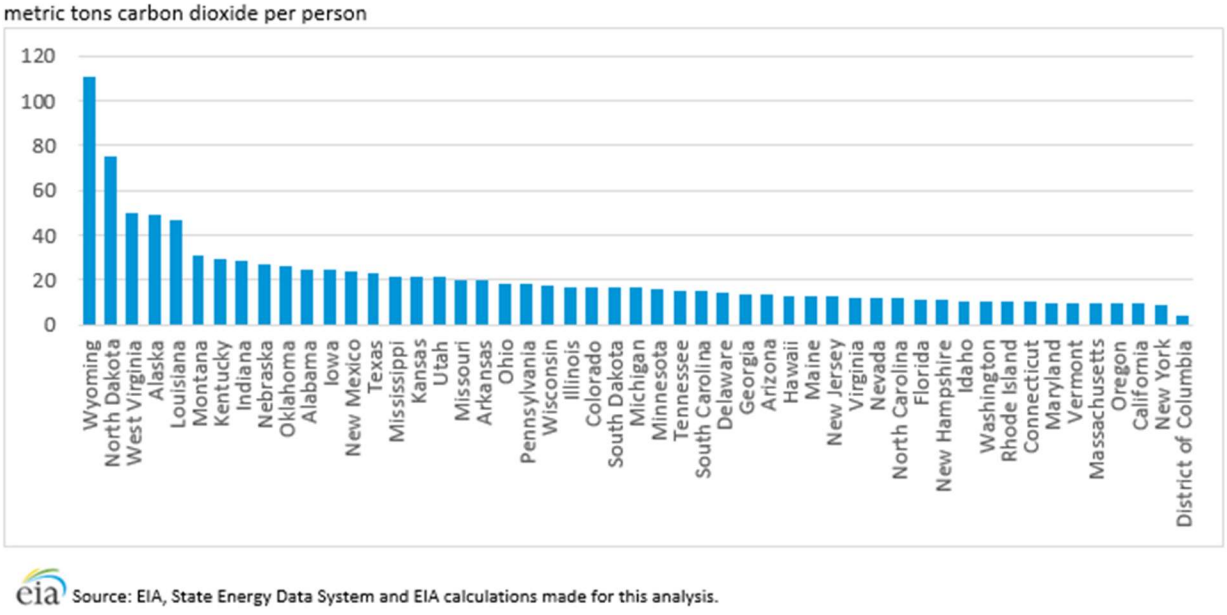
Minnesota produces no coal; it receives most of its supply from Wyoming and Montana which is used towards electricity production. Minnesota is consistently reducing its reliance on coal; in 2012, coal provided less than half of electricity production (US Energy Information). By 2017, coal had dropped to about two fifths of energy production, nuclear power plants provided about one fifth, and natural resources covered the rest. With its bountiful natural resources, Minnesota is well situated for further reducing its reliance on fossil fuels.

It is estimated that Minnesota renewable energy production is at twenty-one percent (21%). Its goal is twenty-five percent (25%) production by the year 2025. There are many regulations the state has in place that are directed at companies and utilities to improve renewable energy consumption.

d. The Need for Clean Energy

Despite the tense political climate, specifically regarding global warming, the upward trend towards clean energy is clear. In the last fifteen years, forty-one states have reduced CO2 emissions while the remaining nine have increased their emissions. State emissions of CO2 by population varies:

Figure 2. Per capita energy-related carbon dioxide emissions by state, 2015



eia Source: EIA, State Energy Data System and EIA calculations made for this analysis.

Minnesota ranks about halfway (27th) per capita in carbon dioxide emissions. There is room for improvement. This graph shows Minnesota's need to increase renewable energy incentives in more successful state energy programs directed at more than just business and industry.

Although US tax incentives for renewable energy far outweighs tax incentives for fossil fuels, the US continues to rely mainly on oil, gas and fuels for power. The U.S. Energy Information Administration expects 2018 and 2019 to set new records in U.S. fossil fuel use (EIA.gov).

III. EXISTING MINNESOTA POLICIES

a. State of Minnesota Renewable Energy Action Plan

The State of Minnesota currently has renewable energy action plans in place. These plans include promoting personal electric vehicles, buses, fleets, and alternate-fuel heavy vehicles, as well as cross-sector opportunities to promote a clean energy industry. It sets its goal to be at twenty-five percent (25%) renewable energy production by the year, 2025. These action plans are funded by the United State Department of Energy and implemented by the state of Minnesota.

According to its August 2016 action plan, the state reported in 2013 that it was at thirteen percent (13%) renewable energy production. A 2016 press release by the state referenced that it generated twenty-one percent (21%) of its electricity from renewable forms of energy in 2015. In many ways, Minnesota has exceeded and continues to exceed its goals. However, many of its goals are dependent on U.S. funding, and focus primarily on electric vehicles, commercial industry, new constructions, and encouraging residential customers through "behavioral strategies" as opposed to incentives. As federal administrations change, it is necessary to create additional funding methods instead of solely relying on funding from the federal government. And as renewable energy production increases, it is necessary to craft new ways to generate new renewable energy production. Further, the current actions by the state of Minnesota do not have definitive plans for funding nor economically promoting renewable energy production for property owners.

b. State of Minnesota Energy Production Tax

The Minnesota State Department of Revenue ("MSDR") administers solar and wind energy production taxes. These taxes apply to anyone generating solar energy systems with a capacity exceeding one megawatt or wind energy conversion systems installed after January 1, 1999. Each year, solar and wind energy producers meeting the criteria must file a return. If an energy production return is not filed, the state will assume the production rate is sixty-percent capacity for wind energy and third-percent capacity for solar and tax accordingly.

The current tax rate varies based on capacity of the systems and whether there are two or more systems. Below is a table that outlines the current tax rate.

i. Solar Energy Generating System Tax Rate

$1.20 per megawatt hour (1,000 kilowatt hours) produced.

ii. Wind Energy Conversion System (WECS) Tax Rates

TYPE OF WECS	CAPACITY	TAX PER MEGAWATT HOUR
Large scale	Over 12 megawatts	$1.20
Medium scale	Over 2 to 12 megawatts	$.36
Small scale	2 megawatts and under	$.12

IV. NON-RENEWABLE ENERGY PRODUCTION TAX & IMPLEMENTATION

a. The Non-Renewable Energy Production Tax (Non-REU Tax)

Property owners without at least thirty percent (30%) of their energy produced from renewable energy systems will be required to file a return for a non-renewable energy production tax ("Non-REP tax"). This tax also applies to property owners who do not use any renewable energy production systems.

Renewable energy production systems include hydro, wind and solar energy conversion systems.

i. Tax Rate

The tax will be based on megawatt hour produced of non-renewable forms of energy. The tax does not apply to renewable energy forms such as hydro, wind and solar energy generating systems.

The rate will be $2.40 per megawatt hour of non-renewable sources of energy produced per month by property owners.

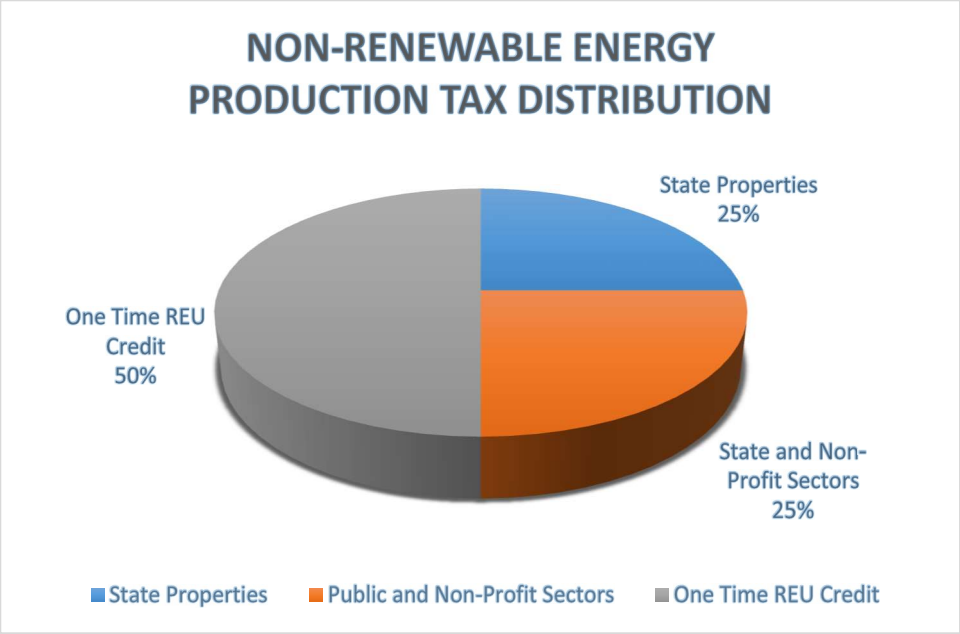
ii. Renewable Energy Tax Trust

All funds generated from the Non-REU tax will be deposited into a state trust. The MSDR will control the trust and distribute according to its covenants, conditions and restrictions. In accordance with these covenants, the funds from the trust will be distributed as follows:

a) State Properties
Twenty-five-percent (25%) of the funds to be distributed and used to increase and maintain renewable energy projects on all state properties. This includes implementing and maintaining renewable energy production systems and upgrading to at least twenty-five percent (25%) renewable energy production use.

b) State and Non-profit sectors
Twenty-five percent (25%) of the funds will be distributed to both state and non-profit sectors, including state transportation, state parks, and non-profit organizations operating in the state of Minnesota. This includes implementing and maintaining renewable energy production systems or upgrading to at least twenty-five percent renewable energy production use.

c) One Time REU Credit
Fifty-percent (50%) from the trust will be distributed to Minnesota property owners as a one-time renewable energy use credit (REU credit) for those who provide evidence of purchasing and using new renewable energy systems installed after May 1st, 2018. The system must convert existing production from zero to at least thirty percent (30%) renewable energy production use.



iii. Surplus

Any surplus of funds will be distributed to create scholarships for eligible Minnesota State residents who are actively seeking a degree in any environmental science.

V. THE WAY FORWARD

It is Minnesota's obligation to its citizens to protect the current and future health of the environment. Current renewable energy policies for property owners are unfavorable; the extra tax burden dissuades owners from converting to renewable energy sources.

The goal of this policy is to create an incentive for property owners to implement and increase renewable energy usage, while provide funding to state renewable energy projects. It reduces reliance on fossil fuels and increases monetary statewide support toward renewable energy projects. To create ambitious yet feasible goals, Minnesota must consider social, scientific, and economic barriers. This will be done by collaborating with appropriate private and public subject matter experts.

This energy policy should not be considered stagnant; it will develop and adapt to match the dynamic nature of renewable energy and Minnesota's environmental landscape. It will likely require amendments and supplements as problems arise. These policies will be analyzed quarterly for the first year, and yearly thereafter, to ensure appropriate transitions and implementations. When this energy policy proves consistent success, the standard review process will take place every two years, including taking in consideration comments and suggestions from the public. Constant monitoring of private and public energy production rates will provide data to ensure it has aligned with social, environmental, and financial expectations.

VI. CONCLUSION

The state of Minnesota continues to drive renewable energy production at a state level by regulating industry and promoting production by its residents through behavioral strategies. These action have proven successful, specifically in industry, but also rely heavily on federal funds and state regulations. There are not enough incentives for property owners. By taxing property owners who do not use at least thirty percent (30%) renewable energy, which helps balance the current energy production tax, additional funds can be generated to focus on specific areas of improvement by the state and its residents. The commission in charge of distributing these funds will be the same departments focused on improving the current actions in place. This policy will not only increase funds for state-level projects, but it will help incentivize its residents to convert existing systems to renewable forms of energy. It also funds education scholarships and other state projects that may not fall within its current goals. The Non-Renewable Energy Production Tax is what Minnesota needs in order to create new, innovative projects and lead its residents to clean energy production and living.

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