

This letter addresses the proposed 500 kV **Mountain States Transmission Intertie (MSTI) and Townsend substation**. I am a professional wildlife biologist. I strongly believe that alternative energy is the future of our country if we are to continue to enjoy the quality of life and clean environment that we have come to expect. I also have expertise with both wind and solar energy, as for eight years, I've produced all of our household electricity from these two renewable energy sources. **Based upon this knowledge and experience, I oppose MSTI and the Townsend substation.**

Here are some facts about wind and solar energy. For the cost, solar has greater predictability than wind and is virtually maintenance free. We have a system of 1.8 KW of solar panels, costing \$4/watt or \$7,000 total, which generates more than enough to run our home. In fact, from early March to late September, we produce an excess of electricity. We've reduced our electrical consumption by replacing incandescent with compact florescent bulbs, replacing our desktop computer with a laptop, using an energy star freezer, and switching off electronic devices. Electrical generation and conservation are things every household in America could do.

For the past three years, I have been working on thermal solar sites in the Mojave Desert. Presently, five thermal solar plants operate there. The California Energy Commission is in the process of approving 14 applications for thermal solar electric plants that have a total installed capacity of 4,800 MW. (A megawatt can power 1,000 homes.) These are all located within 100 to 150 miles of major load centers where the electricity will be used. In addition, the Bureau of Land Management (BLM) has received applications for 34 large scale thermal solar plants with a combined capacity of 24,000 MW. There are at least nine large wind farms planned in that area as well. I know that there are similar projects planned for southern Nevada and Arizona. The sun in the Mojave Desert is much more consistent than the wind in Montana. In addition, thermal solar plants have the ability to efficiently store solar energy for peak demand periods. How is Montana's wind generated electricity going to compete with solar located right next to the load centers?

In California, recent developments increase the prospect of grid parity for photovoltaics (also called solar panels). Grid parity is the point at which renewable electricity is equal to or cheaper in cost than grid power. San Diego Gas and Electric (SDGE) has just invested **\$250 million** to place photovoltaic panels on roofs of large commercial and government buildings. Southern California Edison (SCE) is in the initial stage of engineering a similar project in the Los Angeles basin. California state government is into its second program to encourage homeowners to place solar panels on their roofs, and as a result of these programs, home based photovoltaics provide more electricity than the five large scale thermal solar plants currently operating in the Mojave Desert! These people have found the same thing we have at our house: photovoltaics are simple, cost effective, and virtually maintenance free. The trend in photovoltaics in recent years has reduced production costs (30% reduction in the past year) and increased efficiency. If SDGE and SCE did not believe this, they would not be investing hundreds of millions of dollars in these projects.

Think about this: **The MSTI transmission line will cost about \$1.1 billion but will not produce one single watt of electricity.** Instead, it will create unmitigated environmental impacts, high consumption of fossil fuels (for maintenance by vehicles and helicopters), new maintenance roads, significant loss of electricity during transmission, and unwarranted taking of private property for the profit of private industry. This money could instead fund a large scale photovoltaic project such as SDGE's that would be sufficient to power 250,000 homes (that is about 250 MW). You could easily double the number of homes powered if those homes were to engage in energy conservation. Doesn't it make sense to generate the electricity where it is going to be consumed? Maybe 50 years ago the options were coal or nuclear, but today, photovoltaics and thermal solar are viable alternatives that can be used almost anywhere. Las Vegas and Los Angeles do not need Montana electricity. They can more than adequately generate their own electricity. Electricity generated in Montana for export to distant load centers is a bad idea that only an energy corporation would love. Electrical generation as close to the load center as possible reduces environmental impacts, increases reliability of the grid systems, and assures that the socialized costs of electrical generation are paid by those who use the electricity. Micro generation of electricity with photovoltaics at individual homes and commercial and government buildings is by far the most environmentally friendly form of electrical production since it is centered in areas already impacted by humans, virtually eliminates the need for long distance high voltage transmission lines, and results in no CO<sub>2</sub> production.

I've followed the development of the MSTI power line for about a year now, and a major issue will be the taking of private property for this project. I have spoken to several landowners along the proposed routes in Broadwater and Jefferson Counties who are strongly opposed to the power line crossing their properties. They consider the amount of money offered per tower (a few thousand as a one time payment) to be trivial compared with lost property value and quality of life. This sentiment has been expressed by property owners all the way from the proposed Townsend substation site to the Idaho substation site.

We do not know who will be paying for MSTI and the Townsend substation. Will there be a socialized cost that will be passed on to Montana rate payers in their monthly bills? Will exporting electricity from Montana under deregulated market conditions result in higher electrical costs in Montana because we would be competing with major load centers in the southwest that pay more for their electricity? MSTI and the Townsend substation have nothing to do with serving the greater public good and everything to do with corporate and state government greed. There are viable alternatives to MSTI that don't involve huge, expensive power lines. Montana's citizens have nothing to gain from this project and will bear the costs while NorthWestern is poised to reap the profits. NorthWestern is not even a Montana owned business. This continues the colonial relationship that Montana has served for wealthy out-of-state interests since our early history. I am asking our government officials to stand up to these people and protect the rights of Montana citizens first and foremost. Montanans should not subsidize electricity in distant locations by losing their property rights and paying higher electric rates while MSTI and the Townsend Substation negatively impact Montana's justly famous "Big Sky Country."

**Sincerely, Craig Knowles, PhD**

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