To the Members of the Select Energy, Utilities, Technology Committee:

I am writing to you in regard to LD 2205, the proposed bill to initiate a feasibility study to evaluate transmission technologies for transmission lines pursuant to Northern Maine Renewable Energy Development. Please be aware that this testimony is offered by my wife and I who live completely off-grid with a homestead powered by wind and solar energy. Furthermore, I speak from the standpoint of an engineer holding a BS in Electrical Engineering and a MS in Mechanical Engineering with over 48 years' experience in technical management of several manufacturing companies.

I advocate feasibility studies by knowledgeable, impartial, objective consultants to determine the efficacy of the proposed design as well as to identify weaknesses or shortcomings prior to initiating full scale operation. In this case, I am a proponent of full system feasibility studies that include the generation, transmission and consumption of renewable energy. Only in such a study can the impact of dynamics in one part of the system be assessed against the performance of other parts of the system. Demonstration projects such as I am advocating for are considered "best practice" in the private sector and there should be no less professionalism applied to public projects.

A full system feasibility study would give answers to questions about the sufficiency of energy supply to satisfy Maine's residential and industrial demand given the intermittent nature of renewable energy. In the terms of the power industry, renewable energy is not "dispatchable" because it cannot be immediately generated and delivered regardless of time of day or season of the year.

In contrast, "dispatchable energy" can be scaled up and down at will since the electrical energy is generated from coal, oil, gas or nuclear energy. Winter storms Uri and Viola that hit Texas in 2021, in conjunction with the lack of dispatchable power, caused the loss of 210 lives and an economic cost in excess of $200 billion. That event served as a demonstration project of sorts, with an expensive cost in terms of loss of human life. Because of the high cost of knowledge in this case and the lower amount of solar gain in Maine compared to Texas, the lessons of this "demonstration project" should not be ignored. The full report entitled, "The 2021 Reliability-Resilience in the Balance Report" by the American Society of Civil Engineers (ASCE) at this link: www.texasce.org/our-programs/beyond-storms/ indicates that this disaster occurred in a southwestern state due to an excessive reliance of power that was not dispatchable. It is the duty of Professionally Licensed engineers to protect the safety of the public and I trust the same high standard holds for political and bureaucratic leaders as well.

Finally, demonstration projects would permit:

a) Study of high voltage transmission performance via underground structures in ROWs of existing roads, and
b) Investigation of Total Cost of Ownership (TCO) of cross country ariel transmission that is subject to wind and storm damage versus underground construction with potentially lower cost of maintenance next to existing roads and lower susceptibility to wind and storm damage.

In closing, I remind the listener that I am not opposed to renewable energy because that is the source of energy that powers our home 365 days of the year. My advocacy is for comprehensive system design and the use of "best practice" of feasibility studies and demonstration projects to learn what works, identify and fix what doesn't before the implementation of full scale projects.

Respectfully,

Gary Hazard