

**Testimony of William Kaewert, President of Stored Energy Systems LLC before the House
Transportation and Energy Committee of the Colorado State Legislature
in Support of House Bill 15-1363
April 29, 2015**

Good afternoon members of the committee. My name is William Kaewert. I am president of Stored Energy Systems LLC, a Longmont-based manufacturer of emergency power equipment that protects critical infrastructure from shutdown due to power loss. Our equipment is used in data centers, telecommunication facilities, hospitals, government facilities, Wall Street and other areas where even short electrical power outages cause loss of life or significant financial damage. In addition to these permanent installations, our products are often used in transportable systems such as the gas turbine and reciprocating power plants deployed to Japan after the Fukushima nuclear powerplant disaster. While I am keenly aware of the extraordinary costs of electrical power downtime, our company stands to make no money from passage of this bill.

Rare events DO happen, and we need to be prepared

As a long-time Colorado resident I wish to add one comment to testimony others have made regarding the probability that the electric power system will suffer a high impact, low-frequency outage. In September of 2013 Colorado experienced what the National Oceanic and Atmospheric Administration described as a "1 in 1000 year" flood. Nearly everyone in this room knows someone that suffered damage from that flood.

It is astounding that even though Colorado experienced a 1 in 1000-year natural disaster just two years ago, some Coloradans argue that NERC geomagnetic storm standards that are designed to protect against a much less severe 1 in 100-year event are sufficient to protect the bulk power system from future outages. Rare events do happen in a timeframe that affects either our generation or that of our children. We therefore can, and should, plan for both the more powerful 1000-year geomagnetic storms and an EMP attack as if our lives depend on it – because they do.

Market-based solutions are not practical because electric power is delivered by monopoly providers

As chief executive of a private sector company I typically support free market solutions where consumers choose providers of goods and services based on reliability, price, performance and other attributes. Unlike utilities like Internet communications, however, electrical power is a monopoly and such choice is not possible. Where most consumers can typically choose between three alternative Internet providers with different prices and quality of service, we have only one choice when it comes to electric power: buy it from the local monopoly, or make it ourselves. Unfortunately, the latter solution is affordable only for those with plenty of money and space for alternative energy generating equipment, such as solar panels or wind turbines. For most people, there is no practical competition to monopoly electric utilities.

I sympathize with my colleagues in business and industry that are skeptical of new regulations, particularly those that would increase costs. There are two reasons regulation is necessary. The first is

that there is no market mechanism to provide an alternative “high resiliency power” service consumers could choose to buy. The second reason is that, despite knowledge about these vulnerabilities for many years, existing federal and state regulatory systems have left Colorado vulnerable to widespread, long-duration power outage.

There is good news

This vulnerability of our infrastructure has a silver lining that the committee has an opportunity to turn into good news today.

In September of 2007 the Sage Policy Group published an economic impact assessment of an EMP attack on the Baltimore-Washington-Richmond area. The good news from that study is that businesses and local governments could substantially reduce the damage, and dramatically shorten restoration time by *protecting approximately ten percent* of their most mission critical infrastructure and facilities. This Colorado bill – HB 1363 – would start the process of identifying the most crucial infrastructures. Once these are identified the problem will move from overwhelming to something that is manageable and could be solved in a reasonable amount of time at reasonable cost.

The time to start this process is now. The primary reason is to avoid massive loss of life and property. The second reason is to jump start economic development that would start paying benefits almost immediately. Citizens and businesses across the country are rapidly learning about the danger of geomagnetic storms and EMP. For example, the first commercial EMP-hardened data center was built in the Midwest last year in response to end-user demand. In Texas a forward-thinking utility has constructed an electromagnetically hardened control room without any legislative incentive. The state of Maine passed legislation two years ago that requires hardening of new power lines against geomagnetic storms and EMP. Virginia passed legislation in 2014. Texas is at this moment also considering EMP legislation. Still other states have started the legislative process.

In the absence of federal leadership, states are where the action is. Colorado should seize this opportunity to become the state known for the most resilient lifeline infrastructures in the nation. When the state realizes this commitment Colorado would become an economic development magnet for mission-critical, high valued-added facilities that would attract high paying jobs. The modest cost to achieve this goal would yield a huge return on investment as high value firms choose Colorado over other states.

Support HB 1363

I urge the committee to approve HB 1363. The bill will help bound the potential problem, and provide initial data on the size and cost to improve our resilience against worst-case threats. Once we understand the size and scope of the problem Colorado can start work and make public its commitment to create the most resilient infrastructure in the country. I urge the committee to vote yes on HB 1363.