



Opening Statement
Oversight Hearing on Cost Reductions in Emerging Energy Technologies
Chairman Lisa Murkowski
June 8, 2017

Good morning, everyone. The Committee will come to order. This is a hearing this morning, an oversight hearing to consider cost trends in emerging energy technologies. I appreciate everyone being here this morning. It's kind of quiet on this side of the dais. I think that if we had suggested that this was the overflow room for the Senate Intelligence Committee we might have a bigger crowd out there. I do recognize and appreciate that the conversation that you will have with us this morning is one that I think should generate a level of excitement and opportunity, particularly with young people as they think about our energy future and how they can be participants in it. So I appreciate the fact that you are here this morning.

This hearing is meant to provide us with a better understanding of what is happening in the energy marketplace, how federal energy policies may be affecting those changes, and what more we can do to help keep energy affordable. A stronger grasp of what is happening will help us determine what to expect going forward, and the best ways for the federal government to be involved as we continue our policymaking efforts.

The big story in recent years has been sustained and historically low prices for electricity rates and consumers at the pump. This has been driven by technological innovation in the oil and gas industry, which has dramatically expanded our nation's energy supply, and more recently by decreases in the costs of production.

The cost of renewable energy has also decreased drastically. According to the Department of Energy, the cost of wind turbines decreased by 27 percent from 2009 to 2015, and the cost of installing solar panels decreased by 60 percent over the past decade. These technologies are challenged because of their intermittent nature, but the costs of energy storage technologies are coming down, as well, and we recognize the great potential there.

Although much work still needs to be done to commercialize the array of storage options that will be needed for our grid in the future, the decrease in lithium-ion battery prices is a big first step. According to McKinsey and Company, the cost of lithium-ion batteries per kilowatt-hour has dropped by 77 percent since 2010.

That drop is also making new vehicle technologies more competitive. Hybrids and electric vehicles rely on high-capacity lithium-ion batteries to operate. Those batteries need to be less

expensive for those vehicles to be directly cost competitive with traditional combustion powered vehicles. And this is occurring right now, even as traditional vehicles are increasing efficiency through the adoption of lightweight materials and advanced manufacturing techniques.

Although less well known, the semiconductor industry might be the most impressive story to-date when it comes to decreasing costs. Semiconductors are the base of all of our electronic technologies and costs per transistor have continued to decrease at a rapid rate, including three orders of magnitude over the past decade alone. New devices can now be used in more extreme environments and are more energy efficient. This has led to drastic decreases in LED prices for consumers, leading to further decreases in energy consumption and costs for consumers. The innovation taking place right now is good news for our energy future—and particularly in my state of Alaska, where we pay far more for electricity than the average US consumer. In some of our smaller, more remote communities, we see as much as a dollar per kilowatt hour paid by our families. That is simply not sustainable. We have dozens of communities that are not connected to the main grid, and that's not actually an accurate statement. You know, when you have 80 percent of your communities in the state that are not connected by a road, think about what that means for any kind of energy grid. When we talk microgrids in Alaska, they are micro, micro-grids. So, we recognize that more often than not, when we are looking at how we power our communities, we rely on diesel generation. That is equally not sustainable. So, new and more affordable technologies offer tremendous promise for us.

Today is also a good opportunity for us to consider whether federal policies are keeping up with the changes we are seeing in the energy industry. As you have heard the two of us say here, it's been a full decade since the last major energy bill was signed into law, meaning we are well, well, well overdue to update and modernize so many of our energy policies.

So, I intend that this hearing will be the first in a series on innovation that we will hold in Congress, a focus on innovation. My hope is that it will both set the stage and serve as a jumping off point, so that we can develop meaningful policy that continues to drive cost reductions and promote affordable energy for the American people.

I will note that Sen. Cantwell and I will be heading to Sen. Cantwell's state tomorrow, where we'll have an opportunity to look at some of the high-tech, new age, cutting edge developments when it comes to efficiency and energy. I am really excited about the day tomorrow. On Saturday, we will have a field hearing up in a small fishing community, Cordova, Alaska, where we will have a chance to take a look at how microgrids are helping us with our energy.

So, proud of the work this committee is doing, proud of my partnership with my ranking member. Sen. Cantwell, I know turn it over to you.

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