NUCLEAR MATTERS

The Benefits of Nuclear Energy – Key Talking Points

As advocates for nuclear energy, your knowledge and expertise is essential to sharing the benefits of our industry with the public and policymakers. Many of these issues are complex to those outside of the industry, and part of our mission is to make these topics understandable and relatable to the broader community. Below are some helpful talking points that can be used in conversations about nuclear energy with your friends, family, neighbors, and others in your community.

Core Message

Nuclear energy matters. It plays a vital role in meeting our nation's electricity needs, powering local economies, protecting the environment, preserving fuel and technology diversity, ensuring our nation's security and ability to compete globally, and enhancing the nuclear science, technology, and medical fields. Our country's nuclear plants produce clean electricity 24 hours a day, seven days a week with zero carbon emissions and bring important diversity to our nation's fuel mix.

We must promote the benefits of nuclear technology to support existing facilities and implement policies that support building new nuclear energy technology.

The talking points outlined below derive from this key message.

ELECTRICITY

Talking about nuclear energy's contributions to our electricity supply can help others learn where their power comes from and why it is important to protect this valuable resource.

Nuclear plants are essential to ensuring a reliable energy supply and meeting our growing electricity demands. For these reasons, our nation's energy and environmental policies must ensure that the attributes that nuclear energy brings to the table are protected, properly understood and valued.

Many people take for granted the inherent reliability that nuclear energy provides to our electricity supply. When demand for electricity spikes during summers, winters and extreme weather situations, nuclear energy fills the gap created as other fuel supplies are exhausted, inaccessible, or unusable.
The 99 nuclear reactors around the country generate nearly 20 percent of our total electricity. In several states, nuclear plants generate more electricity than any other energy source, including natural gas, coal, solar, wind, or hydro.
The Department of Energy projects that U.S. electricity demand will rise 28 percent by 2040. To ensure that supply can meet these growing demands, and that these sources are diverse and reliable in any case of extreme weather, many of the new plants the United States must be nuclear.

In 2017, the U.S. fleet of nuclear energy plants operated at a capacity factor of 92.2 percent, the most efficient of any fuel source in the country.
Electricity markets do not properly value the unique set of attributes that nuclear energy brings as a carbon-free source of electricity. Despite the reliability and carbon-free benefits that nuclear energy brings to supporting the country's electricity grid, it is not extended the same tax credits as other renewable energy sources. Our energy and environmental policies must ensure that existing nuclear energy facilities are preserved.

ECONOMIC IMPACT AND JOBS

Jobs and the economy are a great starting point for highlighting the key benefits of nuclear energy, and something everyone can relate to on a personal level.

Nuclear plants are important economic engines for both our country and in the communities where they operate, creating hundreds of well-paying jobs and supporting local economies and infrastructure.

The average nuclear energy plant generates an annual $40 million in wages and salaries. Each plant employs between 400 and 700 workers at wages that are nearly 36 percent higher than the average local salary.
Nuclear energy plants often serve as the lifeblood of their communities, not only creating jobs but also supporting local businesses and organizations. A typical nuclear plant generates $470 million per year in revenue from buying local goods and services, and every $1 spent to operate a nuclear energy facility creates an additional $1.04 in the community.
Nuclear energy plants pay about $2.2 billion in state taxes annually across the country. These tax dollars are critical to supporting state and local infrastructure, including funding for schools, roads, parks, and other important government services.
In total, the U.S. nuclear industry adds $60 billion to the country's GDP.

ENVIRONMENT

Environmental advocates are some of the most passionate supporters of nuclear energy. Thanks to its carbon-free properties, nuclear energy is a highly environmentally friendly energy source, but many people are unfamiliar with these benefits.

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Nuclear energy plays an essential role in creating clean energy for our country. As the largest single source of emission-free energy in the U.S., maintaining and expanding nuclear energy's role will be key to helping preserve our climate and realizing a clean energy future.

Nuclear energy plays an essential role in our country's clean energy future. Nuclear energy plants, which do not emit any carbon dioxide, accounted for more than 56 percent of U.S. emission-free generation in 2017.
Every year, nuclear-generated electricity saves our atmosphere from more than 547.5 million metric tons of carbon dioxide emissions that would otherwise come from fossil fuels. That's the same as taking 117 million passenger vehicles off the road, which is more than every passenger vehicle currently on the road in the United States (nearly 113 million passenger vehicles).
Nuclear energy is the only emission-free source of electricity that can be widely expanded and relied upon to meet minimum electric demands. To provide the same amount of carbon-free electricity as produced by a typical 1000 MW nuclear facility, a photovoltaic solar farm with more than 32 times the nuclear power plant's footprint would need to be installed, an area roughly twice the size of Manhattan, New York.
States that have closed nuclear plants have seen significant increases in carbon emissions. In California, closing the San Onofre plant at the beginning of 2012 contributed to a 43 percent increase in carbon emissions from in-state electricity generation over the following year, and Vermont witnessed a 19 percent increase from electricity generation in 2015 following the closure of the Vermont Yankee plant in 2014.

SAFETY

Countering a lack of public awareness about the overwhelming safety of America's nuclear energy industry is critical to successful nuclear advocacy. Many people are oblivious to the processes and regulations put in place to protect community members, plant employees and the environment.

Nuclear energy facilities are among the safest industrial facilities in the world, thanks to highly-trained personnel, stringent federal regulations, multiple automated safety systems and extensive security operations.

The independent U.S. Nuclear Regulatory Commission (NRC) holds nuclear energy plants to the highest safety and security standards. The nuclear energy industry is one of the few industries with a security program that is regulated by the federal government, and at least two independent inspectors from the NRC are on-site every day at each nuclear energy facility.
Multiple studies by leading organizations, such as the National Cancer Institute and The United Nations Scientific Committee on the Effects of Atomic Radiation, have shown that U.S. nuclear plants have no negative impact on the health of neighboring communities.
The nuclear energy industry has built a comprehensive system for managing used fuel in the short- and long-term that keeps both the public and the environment safe.

All the used fuel produced by the U.S. nuclear energy industry in 60 years of operations would, if stacked end-to-end, only cover an area the size of a football field to a depth of less than 10 yards.
The NRC has determined that used nuclear fuel could be stored safely in storage facilities for at least 100 years.

INNOVATION

Nuclear energy innovation is exciting and inspirational. Focusing on the next generation of nuclear technology and opportunity makes people feel eager and engaged.

Innovation is driving the nuclear industry forward and laying the groundwork for the next generation of nuclear technology. With the support of policymakers and regulators, we can ensure the future of nuclear energy is less expensive, more efficient and even safer.

Advanced nuclear reactors are next-generation designs that are expected to deploy in the early- to mid-2030s and will supplement current technology. These advanced reactor designs vary from reactors capable of recovering and reusing elements in used fuel to produce even more energy, to safer molten salt reactors and high-temperature gas reactors. Advanced reactors have the potential to simplify installment, provide new opportunities for consuming used fuel, and further strengthen safety.
Small modular reactors are simple, scalable, and safe providers of nuclear energy that can be deployed in a variety of locations, including remote areas. These reactors are expected to deploy in the 2020s and will be less expensive and easier to build than traditional reactors, making nuclear energy more versatile than ever before.
Advanced reactors and small modular reactors will not only address the future retirement of some current reactors, but will provide new opportunities beyond electricity generation, allow suppliers to more quickly adjust their electricity output to match demand, and will help the U.S. meet rising demand for electricity in the future.

SECURITY

Once potential supporters begin to understand the true safety and security of our nation's nuclear energy facilities, they're more likely to be receptive of other key messages.

Nuclear energy is vital to both our national security and our nation's energy security. To maintain U.S. global influence and protect homeland infrastructure, America's nuclear energy industry must be maintained and remain competitive with other nations.

Nuclear energy plays a critical role in keeping the United States safe. Energy independence is a key piece of our country's national security, and a strong nuclear fleet plays a significant part in an energy independent future by making us less vulnerable to international energy shocks outside our control.

A diverse national energy supply portfolio or “all-of-the-above” energy strategy that includes nuclear not only makes the U.S. more secure from foreign influences, but it also saves consumers an average of 6% on their electricity bills annually.
It is important to recognize that the domestic nuclear industry can best maintain a leadership role in global nuclear technology development and contribute to worldwide safety enhancements by designing and building new nuclear plants and continuing development programs of all types.
The entire economy – as well as our defense and national security operations – depends on the uninterrupted availability of affordable energy sources. As a source that operates constantly regardless of weather, nuclear energy is critical to maintaining our reliable electricity supply and greatly limits the possibility of energy brownouts or blackouts.