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Reduce the risk of energy supply disruptions from globally strategic sources to the U.S. and to key overseas installations

The U.S. economy and national infrastructure depends heavily on our imports of oil and gas resources. Liquid fuels will be a critical part of world energy supplies for the foreseeable future (55% today, 60% in 2035). The loss of 1.5 million barrels per day (1.7 % of supply) would imply a price increase of 17% if that supply loss could not be made up from other sources; a loss of 5 million barrels per day would imply a price increase to $125 per barrel. The economic consequences of such oil price shocks depend on how strong the economies of key countries are at the time of the supply interruption and how long an interruption lasts.

Pipelines that transport crude oil over long distances are tempting, fixed targets for those who would disrupt the flow of energy supplies.

Because energy drives the U.S. economy and transportation keeps it rolling, our national security and economic prosperity demands that we address the security needs of the top tier oil-supplying countries immediately. Global Critical Energy Infrastructure Protection (G-CEIP) is a U.S. interagency program that seeks to ensure the supply of energy to the U.S. by securing critical energy and infrastructure sites across the world. G-CEIP targets facilities that supply our nation with more than one million barrels of petroleum per day and currently has contact with oil-industry operators in Saudi Arabia, Kuwait, the United Arab Emirates, Qatar, Azerbaijan, and Kyrgyzstan. Additional sites can potentially include Nigeria, Mexico, and Columbia. In addition, other selected oil and natural gas facilities, airports, seaports, solar plants, and other facilities that create or distribute natural energy resources could be included in the G-CEIP program.

Liquefied natural gas (LNG) is a vital energy commodity that is often transported past and stored near other essential industrial infrastructure (above) and even large residential areas (right).

Sandia conducts large-scale experiments that provide data for and verification of high-performance computing simulations concerning the vulnerabilities of our vital infrastructure.

Sandia has more than 30 years of experience with projects that utilize "denial" strategies—born out of out our nuclear weapon protection experience. Recent attacks on the global oil infrastructure are forcing a change of protection strategy—industrial vs performance-based high security. Even now, our Sandia staff in the G-CEIP program are getting "boots on the ground" experience identifying critical needs for our R&D mechanisms to solve.

The global fossil fuel infrastructure presents a large, inviting target, but is by no means the only objective for those who wish to disrupt the flow of energy. Nuclear power stations have always maintained a significant security presence against attack, and in the future, even renewable energy stations will need to be secured against those with malicious intent.

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