From: Sent: To: Subject: susan van dolsen Wednesday, January 23, 2013 9:07 PM LNGStudy 2012 LNG Export Study

Dear Secretary Chu,

Re: Comments on Department of Energy impact of LNG gas exports

I am a citizen who learned a great deal about shale gas extraction during the past several years and I have read many scientific studies and reports. The LNG export recommendations in the DOE study would promote the use of high-volume hydraulic fracturing at a time when the health and environmental impacts have not been fully examined and when evidence shows that this as a practice that is both dangerous and has long-range consequences on climate change that undermine a positive long-range energy policy to reduce dependence on fossil fuels. True energy independence will come when we commit fully as a country to renewable and sustainable energy. The more we build a reliance on extreme fossil fuel extraction, including shale gas, the more our nation becomes an extraction colony or a country like those we have exploited worldwide for natural resources. It is a poor policy choice to encourage high volume hydraulic fracturing for domestic use and it is an ever poorer choice to export the gas. The only people who will benefit will be the gas companies, very few high net-worth investors and the residents of other countries. Our citizens and domestic corporations, such as Dow Chemical, will be forced to pay higher prices for natural gas based on the price of gas on the global marketplace. These costs will be passed on to the American public.

Shale gas extraction requires 2-8 million gallons of fresh water per frack and this water is permanently removed from our water supply. Our nation has experienced record-setting high temperatures and droughts during the past several years and farmers have been fighting with the gas industry for this precious water. If the gas is then exported to other countries and not used by our own country, we are using up a finite resource to supply gas to other nations.

Furthermore, shale gas extraction introduces over 600 chemicals into the earth during the fracking process and many of these chemicals are proprietary, so we are unable to identify their health effects or the long-term effects on the environment where they could end up from spills and other mishaps. The gas and oil industry are exempt from many federal statutes created to protect us, including the Clean Air Act, the Safe Drinking Water Act, CERCLA, etc. Dr. Theo Colborn of The Endocrine Disruptor Exchange (TEDX) identified some of the fracking chemicals through extensive research and many are carcinogenic and endocrine disruptors. http://www.endocrinedisruption.com/chemicals.introduction.php Furthermore, Dr. Colborn identified air pollutants from the entire lifecycle of the fracking process that cause asthma and other respiratory illnesses (BETX chemicals). These are not only found on gas drilling sites, but also at compressor stations, metering stations and along the pipelines that are needed for the infrastructure build-out that is necessary for exporting the gas.

Once a well is fracked, flowback returns to the surface with the gas and it is laden with NORM (naturally occurring radioactive materials) along with the chemicals and "brine" or water from deep in the earth that has very high salt content. There is no practical disposal plan for this toxic brew and the gas industry has yet to

address this. How can we consider encouraging export of gas when we cannot even deal with the radioactive wastewater and drill cuttings from the gas operations that exist today.

One of the other major issues related to shale gas drilling is the fugitive methane emissions. Methane is a larger contributor to climate change than carbon dioxide. President Obama stated in his inaugural address that "we will respond to the threat of climate change, knowing that failure to do so will betray our children and future generations." The Adminstration, led by the Department of Energy, must recognize that exporting gas would only exacerbate the methane emissions that are part of the cause of climate change. Dr. Anthony Ingraffea of Cornell University studied methane emissions and discovered that shale gas extraction entails methane gas leakage at the well-head and flaring which contributes to climate change. (http://catskillcitizens.org/learnmore/ventingandleakinghowarth.pdf ).

Furthermore, a study by NOAA and the University of Colorado at Boulder was undertaken as follow-up to a 2012 study in Colorado. The new results "prompted NOAA's latest examination of the Uinta Basin in Utah, and found more than twice that rate of methane escapes into the atmosphere. Scientists with the National Oceanic and Atmospheric Administration (NOAA) and the University of Colorado in Boulder, reported their findings at a meeting of the American Geophysical Union last month. Preliminary results from this new field study in the Uinta Basin indicate 9% rates of methane leakage.

"We were expecting to see high methane levels, but I don't think anybody really comprehended the true magnitude of what we would see," says Colm Sweeney, who led part of the study at NOAA's Earth System Research Laboratory in Boulder. (<u>http://fromthestyx.wordpress.com/2013/01/11/noaa-study-shows-high-methane-leaks-in-gasfields/</u>).

In addition to the methane that results from gas extraction, there is a tremendous amount of diesel emitted at the drilling sites and by the thousands of truck trips needed to bring the water and chemicals to the site. Moreover, the compressor stations, metering stations and other infrastructure emit VOC's and diesel into the air and degrade the air quality. The air in Wyoming is worse than Los Angeles because of the fracking operations there. In addition to all of reasons stated above, The Department of Energy's study of exports is not a sound basis for recommending export of shale gas. It was conducted by NERA and it is based on information from the Energy Information Administration's 2010 data when the shale gas build-out was not at the level of today. As Representative Ed Markey (MA) wrote to Secretary Chu, "This data badly underestimates the growth that has already occurred in domestic natural gas as well as demand that is expected in the future." The Department of Energy must evaluate the export of gas in a credible way.

The NERA report also doesn't account for foreign ownership of many gas leases in the United States today. In fact the NERA study assumes that the financing of natural gas investments comes from U.S. companies. Each day, China, Norway, France and other nations that may not even allow fracking in their own countries, invest in gas drilling here by purchasing land or leases. Energy independence – I think not!

The export of gas is already being planned and the infrastructure build-out has been underway for some time. Throughout our area, there are more and more compressor stations, pipelines and metering stations necessary to send the gas to the export terminals. Some of these are being approved piecemeal which makes it easier to get approval, but the master plan is obvious. As this infrastructure is built, people are becoming ill from spills, leaks, VOCs and other air emissions.

Export of gas should be rejected by the Department of Energy, Congress and the President. The extraction of shale gas puts the health of our citizens, and our precious water, air and soil at risk. It endangers our economy

and the only beneficiaries are the gas companies, the pipeline companies, a few high net worth investors and the people in other countries who do not have to deal with the mess. Our country can do better. We can be a leader in renewable energy and create jobs that are sustainable and have a long-term plan for domestic energy independence that does not endanger our way of life.

Thank you for the opportunity to submit my comments.

Susan Van Dolsen

