

America's Oil and Natural Gas Industry

ENERGY WORKS

For America



OUR ENERGY FOUNDATION

The United States is the world's leading producer of oil and natural gas, and as a result of greater use of clean-burning natural gas and cleaner, more efficient fuels, we are also a world leader in reducing carbon emissions and other air pollutants. We have a proven model for achieving environmental progress without sacrificing jobs, economic growth, energy security or consumer affordability. Our political leadership has the opportunity to continue, and expand upon, the American energy revolution.

In the past decade alone, technological advances in oil and natural gas production have ushered in a new era. American crude oil production jumped 88 percent between 2008 and 2015, and natural gas production increased 48 percent since 2005. The turnaround has helped reduce gasoline prices, fuel imports, and heating and electricity costs for households and businesses, while at the same time cutting carbon emissions from energy to near 20-year lows. Technological improvements are not just limited to production; between 1990 and 2014, U.S. refiners spent \$154.4 billion on

environmental improvements— helping contribute to cleaner air. These technological advances have moved us from an era of energy scarcity to one of energy abundance in a few short years. Washington can make energy policy choices that will continue our national progress, such as:

- » Implementing policies that recognize our energy reality, both today and tomorrow, and are based on sound science and economics.
- » Embracing our new era of American energy abundance and protecting the progress made, avoiding a return to decades of insecurity and scarcity.
- » Seizing the career opportunities that the oil and gas sector provide to a diverse American labor force with the potential to break the cycle of generational poverty.
- » Insisting our government regulatory systems perform their duty of protecting the public in a timely and efficient manner; avoiding unnecessary, duplicative rules that place undue burdens on energy development and distribution.
- » Recognizing the best way to achieve our energy and environmental goals is not with government mandates, but through private innovation and investment, in cooperation with governments at all levels.

American energy is working and the goal of a national energy policy must be to ensure a secure supply of abundant, affordable, and available energy for the American people in an environmentally responsible manner.

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AMERICAN PETROLEUM INSTITUTE

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CAREER OPPORTUNITIES FOR WOMEN AND MINORITIES

Based on federal data, the average annual pay in the oil and natural gas industry is more than \$100,000 – nearly \$50,000 higher than the 2014 U.S. average. That’s good news, and the even better news is that the oil and natural gas industry is projected to have significant job gains for women, African Americans and Hispanics between now and 2035 according to a [2016 report by consulting firm IHS](#), which projects significant job gains for women, African Americans and Hispanics between now and 2035. Here are some of the principle findings:

Nearly 1.3 million job opportunities by 2025 and close to 1.9 million job opportunities by 2035 will be in the oil & natural gas and petrochemical industries considering all types of job growth.

- » 707,000 jobs, or 38% of the total, are projected to be filled by African American and Hispanic workers through 2035. (131,000 for African Americans and 576,000 for Hispanics).
- » Women in the industry are projected to account for more than 290,000 of the job opportunities, 16% of the total through 2035.

“The magnitude of these opportunities speaks to the continuing importance of the oil and natural gas and petrochemical industries in the U.S. economy as a whole as well as to individuals and families looking for well-paying career opportunities.

As seen in this report, minority communities and women represent critically vital and available talent pools to help meet the industry’s future workforce demands.” —IHS

OPPORTUNITIES FOR MINORITIES

The share of minorities employed in the oil & natural gas and petrochemical industries is rising: Minority employment will rise from about one-quarter of the total in 2015 to more than one-third (36%) in 2035.

African American and Hispanic workers are projected to make up over one-fourth of the new hires in management, business, and financial jobs in the industry through 2035.

Meaningful career opportunities also exist in the industry for other minority groups, such as Native Americans and Asian Americans. For example, in 2011 an estimated 20% of known U.S. oil and natural gas reserves were beneath tribal lands, with the Department of the Interior estimating that Indian lands could produce up to 5.35 billion barrels of oil and 37.7 trillion cubic feet of natural gas.

OPPORTUNITIES FOR WOMEN

There are already more than 237,000 women working in the oil & natural gas and petrochemical industries. Nearly half of those women (over 114,000) work in management and professional occupations.

IHS projects continued opportunity for women in management and professional fields, with women accounting for 154,000 of these job opportunities through 2035.

Much of the job growth is projected to occur in blue collar professions. There is significant potential for female blue collar employment if interest and training are directed toward women to increase female participation in those areas.

OPPORTUNITIES BY OCCUPATION

Fifty-seven percent of the job opportunities through 2035 are projected to be in blue collar occupations. This suggests tremendous opportunity for workers with a high school diploma and some post-secondary training (e.g., certificates and community college).

One-third of the job opportunities are projected to be in management and professional fields such as engineering, geoscience, management, finance, and as technicians. African Americans, Hispanics, and women who successfully complete college degrees in these fields would be highly competitive for workforce placement.



AMERICA'S OFFSHORE OPPORTUNITY

America's vast offshore energy reserves present an opportunity to improve our economy, increase our energy security and create tens of thousands of jobs. Opening the U.S. Atlantic Outer Continental Shelf (OCS) alone to offshore oil and natural gas development could create nearly 280,000 new jobs along the East Coast and across the country, as well as result in an additional \$195 billion in new private investment and contribute billions per year to the U.S. economy.

Oil and natural gas production off our Atlantic coast is a potential gold mine. Developing oil and natural gas in the Atlantic could put hundreds of thousands of Americans to work, make us more energy secure and bring in needed revenue for the government. But none of these benefits will appear unless the federal government follows pro-development energy policies.



In January 2015, the Obama administration proposed a limited offshore leasing program to develop resources in the Gulf of Mexico, off the coast of Alaska and along the Atlantic OCS. Americans stand to benefit if the Atlantic and other offshore areas that have been kept off-limits are included in the next five-year leasing program.

"NORTH CAROLINA HAS ABUNDANT OFFSHORE ENERGY RESOURCES THAT HAVE THE POTENTIAL TO CREATE THOUSANDS OF JOBS, PRODUCE MUCH-NEEDED REVENUE AND MOVE US CLOSER TO ENERGY INDEPENDENCE."

— Governor Pat McCrory



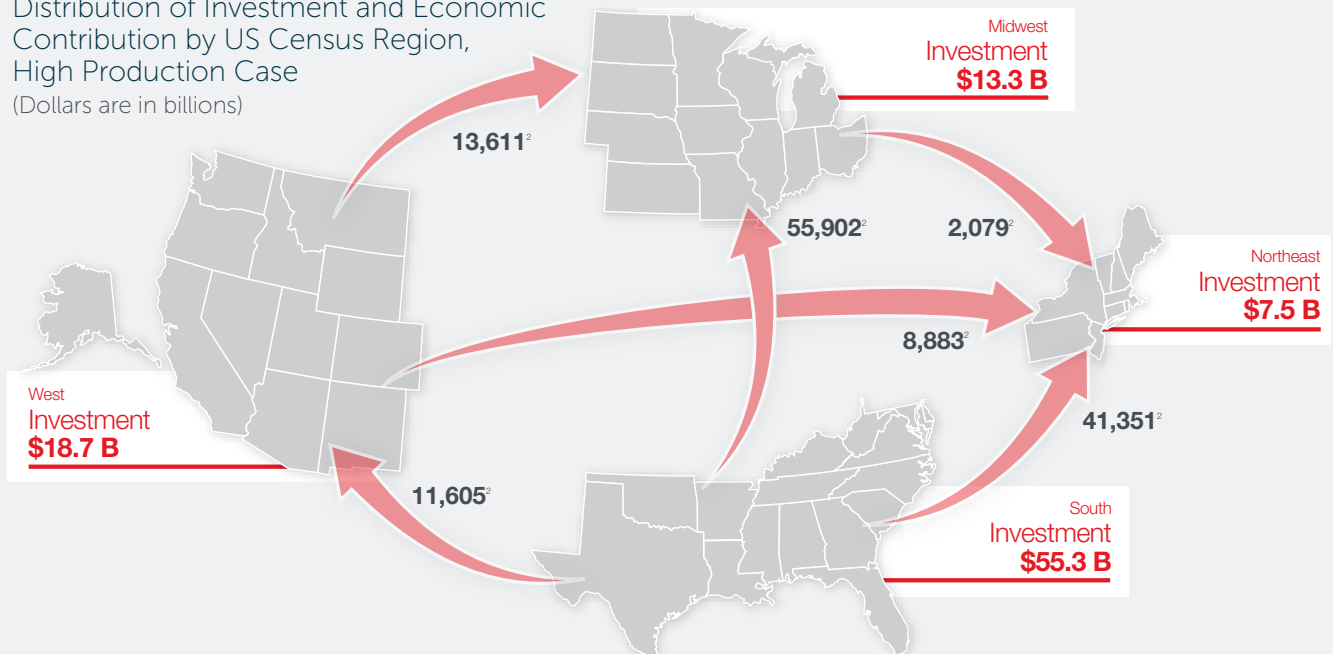
OPPORTUNITIES IN INFRASTRUCTURE

America's energy infrastructure system is critical to the efficient movement of crude oil and natural gas to refineries and to businesses and consumers as end customers. Keeping that infrastructure current for today's energy realities will be among the energy choices facing policymakers in 2014 and beyond. Surging production in the Northeastern U.S., remote locations like the Bakken region and the Canadian oil sands require not only expanded transportation capacity but a wholesale redesign of the energy infrastructure network.

Relative to today's production realities, the existing energy transportation system is virtually upside down, and righting it will eliminate costly inefficiencies as well as generate substantial economic growth.

Updating infrastructure to our new energy reality could, per an IHS study, generate an estimated \$1.15 trillion in capital investments between 2014 and 2025. These investments in midstream and downstream infrastructure — including pipelines, storage, processing, rail, and marine components — will ripple through the U.S. economy creating jobs, increasing GDP and labor income, and boosting tax revenue to federal, state, and local governments. Midstream and downstream infrastructure investment could support as many as an estimated 1.15 million jobs on an average annual basis over the 2014-2025 period, adding up to \$120 billion on average per year to the economy and generating up to \$27.5 billion in average annual revenue to the government. Pipeline investment alone could support up to 830,769 jobs on an average annual basis over the 2014-2025 period.

Distribution of Investment and Economic Contribution by US Census Region, High Production Case
(Dollars are in billions)



Net Jobs in...	Northeast	South	Midwest	West
Jobs "originating" in region ¹	88,342	668,859	171,657	218,048
Net jobs due to investment in other regions	52,313	(108,857)	67,434	(10,890)
Net jobs in region	140,654	560,001	239,092	207,158

SOURCE: IHS, "Oil & Natural Gas Transportation & Storage Infrastructure: Status, Trends, & Economic Benefits," December 2013

¹ The phrase "Jobs originating in this region" is shorthand for "U.S. jobs supported as a result of direct capital investment made in this U.S. Census Region"

² Each arrow shows the net redistribution of jobs between two regions



OPPORTUNITY IN TRADE

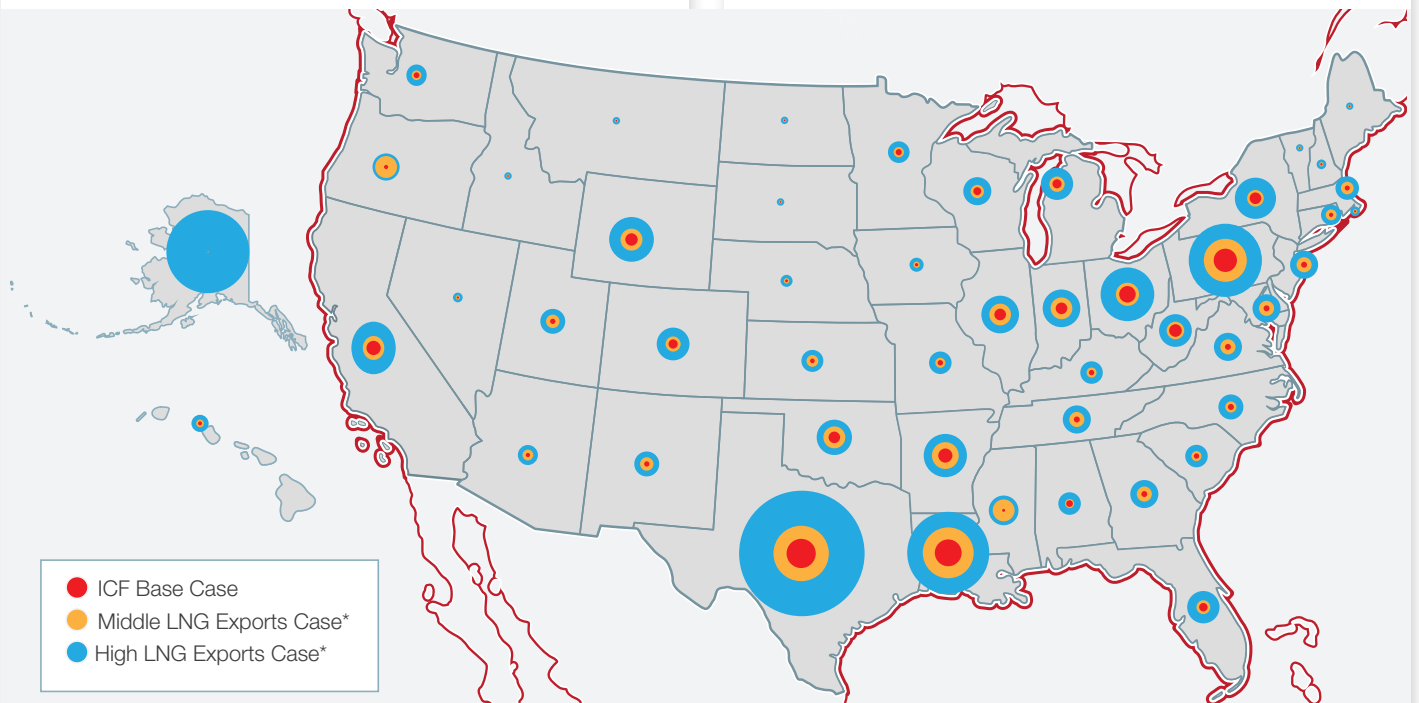
America is in the midst of an energy revolution and for American workers, the best is yet to come. The export of liquefied natural gas — or LNG — represents one of the most promising economic opportunities of the shale revolution.

These exports will significantly reduce our trade deficit, increase government revenues, grow the economy, and support millions of U.S. jobs in engineering, manufacturing, construction, and facility operations. The opportunities associated with LNG exports will extend beyond natural gas-producing states, and the economic impacts could be substantial in many areas. According to ICF, by 2035:

- » LNG exports could contribute as much as \$10 to \$31 billion per state to the economies of natural gas-producing states.
- » Other states will also benefit, partly due to the boost in demand for steel, cement, equipment, and other goods. States with a large manufacturing base, such as Ohio, California, New York, and Illinois, will see economic gains as high as \$2.6 to \$5.0 billion per state.
- » Natural gas-producing states could see employment gains as high as 60,000 to 155,000 jobs; and large manufacturing states, such as California and Ohio, could see employment gains of up to 30,000 to 38,000 jobs in 2035.
- » There could also be significant job growth in states where LNG export terminals could be built. For example, in a high export scenario, in which an Alaska-based terminal is built, Alaska could see up to a \$10 billion addition to state income and over 36,000 added jobs resulting from LNG exports.

America is in a global race to build this infrastructure and secure a competitive position in the international market. More than 60 international LNG export projects are currently planned or under construction around the world, and those nations that act quickly to attract these investments will reap the economic rewards.

Fortunately, U.S. workers are in a very good position to win that race.





WHAT THEY ARE SAYING

RAHM EMANUEL, CHICAGO MAYOR

"Cheap energy—the revolution that's going on in America's heartland on energy—is making sure that America now has a manufacturing renaissance."

VIRG BERNERO, MAYOR OF LANSING, MICHIGAN

"We're all aware of the incredible impact the energy revolution is having on our national economy. The growing competitiveness and increase in employment from these manufacturing sectors are important to our cities and metro economies."

SARA HIGGINS, CITY OF MIDLAND, TEXAS

"Right now our economy is booming due to the increased oil and gas activity here in town. We have great business opportunities here in Midland."

JOHN H. THOMPSON, DIRECTOR, U.S. CENSUS BUREAU

"Mining, quarrying, and oil and gas extraction industries were the most rapidly growing part of our nation's economy over the last several years."

JIM FITTERLING, DOW CHEMICAL, TALKING ABOUT THE IMPACT OF NEW PETROCHEMICAL INVESTMENT

"This validates everything we've been trying to say about the potential of energy resources to recharge the U.S. economy. It's coming and it's real and it will have an impact."

JERRY ZEIDERS, PLANT MANAGER FOR GARDNER DENVER (PA), WHICH MAKES AND FIXES PUMPS USED IN THE MARCELLUS SHALE

"We will be adding more jobs this year ... We are going to continue to grow. We have just scratched the surface of the things we can do in the Northeast."

BETSEY HALE, LOVELAND COLORADO ECONOMIC DEVELOPMENT DIRECTOR

"It's not always the job on the rig or the well. There's a whole host of jobs other than the guy who's actually fracking. ... A lot of people who were out of work during the recession are now working because of oil and gas, and energy in general."

ROLAND MOWER, CEO, CORPUS CHRISTI (TEXAS) REGIONAL ECONOMIC DEVELOPMENT CORP.

"This region is experiencing an uptick in interest from international manufacturers interested in leveraging our low-cost, politically stable supply of natural gas as a fuel source for their manufacturing processes and our immediate proximity to the U.S. (Western Hemisphere) markets."