

Statement of Toby Mack
Energy Equipment and Infrastructure Alliance
House Small Business Committee Briefing
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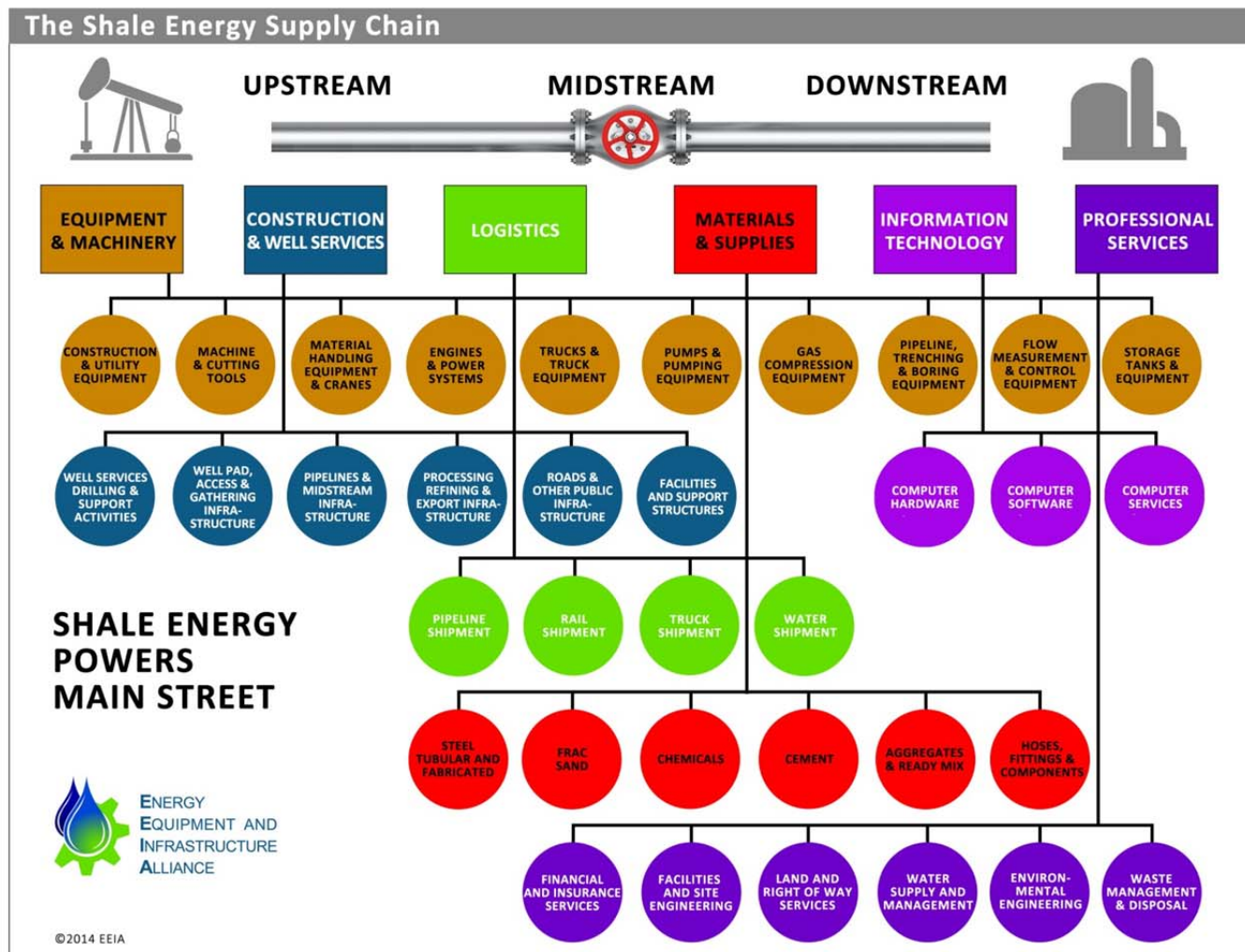
Good afternoon. I represent the Energy Equipment and Infrastructure Alliance, an organization of companies, trade associations and unions that represent the businesses and workers of the shale oil and gas supply chain. Our organization strongly supports lifting the ban on export of American crude oil. Doing so will result in a great number of new jobs, and strong growth of business output, in the supply chain, and especially for its many small businesses.

Before we address the benefits of crude oil exports to small businesses in the energy supply chain, I'd like first to describe it. Much of the recent dramatic growth in US oil and gas production has come from horizontal drilling and hydraulic fracturing in America's shale formations. This is important for today's briefing because the shale energy supply chain that supports this type of energy production is remarkably large, diverse and widely distributed throughout the United States. We've noticed that while many people talk about the importance of the energy supply chain, few seem to have a solid understanding of it. Much like the "cloud" in information technology, we know it's up there, but we don't know what's in it. Here's a closer look.

Equipment, products and services provided by the supply chain in support of shale energy operations are produced by businesses and workers in all 50 states. They represent 60 different industries, which fall generally within six sectors, each of which includes a tremendous variety of businesses and occupations. Here's a summary of these sectors, also depicted graphically on the following supply chain diagram:

1. **Equipment and machinery manufacturing, distribution, rental and maintenance;** including earthmoving, material handling, drilling, pumping, power generation and distribution, and welding equipment. Also trucks, tanks, engines, compressors, and well-head equipment.
2. **Construction of production sites and facilities;** including well-site and access infrastructure, gathering systems, storage and processing facilities; also services directly supporting drilling and production activities
3. **Logistics;** including hauling of equipment, materials and supplies to and from production sites; and truck, pipeline and rail transportation of both energy products and drilling waste away from the sites
4. **Materials, supplies and components;** including steel and other metals, drilling solution, cement, concrete, industrial gasses, sand, pipe, valves, fittings, and flow control and electrical components
5. **Information technology;** including computers, software and services for exploration, process measurement and control, and data management and analysis
6. **Professional, financial and other services;** including architectural, environmental and facilities engineering; water and waste management services; financial, real estate and insurance services

The Shale Energy Supply Chain



The energy supply chain is remarkably broad, diverse and complex. It is important to know that almost every product or service has its own supply chain – businesses and workers that may be one or two steps removed from the production site, but are nevertheless ultimately dependent on, and contribute to, shale energy operations.

To illustrate, take the example of a piece of earthmoving machinery – let’s say a bulldozer or excavator – used to grade a drilling pad, carve out access roads, or dig foundations and trenches for oil and gas gathering and storage systems.

Think of what goes into manufacturing that big machine and putting it out on the energy production site. There’s raw steel, fabricated steel plate and forgings; the machine tools that cut, bend, machine and weld steel components; steel buckets, teeth and attachments; a high-horsepower engine and transmission with all of their components; hydraulic cylinders and components; steel sprockets and tracks or huge rubber tires; electrical and electronic controls and components; not to mention hoses, valves, filters, gaskets, lubricants, and fuel. Then there’s the preparation, maintenance and delivery of the machine to the production site by the dealer or rental company. And last but far from least, there’s a skilled operator needed to run the machine safely and efficiently and deliver the work it’s designed to produce.

Whatever the machine’s brand, the company making it has thousands of suppliers of components, materials and services that go into building it and putting it to work. And their suppliers have suppliers and so on down the supply chain line, until you get to raw material. The vast majority of these businesses are smaller local and regional firms.

As with a real chain, each link is essential to the end result. A similar story can be told for just about every primary product or service used in energy production.

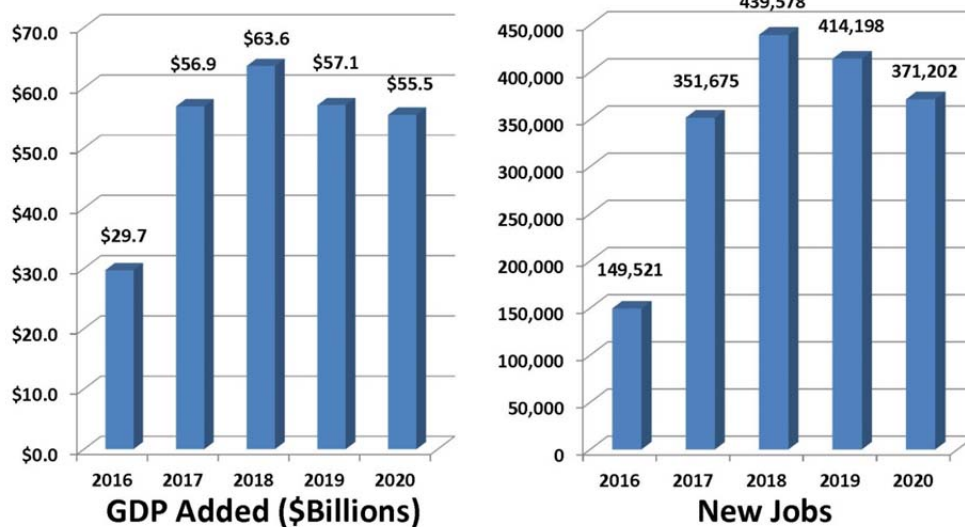
Now I'd like to turn to the shale supply chain's economic and employment dimensions. Late last year, the research firm IHS published a study reporting the extent of supply chain jobs and output generated by U.S. unconventional oil and gas operations. It reported that in 2015, the supply chain consists of 615,000 jobs, growing to 757,000 by 2025, for 23% growth. Output in 2015 is \$173 billion, growing to \$206 billion by 2025 (in constant dollars), for 20% growth. These numbers assume that current energy policies remain in effect. The study also documents that energy supply chain workers earn, on average, \$79,000 per year, versus \$68,000 for all American workers. These numbers represent just those workers, and their output, that exist because of shale energy.

IHS recently released a new study measuring the potential additional growth in the supply chain that would occur if the export ban is lifted. This was reported in terms of new jobs, labor income, GDP growth and new tax revenues. Its key findings, in summary, are:

- The export ban *reduces* US oil investment, production, supply chain activity, and job growth, but *raises* US gasoline prices.
- Each crude oil production job creates three in the supply chain and another six in the broader economy.
- Every dollar of GDP in the oil and gas sector generates two dollars in the supply chain.
- Lifting the ban would create up to 440,000 new supply chain jobs by 2018.
- Lifting the ban would add \$64 billion of supply chain output to GDP by 2018.
- Supply chain benefits reach into every state and most congressional districts.
- For example, Illinois, with little production, accounts for roughly 10% of the overall supply chain impact.

The report measures 60 supply chain industries, by state and by congressional district, annually through 2030. Here is a top-line data chart showing the total supply chain jobs and GDP impacts through 2020. Jobs and GDP peak in 2018 at 440,000 and \$64 billion, respectively.

TOTAL SUPPLY CHAIN New GDP and Jobs If Crude Oil Export Ban is Lifted



IHS Study: Crude Oil Exports: Unleashing the Supply Chain Study
(March 2015, Potential Production Case)

These numbers reflect the potential production case, which includes producing an average of 2.3 million barrels per day above current production, to supply the newly available global crude oil customer base. This case assumes additional production from known areas of existing plays, enhanced with moderate drilling performance and technology improvements.

As noted earlier, the supply chain is truly national, and not confined to crude oil and natural gas producing areas. To illustrate, this slide demonstrates the chain’s geographic diversity in terms of job creation, showing both the base and the potential production cases. Of the top fifteen states by job gains if the export ban were lifted, ten are states in which very little or no crude oil is produced.

	Base	Potential
CA	43,129	57,338
TX	32,279	40,599
IL	17,644	26,909
NY	13,956	24,605
FL	12,213	22,481
OH	10,475	13,601
GA	7,520	13,271
MI	8,109	13,256
PA	7,325	13,251
WA	8,204	12,903
NC	7,085	12,664
MA	7,568	12,046
OK	7,628	11,006
WI	6,264	10,219
MD	6,238	9,911



**THE SUPPLY CHAIN:
It’s Everywhere!**

**10 of the top 15 states
by job gain are
Non-producing States**

**New Supply Chain Jobs
by 2018 with the
export ban lifted**

IHS Study: Unleashing the Supply Chain (March 2015)

Similarly, GDP growth is also spread widely throughout the country. Of the top fifteen states by potential GDP growth if the export ban were lifted, eleven are states in which very little or no crude oil is produced.

State	Base	Potential
CA	\$5.8	\$7.6
TX	\$4.2	\$7.1
IL	\$3.2	\$5.2
NY	\$2.5	\$4.3
FL	\$1.8	\$3.0
WA	\$1.2	\$2.1
MA	\$1.2	\$2.0
OH	\$1.5	\$1.9
NC	\$1.0	\$1.8
SC	\$1.0	\$1.8
PA	\$1.1	\$1.7
MD	\$1.0	\$1.7
VA	\$0.9	\$1.6
GA	\$0.9	\$1.5
MI	\$0.9	\$1.5



**THE SUPPLY CHAIN:
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**11 of the top 15 states
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**New Supply Chain GDP
\$billions by 2018 with the
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IHS Study: Unleashing the Supply Chain (March 2015)

We estimate that there are no less than 120,000 shale energy supply chain companies in the U.S., at least 100,000 of which are small businesses. Using the Small Business Administration estimate that half of American workers are employed by small business, we project that of the major job and GDP gains forecast from lifting the export ban, small supply chain businesses would be responsible for creating at least half of them.

While some would claim that the crude oil industry is a game for big business, exactly the opposite is true. Companies in the supply chain, and the communities in which they operate, will benefit to an even greater extent than the producers themselves, as evidenced by the IHS-reported ratio of three jobs for one, and two dollars for one, in the supply chain versus at the producer level.

That's why EEIA and our member companies, unions and trade associations urge support of legislation to repeal this obsolete policy.