House Committee on Energy and Commerce, Subcommittee on Energy

Hearing entitled "The Impacts and Future of North American Energy Trade"

Testimony of Chet Thompson, President and CEO, American Fuel & Petrochemical Manufacturers

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The American Fuel & Petrochemical Manufacturers ("AFPM") appreciates the opportunity to provide testimony on the impacts and future of North American Energy Trade. AFPM is proud to represent 97 percent of the nation's refining and petrochemical manufacturing capacity, including 118 refineries and 248 petrochemical manufacturing facilities. Our members make the gasoline, diesel, jet fuel, and petrochemicals that make modern life possible. The refining and petrochemical industries support more than 3 million U.S. jobs and add $568 billion each year to the U.S. economy. In the next decade, the refining and petrochemical industries will need additional skilled labor to work as welders, electricians, pipefitters, boiler makers, and in other similar positions. In fact, demand for these skilled labor positions is expected to grow by 12 percent by 2024 to support the more than $185 billion in committed investment in our industries.

North American energy trade is a key element for continued growth in U.S. refining and petrochemical manufacturing. The United States imports significant volumes of crude oil from Canada and Mexico and exports substantial volumes of refined petroleum products and petrochemicals to those countries. World demand for gasoline, diesel fuel, and other petroleum products continues to increase and will provide further opportunity for growth in U.S. exports of transportation fuels from our refineries. Likewise, Canada and Mexico are also key trading partners for petrochemicals.

Cross-border trade of energy and petrochemical products between the United States, Mexico, and Canada has enhanced market access and bolstered the competitiveness of our domestic refining and petrochemical industries. Canada is the United States' largest energy trading partner and Mexico is the United States' second largest energy trading partner.

In 2016 the U.S. imported $53 billion worth of energy products from Canada and exported $14 billion worth of energy products to Canada. Mexico is the largest export market for refined products manufactured in the United States, with energy products accounting for almost 20 percent of trade with Mexico. In 2016, the U.S. exported $20.2 billion worth of energy products to Mexico and imported $8.7 billion worth of energy products. Energy is a NAFTA success story and is poised to become even more important in the decades to come. AFPM supports the continuation of a strong NAFTA and urges Congress to build on its success by aligning policies to better facilitate the construction of modern infrastructure.

I. North American Trade in Energy and Petrochemicals is Significant and Growing

North American trade in energy and petrochemicals plays an integral role in securing and preserving energy security and economic growth for the United States as well as for our trading partners, Canada and Mexico. Bilateral energy trade between the United States, Canada and Mexico centers largely on crude oil, refined products, and natural gas.

Crude Oil. The North American supply of crude oil is vital for U.S. energy, economic, and national security. Canada and Mexico combined to supply 48 percent of the U.S. imported crude supply needs in

2016. More specifically, in 2016, the U.S. imported 3.3 million barrels of Canadian crude oil per day, making Canada the largest supplier of imported crude oil to the U.S., representing 41 percent of U.S. crude oil imports. Similarly, the U.S. imported 582,000 barrels of crude oil per day from Mexico, making Mexico the fourth largest source of imported crude oil, representing 7 percent of U.S. crude oil imports.

Petroleum products. In 2016, the U.S. exported 4.7 million barrels per day of refined petroleum products, and one-third of those exports went to Canada and Mexico. Products include transportation fuels such as gasoline, diesel, and jet fuel, as well as heating oil, and other products such as naphtha, a petrochemical feedstock, propane that is used for heating and cooking, and light oils used to dilute heavy crude oils, which both Canada and Mexico produce.

Both Canada and Mexico are vital markets for U.S. refined products. Mexico is the single largest export market for the U.S. refining industry; in 2016, almost 20 percent of U.S. petroleum product exports were delivered to Mexico. In fact, U.S. exports of gasoline to Mexico supplied more than half of Mexico's gasoline demand in 2016.

Bilateral trade of refined products between the United States and Canada is relatively balanced in both volume and value. For 2016 the United States exported 564,000 barrels of refined products per day to Canada, valued at $8.2 billion and constituting 12 percent of all product exports. Additionally, in 2016, the United States imported 542,000 barrels of refined product, which included 180,000 barrels per day of gasoline (2.8 billion gallons for the year) and 104,000 barrels per day of diesel fuel and heating oil (1.6 billion gallons for the year) from Canada. The Northeastern United States especially relies on gasoline, heating oil and diesel fuel from refineries in Eastern Canada.

Natural Gas. Natural Gas trade between the United States and Canada is dominated by pipeline shipments. In 2016, natural gas imports from Canada averaged 8.0 billion cubic feet per day (Bcf/d) (equaling 97 percent of all U.S. natural gas imports), and U.S. natural gas exports to Canada averaged 2.1 Bcf/d, (equaling 33 percent of all U.S. natural gas exports). Most U.S. imports of natural gas from Canada originate in Western Canada and are shipped to U.S. markets in the West, Midwest, and Northeast. U.S. natural gas exports to Canada originate primarily in Michigan and New York, and exploration of the Marcellus and Utica shales have increased U.S. production of natural gas.

Mexico is the U.S.'s largest recipient of natural gas exports. U.S. exports of natural gas to Mexico have increased dramatically as U.S. production of natural gas has increased. In 2016, U.S. exports of natural gas to Mexico totaled nearly 4 Bcf/d (equaling 60% of total U.S. natural gas exports) and are expected to increase in 2017 as pipeline infrastructure expands. Natural gas pipelines currently under construction or in the planning stages are expected to double the pipeline natural gas exporting capacity from the U.S. to Mexico in the coming years. The U.S imports very small volumes of natural gas from Mexico into Southern California and Texas.

U.S. natural gas trade with Mexico and Canada is vitally important to balancing U.S. natural gas demand and supply. In 2016, the U.S. consumed more than 75 Bcf/day of natural gas, more than 10 percent of which was imported from Canada and Mexico.

Petrochemicals. In total, trade in all chemicals, including substances outside of the petrochemical portfolio, many of which are made from petrochemical building blocks, has more than tripled over the last two decades from $20 billion in 1994 to $63 billion in 2014. Petrochemical imports from Canada and

Mexico totaled around $419 million in customs value, while exports to both countries totaled around $749 million in customs value. As mentioned above, there is a very diverse portfolio of petrochemicals crossing the border that affects a wide variety of different manufacturing supply chains throughout North America. Those supply chains often go back and forth across borders, blurring the distinction of purely American, Canadian or Mexican manufacturing and creating a North American manufacturing bloc.

II. North American Trade in Energy and Petrochemicals Enhances the Competitiveness of U.S. Fuel and Petrochemical Manufacturers

North American energy trade has led to significant and innovative changes in the energy and petrochemical sectors of the U.S., Canada, and Mexico. Innovation and technology have increased crude oil production in the U.S., leading to the lifting of the U.S. ban on crude oil exports in 2015. Likewise, in 2013, Mexico changed its constitution to begin liberalizing its energy sector, allowing for direct investment by foreign companies for the first time.

As a result of increased energy production and the increasingly integrated North American energy market, the International Energy Agency (IEA) now projects that North America will be energy secure by 2020. North American energy security reduces U.S. reliance on unstable and volatile sources of energy, benefiting U.S. national security. Continued cross-border energy trade will only add to the increases in productivity and innovation that has played out the last two decades.

With the liberalization of the Mexican energy sector, significant investments are now being directed from the U.S. into the Mexican energy infrastructure. For example, Andeavor, formerly Tesoro Corporation, was recently awarded a contract to lease storage and pipeline capacity in northwestern Mexico from Mexico's state-run oil and gas company Pemex. Andeavor will supply refined products produced from their U.S. West Coast refineries to consumers in Mexico, providing an important market for U.S.-produced refined products.

Andeavor is currently the first company to integrate sales of U.S. manufactured fuel at U.S. branded (ARCO) stores in Mexico. Andeavor has seen sales volumes at these stores exceed expectations. By 2020, Andeavor projects sales of 30,000 barrels per day in Baja California and Sonora, and the potential for an additional 20,000 barrels of sales per day in Chihuahua, Sinaloa and Baja Sur.

Likewise, Valero Energy Corporation and Exxon Mobil recently announced hundreds of millions of dollars in investment in fuels logistics, product inventories, and marketing in Mexico. Exxon has said the company plans to invest $300 million over the next decade and is opening the first series of Mobil-brand stations in Mexico this year. Similarly, BP launched its first Mexican service station in March of 2017 with plans to have 1,500 in operation over the next five years.

In August, Valero Energy Corporation signed a long-term supply agreement with IENova to supply gasoline, diesel and jet fuel to terminals operated by IENova at the Port of Veracruz on the Gulf of Mexico and inland in Puebla and Mexico City. Supply to the terminal at the Port of Veracruz will begin in 2018 with products moving inland by rail through a separate, long-term Valero agreement with rail operator Ferromax. The Puebla terminal and Mexico City terminal is scheduled to begin operating in early 2019. These investments will provide an important and growing market for U.S. refined products.

III. Future Opportunities for Growth and Investment Presented by North American Trade in Energy and Petrochemicals

In addition to the current economic benefits of cross-border energy trade, opportunities for sustained trade benefits as well as future growth and investment between the United States, Canada and Mexico will continue.

Exports to Canada of natural gas and other refined products will remain strong thanks in part to investments in energy infrastructure, primarily cross-border pipelines. Additionally, Mexican demand for U.S. exports of natural gas has grown and is expected to continue trending upward through 2030.

In Mexico natural gas is the country's largest source of electricity generation, accounting for 54 percent of the country's generation in 2015, up from 34 percent in 2005. According to Mexico's national energy minister (SENER), more than 60% of Mexico's electric capacity additions between 2016 and 2020 are projected to come from natural gas-fired power plants, and significant natural gas capacity additions are expected to continue through 2029. SENER projects natural gas-fired capacity will account for 24.9 gigawatts (GW) of total capacity additions from 2016 to 2029, with 14.7 GW of new gas-fired capacity coming online by 2020.

New natural-gas fired plants will increase Mexico's natural gas demand, specifically a projected increase from the power generation sector from 3.6 billion cubic feet per day (Bcf/d) in 2015 to 5.4 Bcf/d in 2029. This expected demand growth will be met primarily by increasing imports of natural gas from the United States and by large expansions of both cross-border U.S.-Mexico pipeline capacity and Mexico's domestic natural gas pipeline networks.

In 2017 and 2018, natural gas pipelines currently under construction or in the planning stages are expected to nearly double the pipeline natural gas exporting capacity from the United States to Mexico. The expansion of U.S. pipeline export capacity to Mexico has been matched by a five-year plan to expand Mexico's domestic pipeline network, which includes 12 additional pipelines with a total capacity of 9.7 Bcf/d currently in development. The plan will expand existing networks and add more than 3,200 miles of new pipeline through Mexico that will create new markets for natural gas in currently supply-constrained regions.

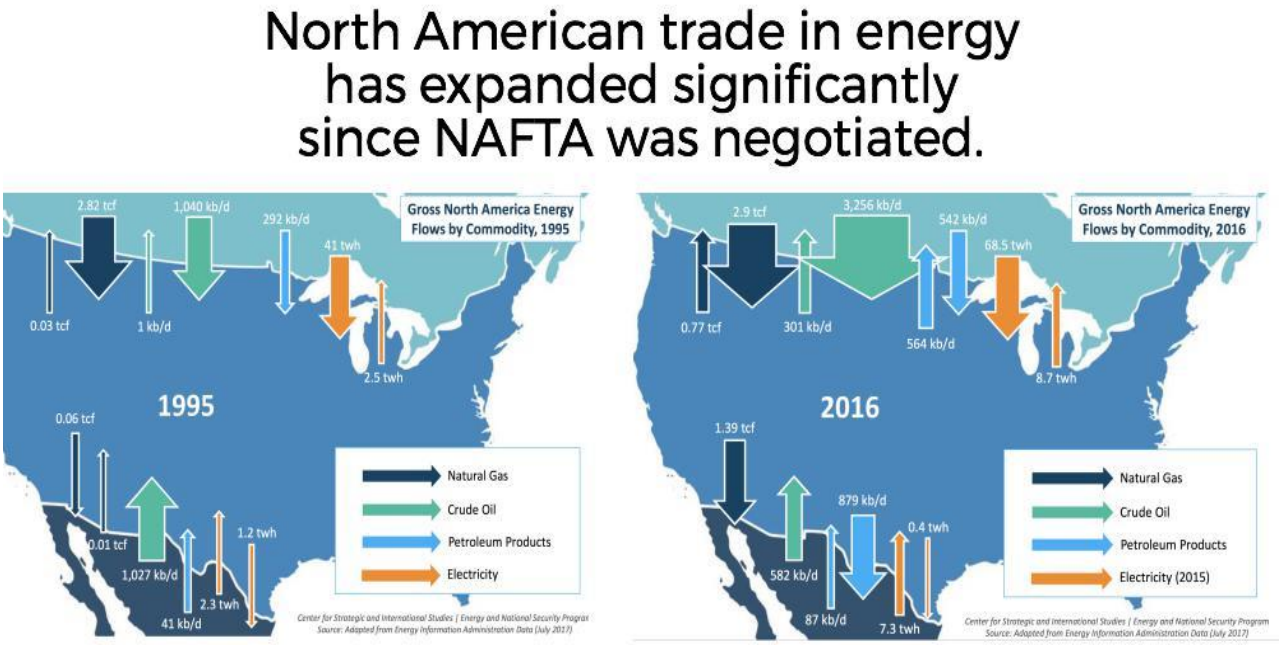
IV. Recommendations

An increasingly integrated North American energy market is a win for the U.S. refining and petrochemical industries, the environment, and energy consumers. Strong trade relationships between the United States, Canada and Mexico have led to reduced costs on key imported energy products, robust export markets in Canada and Mexico, and expanded market access. This in turn has allowed for greater industry investment and job growth, affordable energy costs and increased global competitiveness.

AFPM recommends that the U.S. build on these successes by enhancing and modernizing the North Atlantic Free Trade Agreement (NAFTA) to reflect the realities of an integrated North American energy market. In particular, such policies should promote a more harmonized and efficient regulatory environment, provide certainty for businesses and the public, and enhance and protect foreign direct investment in partner nations.

Finally, AFPM recommends the United States work with Canada and Mexico to ensure policies encourage the development of modern infrastructure to safely and efficiently move our products across the borders and further strengthen our integrated energy markets. Taken together, a strong trade and regulatory policy will ensure the U.S. and our neighbors are prepared to meet energy challenges for decades to come.

Appendix A – Center for Strategic & International Studies North American Energy Trade Expansion from 1995 to 2016



Appendix B – Import and Export Energy Trade Data

Thousands of Barrels per Day	2016 US Exports to Canada	2016 US Exports to Mexico
Crude Oil	359	1
Crude Diluent (Pentanes Plus)	199	1
LPGs (Propane, Butane)	91	119
Gasoline-Finished & Blending Components	60	404
Diesel Fuel & Heating Oil	34	183
Kerosene/Kerosene Jet	44	33
Residual Fuel Oil	32	31
Petroleum Coke	23	51
Other Miscellaneous Products *	93	58
Total Product Exports	**576**	**880**

Thousands of Barrels per Day	2016 Imports from Canada	2016 Imports from Mexico
Crude Oil	**3,227**	**582**
Crude Diluent (Pentanes Plus)	1	10
LPGs (Propane, Butane)	160	1
Gasoline-Finished & Blending Components	179	9
Diesel Fuel & Heating Oil	104	1
Kerosene/Kerosene Jet	9	
Residual Fuel Oil	38	52
Petroleum Coke	2	
Biomass Based Diesel	7	
Other Miscellaneous Products	53	14
Total Products	**553**	**87**

Testimony Summary for Chet Thompson, AFPM President and CEO

Preserving and fostering North American cross-border energy trade is key to continued economic growth for the nation's refining and petrochemical manufacturing industries.

The United States imports significant volumes of crude oil from Canada and Mexico while exporting substantial volumes of refined petroleum products and petrochemicals to those countries. Canada and Mexico are also key trading partners for petrochemicals. Canada is the United States' largest energy trading partner and Mexico is the United States' second largest energy trading partner.

In 2016 the U.S. imported $53 billion worth of energy products from Canada and exported $14 billion worth of energy products to Canada. Mexico is the largest export market for refined products manufactured in the United States. In 2016, the U.S. exported $20.2 billion worth of energy products to Mexico and imported $8.7 billion worth of energy products. Preserving and fostering North American energy trade is key to maintaining and increasing economic growth for the nation's refining and petrochemical industries which support over 3 million U.S. jobs and add $568 billion each year to the U.S. economy.

North American trade in energy and petrochemicals is substantial and plays an integral role in securing and preserving energy security and economy growth for the U.S. as well as for our trading partners.

Bilateral trade between the United States, Canada and Mexico centers on crude oil, refined products, and natural gas. Supplies of crude oil foster domestic economic growth, while exports of petroleum products and natural gas trade drives investment by U.S. companies in jobs and energy infrastructure. The North American supply of crude oil is integral for U.S. energy, economic, and national security. Canada and Mexico combined to supply 48 percent of the U.S. imported crude supply needs in 2016.

Both Canada and Mexico are also vital markets for U.S. refined product exports. In 2016 the U.S. exported 4.7 million barrels per day of refined petroleum products, with one-third of those exports going to Canada and Mexico. Mexico represents the single largest export market for the U.S. refining industry. In 2016 Mexico received almost 20 percent of U.S. petroleum product exports while 12 percent of all U.S. refined product exports went to Canada.

U.S. natural gas trade with Mexico and Canada is extremely important to balancing U.S. natural gas demand and supply. Mexico is the U.S.'s largest recipient of natural gas exports, and in 2016 U.S. exports of natural gas to Mexico represented 60 percent of total U.S. natural gas exports.
In 2016 imports of natural gas from Canada equaled 97 percent of all U.S. natural gas imports, while U.S. natural gas exports to Canada amounted to 33 percent of all U.S. natural gas exports

Additionally, trade in all chemicals, including substances outside of the petrochemical portfolio, many of which are made from petrochemical building blocks, has more than tripled over the last two decades from $20 billion in 1994 to $63 billion in 2014.

North American energy trade has enhanced the competitiveness of the U.S. refining and petrochemical manufacturing industries, and provides future opportunities for economic growth.

North American trade of energy and petrochemical products has led to innovative changes and growth in the energy and petrochemical sectors of the United States, Mexico, and Canada. Cross-border market access has also bolstered the competitiveness of our domestic refining and petrochemical industries.

As a result of Increased energy production and the increasingly integrated North American energy market, the International Energy Agency (IEA) now projects North America will be energy secure by 2020, which will reduce U.S. reliance on unstable volatile sources of energy.

Recent developments such as the liberalization of the Mexican energy sector has led to increased investments from the U.S. in the Mexican energy infrastructure. These investments will provide an important and growing market for U.S. refined products.

For example, companies such as Andeavor, Valero Energy Corporation and Exxon Mobil have announced hundreds of millions of dollars in investments in Mexico. This year Andeavor has integrated sales of U.S. manufactured fuel at their U.S. branded (ARCO) stores in Mexico and Exxon is opening the first series of Mobil-brand stations in Mexico. Additionally, Valero has signed a long-term agreement with IENova to supply transportation fuels to terminals at the Port of Veracruz and inland in Puebla and Mexico City.

Finally, U.S. support for policies that preserve and grow North American energy trade is key to fostering continued and expanded economic growth, investment and energy security.

North American energy trade plays an integral role in securing and preserving energy security and economic growth for the United States as well as our trading partners, Canada and Mexico. The strong relationships the United States has developed with Canada and Mexico have allowed us to become an international energy power house and have armed us with the necessary abilities to beat out foreign competitors in the global markets such as China.

As a result of an increasingly integrated North American energy market, the U.S. enjoys reduced costs on key imported energy products such as crude oil, as well as billions in annual domestic export revenues. The growth of energy infrastructure from the U.S. into Canada and Mexico has allowed for expanded market access for U.S. companies, greater investment, job growth and affordable energy costs for consumers.

Policies that could upend the existing integrated North American energy market could greatly increase the costs of U.S. imports of key energy products from Canada and Mexico, driving up costs for energy consumers and impacting job growth and investment. Furthermore, changes to cross-border trade policy would threaten the U.S.'s role in Canadian and Mexican energy export markets which could in turn allow for foreign competitors such as China to move into those markets.

Lastly, the International Energy Agency (IEA) projects that North America will be energy secure by 2020, a key policy objective highlighted by the current Administration. However, reductions in the ability of energy products to trade between the United States, Canada, and Mexico could compromise this historic milestone.

Therefore, we urge that the U.S. support policies that facilitate the building of a modern North American energy infrastructure, allow energy markets to grow through enhanced regulatory cooperation, and protect and preserve U.S. investments in partner nations.