

ONE HUNDRED FOURTEENTH CONGRESS  
**Congress of the United States**  
**House of Representatives**  
COMMITTEE ON ENERGY AND COMMERCE  
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**MEMORANDUM**

**March 2, 2015**

**To: Subcommittee on Energy and Power Democratic Members and Staff**

**Fr: Committee on Energy and Commerce Democratic Staff**

**Re: Hearing on “21st Century Energy Markets: How the Changing Dynamics of World Energy Markets Impact our Economy and Energy Security”**

On Tuesday, March 3, 2015, at 1:30 p.m. in room 2123 of the Rayburn House Office Building, the Subcommittee on Energy and Power will hold a hearing on “21st Century Energy Markets: How the Changing Dynamics of World Energy Markets Impact our Economy and Energy Security.” This hearing is expected to focus primarily on the current restrictions on crude oil exports and the implications of removing or relaxing those restrictions.

**I. BACKGROUND**

The Energy Policy and Conservation Act of 1975 (EPCA) is the primary statute restricting the export of domestically produced crude oil. EPCA was enacted in the wake of the 1973 oil embargo.

EPCA includes several provisions intended to mitigate the impact of disruptions in the supply of petroleum products on the U.S. The law directs the President to prohibit the export of crude oil and natural gas produced in the United States, unless doing so is determined to be in the national interest and consistent with the purposes of EPCA.<sup>1</sup>

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<sup>1</sup> Congressional Research Service, *The Strategic Petroleum Reserve: Authorization, Operation, and Drawdown Policy* (Aug. 27, 2013) (R42460) (online at [www.crs.gov/pdfloader/R42460](http://www.crs.gov/pdfloader/R42460)).

The Department of Commerce's Bureau of Industry and Security (BIS) is responsible for regulating crude oil exports by issuing licenses to interested companies.<sup>2</sup> In accordance with EPCA's general prohibition on crude oil exports and regulations issued pursuant to the 1979 Export Administration Act, BIS will only approve export licenses for the following transactions:

- Exports from Alaska's Cook Inlet;
- Exports to Canada for consumption or use therein;
- Exports in connection with refining or exchange of SPR oil;
- Exports of heavy California crude oil up to an average of 25,000 barrels per day (b/d);
- Exports that are consistent with international agreements;
- Exports that are consistent with findings made by the President; and
- Exports of foreign-origin crude that has not been commingled with U.S. crude oil.<sup>3</sup>

Over the past several years, the number of approved applications and the level of crude oil exports have steadily increased. The number of approved crude oil license applications grew from 31 approved applications in FY 2008 to 189 approved applications in FY 2014.<sup>4</sup> Crude oil exports reached the high point of 502,000 b/d in November 2014, going primarily to Canada.<sup>5</sup>

## **II. TRENDS IN U.S. CRUDE OIL PRODUCTION, CONSUMPTION, AND PRICES**

Nearly all of the recent growth in U.S.-produced crude is in light, sweet crude oils from tight oil formations.<sup>6</sup> In the past, the oil and natural gas industry considered resources locked in tight, impermeable formations, such as shale either technically impossible or uneconomical to produce. Historically higher oil prices and advances in horizontal drilling and hydraulic

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<sup>2</sup> Congressional Research Service, *U.S. Oil Imports and Exports* (Apr. 4, 2012) (R42465) (online at [www.crs.gov/pdfloader/R42465](http://www.crs.gov/pdfloader/R42465)).

<sup>3</sup> 15 C.F.R. § 754.2(b)(1).

<sup>4</sup> Congressional Research Service, *U.S. Crude Oil Export Policy: Background and Considerations*, at 10 (Dec. 31, 2014) (R43442) (online at [www.crs.gov/pdfloader/R43442](http://www.crs.gov/pdfloader/R43442)).

<sup>5</sup> U.S. Energy Information Administration, *U.S. Exports of Crude Oil* (online at [www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=MCREXUS2&f=M](http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=MCREXUS2&f=M)); U.S. Energy Information Administration, *Exports by Destination* (online at [www.eia.gov/dnav/pet/PET\\_MOVE\\_EXPC\\_A\\_EPC0\\_EEX\\_MBBLPD\\_M.htm](http://www.eia.gov/dnav/pet/PET_MOVE_EXPC_A_EPC0_EEX_MBBLPD_M.htm)).

<sup>6</sup> Crude oils categorized as “light” have a relatively low density, while higher density crude oils are known as “heavy.” Low sulfur content crudes are known as “sweet,” while crude oils with higher sulfur content are known as “sour.” See U.S. Energy Information Administration, *Oil Crude and Petroleum Products Explained* (June 19, 2014) (online at [www.eia.gov/energyexplained/index.cfm?page=oil\\_home](http://www.eia.gov/energyexplained/index.cfm?page=oil_home)); Government Accountability Office, *Changing Crude Oil Markets: Allowing Exports Could Reduce Consumer Fuel Prices, and the Size of the Strategic Reserves Should Be Reexamined* (Sept. 30, 2014) (GAO-14-807) (online at [www.gao.gov/assets/670/666274.pdf](http://www.gao.gov/assets/670/666274.pdf)).

fracturing have made these resources commercially viable. The recent precipitous drop in oil prices has called into question the long-term economic feasibility of continued growth in light sweet crude oil production.<sup>7</sup>

#### **A. Crude Oil Production**

Domestic crude oil production has increased significantly over the past few years, reversing a decline that began in 1986. According to Energy Information Administration (EIA), U.S. crude oil production increased from 5.1 million b/d in 2007 to an estimated 9.0 million b/d by the end of 2014. EIA currently projects crude oil production to average 9.5 million b/d in 2016, just shy of the highest annual average crude oil production in 1970.<sup>8</sup> EIA also notes that tight oil development is still at an early stage, and that changes in U.S. crude oil production can be affected by technological advances which allow production to occur in potentially high-yielding tight formations. In that “High Oil and Gas Resource” case production continues to climb reaching a high of 13.3 million b/d in 2036.<sup>9</sup>

EIA projections suggest that the recent gains in tight oil production may be temporary. In its 2014 Annual Energy Outlook Reference Case, EIA projects that domestic production plateaus near 9.6 million b/d between 2017 and 2020.<sup>10</sup> EIA expects that “tight oil production begins to slow after 2021, contributing to a decline in total U.S. oil production through 2040.”<sup>11</sup> Domestic production has already started to slow due to low oil prices.

#### **B. U.S. Refining Capacity and Utilization**

As of January 1, 2014, the United States had 142 operating refineries with a total crude oil processing capacity of 17.9 million b/d.<sup>12</sup> Each refinery has its own unique configuration that is generally designed to economically optimize the use of a certain crude oil blend and the production of oil products that will maximize profit margins.<sup>13</sup> More than 50% of the refining

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<sup>7</sup> See eg. *Top drillers say they'll sit on wells until prices go back up*, EnergyWire (Feb. 26, 2015); *Oil rig count falls by 33 as decline continues*, Fuelfix.com (Feb. 27, 2015).

<sup>8</sup> U.S. Energy Information Administration, *Short-Term Energy Outlook February 2015* (Feb. 10, 2015) (online at [www.eia.gov/forecasts/steo/pdf/steo\\_full.pdf](http://www.eia.gov/forecasts/steo/pdf/steo_full.pdf)). Hereinafter: U.S. Energy Information Administration, STEO February 2015.

<sup>9</sup> U.S. Energy Information Administration, *Annual Energy Outlook 2014*, at ES-2 (Apr. 2014) (online at [www.eia.gov/forecasts/aeo/pdf/0383\(2014\).pdf](http://www.eia.gov/forecasts/aeo/pdf/0383(2014).pdf)).

<sup>10</sup> U.S. Energy Information Administration, *U.S. Crude Oil Production Forecast-Analysis of Crude Types* (May 29, 2014) (online at [www.eia.gov/analysis/petroleum/crudetypes/pdf/crudetypes.pdf](http://www.eia.gov/analysis/petroleum/crudetypes/pdf/crudetypes.pdf)).

<sup>11</sup> U.S. Energy Information Administration, *Annual Energy Outlook 2014*, at ES-2 (Apr. 2014) (online at [www.eia.gov/forecasts/aeo/pdf/0383\(2014\).pdf](http://www.eia.gov/forecasts/aeo/pdf/0383(2014).pdf)).

<sup>12</sup> U.S. Energy Information Administration, *Number and Capacity of Petroleum Refineries* (Jun. 25, 2014) (online at [www.eia.gov/dnav/pet/pet\\_pnp\\_cap1\\_dcu\\_nus\\_a.htm](http://www.eia.gov/dnav/pet/pet_pnp_cap1_dcu_nus_a.htm)).

capacity in the U.S. is located in the Gulf Coast region, where the refineries are configured to process heavy crude. Refining of light sweet crude is concentrated primarily on the east coast.<sup>14</sup>

Beginning in the late 1970s, U.S. refineries faced dwindling supplies of light-sweet crude oil, typically used to make motor fuels. Many refineries switched their configuration to account for the increased availability of heavy-sour crude oil, and added "cracking" and "coking" processes to convert petroleum "resid" into high value motor fuels. Several Midwest refineries have recently added coking/conversion capacity to take advantage of the increasing supply of heavier crude oils from Canada's oil sands projects.<sup>15</sup>

### **C. Imports of Crude Oil**

Despite increased production, the U.S. remains heavily dependent on imports of crude oil. In December 2014, the U.S. imported an average of 6.8 million b/d of crude oil.<sup>16</sup> However, in 2014, U.S. imports declined to an estimated 27% of consumption since peaking in 2005 when the U.S. imported 60% of the petroleum it consumed.<sup>17</sup> This is the result of a variety of factors, including the rise in domestic oil production and a decreased demand for petroleum products – due to increased alternative fuel use, higher fuel efficiency standards and the overall economic downturn. EIA projects the net U.S. petroleum imports will fall to 20% of consumption in 2016, which would be the lowest level since 1968.<sup>18</sup>

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<sup>13</sup> Congressional Research Service, *U.S. Crude Oil Export Policy: Background and Considerations* (Dec. 31, 2014) (R43442) (online at [www.crs.gov/pdfloader/R43442](http://www.crs.gov/pdfloader/R43442)).

<sup>14</sup> U.S. Energy Information Administration, *This Week in Petroleum: Regional refinery trends continue to evolve* (Jan. 7, 2015) (online at [www.eia.gov/petroleum/weekly/archive/2015/150107/includes/analysis\\_print.cfm](http://www.eia.gov/petroleum/weekly/archive/2015/150107/includes/analysis_print.cfm)).

<sup>15</sup> See Oil Change International, *Should It Stay or Should It Go? The Case Against U.S. Crude Oil Exports* (Oct. 11, 2013) (online at [priceofoil.org/content/uploads/2013/10/OCI\\_Stay\\_or\\_Go\\_FINAL.pdf](http://priceofoil.org/content/uploads/2013/10/OCI_Stay_or_Go_FINAL.pdf)); Congressional Research Service, *Small Refineries and Oil Field Processors: Opportunities and Challenges* (Aug. 11, 2014) (R43682) (online at [www.crs.gov/pdfloader/R43682](http://www.crs.gov/pdfloader/R43682)).

<sup>16</sup> U.S. Energy Information Administration, *U.S. Net Imports of Crude Oil* (Feb. 27, 2015) (online at [www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=MCRNTUS2&f=M](http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=MCRNTUS2&f=M)).

<sup>17</sup> U.S. Energy Information Administration, *STEO February 2015*; Government Accountability Office, *Changing Crude Oil Markets: Allowing Exports Could Reduce Consumer Fuel Prices, and the Size of the Strategic Reserves Should Be Reexamined* (Sept. 30, 2014) (GAO-14-807) (online at [www.gao.gov/assets/670/666274.pdf](http://www.gao.gov/assets/670/666274.pdf)).

<sup>18</sup> U.S. Energy Information Administration, *STEO February 2015*.

Nearly the entire recent decline in crude oil imports has occurred in light sweet grades. In particular, U.S. light crude imports fell over 70% between 2010 and August 2014. Imports of light sweet crude to the U.S. Gulf Coast have been virtually eliminated.<sup>19</sup>

#### **D. Volatility in Global Oil Market**

Analysts have identified several factors contributing to the recent fall in global oil prices, including: decreased demand in Europe and Asia; significantly increased production by the world's major oil producers; and OPEC's decision to maintain current production levels in order to secure their share of the global market.<sup>20</sup>

The price of a barrel of oil has fallen rapidly in the second half of 2014. The price of futures contracts for West Texas Intermediate crude oil (WTI), the main U.S. benchmark oil price, fell from approximately \$100 per barrel in July to approximately \$49 at the end of February, 2015.<sup>21</sup>

Much of the decline in gasoline prices since mid-2014 is attributable to falling crude oil prices. The combination of robust U.S. crude oil production growth, a return of Libyan production, weakening expectations for global economic growth – particularly in China, and the sustained level of crude output from OPEC has reduced oil prices.<sup>22</sup>

#### **E. Condensate**

Condensate is the lightest form of hydrocarbons classified as crude oil, and refers to very light hydrocarbons that exist as a gas underground but condense to a liquid after reaching the pressure and temperature at the earth's surface. Some tight oil deposits have very high condensate content, for instance as much as half of all oil production in the Eagle Ford Shale is believed to fall into the condensate category.<sup>23</sup>

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<sup>19</sup> U.S. Energy Information Administration, *EIA tracking tool shows light-sweet crude oil imports to Gulf Coast virtually eliminated* (Feb. 10, 2015) (online at [www.eia.gov/todayinenergy/detail.cfm?id=19931](http://www.eia.gov/todayinenergy/detail.cfm?id=19931)).

<sup>20</sup> Congressional Research Service, *Lower Oil Prices 2015* (Jan. 6, 2015); *A Simple Guide to the Sudden Collapse in Oil Prices*, Washington Post (Dec. 1, 2014) (online at [www.washingtonpost.com/blogs/wonkblog/wp/2014/11/28/a-simple-guide-to-the-sudden-collapse-in-oil-prices/](http://www.washingtonpost.com/blogs/wonkblog/wp/2014/11/28/a-simple-guide-to-the-sudden-collapse-in-oil-prices/)).

<sup>21</sup> U.S. Energy Information Administration, *Cushing, OK Crude Oil Future Contract 1* (Feb. 25, 2015) (online at [www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=p&s=rclcl&f=d](http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=p&s=rclcl&f=d)).

<sup>22</sup> *Id.*

<sup>23</sup> Oil Change International, *Should It Stay or Should It Go? The Case Against U.S. Crude Oil Exports* (Oct. 11, 2013) (online at [priceofoil.org/content/uploads/2013/10/OCI\\_Stay\\_or\\_Go\\_FINAL.pdf](http://priceofoil.org/content/uploads/2013/10/OCI_Stay_or_Go_FINAL.pdf)); *What is Condensate? Introducing America's New Oil Export*, Wall Street Journal (June 25, 2014) (online at [blogs.wsj.com/corporate-intelligence/2014/06/25/what-is-condensate-introducing-americas-new-oil-export/](http://blogs.wsj.com/corporate-intelligence/2014/06/25/what-is-condensate-introducing-americas-new-oil-export/)).

Until recently, condensate was treated exclusively as a crude oil and subject to export restrictions. However, BIS issued two private rulings in 2014 to allow, without license, the export of condensate. When asked to clarify its decisions, BIS stated, “lease condensate that has been processed through a crude oil distillation tower is not crude oil but a petroleum product.”<sup>24</sup> Some have questioned the Commerce Department’s process and legal rationale behind these private rulings, highlighting the potential easing of restrictions on crude exports.<sup>25</sup> Despite the uncertainty surrounding the commodity classification of condensate, refiners have already started making significant investments in condensate splitters (distillation towers) in order to extract and export the resulting components without restriction.<sup>26</sup>

### **III. IMPACTS OF LIFTING THE CONTROLS ON CRUDE OIL EXPORTS**

The boom in domestic crude oil production and anticipation of continued growth has led to increased calls to lift the current limitations on crude oil exports. One of the arguments commonly used in favor of lifting exports restrictions is premised on the likelihood of an oversupply of light crude in the U.S. due to a mismatch between the light, sweet oil being produced and configurations of the U.S. refining capacity, much of which is optimized to run heavy, sour crude.

#### **A. Economic Impact of Crude Exports**

The economic impact of lifting the crude export ban is an area of considerable uncertainty and disagreement.<sup>27</sup> Proponents of lifting the current export restrictions have cited, among other things, two studies released in 2014: one by IHS and the other by ICF International. The results of these studies vary widely, but both anticipate significant increases in production, reductions in oil prices by anywhere from \$0.25 to \$5 per barrel (Brent prices), and lower gasoline prices ranging from \$0.014 to \$0.12 per gallon.<sup>28</sup>

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<sup>24</sup> U.S. Department of Commerce, Bureau of Industry and Security, *FAQs – Crude Oil and Petroleum Products* (Dec. 30, 2014) (online at [www.bis.doc.gov/index.php/licensing/embassy-faq](http://www.bis.doc.gov/index.php/licensing/embassy-faq)).

<sup>25</sup> Letter to Secretary Penny Pritzker, from Senators Edward J. Markey and Robert Menendez (July 2, 2014) (online at [www.markey.senate.gov/imo/media/doc/2014-06-25\\_Commerce\\_Condensate.pdf](http://www.markey.senate.gov/imo/media/doc/2014-06-25_Commerce_Condensate.pdf)).

<sup>26</sup> U.S. Energy Information Administration, *Presentation by Adam Sieminski on the Effects of Low Oil Prices* (Feb. 12, 2015) (online at [www.eia.gov/pressroom/presentations/sieminski\\_02122015.pdf](http://www.eia.gov/pressroom/presentations/sieminski_02122015.pdf)); Congressional Research Service, *U.S. Crude Oil Export Policy: Background and Considerations* (Dec. 31, 2014) (R43442) (online at [www.crs.gov/pdfloader/R43442](http://www.crs.gov/pdfloader/R43442)).

<sup>27</sup> U.S. Energy Information Administration, *What Drives U.S. Gasoline Prices?* (Oct. 30, 2014) (online at [www.eia.gov/analysis/studies/gasoline/pdf/gasolinepricestudy.pdf](http://www.eia.gov/analysis/studies/gasoline/pdf/gasolinepricestudy.pdf)).

<sup>28</sup> Presentation by Jason Bordoff, Director of the Center on Global Energy Policy, Columbia University, to EIA Energy Conference (July 14, 2014) (online at [www.eia.gov/conference/2014/pdf/presentations/bordoff.pdf](http://www.eia.gov/conference/2014/pdf/presentations/bordoff.pdf)); IHS, *U.S. Crude Oil Export Decision: Assessing the Impact of the Export Ban and Free Trade on the U.S. Economy* (May 29,

Opponents of lifting the crude oil ban, including independent refiners, have challenged the premise of U.S. market and refining system oversaturation with light tight oil. One study found that U.S. refiners appear to have underutilized their lighter processing capacity and that, by 2020, the U.S. will have capacity to absorb 3.1 to 4.3 million b/d of additional U.S. light tight oil production versus that consumed in Q4 2013.<sup>29</sup> CBO estimates that if the restrictions on crude oil exports are lifted, “the prices of domestic light crude oils seen by some U.S. crude oil producers and petroleum refiners would rise.”<sup>30</sup> These price increases would be seen primarily by refineries already configured for processing light sweet crude, like those on the east coast.<sup>31</sup>

A May 2012 CBO study also examined the relationship between global markets and U.S. energy prices. This report found that increased domestic production of crude oil does not prevent or mitigate spikes in oil and gas prices. CBO examined gasoline prices in Canada, the United States, and Japan between 1999 and 2011. CBO found that gasoline prices in those countries rose and fell in tandem with the world market, even though Japan produced almost no oil, Canada was a net oil exporter, and the United States produced less than half of its own oil. More domestic supply did not protect Canadian consumers from price shocks. CBO concluded that “even if the United States increased production to become a net exporter of crude oil, U.S. consumers would still be exposed to gasoline prices that rose and fell in response to disruptions around the world.”<sup>32</sup>

## **B. Climate and Environmental Impact of Crude Exports**

Maximizing U.S. oil production will exacerbate climate change and increase the risks to the land, water and air. According to a recent study, approximately one third of the world’s remaining oil reserves and half of the remaining gas reserves should remain untouched over the next 40 years in order to prevent the global average temperature from rising more than 2°C.<sup>33</sup>

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2014); ICF International, for the American Petroleum Institute, *The Impacts of U.S. Crude Oil Exports on Domestic Crude Production, GDP, Employment, Trade, and Consumer Costs* (Mar. 31, 2014).

<sup>29</sup> Baker and O’Brien, Inc., *An Analysis of U.S. light Tight Oil Absorption Capacity* (Sept. 24, 2014) (online at [www.bakerobrien.com/bakerobrien2/assets/File/B&OB%20LTO%20Capacity%20Study.pdf](http://www.bakerobrien.com/bakerobrien2/assets/File/B&OB%20LTO%20Capacity%20Study.pdf)).

<sup>30</sup> Congressional Budget Office, *The Economic and Budgetary Effects of Producing Oil and Natural Gas From Shale* (Dec. 7, 2014) (online at [www.cbo.gov/sites/default/files/cbofiles/attachments/49815-Effects\\_of\\_Shale\\_Production.pdf](http://www.cbo.gov/sites/default/files/cbofiles/attachments/49815-Effects_of_Shale_Production.pdf)).

<sup>31</sup> U.S. Energy Information Administration, *This Week in Petroleum: Regional refinery trends continue to evolve* (Jan. 7, 2015) (online at [www.eia.gov/petroleum/weekly/archive/2015/150107/includes/analysis\\_print.cfm](http://www.eia.gov/petroleum/weekly/archive/2015/150107/includes/analysis_print.cfm)).

<sup>32</sup> Congressional Budget Office, *Energy Security in the United States* (May 9, 2012) (online at [www.cbo.gov/sites/default/files/05-09-EnergySecurity.pdf](http://www.cbo.gov/sites/default/files/05-09-EnergySecurity.pdf)).

<sup>33</sup> *The geographical distribution of fossil fuels unused when limiting global warming to 2°C*, Nature (Jan. 7, 2015) (online at [www.nature.com/nature/journal/v517/n7533/full/nature14016.html](http://www.nature.com/nature/journal/v517/n7533/full/nature14016.html)).

An increase in oil production, consistent with unrestricted crude exports, would run counter to U.S. and global efforts to limit greenhouse gas emissions and prevent catastrophic climate change.

Two additional climate concerns are methane leaks and natural gas flaring. The drilling boom has outpaced the building of infrastructure necessary to control methane leaks from oil and gas wells leading to increased emissions of this potent greenhouse gas. The energy sector—including sources like natural gas and petroleum systems—is the largest source of U.S. methane emissions, accounting for 303 million metric tons of CO<sub>2</sub> equivalent in 2009.<sup>34</sup> In oil-rich shale formations, such as North Dakota’s Bakken and Texas’s Eagle Ford shales, natural gas often is produced along with crude oil. As oil production has boomed, so has the amount of gas produced, but industry has not built the gas gathering infrastructure necessary to process and transport much of that gas to market.<sup>35</sup> This lack of infrastructure, combined with low natural gas prices, often makes it cheaper for industry to burn the gas than to capture and process it.<sup>36</sup> This flaring generates air pollution and releases CO<sub>2</sub>.

#### **IV. WITNESSES**

The following witnesses have been invited to testify:

**The Honorable Adam Sieminski**  
Administrator  
U.S. Energy Information Administration

**John Kingston**  
President  
McGraw Hill Financial Global Institute

**Amy Jaffe**  
Executive Director, Energy and Sustainability  
University of California, Davis

**Scott Sheffield**  
Chairman and Chief Executive Officer  
Pioneer Natural Resources

**Charles Drevna**  
President

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<sup>34</sup> U.S. Energy Information Administration, *Emissions in Greenhouse Gases in The U.S.* (Mar. 31, 2011) (online at [www.eia.gov/environment/emissions/ghg\\_report/ghg\\_methane.cfm](http://www.eia.gov/environment/emissions/ghg_report/ghg_methane.cfm)).

<sup>35</sup> Letter to Chairman Fred Upton, from Ranking Members Henry A. Waxman, Bobby L. Rush, and Diana DeGette (May 14, 2012).

<sup>36</sup> *Gas flaring permits surge in Texas*, Fuelfix.com (Apr. 9, 2012) (online at [fuelfix.com/blog/2012/04/09/gas-flaring-permits-surge-in-texas/](http://fuelfix.com/blog/2012/04/09/gas-flaring-permits-surge-in-texas/)).



American Fuel & Petrochemical Manufacturers

**Dr. Graeme Burnett**

Senior Vice President for Fuel Optimization, Delta Airlines

Chairman of the Board, Monroe Energy

**Brad Markell**

Executive Director

AFL-CIO Industrial Union Council