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EPA Actions to Quantify and Reduce Methane Emissions by the Oil and Gas Industry

Methane, the primary component of natural gas, has been identified by the U.S. Environmental Protection Agency (“EPA”) as a potent greenhouse gas (“GHG”). EPA has further determined that the oil and gas industry is a significant contributor to U.S. methane, and therefore GHG, emissions. The EPA has recently announced several steps intended to lead to the reduction of methane emissions by the oil and gas industry. These measures threaten to extend potentially costly requirements concerning the measurement and reduction of methane emissions to many additional emission sources in the oil and gas industry.

Most recently, on May 12, 2016, EPA released final regulations addressing methane emissions from new, modified and reconstructed oil and gas sources located in the United States, the “New Source Performance Standards” for methane. In addition, on March 10, 2016, in the U.S.-Canada Joint Statement on Climate, Energy and Arctic Leadership (the “Joint Statement”) President Obama announced that the EPA will begin developing regulations governing methane emissions from existing oil and gas sources located in the United States. The final regulations concerning new, modified and reconstructed sources, as well as the regulations in development concerning existing sources, include such sources that are owned by non-U.S. entities. The EPA also announced in March its new voluntary Natural Gas STAR Methane Challenge Program, a partnership between the EPA and companies in the oil and gas industry that builds upon an existing voluntary methane emission reduction program. This voluntary program is also available to non-U.S. oil and gas companies with operating assets in the United States. These developments indicate that limiting methane emissions will play a significant part in the Obama administration’s efforts to reduce GHG emissions.

This memorandum reviews these recent EPA actions concerning methane emissions and describes their context and their potential impact on the oil and gas industry in the United States. Regulated parties should be prepared to evaluate the potential applicability of these actions to their ongoing and future operations, as well as the potential costs of compliance in the United States. Regulated parties should also be aware that U.S. securities disclosure standards require disclosure of any material impacts from new and anticipated environmental regulations, and the U.S. Securities and Exchange Commission has released guidance that highlights its expectations for disclosure of impacts from climate change-related regulations. Therefore, companies will need to evaluate their operations and infrastructure to assess whether compliance will require additional costs or result in operational impacts that merit new or updated environmental disclosures.

The Road to Methane Regulation

In June 2013, the Obama administration issued its Climate Action Plan (“CAP”), which marked the beginning of significant regulatory action by the administration to limit methane emissions. Based on methane’s potency as a GHG – more than 25 times greater than that of carbon dioxide, according to the EPA – achieving methane reductions was a key element of the CAP, and the oil and gas industry, a significant source of methane emissions, became the focus of subsequent regulatory efforts. The Obama administration pledged to reduce methane emissions from the oil and gas sector by 40% to 45% from 2012 levels by 2025.

In April 2015, EPA issued white papers evaluating five categories of sources in the oil and gas sector (compressors, hydraulically fractured oil wells, leaks, liquids unloading and pneumatic devices) as potentially significant sources of, inter alia, methane. The white papers identified recommended techniques to control and mitigate methane and volatile organic compound (“VOC”) emissions from these sources.

Key Actions to Date

NSPS for New or Modified Oil and Gas Sources

On May 12, 2016, the EPA released the final New Source Performance Standards for emissions of methane from the oil and gas industry (the “Methane NSPS”), which contain certain changes to the rules as originally proposed in August 2015. Publication of the final Methane NSPS in the Federal Register is pending.¹ Only onshore oil and natural gas production will be subject to the Methane NSPS; the rule does not apply to offshore operations.

Generally, the Methane NSPS standards require reduction of methane emissions for new, modified and reconstructed sources in the oil and gas industry.² Under Section 111(b) of the Clean Air Act, EPA is authorized to issue “standards of performance” for categories of new and modified air pollution emissions sources that it has determined significantly contribute to air pollution endangering public health. The Methane NSPS for the oil and gas industry complements the NSPS for VOCs emitted by the oil and gas industry issued by EPA in 2012, at 40 C.F.R. Part 60, Subpart OOOO (“2012 NSPS”). The new Methane NSPS will be issued as Subpart OOOOa, as well as certain amendments to Subpart OOOO.

New Subpart OOOOa (i) directly regulates methane emissions from new, modified and reconstructed sources already regulated for VOC emissions in Subpart OOOO and (ii) imposes requirements to reduce VOC and methane emissions on certain new, modified and reconstructed sources not covered by Subpart OOOO. In particular, the Methane NSPS requires emissions reductions at certain new, modified and reconstructed sources downstream of the well site: natural gas transmission compressor stations, gathering and boosting stations and natural gas processing plants. Affected equipment includes

centrifugal wet seal compressors, reciprocating compressors, pneumatic controllers and pneumatic pumps; control requirements vary depending on the location of the equipment. In addition, the final Methane NSPS imposes leak detection and repair (“LDAR”) requirements at natural gas and oil well sites as well as downstream of well sites. LDAR requirements are intended to address leaks, also known as “fugitive emissions”, of methane and VOCs from equipment. Owners or operators will be required to develop and implement leak monitoring plans to identify leaks from a variety of components, and repair such leaks within specified timeframes. The Methane NSPS also requires reduced emissions from completion of hydraulically fractured oil wells, also known as “green completions”, subject to certain limited exceptions. Such wells were not subject to the 2012 NSPS. Owners and operators of affected wells will need to capture emissions during well completions, typically through the use of equipment that separates gas and liquid hydrocarbons from flowback generated during initial well preparation process.

The final Methane NSPS differs from the proposed rule published in September 2015 in several respects, including:

- With respect to LDAR requirements:
 - Owners and operators must conduct an initial leak monitoring survey within one year of publication of the rule or 60 days of the startup of production, whichever is later. Leak monitoring and repair must now be conducted (i) semiannually at well sites, including low-production sites not covered in the proposed rule and (ii) quarterly for compressor stations. Repairs must be made within 30 days of finding fugitive emissions, subject to limited exceptions, and a resurvey of the repaired component must be made within 30 days of the repair.
 - EPA has also introduced flexibility as to permitted leak detection methods. The final Methane NSPS allows use of alternative technologies to optical gas imaging: (i) Method 21 (an EPA method for determining VOC emissions using a portable VOC monitoring instrument) with a repair threshold of 500 ppm or (ii) potential use of other leak monitoring technologies, if approved by EPA after submission of certain information identified in the final rule.
- New “green completion” requirements for hydraulically fractured oil wells will be phased in, with owners and operators given six months from the publication of the final Methane NSPS to meet the new requirements. Combustion controls will be required in the interim period.

With respect to sources covered by the 2012 NSPS, the proposed methane regulations should not materially change current requirements. Based on the proposed rule, the required emission controls for methane will be the same as the VOC control requirements required under the 2012 NSPS. Nevertheless, new Subpart OOOOa represents an expansion of sources subject to VOC control requirements, as the

number of categories of equipment at oil and gas sources to which VOC and methane emission control requirements will apply has significantly increased. Accordingly, compliance with Subpart OOOOa may entail significant expenditures for operational changes and/or equipment to achieve required emission reductions at newly covered sources.

Standards for Existing Sources

In addition to regulation of methane emissions from new, modified and reconstructed oil and gas sources, on March 10, in the Joint Statement, President Obama announced that EPA will begin developing regulations to address methane emissions from existing oil and gas sources. The expansion of methane regulations to existing oil and gas emission sources would represent a great increase in the number of sources of methane emissions subject to regulation and in the potential aggregate cost of complying with the new regulations. The rulemaking process commenced with EPA's issuance of a draft "Information Collection Request" ("ICR") on May 12, 2016, in conjunction with the release of the final Methane NSPS. The draft ICR seeks information on existing sources of methane emissions, the nature and cost of technologies currently employed to reduce methane emissions, as well as configurations of these technologies, the feasibility and costs of installation and upgrading or retrofitting controls and frequency of staffing or visiting sites.

The draft ICR consists of two parts. The first, Part 1, is an operator survey that will be sent to all known operators of oil and gas production wells at onshore oil and gas production facilities in the United States. Part 1 is intended to collect facility-level information to understand the amount and type of equipment at sites, e.g., the number of wells, tanks and compressors. An estimated 22,500 operators of approximately 698,800 facilities are expected to be subject to Part 1. In contrast, Part 2 is a detailed facility survey that will be sent to only certain oil and gas facilities in the United States across industry segments, including onshore production, gathering and boosting, processing, compression/transmission, natural gas storage and liquefied natural gas storage and import/export facilities. Information sought in Part 2 will consist of detailed unit-specific information on emissions sources and emission control devices or emission reduction management practices, some of which may be confidential business information. While EPA anticipates that most information is in existing company records, it has noted that certain information requested will need to be based on actual counts (pneumatic device and equipment leak components) and measurement data (separator/storage vessel flash analyses), and that respondents may need to collect this data. Due to the large number of facilities that fall into these categories, EPA will send the detailed facility survey to a statistically significant subset of these facilities in each industry segment, expected to total approximately 3,385 facilities. These facilities will be selected based on one of two proposed statistical sampling methods, one based on the type of well and the other based on regional groupings of basins.

EPA is requesting public comment on the draft ICRs. EPA has previously noted that collection of responses is expected to be complete by the end of 2016 for the first phase. The second phase is likely to be issued some time after responses to the first phase are collected. Therefore, it seems likely that the

proposed regulations addressing methane emissions from existing sources will not be issued in draft form for public comment before the new presidential administration assumes office in 2017.

Voluntary Program for Existing Sources

On March 30, 2016, EPA announced its new voluntary methane reduction program, known as the Natural Gas STAR Methane Challenge Program. The Methane Challenge Program relies on a “best management practices” approach, applied to emissions sources grouped into the categories of onshore production, gathering and boosting, natural gas processing, transmission and storage and distribution. Companies participating in the program would commit to implementing a suite of best management practices across operations. The practices are outlined in the Methane Challenge Program’s Best Management Practice (BMP) Commitment Framework and technical guidance. To participate, a company must execute a partnership agreement and submit an implementation plan within six months of executing the agreement. Applicable BMPs would need to be implemented within five years of the designated start date. Participants will be required to report progress to EPA in the form of annual data submissions using a system to be developed by EPA. In addition, EPA will develop a public website on which all non-confidential data submitted to the program (including activity data, annual emissions and annual voluntary reductions) will be made public. Although the BMP commitments are generally to apply company-wide, EPA may grant exemptions where circumstances “significantly hinder” a participating company from doing so.

The Methane Challenge Program is part of EPA’s overall strategy to reduce methane emissions, aimed at addressing methane emissions from existing sources. The initial participants consist of 41 companies that are primarily distribution companies, rather than existing oil and gas exploration and production companies. At this point, it is difficult to determine whether and to what extent the BMPs and other program commitments will overlap with requirements of any methane NSPS that EPA ultimately issues for existing sources. Accordingly, the impact on future compliance for participants is unclear, and companies will need to assess the potential risks and benefits of participation in the Methane Challenge Program on a case-by-case basis.

States Move to Regulate Methane Emissions

Several states have also established requirements that directly or indirectly reduce methane emissions. Notably, these states are ones with significant oil and gas exploration and production operations, and two states – Pennsylvania and Colorado – have preceded EPA in proposing regulations directly addressing methane emissions from existing wells and other production equipment. Further, state regulations have differed in scope from EPA’s proposing regulations, including coverage of additional sources.

- **Colorado:** In February 2014, Colorado became the first state to adopt regulations aimed at methane emissions in connection with oil and gas operations. In addition to adopting

requirements in federal Subpart OOOO, Colorado also added regulations that apply (i) directly to methane emissions from existing and new sources, in contrast to Subpart OOOO, which required only reporting of methane and regulated only new, modified and reconstructed sources and (ii) to emissions through the natural gas lifecycle, including emissions from venting, flaring, gathering and storage activities, compression stations and processing plants.

- **Wyoming:** In July 2015, the state proposed revisions including requirements for LDAR for existing wells in the Upper Green River Basin (“UGRB”), driven by UGRB’s designation as non-attainment for ozone. Regulations previously adopted in 2013 required LDAR for new and modified gas operations as well as “green completions” for both oil and gas wells in the UGRB.
- **Ohio:** In April 2016, the administration of Ohio Governor John Kasich announced that permits for new and modified equipment at compressor stations will require quarterly LDAR monitoring using infrared cameras or handheld analyzers. This announcement effectively extends regulations issued in April 2014, which required LDAR programs at well sites to address fugitive emissions of methane and VOCs.
- **California:** In April 2015, the California Air Regulatory Board issued draft regulations addressing VOC and methane emissions from crude oil and natural gas facilities. The state expects to adopt final regulations in 2016. In addition to controlling emissions from liquids unloading activities at natural gas wells, and from certain equipment (including oil and water separators and tanks, compressors and pneumatic devices), covered facilities without LDAR programs are required to develop and implement such programs.
- **Pennsylvania:** In February 2016, Pennsylvania Governor Tom Wolf announced a plan to reduce methane emissions from new and existing oil and gas operations. The plan requires the Pennsylvania Department of Environmental Protection (“PADEP”) to develop regulations to address methane emissions from existing sources. Under proposed changes, the current air permit exemption for oil and gas operations will be eliminated, and such operations will need to obtain a general permit that requires best available technology to control emissions and quarterly monitoring. Compression and processing facilities will also be subject to updated best available technology requirements and updated LDAR requirements, while production, gathering, transmission and distribution lines will be required to use best management practices to be developed by PADEP.

What Can the Oil and Gas Industry Expect?

As evidenced by the Joint Statement, the Methane NSPS and the Methane Challenge Program, the Obama administration is advancing the goal of quantifying and reducing methane emissions. As noted, if regulations similar to the Methane NSPS are applied to existing sources as promised by the Joint

Statement, it could represent a significant cost to the oil and gas industry, including non-U.S. oil and gas companies with significant operations in the United States. However, given the expected time frame for the development of regulations applicable to existing sources, it is highly likely that these new regulations will not be finalized before the end of the Obama administration, meaning that the new Presidential administration will have an opportunity to modify or terminate these regulations.

EPA, through the ICRs (discussed above), expects to begin collecting information from oil and gas companies with U.S. operations to better understand methane emissions and existing emission controls at oil and gas operations. Based on earlier EPA releases, the first phase of the ICRs may be completed by the end of 2016, but the ICRs are likely to continue into 2017. Companies will need to determine whether information necessary to respond to the ICRs is readily available, and the extent to which the ICRs may entail surveys and emissions monitoring in the event that the company receives Part 2 of the ICR. Owners and operators may want to consider submitting comments to EPA regarding the scope of information sought in the ICRs, and the feasibility, timing and costs of collecting such information. Further, EPA is also currently seeking comment regarding the methods used to identify the subset of facilities that will receive Part 2.

In addition to pending federal regulation, the trends for increasing state regulations addressing methane emissions require that oil and gas companies stay apprised of applicable state regulations. In a number of cases, state regulations are more stringent or apply more broadly than federal regulations. Future compliance will require a careful evaluation of the federal and state requirements, including any new record-keeping, monitoring and leak detection requirements, and whether new emissions control technology will be required for existing sources.

Companies should also consider whether these regulations, particularly the regulations under development concerning existing sources, are likely to have a material impact on their costs of operations, and therefore whether the impact of these regulations should be described in their public disclosure. New and anticipated methane regulations are likely to trigger costs for regulated companies, in the form of capital expenditures for equipment to control emissions and costs of required procedures such as leak monitoring and repair, as well as costs arising from any necessary operational changes. However, the impacts on each company will be highly individualized, depending on factors as varied as the age of existing current equipment, region(s) in which operations are located and the extent to which external resources will be needed to comply with requirements such as leak monitoring. For companies filing under U.S. disclosure standards, the SEC has released guidance stating that companies need to consider the impacts of climate change regulations and legislation in crafting environmental disclosures.³ Companies filing under Canadian disclosure standards should still evaluate the potential materiality of these regulatory developments in considering whether to disclose their impact on the company's operations. Accordingly, clients should consider whether regulatory developments targeting methane emissions will require updates to existing environmental disclosures, and assess their business and

operations in order to determine whether compliance with new or potential regulations will have material effects that warrant disclosure.

Companies in the oil and gas industry, including non-U.S. companies with operations in the United States, would be well-advised to review the Methane NSPS the future draft regulations affecting existing sources, and developments at the state and local level to assess the impact on operations and where applicable, consider providing comments articulating any concerns regarding cost and difficulty of compliance. In addition, clients may wish to evaluate participation in the voluntary Methane Challenge Program, as methane reduction measures undertaken by participants in the program may overlap with future regulatory requirements. Please do not hesitate to contact any of the undersigned if you wish to discuss the above.

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This memorandum is not intended to provide legal advice, and no legal or business decision should be based on its content. Questions concerning issues addressed in this memorandum should be directed to:

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¹ See U.S. Environmental Protection Agency, Final Rule: Oil and Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources, *available at* <https://www3.epa.gov/airquality/oilandgas/may2016/nsps-finalrule.pdf>. Along with the Methane NSPS and the Information Collection Requests issued on May 12, 2016 and which are discussed in this alert, the EPA issued two other rules that impact air permitting for the oil and gas industry: a final rule clarifying EPA's source determination rule as applied to the oil and gas industry, and its Federal Implementation Plan for EPA's Indian Country Minor New Source Review program for oil and gas production sources, available at <https://www3.epa.gov/airquality/oilandgas/actions.html>.

² The proposed draft of the Methane NSPS, published in September 2015, was issued part of a suite of requirements to address climate change and air pollution. EPA also issued draft Control Techniques Guidelines ("CTGs"), non-binding guidance to states on available measures to reduce VOC emissions from existing oil and gas sources in ozone nonattainment areas and states in the Ozone Transport Region. While these measures are aimed at VOC reduction, methane reduction would also result from the implementation of these measures. While states would retain flexibility, they must consider the CTGs in identifying appropriate emission control measures. EPA has stated it anticipates issuing final CTGs this spring.

³ U.S. Securities and Exchange Commission, Commission Guidance Regarding Disclosure Related to Climate Change, Release Nos. 33-9106, 34-61469, 75 Fed. Reg. 6290 (Feb. 8, 2010).