Grounds for a YES vote on Proposal 7 at
Occidental Petroleum requesting a report on
Methane Emissions reduction targets, measurement, and disclosure

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Arjuna Capital and Baldwin Brothers Inc. are the sponsors of **Proposal #7** on the proxy ballot of Occidental Petroleum (OXY). We encourage you to support the proposal, which reads:

> Shareholders request Occidental Petroleum issue a report (by October 2017, at reasonable cost, omitting proprietary information) reviewing the Company's policies, actions and plans to measure, monitor, mitigate, disclose, and set quantitative reduction targets for methane emissions and flaring resulting from all operations, under the Company's financial or operational control.

Implementing the Proposal would allow investors to better assess the Company's methane risk exposure to unnecessary economic loss from leaking gas, an evolving regulatory regime and the Company's ability to respond quickly and economically to a change in policy and environmental liability. Without proper disclosure, we believe shareholders are unable to effectively assess methane risk. We believe best practice disclosure would include the following:

> Specifically, the report should include the leakage rate as a percentage of production, throughput, and/or stored gas; quantity of flared and vented hydrocarbons, how the Company is measuring and mitigating emissions, best practices; worst performing assets; environmental impact; reduction targets and methods to track progress over time. Best practice strategy would utilize real-time measurement and monitoring.

A strong program of measurement, mitigation, target setting and disclosure would indicate a reduction in regulatory and legal risk, as well as efficient operations maximizing gas for sale and shareholder value.

Rationale for a YES vote:

1. **Leaked Gas is Lost Revenue:** Leaked gas has a direct economic impact on companies, as it is no longer available for sale, establishing a clear business case for reduction targets and control processes. Poor oversight of gas infrastructure, including storage facilities, has a direct economic impact on Occidental Petroleum. Implementing the proposal would allow investors to better assess the Company's methane risk exposure to unnecessary economic loss from leaking gas, an evolving regulatory regime (i.e. the Company's ability to respond quickly and economically to a change in policy), and environmental liability. Without proper disclosure, we believe shareholders are unable to effectively assess methane risk.

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2. **Methane has an Outsized Impact on Global Warming**: Methane has a potent impact on the environment, which threatens the natural gas industry's social license to operate. On a 20-year timescale, methane has 86x the Global Warming Potential (GWP) of CO2,[12] represents over 25% of the EPA Greenhouse Gas Inventory,[3] and its concentration in the atmosphere is 150% higher than pre-industrial levels (as compared to CO2, which is 40% higher). [4] Methane impact has spurred academic, industry, and public debate, has been featured in Forbes and The New York Times, and has led to investor, regulatory and legal action over the last five years.
    a. *The New York Times* reported in April 2016 that leakage from oil and gas wells is the largest source of methane gas in the atmosphere.[5] In April 2016, the E.P.A. released a report concluding the amount of the gas leaking from oil and gas wells is much higher than previously reported.[6]
    b. An October 2016 study from journal *Nature*[7] asserts that methane emissions from fossil fuel production are 20 to 60 percent higher than widely cited estimates. It is one of the most exhaustive analyses of long-term global methane emissions and methane carbon isotope records, with implications for climate policy worldwide. The *Nature* study analyzed thousands of air samples taken over three decades (between 1984 and 2013) at 84 sites on every continent that are part of NOAA's Global Greenhouse Gas Reference Network.
3. **Reporting is Inadequate:** We find current reporting to be woefully inadequate and there is a large dissonance between current industry/company reporting/estimates and scientific findings.
    a. Academic studies have identified methane leakage rates of up to 9%, over 6X the Environmental Protection Agency's (EPA) 1.4% leakage estimate[8] and industry estimates. The short-term climactic benefit of natural gas over coal is negated when leakage rates exceed 2.7%.[9]
    b. The 2017 shareholder proposal to Occidental Petroleum was written in response to the deficiencies in the company's current reporting. The company states that, "it is an active and longstanding participant in the Natural Gas Star Program and the Global Methane initiative, which the US EPA established and manages"[10]; however, the company does not provide current, publicly available information on leakage rates and a quantitative strategy to reduce the impacts of methane emissions and flaring and what effects they may have on the Company
4. **Regulatory Risk:** A failure by companies to proactively inspect, monitor, and upgrade critical transportation infrastructure with the aim of reducing methane emissions has resulted in more rigorous regulations.
    a. The EPA released new rules in May 2016 to reduce oil and gas sector methane emissions by 11 million metric tons by 2025. While methane regulations are under review by the new head of the EPA, there has been clear momentum toward greater reporting requirements and reduction targets over the last 3 years.
    b. In March 2014, the White House released a "Strategy to Reduce Methane Emissions" as a key element of the President's Climate Action Plan.[11] This action came in the wake of a 2013 EPA watchdog report per a February 2013 Bloomberg article entitled "Fracking Emissions Get Review After EPA Watchdog Report." The article stated, the EPA has "agreed to more closely study air emissions from hydraulic fracturing after the agency's auditor concluded its current data is insufficient to make policy decisions."[12] The group also referred to current air pollution estimates as being of "questionable quality."[13]

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[1] http://www.ipcc.ch/report/ar5/wg1/#.UxdnSaXDG8M
[2] In 2013, IPCC increased the GPW of methane from 72x to 86x over a 20-year timescale, and from 25x to 34x over a 100-year time horizon. http://en.wikipedia.org/wiki/Global-warming_potential
[3] http://www.pnas.org/content/110/44/17768
[4] http://www.ipcc.ch/ipccreports/tar/wg1/017.htm
[5] https://www.nytimes.com/2016/05/13/us/obama-methane-epa.html?ref=topics
[6] https://www.nytimes.com/2015/08/05/science/methane-leaks-may-greatly-exceed-estimates-report-says.html?_r=0
[7] http://www.nature.com/nature/journal/v538/n7623/full/nature19797.html
[8] http://www.wri.org/blog/5-reasons-why-it's-still-important-reduce-fugitive-methane-emissions
[9] https://thinkprogress.org/bridge-out-bombshell-study-finds-methane-emissions-from-natural-gas-production-far-higher-than-epa-de1d123e8cf0
[10] http://www.oxypublications.com/annualreport/PDF/2017/OXY_2017_Proxy.pdf
[11] http://www.whitehouse.gov/the-press-office/2014/03/28/fact-sheet-climate-action-plan-strategy-cut-methane-emissions
[12] http://www.bloomberg.com/news/2013-02-21/fracking-emissions-get-review-after-epa-watchdog-report.html
[13] http://mobile.bloomberg.com/news/2013-02-05/greenhouse-gas-emissions-fall-in-u-s-power-plants-on-coal-cuts.htm

c. At the public opinion level, natural gas remains a controversial issue. A March 23, 2015 Gallup poll shows Americans are split on support for fracking in oil and natural gas, with 40% in favor and 40% against. [14]
d. At the state level, New York State is the latest state to ban hydraulic fracturing.[15] Colorado adopted the first regulations in the nation expected to directly reduce 1000,000 tons of methane from oil and gas operations, followed by Ohio and Wyoming.

5. **Investor Action:** In 2017, 15 shareholder proposals have been filed at various companies asking for methane management disclosures.
   a. From 2006 to 2016, methane proposals garnered the largest average vote percentages (25%) of any other environmental proposals.[16]
   b. In October 2014, investors representing over 300 billion in assets under management called on the EPA to regulate methane as a serious climate problem, with proven cost effective solutions, stating it is insufficient to rely on voluntary initiatives and state-level action and a methane policy can reduce risk and create long-term value for investors and the economy.[17]
   c. High profile investor Jeremy Grantham of GMO LLC also highlighted the challenge of natural gas in his February 2014 Quarterly Letter to clients: "Fracking gas,' like all natural gas, is basically methane. Methane unfortunately is an even more potent greenhouse gas than CO2: at an interval of 100 years it is now estimated to be 32 times as bad, and at 20 years to be 72 times worse! **If it leaks from well head to stove by more than 3%, it gives back its critical advantage and becomes no better than coal in its climate effect. Emissions, for whatever reasons, have not been carefully monitored.** It would be nice, though, to know how fast we are roasting our planet. A series of tests in the next three years or so, privately funded, will measure leakages. In old cities with Victorian era gas lines, leakage will be terrible – probably 2% or 3% on their own. At some "cowboy" wells, emissions will be much higher than that."[18]

The Company's Opposition Statement

Occidental Petroleum's Reporting is currently inadequate, lagging that of industry peers.

Methane emissions and flaring management has moved to a mainstream investor concern, as academic studies, regulatory changes, and public attention have highlighted the complexity and importance of the issue. Investor analysis is reliant upon improved disclosure going forward, without which it is not possible to evaluate methane risk.

The Carbon Disclosure Project (CDP) released a Methane Emissions questionnaire in 2016 as part of their Oil and Gas Supplement, which provides an outlet for disclosure. Currently, 22 companies in North America and Europe provide their leak rates as a percentage of natural gas production or throughput at given segment through disclosure to CDP.[19] Occidental Petroleum fails to report on its leakage rate, among other disclosures listed below.

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[14] http://www.gallup.com/poll/182075/americans-split-support-fracking-oil-natural-gas.aspx?
[15] http://www.nytimes.com/2014/12/18/nyregion/cuomo-to-ban-fracking-in-new-york-state-citing-health-risks.html
[16] http://www.valuewalk.com/2016/06/environmental-shareholder-proposals/2/
[17] http://www.greenbiz.com/blog/2014/10/15/eyes-oil-gas-investors-seek-methane-rules
[18] http://www.gmo.com/websitecontent/GMO_QtlyLetter_ALL_4Q2013.pdf
[19] 2016 Carbon Disclosure Project: Oil and Gas Companies response to OG7.5 regarding leak rate through the O&G module

Core concerns and key elements not addressed include:

A. **Leakage rate:**
   a. No methane leakage rate is reported as a percentage of production, throughput, or stored gas, despite such reporting by peer companies. And there is no way for investors to calculate a leakage rate. While investors should have transparency into the absolute amount of methane emission in metric tons, more importantly investors seek to understand the leakage rate, a normalized value which allows investors to compare Occidental Petroleum's performance to its peers, and understand how Occidental Petroleum's performance affects the climate.
      i. Occidental does not include the most basic information regarding methane emissions. Specifically, the company does not disclose masses of gross Scope 1 methane emissions in units of metric tons, CH4, for the organization's owned/controlled operations broken down by value chain segment.[20]
      ii. The company also does not masses of gross Scope 1 methane emissions released into the atmosphere in units of metric tons CH4 for the whole organization broken down by emissions category including: combustion, flaring, process emissions, vented emissions and fugitive emissions.[21]
   b. If leakage is greater than 2.7%[22], natural gas is worse than coal from a climate change standpoint. Without having a normalized number, Occidental Petroleum's reporting is only helpful for aggregating industry-wide volumes at the EPA, and is certainly not helpful to investors. Other peer companies are taking initiative.
   c. Currently, 22 companies in North America and Europe provide their leak rates as a percentage of natural gas production or throughput at given segment through disclosure to CDP[23] (Carbon Disclosure Project

B. **Company-wide quantitative targets:** There are no company-wide methane reduction targets. Quantitative target setting is a core aspect of the Proposal.
   a. In contrast to Occidental Petroleum's actions, the One Future Initiative is a group of natural gas supply chain companies that are setting a goal of achieving a 1% leakage rate. The Company states that they, "strive to minimize flaring of natural gas[24]." One would hope this is an obvious goal for all natural gas companies, but it is neither a quantitative disclosure nor helpful to investors seeking an apples-to-apples comparison of Occidental Petroleum's performance and targets versus its peers.

C. **Lack of Real Time Measurement and Management:** Research underlines the need for real time measurement and management to control poorly performing assets.
   a. EDF's February 2015 Gathering and Processing study found 30% of facilities contribute 80% of leaks for that segment of the value chain. [25]
   b. Currently, Occidental reports that only 0-5% of their operations are monitored and managed in real time. The remainder is based on engineering calculations and emissions factors, which are based on what are considered outdated estimates.

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[20] http://www.oxy.com/SocialResponsibility/Environmental-Stewardship/Documents/CDP%20Climate%20Programme_Oxy%202016.pdf
[21] http://www.oxy.com/SocialResponsibility/Environmental-stewardship/Documents/CDP%20Climate%20Programme_Oxy%202016.pdf
[22] https://thinkprogress.org/bridge-out-bombshell-study-finds-methane-emissions-from-natural-gas-production-far-higher-than-epa-de1d123e8cf0
[23] 2016 Carbon Disclosure Project: Oil and Gas Companies response to OG7.5 regarding leak rate through the O&G module
[24] http://www.oxy.com/SocialResponsibility/overview/Pages/default.aspx
[25] http://www.edf.org/climate/methane-studies

Conclusion

Given the importance of operational efficiency to Occidental Petroleum Energy's profitability, as well as the regulatory, environmental, and social license risks facing the Company, we believe the Company's current level of disclosure is woefully inadequate.

For shareholders to fully evaluate methane and flaring risk, we strongly believe the Board of Directors needs to report to shareholders describing how the Company is managing and will manage methane leakage risk. Furthermore, to be useful, the report should include policies and plans to set material quantitative targets, and how progress will be measured toward achieving those targets, and a discussion of measurement methodology.

For all the reasons provided above, we strongly urge you to support the Proposal. Managing methane risk may have a direct impact on the profitability of Occidental Petroleum Energy and we believe it is in the best interest of shareholders.

Please contact Natasha Lamb at 978-704-0114 or natasha@arjuna-capital.com for additional information.

Sincerely,

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