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A.R. 10

In Support of Requiring Oil and Gas Companies to Cut Methane Emissions on University Lands

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Sponsors: REPRESENTATIVE RAMSEY HASHEM (*College of Natural Sciences*), AND REPRESENTATIVE UMA VAIDYANATHAN (*College of Natural Sciences*)

WHEREAS, Student Government serves as the official voice of students at the University of Texas at Austin; and,

WHEREAS, The earth's average temperature has risen by 1.5°F over the past century and, without significant reductions to anthropogenic greenhouse gas emissions, is projected to rise an additional 0.5 to 8.6°F over the next one hundred years, increasing the severity of floods, droughts, heat waves, and leading to loss of life and financial losses[12];

WHEREAS, According to the Intergovernmental Panel on Climate Change (IPCC), the international body for assessing science related to global warming, established by the World Meteorological Organization and the United Nations Environment Programme, avoiding the worst impacts of global warming requires a reduction in greenhouse gas emissions of at least 80% from 1990 levels by 2050[13];

WHEREAS, Methane is a potent greenhouse gas 80 times more powerful than carbon dioxide and is responsible for 25% of current global warming[14];

WHEREAS, In 2014 the oil and gas industry released more than 9 million metric tons of methane pollution, which is equivalent to the 20-year climate impact from

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12 United States Environmental Protection Agency {https://www3.epa.gov/climatechange/science/future.html}

13 Council on Foreign Relations: Global Governance Monitor {http://www.cfr.org/climate-change/global-climate-change-regime/p21831}

14 United States Environmental Protection Agency {https://www.epa.gov/ghgemissions/overview-greenhouse-gases#methane}, Environmental Defense Fund {https://www.edf.org/methane-other-important-greenhouse-gas}

the operation of 200 coal-fired power plants[15];

WHEREAS, There are approximately 9,000 oil and gas wells drilled on more than 2 million acres of land owned by University Lands which is administered by the University of Texas System, and if University Lands were an oil company, it would rank 5th in Texas for production[16];

WHEREAS, Based on EPA data, over the past few years, methane emissions on UT lands have nearly doubled. From 2009 to 2014, oil and gas production produced the equivalent of 11.7 million tons of climate pollution. In one year, this pollution carries the same short term climate impact as 2.5 million cars or 3.4 coal-fired power plants[17].

WHEREAS, Simple and affordable modifications to oilfield operations can cut methane emissions dramatically and oil and gas producing states, like Colorado, California and Wyoming, require companies to implement strategies to reduce emissions. Companies that drill on UT land are not currently required to implement such strategies[18];

WHEREAS, Oil and gas operators which capture methane can use the gas onsite or sell it, largely covering the cost of the mitigation measures and in some cases possibly creating net savings. Increased sales of methane could increase royalties paid to UT[19];

WHEREAS, The threat of global warming means we must change our energy habits and ultimately move to 100% clean energy;

WHEREAS, University of Texas System's Sustainability Policy (UTS 169) explicitly calls for the reduction of greenhouse gas emissions at University institutions[20];

WHEREAS, Operations on University Lands is governed by a "Field Manual of Required Operating Procedures" that all operators are required to follow. Each lease, post 1951, references this operating manual saying: "Lessee will conduct all operations in accordance and compliance with the then-current University Lands Field Manual of

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15 United States Environmental Protection Agency {https://www.epa.gov/ghgemissions/overview-greenhouse-gases}

16 http://www.oilandgasinvestor.com/texas-university-lands-endowment-undergoing-changes-823886#p=full

17 See Addendum

18 Bloomberg piece about available technology {http://www.bloomberg.com/news/articles/2014-03-03/drillers-can-plug-methane-leaks-at-wells-cheaply-study,

http://www.eenews.net/stories/1060024037}

Environmental Defense Fund {https://www.edf.org/sites/default/files/content/icf_methane_exec_summary_with_url.pdf}

19 http://www.nytimes.com/2016/07/12/business/energy-environment/future-of-natural-gas-hinges-on-stanching-methane-leaks.html?_r=0

20 https://www.utsystem.edu/board-of-regents/policy-library/policies/uts169-sustainability-practices

Required Operating Procedures for Oil & Gas Leases, as published by Lessor, or its successor publication establishing rules of operating procedures."[21]

WHEREAS, Over 2,300 students and two-dozen faculty from across the UT system have endorsed this campaign as of Monday, September 26, 2016,

WHEREAS, University of Texas can demand the same commitment to best practices from the oil companies that drill on its land as it demands from the professors and students that fill its lecture halls; and therefore,

BE IT RESOLVED, The University of Texas Student Government calls on University Lands to amend its "Field Manual of Required Operating Procedures" to require all leaseholders to cut methane emissions by fifty percent in the next five years by using the latest technology; and therefore,

BE IT FURTHER RESOLVED, that a copy of this resolution be delivered to Chancellor William H. McRaven, University Lands CEO Mark Houser, Director of Sustainability Jim Walker, and Editor-In-Chief of the Daily Texan Alexander Chase.

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21 http://www.utlands.utsystem.edu/forms/pdfs/fieldmanual.pdf

Addendum: References and Sources

Methane is an Important Greenhouse Gas

Methane (CH4) is the second most prevalent greenhouse gas emitted in the United States from human activities. In 2014, CH4 accounted for about 11 percent of all U.S. greenhouse gas emissions from human activities. Methane's lifetime in the atmosphere is much shorter than carbon dioxide (CO2), but CH4 is more efficient at trapping radiation than CO2.[2]

Methane Emissions from the Oil and Gas Industry

The oil and natural gas industry is the largest source of methane emissions in the U.S. Methane is greenhouse gas that is more than 20 times as potent as carbon dioxide over 100 years.[3]

Short Term Climate Impact of Methane

While methane doesn't linger as long in the atmosphere as carbon dioxide, it is initially far more devastating to the climate because of how effectively it absorbs heat. In the first two decades after its release, methane is 84 times more potent than carbon dioxide. *Both* types of emissions must be addressed if we want to effectively reduce the impact of climate change.[4] About 25% of the manmade global warming we're experiencing today is caused by methane emissions.[5]

Methane IS Leaking from Oil and Gas Facilities, but Reduction Solutions Exist

A UT-led effort involving experts from the Environmental Defense Fund; Anadarko Petroleum Corporation, BG Group, Chevron, Encana Oil & Gas (USA) Inc., Pioneer Natural Resources Company, SWEPI LP (Shell), Southwestern Energy, Talisman Energy USA, and XTO Energy, allowed researchers to acquire direct measurements of methane emissions from natural gas production operations.

The data showed that methane can be reduced significantly if producers use practices to capture or control emissions, such as green completions. The researchers also found, however, that emissions at some locations were much higher than anticipated.[6]

Estimates of Methane Emissions from Oil and Gas Facilities on UL Land

Estimate for methane emissions on UL lands were calculated using the EPA's Greenhouse Gas Inventory and University Lands production data. First, using the UL website tool and U.S. Energy Information Administration data, the total oil and gas production per year from 2009-2014 was calculated as a percentage of total U.S. production (percent ranges from 0.5% to 0.9%). That percentage was then applied to total U.S methane emissions from the GHGI (minus sources not likely found on UL lands) for each year from 2009-20014.

These totals were calculated in metric tons (MT) of methane and metric tons of CO2e. To calculate the CO2e of the methane emissions, the MT of methane was multiplied by 34, per the IPCC.[7]

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[2] From United States Environmental Protection Agency website:https://www.epa.gov/ghgemissions/overview-greenhouse-gases#methane

[3] From United States Environmental Protection Agency website: https://www3.epa.gov/airquality/oilandgas/basic.html

[4] https://www.edf.org/methane-other-important-greenhouse-gas

[5] Environmental Defense Fund calculation based on IPCC AR5 WGI Chapter 8. http://www.ipcc.ch/report/ar5/index.shtml http://dept.ceer.utexas.edu/methane/study/

[7] http://www.climatechange2013.org/images/uploads/WGIAR5_WGI-12Doc2b_FinalDraft_All.pdf

University Lands Emissions – 2009 – 2014

Year	Methane Emissions (MT)	CO2e (MT, GWP = 34)
2009	44,385	1,509,090
2010	45,042	1,531,428
2011	48,816	1,659,744
2012	55,160	1,875,440
2013	68,996	2,345,864
2014	81,953	2,786,402
Total	344,352	11,707,968
Average	57,392	1,951,328

UT-Austin Carbon Footprint

The carbon footprint of UT's flagship campus was estimated using the University's 2014 Greenhouse Gas Inventory, which used 2011 emission data. The inventory includes three sources. The figure in this letter includes only Source One and Source Two emissions because the UT Inventory included incomplete data for Source Three data.[8]

UT System Sustainability Policy (UTS 169)

See policy online.[9]

Oil and Gas methane reductions are practical and affordable:

Numerous technical and mainstream articles document the affordable and available emission reduction solutions available today. See endnote for examples.[10] A recent analysis by ICF International estimated that based on today's historically low gas prices, the cost of emission reduction solutions and the ability to sell the recovered gas, the cost of capturing methane would add just one cent to the current price of gas.[11]

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[8] https://sustainability.utexas.edu/documents/2014GHGInventory.pdf

[9] https://www.utsystem.edu/board-of-regents/policy-library/policies/uts169-sustainability-practices

[10] http://www.bloomberg.com/news/articles/2014-03-03/drillers-can-plug-methane-leaks-at-wells-cheaply-study

http://www.eenews.net/stories/1060024037

http://www.bloomberg.com/news/articles/2015-08-18/colorado-already-tried-methane-caps-on-drillers-and-they-worked

http://static1.squarespace.com/static/558c5da5e4b0df58d72989de/t/57110da386db43c4be349dd8/1460735396217/Methane+Study.pdf

[11] https://www.edf.org/sites/default/files/content/icf_methane_exec_summary_with_url.pdf

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President's Approval

Kevin Helgren, *Student Body President*

Presented to the Assembly for *First Reading* on September 20th, 2016
Committed to Student Affairs Committee
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Yes 21 No 3 Abs 1 Date: September 27th, 2016