

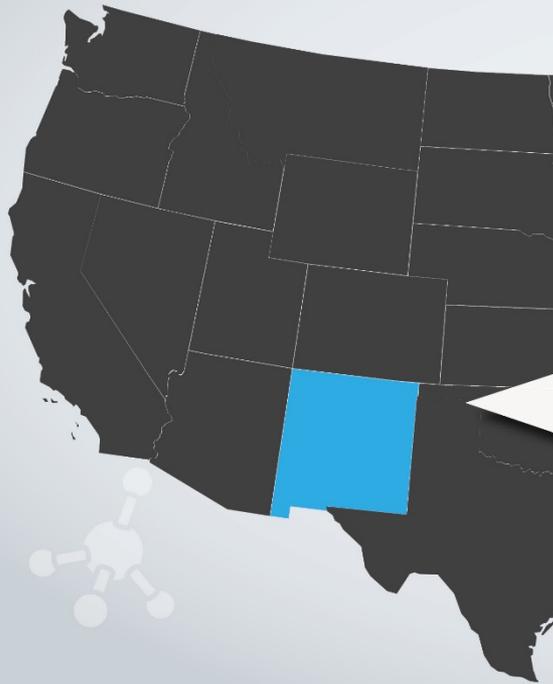
# Curbing Methane Pollution & Waste: New Mexico's Problem and Opportunity

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Director, Regulatory and Legislative Affairs  
November 13, 2017



# OIL & GAS METHANE POLLUTION

How much natural gas is New Mexico wasting?



New Mexico's oil and gas companies emit **570,000 tons of methane** each year.



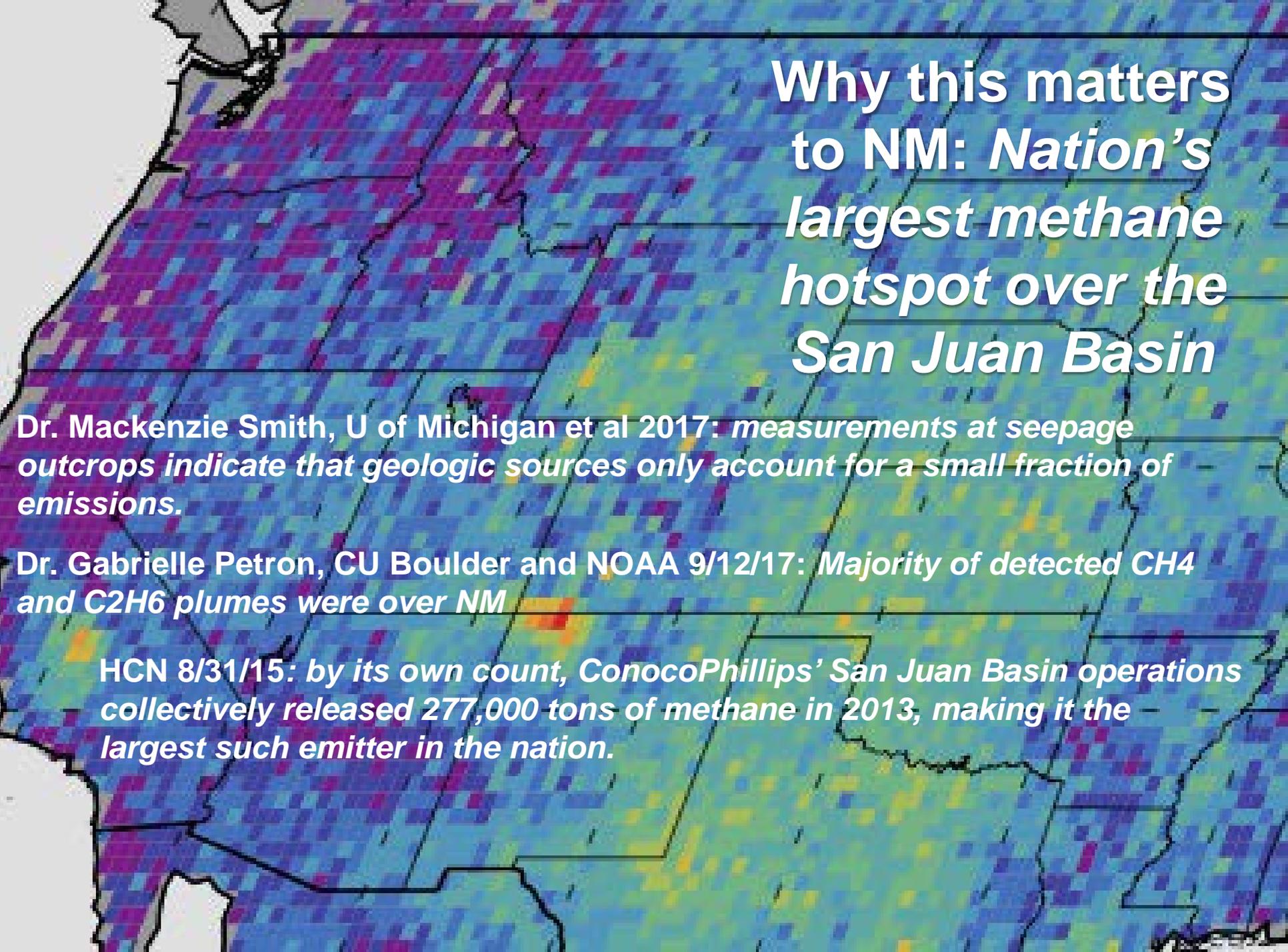
That's enough gas to meet the annual heating and cooking needs of **every home in the state**.



Methane leaks result in **\$180- \$244 million** worth of wasted gas.

# Why this matters to NM: *Waste of up to \$27 million per year in state funding*





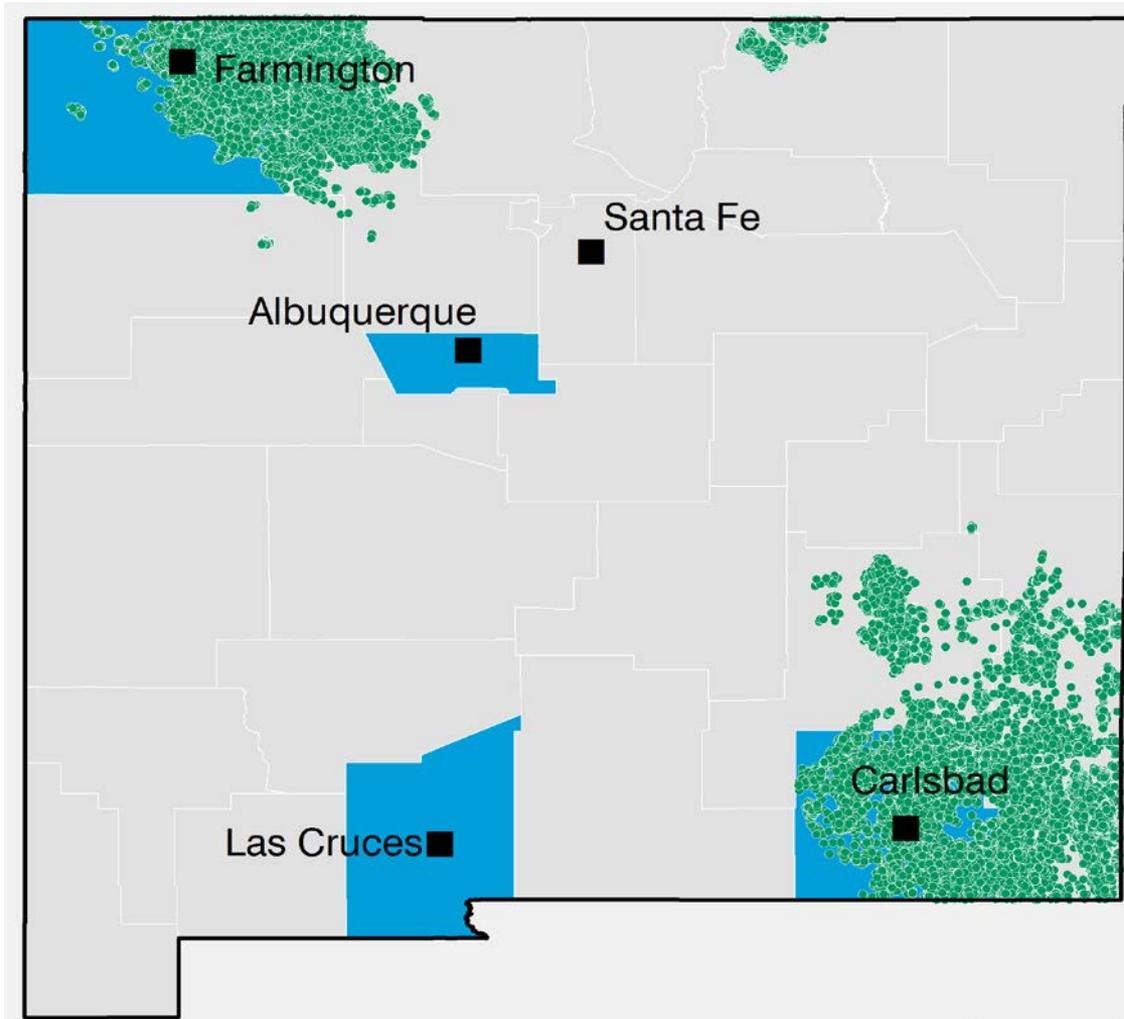
## Why this matters to NM: *Nation's largest methane hotspot over the San Juan Basin*

Dr. Mackenzie Smith, U of Michigan et al 2017: *measurements at seepage outcrops indicate that geologic sources only account for a small fraction of emissions.*

Dr. Gabrielle Petron, CU Boulder and NOAA 9/12/17: *Majority of detected CH<sub>4</sub> and C<sub>2</sub>H<sub>6</sub> plumes were over NM*

HCN 8/31/15: *by its own count, ConocoPhillips' San Juan Basin operations collectively released 277,000 tons of methane in 2013, making it the largest such emitter in the nation.*

# Why this matters to NM: *Public health and ozone smog pollution*





# EDF's Methane Research



## Science

16 peer-reviewed studies analyze data collected through multiple methods to measure oil and gas supply chain emissions



## Collaboration

More than 100 academic and industry partners



## Results

Multiple studies find emissions are higher than official estimates



# Lessons Learned



## Higher Emissions

As a whole, oil & gas methane emissions are higher than conventional estimates suggest.



## Super Emitters

Recurring Problem that needs to be addressed



## Regulations Work

Reducing emissions through regulations is straightforward & narrows ranges of company performance

# Lessons Learned: Regulations Work

## Level Playing Field

Regulations narrows range of company performance

## Data Driven Solutions

“Green completions” help reduce 99% of emissions from completion flowbacks

Researchers find lower emissions at processing plants, which have stronger regulations including LDAR.

## Reducing Fugitives

Improved design & maintenance practices may reduce the occurrence of unintentional emissions

## Leak Detection and Repair

Frequent LDAR needed to quickly identify and mitigate super-emitters



Drilling &  
Production



Gathering &  
Processing



Transmission &  
Storage



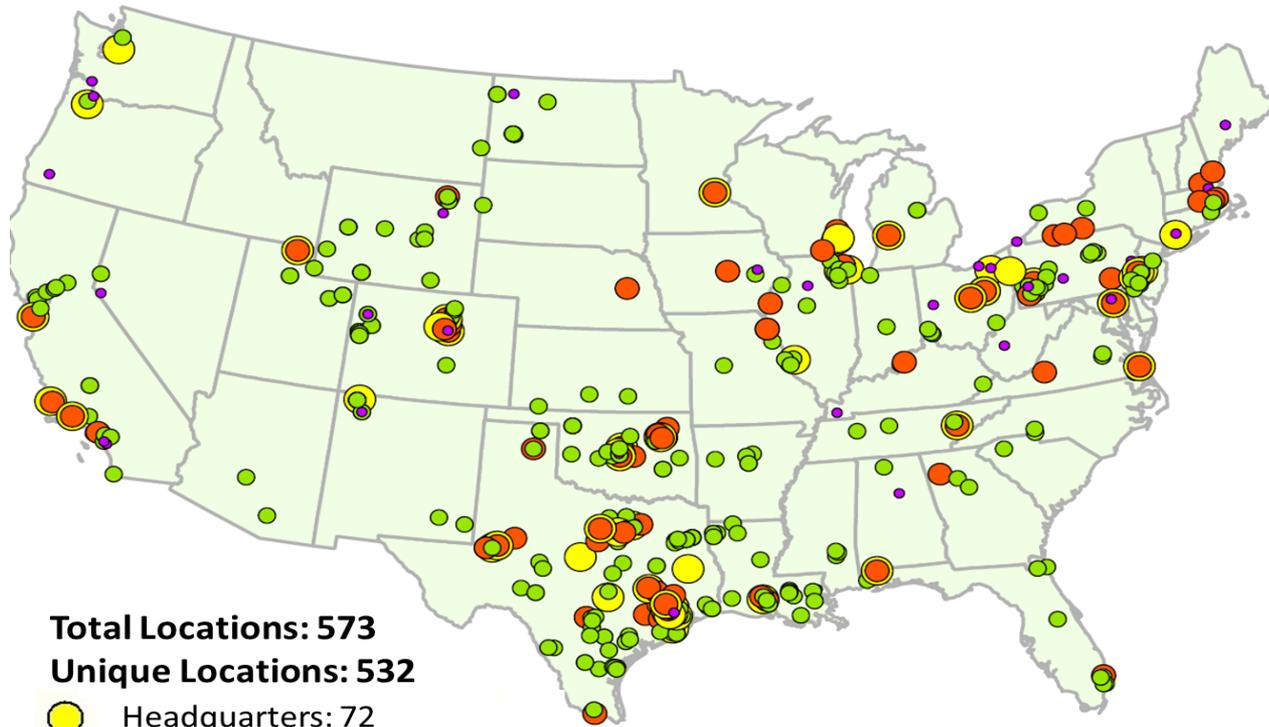
Local  
Distribution



Regional  
Research

# The emerging U.S. industry

Companies have already experienced up to 30% business growth in states with methane regulations.



**Total Locations: 573**

**Unique Locations: 532**

- Headquarters: 72
- Manufacturing/Assembly: 102
- Services: 346
- Other: 53

A close-up photograph of Governor Michelle Martinez of New Mexico. She has short, dark hair and is looking slightly to the right of the camera with a serious expression. Her mouth is open as if she is speaking. The background is dark and out of focus.

**“Leading New Mexico emissions concerns in the energy sector are increased awareness of the amount of methane flared and released from oil and gas development and processing. ....[the OCD] will be collaborating with several other state agencies to assess the economics and benefits to both the state and industry of better capturing methane emissions.”**

Governor Martinez,  
*New Mexico’s Energy Policy  
and Implementation Plan,  
Sept. 14, 2015*

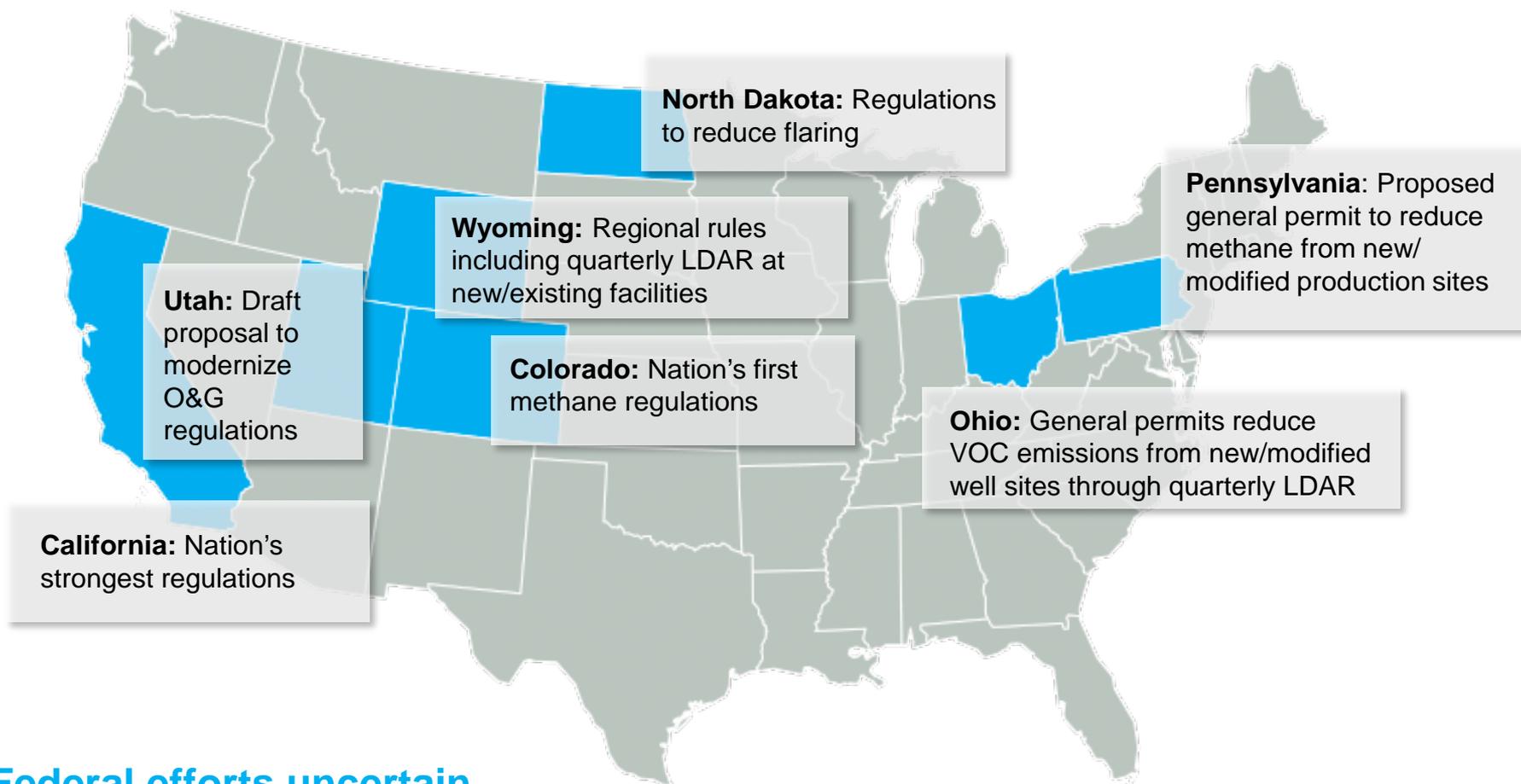
## APD's and Gas Capture Plans Submitted 9/18 – 11/5

Total APDs	GCP submitted		GCP not submitted	
286	132	46%	154	54%

## APD's and Gas Capture Plans By Mineral Owner

	Total APDs	GCPs submitted		GCPs not submitted	
State	100	19	19%	81	81%
Federal	157	110	70%	47	30%
Private	29	3	10%	26	90%

# State emission reduction efforts



## Federal efforts uncertain

- EPA regulations on methane from new/modified facilities
- BLM regulations at new/existing sources on public/tribal lands

# Bloomberg

**“Big Oil Moves on Its Own  
to Cut Methane Pollution”**

Sept. 27, 2017

**SAN ANTONIO  
BUSINESS JOURNAL**

**“Statoil field testing methane leak detection  
Equipment developed in San Antonio ”**

April 4, 2014

# The New York Times

**“Exxon Aims to Cut Methane Leaks,  
a Culprit in Global Warming”**

Sept. 25, 2017

**HOUSTON  
CHRONICLE**



**“Exxon Mobile moves to reduce methane  
from oil and gas operations”**

Sept. 25 , 2014

**NGI** NATURAL  
GAS  
INTELLIGENCE  
News | Data | Prices | Insight... since 1981  
**NatGasIntel.com**

**“Shell launches methane detector pilot  
at Alberta Shale Gas Site”**

Aug. 9, 2017

# Economists report BLM Methane Waste Rule will have a positive effect on New Mexico production and royalty revenue



A Review of the Economic Factors Surrounding the Capture of Methane  
from Oil and Natural Gas Development on Federal Public Land

Research Paper

Conservation Economics Institute<sup>1</sup>

April 22, 2016

# The BLM Methane Waste Rule considers economic hardship concerns



***“allows operators to request an exemption from these requirements if the operator demonstrates, and the BLM concurs, that complying with the requirements would impose such costs as to cause the operator to cease production and abandon significant recoverable oil reserves under the lease. In making this determination, the BLM will consider the costs of compliance, and the costs and revenues of all oil and gas production on the lease.”***