

Methane

A potent climate pollutant Texas can't ignore

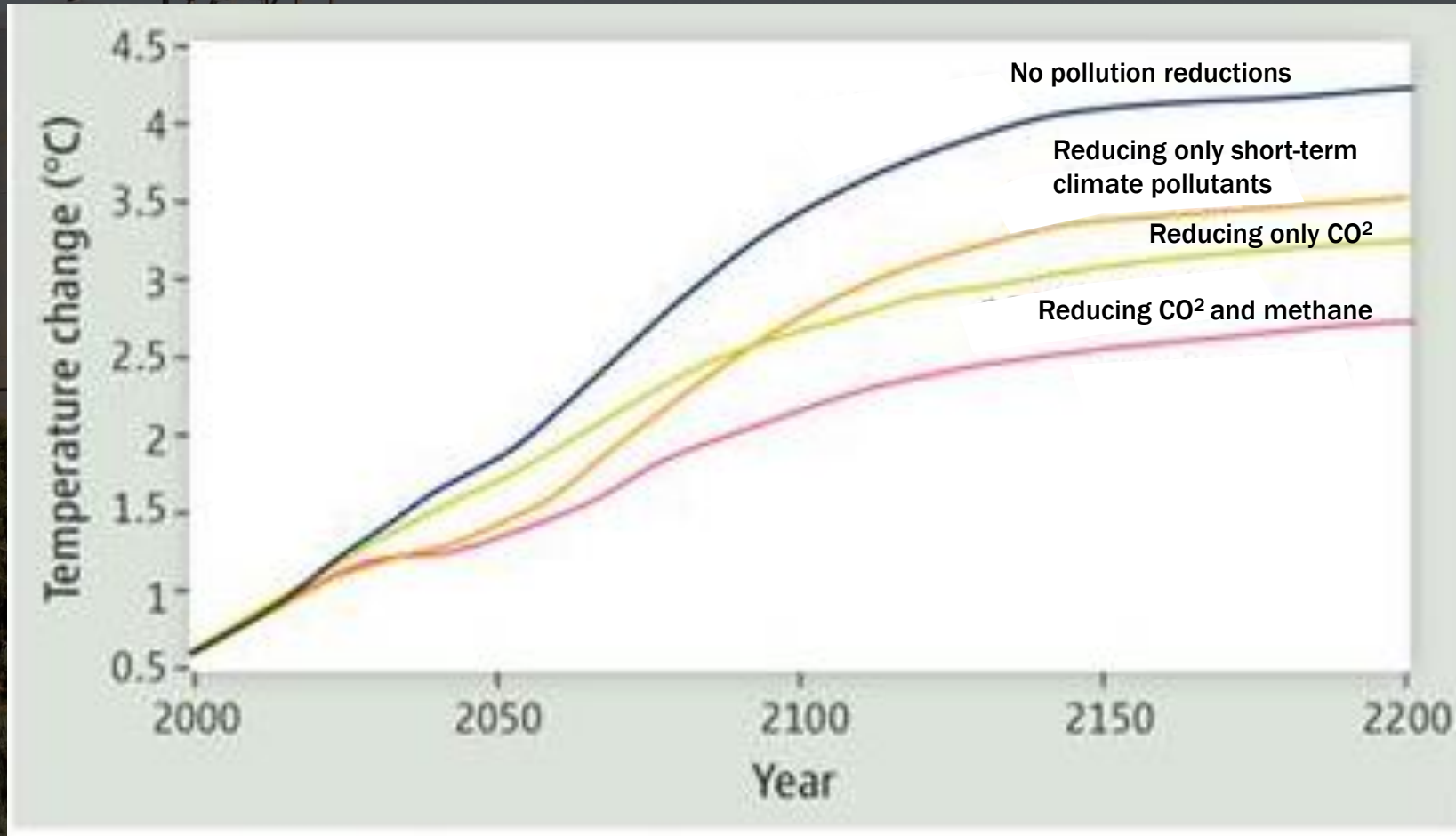
Colin Leyden, Environmental Defense Fund



Methane: What is it?

- Invisible, odorless gas
- Responsible for about **25% of current global warming**
- It will cause far more warming over the next two decades than CO²
- Oil and gas industry is the largest industrial source of methane emissions
 - Natural gas *is* methane: emissions are both a climate and a waste problem

Reducing methane and CO2 critical to get max climate benefits



Methane: How much is leaking?

EDF partners with academic institutions across the country to conduct 16 peer-reviewed studies that examine methane emissions across the supply chain



Production



Gathering and processing



Transmission and storage



Local distribution

Methane: How much is leaking?

According to EDF research, the U.S. Oil and gas industry emits **13 million metric tons** of methane a year, 60% more than EPA estimates.

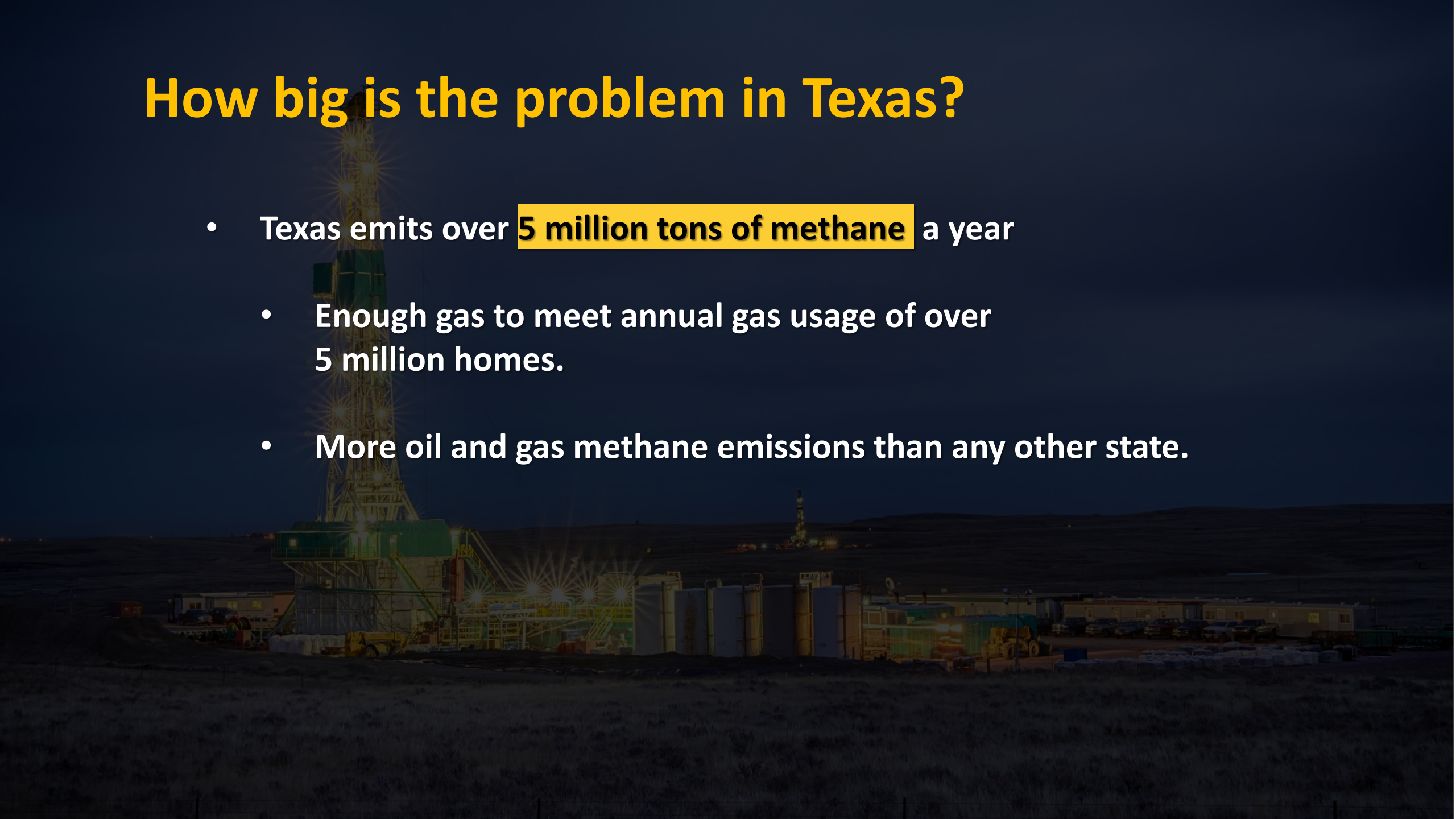
- Enough to supply **10 million homes** with gas for a year
- Approximately **\$2 billion dollars** of wasted gas
- Climate pollution equal to **200 million+ cars**

**Oil and gas sites like these
can silently leak massive
amounts of methane without
anyone knowing.**



How big is the problem in Texas?

- Texas emits over **5 million tons of methane** a year
- Enough gas to meet annual gas usage of over 5 million homes.
- More oil and gas methane emissions than any other state.



The flaring issue



- Practice of burning away unwanted gas
- Incredibly wasteful
- Source of light and air pollution.
- Huge emission source when flares malfunction
- In 2019 Permian flared 230 bcf – value of \$400 million
- Linked to health problems, including pre-term birth
- Critical need to eliminate routine flaring



**Flaring seen
from space**

Zero Routine Flaring by 2025

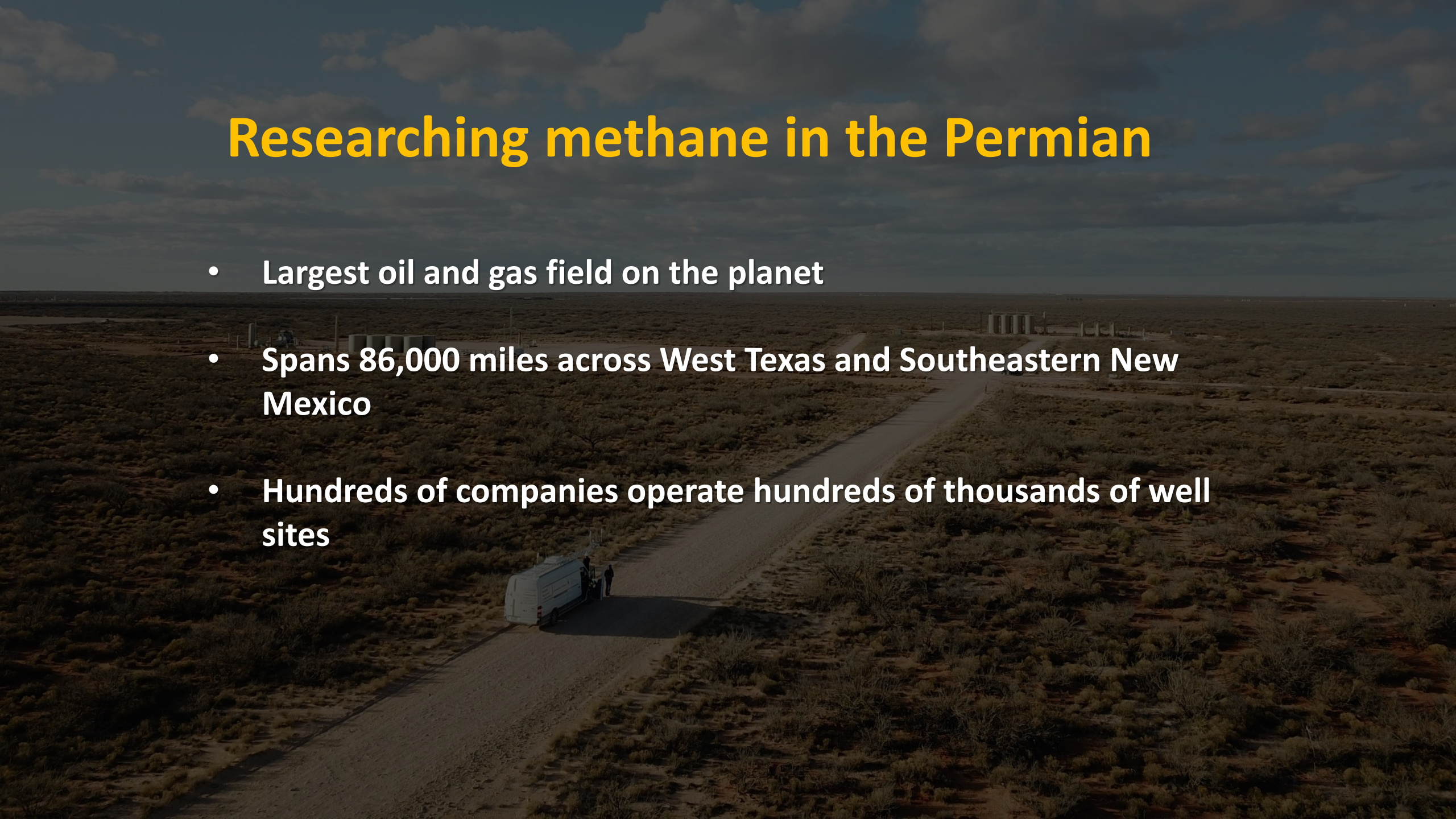
Report from Rystad Energy confirms 84% of routine flaring in Texas can be eliminated at no cost.

Known solutions to flaring:

- Establishing reduction targets and commitments to prioritize reduced flaring
- Midstream coordination
- Protocol to monitor flares
- Innovative solutions (e.g. reinjection)

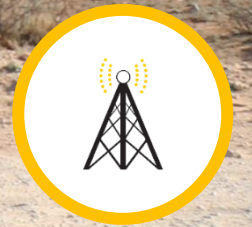
Researching methane in the Permian

- Largest oil and gas field on the planet
- Spans 86,000 miles across West Texas and Southeastern New Mexico
- Hundreds of companies operate hundreds of thousands of well sites



PermianMAP project

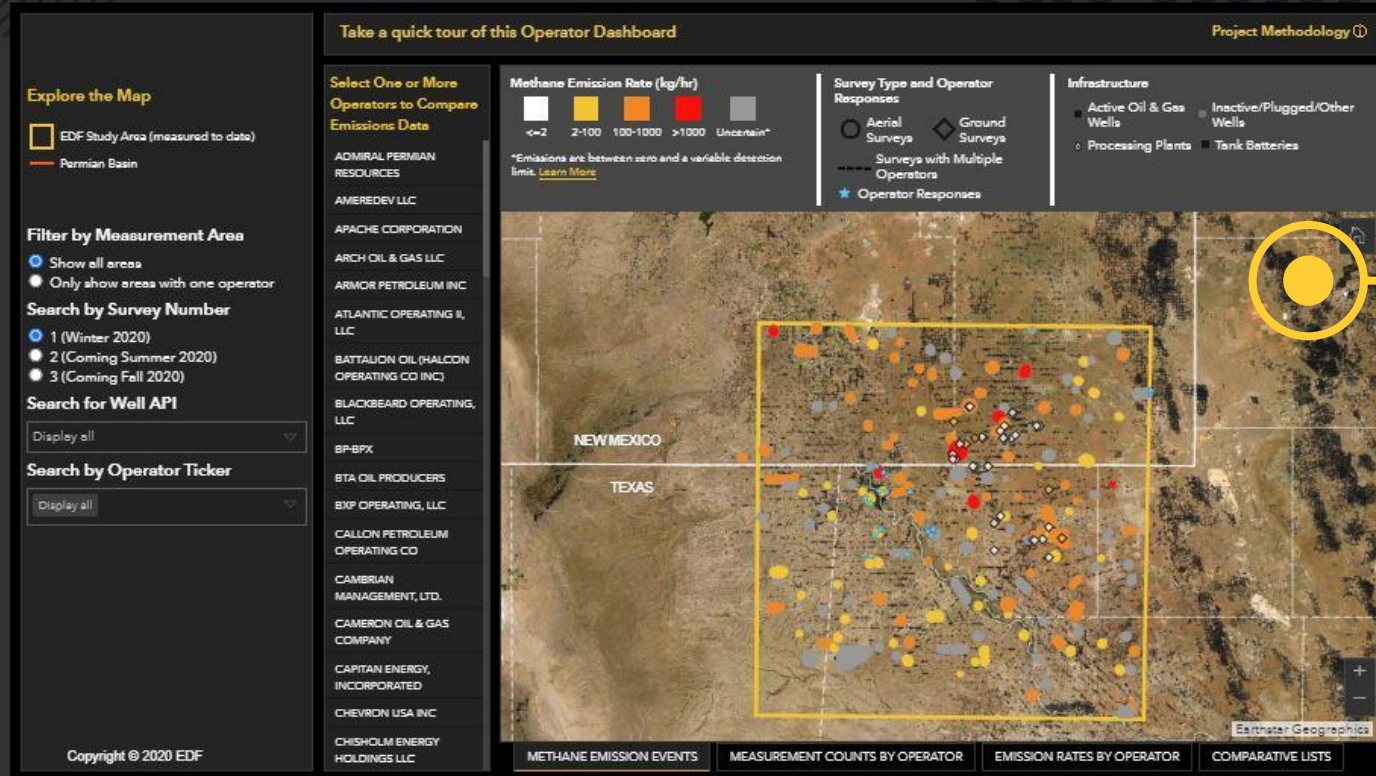
- Partner with leading scientists
- Use multiple, independent methods to measure emissions
- Publish peer-reviewed papers
- Rapidly release actionable data to facilitate mitigation



THE PERMIAN BASIN

Explore regional methane emissions by operator on the interactive map below.

CLICK FOR FULL INTERACTIVE MAP



Delivering the Data

Videos, photos and measurement info published online at permianmap.org

Major Findings

- About **3.5%** of gas escapes into the atmosphere (in our study area)
- The loss rate is **15 times higher** than what leading companies have set out to achieve.
- Permian Basin is emitting **twice as much methane** as any other oilfield in the country
- **10% of flares are malfunctioning** making them a leading source of methane emissions
- The Permian Basin flares and emits enough gas to supply **5 million homes a year.**

Regulatory background and timeline

The Biden EPA has proposed two rules addressing oil and gas methane...

...which are expected to be finalized by Fall 2022

111 (b) New Source Performance Standards

- Strengthens Obama-era rules covering “**new and modified**” sources
- Covering all wells built after 2015

111 (d) Emission Guidelines for Existing Sources

- Expands regulatory coverage to older facilities with emissions guidelines for “**existing sources**”
- For the first time, covers the nearly 1 million wells built before 2015, estimated at >90% of existing wells

Comment Period 1

Q4 2021: EPA’s issuance of proposed rules will open a 60+ day comment period, allowing for stakeholder input until Jan 14th

Supplemental Rule

Spring 2022: EPA has committed to issuing a supplemental rule that will tackle issues around flaring and marginal wells

Comment Period 2

Spring 2022: The proposed supplemental rule will start a second comment period for public comment

Final Rules

Fall 2022: EPA expected to finalize the whole package for new and existing sources, incorporating all comments, by Fall 2022

Engagement Opportunities

Public Comment Period 1

Q4 2021. EPA will be accepting public comment on its proposed new and existing source rules, these will be considered for the design of the supplemental rule as well as in the final rules.

Public Comment Period 2

Spring 2022. Once EPA has issued its supplemental rule in the Spring, the agency will open a second public comment period.