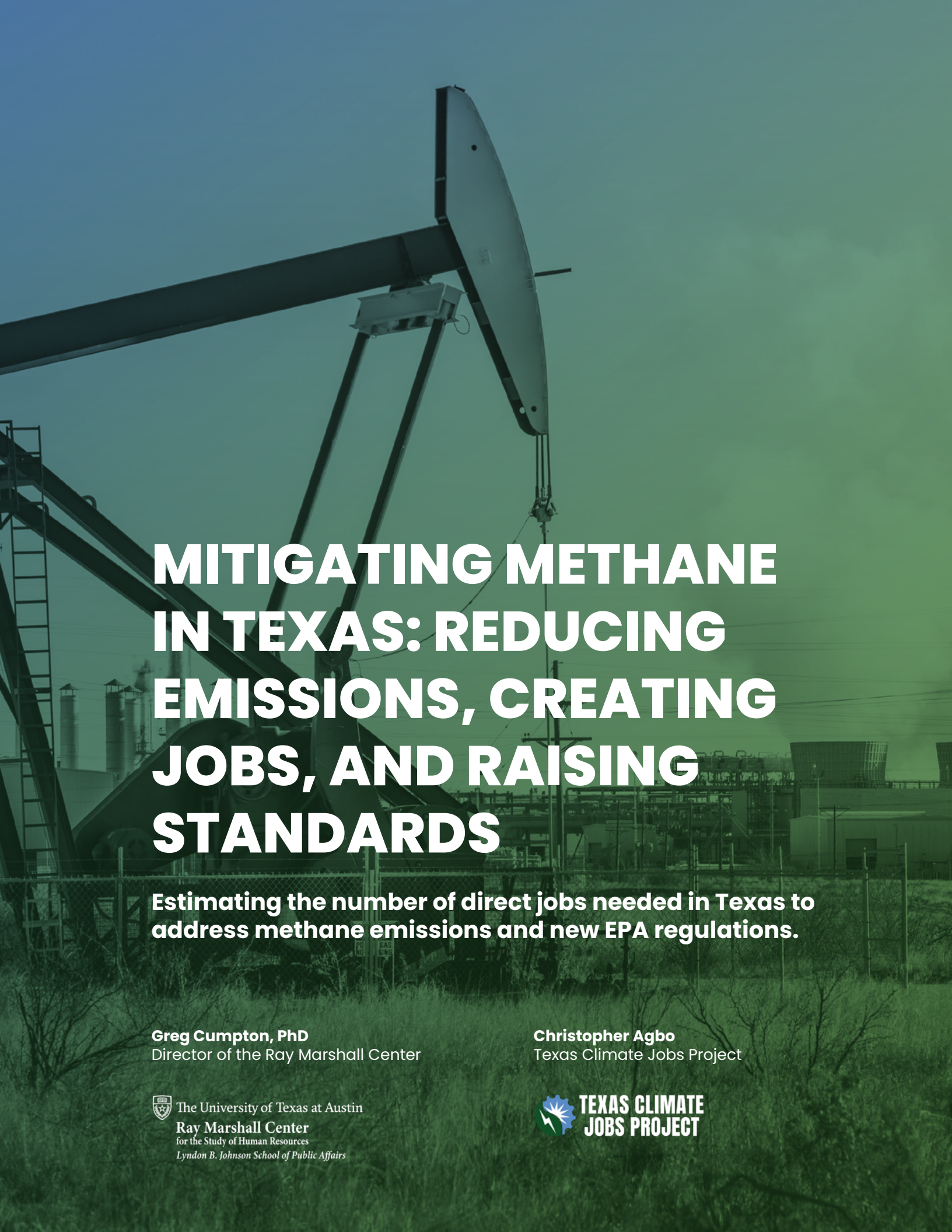

MITIGATING METHANE IN TEXAS: REDUCING EMISSIONS, CREATING JOBS, AND RAISING STANDARDS

Estimating the number of direct jobs needed in Texas to address methane emissions and new EPA regulations.

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TEXAS CLIMATE JOBS PROJECT

This report is dedicated to Texas oil and gas workers, whose hard work has powered our lives, and whose experience in the oil fields and refineries are essential for our clean energy transition.

A special thank you to High Tide Foundation and Sobrato Foundation who made this research possible, as well as the United Association of Plumbers and Pipefitters for their guidance on what it means to have a good job.

This report was produced using funds provided by Texas Climate Jobs Project: https://www.txclimatejobs.org/. Viewpoints expressed in this report reflect those of the author and do not express those of the funding organization.

FOREWORD

Texans have to navigate the reality of economic inequality and climate change every day. The data is clear: addressing climate change presents a win-win opportunity for workers and communities in this state. This report, which is the result of efforts from researchers at the Texas Climate Jobs Project and the University of Texas's Ray Marshall Center, shows clearly that mitigating methane emissions will create high quality union jobs here in Texas, raise labor standards in our communities and at the same time, decrease pollution right here in our state.

Texas is the largest producer of oil and gas in the United States. At the same time, it is also the largest emitter of methane in the country. Methane is a greenhouse gas that contributes to the pollution and warming of our planet's atmosphere. To ensure a better future, it is crucial that we decrease our methane emissions, especially those that result from leaks and other unintentional sources. Federal action, such as the Infrastructure Investment and Jobs Act and proposed updates to the EPA methane rule, is encouraging substantial growth. Overall, this report concludes that mitigating methane in Texas could create approximately 35,000 new jobs in the state.

But Texas is a perilous environment for workers. In 2021, the Texas construction industry had 127 fatalities, which is more than mining, transportation, and manufacturing. One in five construction workers have reported suffering a workplace injury that required medical attention and sixty percent lack essential health and safety training. Moreover, Texas does not require employers to provide workers' compensation. These exploitative practices in the Texas construction industry can not carry over into the methane mitigation industry.

Methane mitigation is an industry that could create many jobs for Texans that can improve job standards in our state. This report calls on local leaders and policymakers to ensure that the jobs created from the methane mitigation industry are family-sustaining jobs filled with highly trained workers. Achieving this will require enforcing Davis-Bacon, implementing Project Labor Agreements, Labor Peace Agreements, Department of Labor registered apprenticeships and pre-apprenticeship programs, and collaborating with Workforce Development Boards. Methane mitigation has the potential to address a myriad of economic and environmental challenges and Texas has the opportunity to be a leader in creating high-quality union jobs in the industry.

Rick Levy
President, Texas AFL-CIO

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GLOSSARY

Apprenticeship Program- The process of learning a skilled occupation through paid on-the-job training under a journey-level craftsperson or trade professional with classroom instruction.

Associated Gas- Gas produced with crude oil.

Centrifugal Compressors- Centrifugal compressors move gas by adding kinetic energy to the gas as it moves through an impeller.

Compressor Station- A compressor station is a facility that stabilizes the flow and pressure of natural gas by receiving gas from the pipeline, re-pressurizing it, and sending it back into the pipeline system. There are three types of compressor stations in the crude oil and natural gas category, gathering and boosting stations, transmission stations, and storage stations.

Department of Labor (DOL)- Federal executive agency responsible for administering federal laws concerning occupational safety, wage and hour standards, unemployment benefits, and reemployment services.

Environmental Protection Agency (EPA)- A federal agency tasked with protecting the environment by researching, developing, and implementing regulations.

Flaring- The deliberate burning of excess natural gas, which results in methane and CO2 emissions.

Fugitive Emissions- Fugitive emissions occur when greenhouse gases are accidentally released during the production and transportation of oil and gas. These fugitive emissions come from industrial plants and pipelines.

Gathering and Boosting Compressor Stations- Infrastructure consisting of multiple pipelines that collect natural gas to a central point.

Greenhouse Gas- A greenhouse gas is a gas that traps heat in the atmosphere and warms the planet.

Railroad Commission of Texas (RRC)- Texas state agency that regulates the oil and natural gas industry, pipeline transporters, natural gas and hazardous liquid pipeline industry, and natural gas utilities.

Transmission Compression- Any compressors that move natural gas from production fields, natural gas processing plants, or other compressors through transmission pipelines to distribution pipelines and storage facilities.

Optical Gas Imaging (OGI)- This is the method of using thermal infrared cameras to visualize gases such as methane.

Orphan Wells- Oil and gas wells abandoned by oil and gas companies.

Pneumatic Controllers- Pneumatic controllers open and close valves to regulate pressure and temperature.

Pneumatic Pumps- These devices use gas pressure to move fluids by increasing and decreasing the pressure of fluids.

Prevailing Wage- The average wage paid to similarly employed workers in a selected area.

Project Labor Agreement (PLA)- A project labor agreement is a pre-hire collective bargaining agreement between a contractor and a labor organization establishing the terms and conditions for a construction project.

Reciprocating Compressors- Reciprocating compressors move gases at high pressure.

Texas Workforce Commission (TWC)- Texas state agency that provides unemployment benefits and services to individuals and businesses. The TWC also oversees Workforce Solutions, the Workforce Development Board network in Texas.

Venting- The deliberate release of natural gas into the atmosphere.

Well Liquids Unloading- A process where liquids accumulated in a gas well are removed to surface equipment. These liquids include oil, water, and condensate. Well liquids are removed by increasing gas velocity, installing a pump, or temporarily diverting the flow from the well to an atmospheric vent.

Well Sites- Locations occupied by the equipment used to drill or produce a well.

Workers' Compensation- Employer-provided insurance that provides wage replacements and medical benefits to injured workers.

EXECUTIVE SUMMARY

This report examines the number of jobs needed in Texas to both meet the needs of new EPA regulations related to methane emissions and to more broadly address methane emissions from investigated sources. This report estimates that there is a need for a minimum of 19,478 workers to implement the proposed standards in the EPA's new proposed methane rule and a maximum of 35,006 workers to address methane emissions more thoroughly in Texas. Reducing methane emissions from oil and gas drilling and processing would provide significant numbers of jobs to Texas, adding between 6% and 9% to the number employed in this industry in 2022.

Methane is a greenhouse gas that contributes to the warming of the earth's atmosphere and it is emitted in several industries such as agriculture, coal mining and oil and gas. Due to Texas' position as the country's largest oil and gas producer, it emits the highest amount of methane among all 50 states. Recognizing the importance of curbing methane emissions, the Biden administration has proposed policies to mitigate methane emissions in the oil and gas industry. Such efforts include the proposed EPA methane rule, which lays out new standards for equipment and facilities in the oil and gas supply chain, and federal funding for states to plug orphan wells. These efforts will help mitigate methane emissions in the oil and gas sector.

The jobs created to mitigate methane will be located in areas where oil and gas production in the state is concentrated, including areas such as the Permian Basin, East

Texas, the Panhandle, and Concho Valley. While the job-creating potential of methane mitigation is good news for the state, they must be well-paying, family-sustaining jobs. Texas remains a state where jobs in the construction industry are often unsafe and underpaid with little to no benefits provided. It is the only state in the country that does not require employers to provide workers' compensation. And Texas has low unionization rates, which stand at 4.1 percent compared to 10.1 percent nationwide.

Methane is a greenhouse gas that contributes to the warming of the earth's atmosphere and it is emitted in several industries such as agriculture, coal mining and oil and gas. Due to Texas' position as the country's largest oil and gas producer, it emits the highest amount of methane among all 50 states.

To ensure that the jobs created to mitigate methane raise job standards, these jobs will have to include Davis-Bacon prevailing wages, Project Labor Agreements, Labor Peace Agreements, OSHA-10 and OSHA-30 safety training, and DOL-registered craft training and apprenticeship programs. Carrying this out will require cooperation between the federal government, state of Texas, labor unions, Workforce Development Boards, and community groups. Overall, this report finds that there is an opportunity to create as many as 35,000 high-quality jobs while mitigating methane emissions in Texas.

THE HARM PRODUCED BY EXCESS METHANE EMISSIONS

In relation to other greenhouse gases such as carbon dioxide, methane is often considered the second most important contributing gas to atmospheric warming, being responsible for roughly 20% of increased temperatures since 1750.[1] Unlike carbon dioxide, which takes many centuries to break down through natural and existing processes, methane begins this process over just a few decades. Not only does methane contribute powerfully and immediately to global temperatures, it contributes indirectly by eventually adding to the store of carbon dioxide in the atmosphere.[2]

Methane contributes to other hazards in addition to climate change. Methane contributes to over a third (35%) of ground-level ozone.[3] Direct exposure to ozone increases inflammation of the airways.[4] This dose-dependent exposure worsens lung function and reduces the efficiency of oxygen exchange in the lungs.[5] Elevated ozone levels contribute to the increased initiation and worsening of asthma symptoms.[6] Ozone exposure leads to broadly reduced lung function in children.[7] Ozone exposure increases hospital admissions for young children and the elderly.[8] Ozone directly harms individuals, with an estimated global annual contribution to respiratory deaths of more than 1 million.[9]

Ozone also impacts ecosystems by damaging plants. Ozone causes cellular damage in leaves, reducing the rate of photosynthesis and plant growth, and requires addition-

al plant resources to effectively repair this damage.[10] Plant exposure to ozone reduces crop yields, with one estimate using 2000 data of between 79-121 million metric tons of loss, worth $11-18 billion.[11] Some evidence also exists that ozone more broadly impacts ecosystems, reducing their ability to absorb (and subsequently sequester) carbon.[12]

Overwhelming evidence points to the role that human beings contribute to climate change through activities that shift the composition of the atmosphere, of which methane is a contributor.[13] Agriculture, coal mining, landfills and oil and natural gas are the major sources of human-induced methane emissions.[14] Methane is the primary component of natural gas.[15] Methane is released in several ways during the exploration, production, processing, storage, and transmission of natural gas: intentional venting; equipment leaks or malfunction; human error; flaring; and routine maintenance.[16] Texas is the top oil and natural gas-producing state in the country.[17] According to the Energy Information Administration, "Texas accounted for 43 percent of the nation's crude oil production and 25 percent of its natural gas production" in 2021.[18] According to the EPA's Greenhouse Gas Reporting Program (GHGRP), in 2021, Texas had a total methane emission of nearly 14 million (MMT CO_2 Eq.), making the state the highest methane emitter in the country.[19]

FEDERAL AND STATE EFFORTS TO ADDRESS METHANE

Methane mitigation is a key focus of the Biden administration's environmental policies. In November 2021, President Biden committed the United States to the Global Methane Pledge; an international effort including over 100 countries to reduce methane emissions from various industries.[20] This pledge aims to reduce methane emissions by at least 30 percent below 2020 levels by 2030.[21] The EPA is finalizing its new version of a methane rule, the Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review ("EPA methane rule"). The Bipartisan Infrastructure Law (BIL) and the Inflation Reduction Act (IRA) also include provisions for curbing methane emissions. Overall, these federal initiatives are expected to significantly increase the number of jobs in the growing methane mitigation industry.

EPA Methane Rule

In January of 2021, President Biden ordered the EPA to revise and update its existing methane rule leading to the EPA releasing the Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review.[22] This rule aims to cut the methane emissions from oil and gas operations by 41 million tons from 2023 to 2035, the equivalent of 920 million metric tons of carbon dioxide.[23] This includes addressing abandoned or unplugged wells, which are oil and gas wells that are no longer in use.[24] To ensure that these abandoned wells are not left to leak methane and other harmful pollutants, the proposed EPA methane rule would require that owners monitor and properly close and plug these wells.[25]

Infrastructure Investment and Jobs Act (IIJA)

Congress passed the Regrow Act as part of the Infrastructure Investment and Jobs Act which includes funding for plugging orphan wells across the country. This includes $1.15 billion from the Department of Interior for states to clean up abandoned wells.[26] There are more than 81,000 abandoned wells in the country, emitting at least 7-20 million tons of CO2 equivalent of methane per year.[27] Texas has 6,489 of these wells and could receive over $82 million in federal grants to plug these wells.[28]

Furthermore, the Department of Interior announced an additional $33 million investment to plug and reclaim orphaned oil and gas wells in national parks, forests, wildlife refuges, and other public lands.[29] Texas is one of the states that is supposed to receive this funding, with the state slated for 20 projects.[30] Some of these projects include the Angelina National Forest in East Texas, which has nine wells, and the Big Thicket National Reserve in Southeast Texas, which includes seven wells.

Documented Orphan Wells in Texas

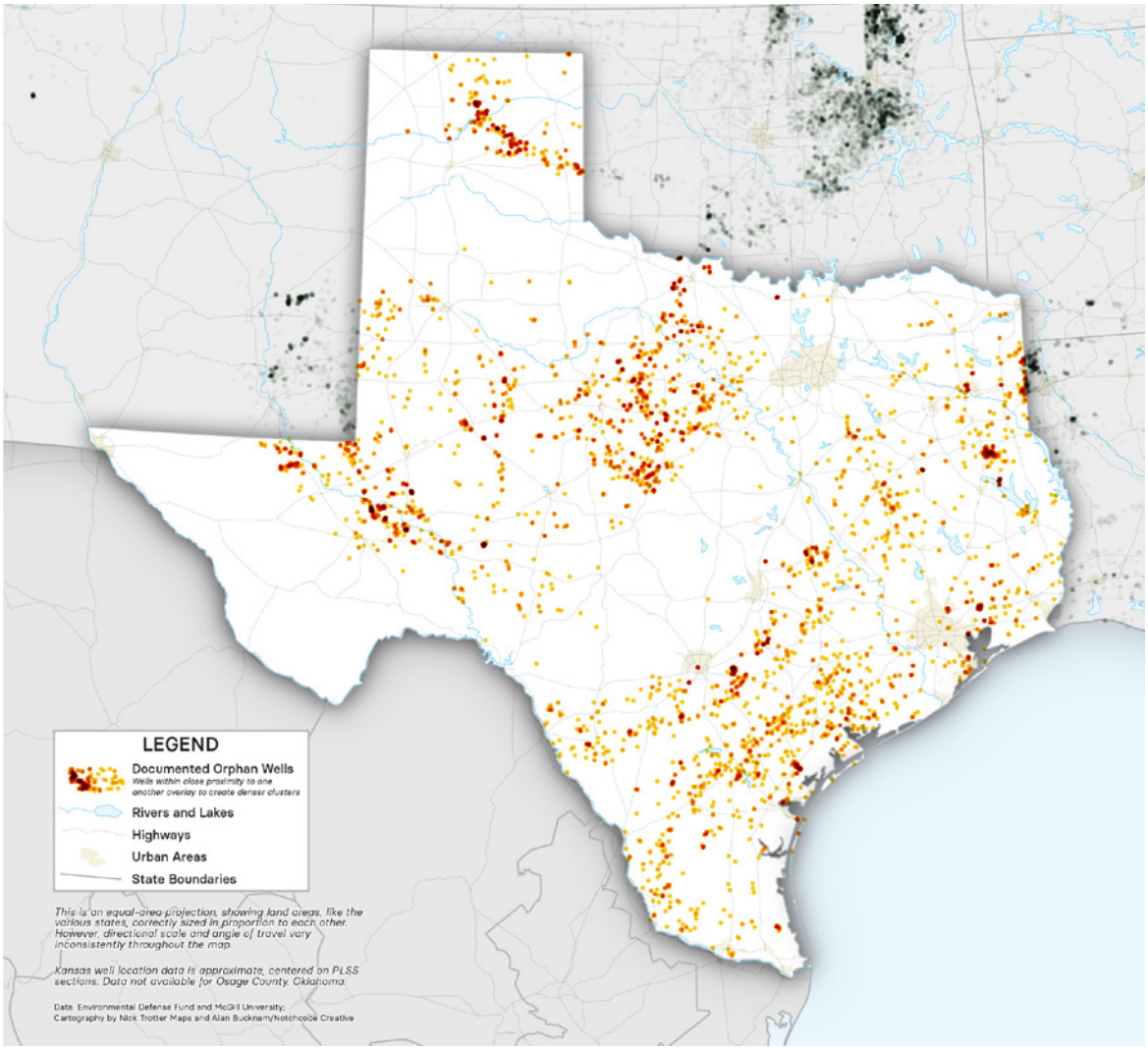


Image sourced from Environmental Defense Fund, 2022.

Inflation Reduction Act (IRA)

The Inflation Reduction Act ("IRA"), signed and passed into law in August 2022,[31] includes a methane charge that will be applied to facilities that emit 25,000 metric tons of carbon dioxide equivalent (mtCO2e) per year.[32] It would begin in 2024 at $900 per metric ton and increase to $1500 in 2026.[33] The charge would apply to petroleum and natural gas production, processing, pipelines, transmission compression, storage, import and export equipment, gathering, and boosting.

In January 2021, Governor Abbott issued an executive order directing every Texas state agency to use every legal means possible to oppose federal action that challenges the "strength, vitality, and independence of the energy industry." This executive order was in response to President Biden's Executive Order 13990, which directed the EPA to propose new rules concerning methane emissions in the oil and gas industry.

Texas Response To Methane Mitigation

The state's response to federal efforts to curb methane emissions has varied. Days after President Biden announced the proposed EPA standards, Railroad Commission of Texas Chairman, Wayne Christian released a statement saying, "the Biden administration continues their efforts to tax and regulate the oil and gas industry out of existence…Texas is the number one oil and gas producer in the nation, and these continued anti-oil and -gas policies will kill jobs, stifle economic growth, and make America more reliant on foreign nations to provide reliable energy."[34]

In January 2021, Governor Abbott issued an executive order directing every Texas state agency to use every legal means possible to oppose federal action that challenges the "strength, vitality, and independence of the energy industry."[35] This executive order was in response to President Biden's Executive Order 13990, which directed the EPA to propose new rules concerning methane emissions in the oil and gas industry.[36] In August 2022, the Railroad Commission announced that the Department of the Interior approved a $25 million grant to plug abandoned wells in Texas.[37] In January 2023, Railroad Commissioner Christi Craddick announced to the Texas Pipeline Association, which represents oil and gas executives, that the state would not accept an additional $300 million in federal funding to plug orphaned wells until they understood the rules to use the funding.[38]

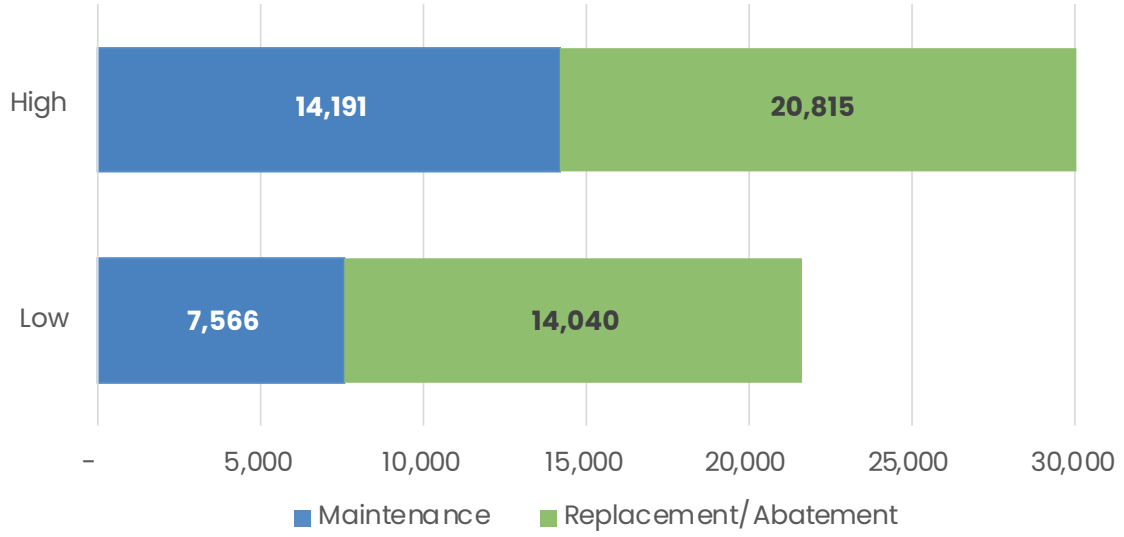
CREATING JOBS BY MITIGATING METHANE

Reducing methane emissions can create tens of thousands of family-sustaining, union jobs in Texas while minimizing the negative environmental and health impacts of the greenhouse gas.

Though there are many potential sources of methane emissions, the primary ones through the oil and gas industry include leaks from sources such as drilling, product transfer, and storage. Using the techniques in the methods and detailed results section, this report estimates the need for a minimum of 21,606 workers to address revised EPA emissions standards, but a need for 35,006 to address methane emissions more thoroughly in Texas.

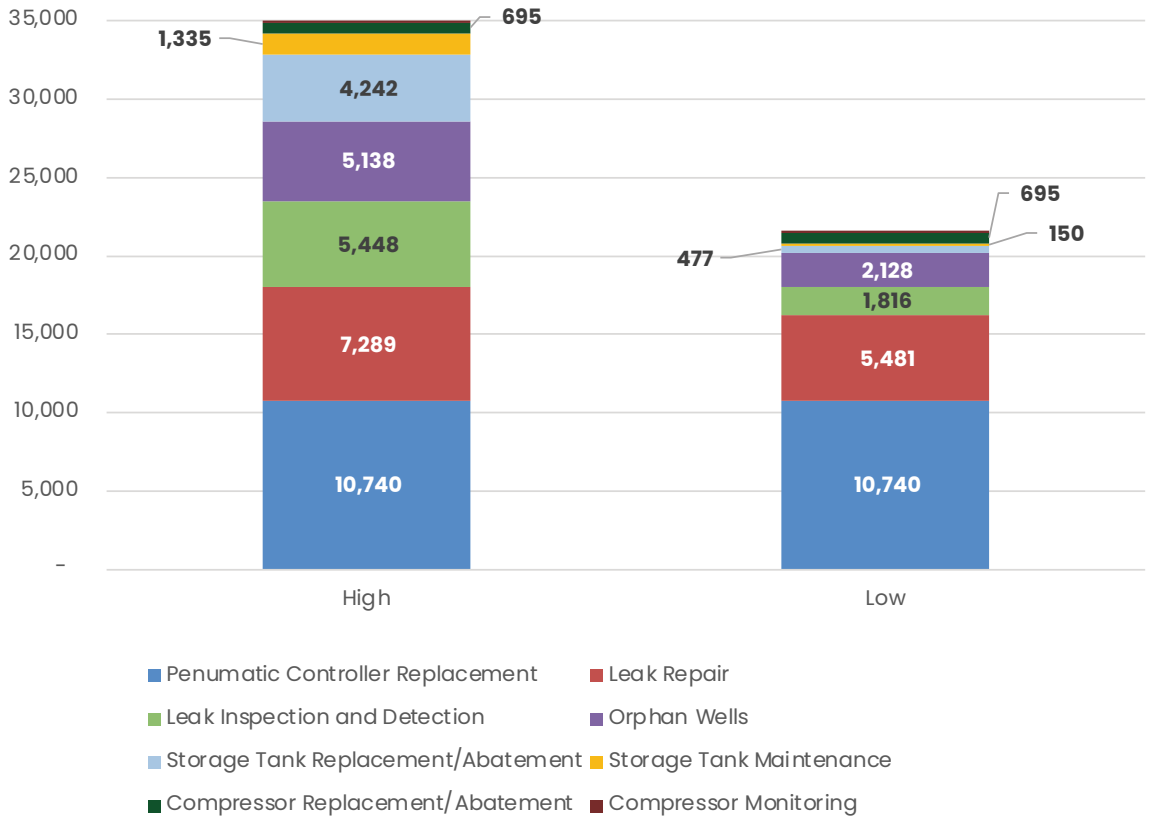
These jobs consist of long-term maintenance and shorter-term replacement and abatement jobs. Maintenance jobs include leak inspection and detection, leak repair, compressor monitoring, and storage tank maintenance, which require from 7,566 to 14,191 workers to address. Replacement and abatement jobs primarily focus on replacing components already known to emit methane, including replacing pneumatic controllers, compressors, and storage tank parts, all of which require between 11,912 to 15,677 workers to complete (Figure 1).

Figure 1. Estimated Jobs, by Maintenance and Replacement/Abatement Status



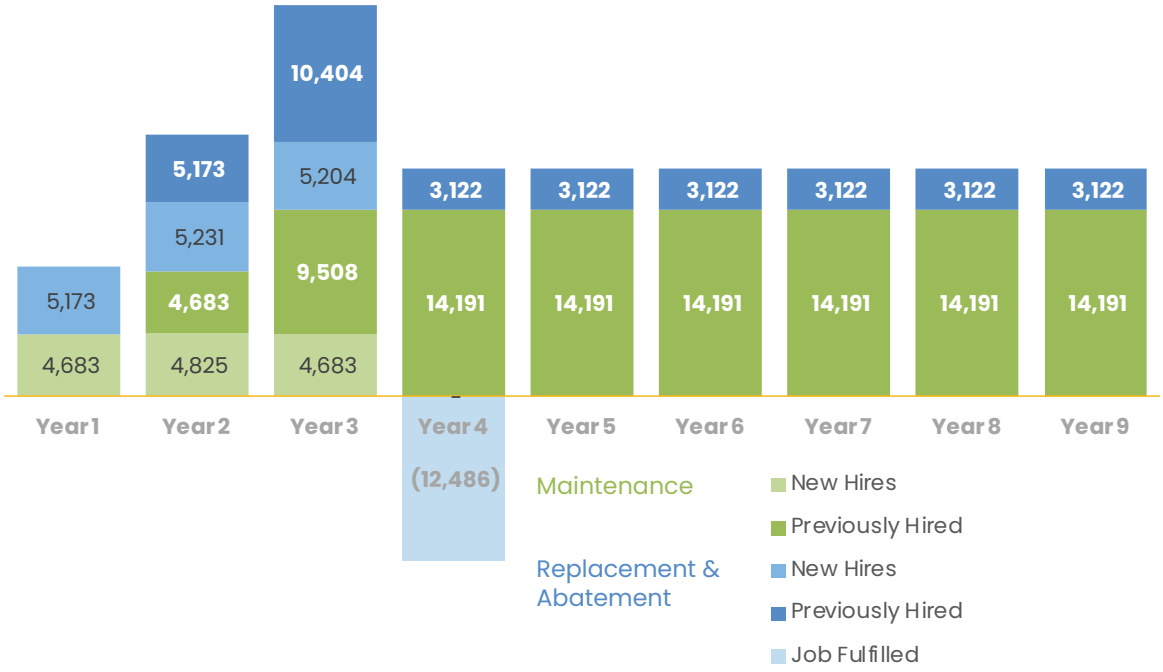
Most of these jobs come from replacing pneumatic controllers, followed by jobs to repair methane leaks, and then jobs to inspect and detect those leaks. The distribution of these jobs depends on whether the goal is to address EPA regulations alone, or to more fully reduce methane emissions in Texas (Figure 2). The reasons for this difference in the number of workers stems from the more thorough effort requiring a more frequent leak inspection and detection regime (monthly rather than quarterly), which requires more workers, and additional inspections are likely to find marginally additional need for repairs.

Figure 2. Estimated Jobs, by Job Type



Individuals must be appropriately trained for these positions and the hiring process can also take time. This report estimates the number of jobs each year for the next nine years based on the higher estimated need for workers (Figure 3). Balancing the need for both maintenance positions, which are long-term hires, and equipment replacement and abatement positions, which are mostly temporary, this report estimates growing numbers of jobs through years one to three, with the largest number of workers in year three (29,799). Beginning in year five, job needs for maintenance will remain steady (14,191). A relatively small number of jobs initially in replacement and abatement work (3,122) are estimated to remain for supporting new construction with higher regulatory requirements.

Figure 3. Estimated Jobs, by Year and Type



Jobs will be more plentiful in areas associated with drilling and processing oil and gas, particularly the Permian Basin area. Breaking estimated jobs into their respective workforce regions demonstrates that half (50%) need more than 500 jobs to meet methane remediation needs. The largest need for these workers comes from the Permian Basin workforce region, which would need an additional 7,556 jobs to broadly address methane emissions. A portion of these jobs reflect the immediate need for abatement and replacement of parts while some will continue into the future as monitoring and maintenance.

Table 1. Estimated Jobs, by Workforce Region

	Direct Jobs	
Workforce Region	**Low**	**High**
Alamo	1,399	2,368
Borderplex	75	131
Brazos Valley	386	611
Cameron County	1	2
Capital Area	2	3
Central Texas	156	262
Coastal Bend	479	850
Concho Valley	1,753	2,758
Deep East Texas	371	668
East Texas	1,417	2,234
Golden Crescent	481	807
Greater Dallas	3	4
Gulf Coast	387	721
Heart of Texas	314	490
Lower Rio Grande Valley	191	309
Middle Rio Grande	750	1,199
North Central Texas	1,095	1,742
North Texas	1,291	2,065
Northeast Texas	50	82
Panhandle	1,723	2,873
Permian Basin	5,148	8,089
Rural Capital	383	682
South Plains	995	1,547
South Texas	662	1,035
Southeast Texas	114	192
Tarrant County	280	429
Texoma	219	350
West Central Texas	1,481	2,503
Total	**21,606**	**35,006**

WORKING CONDITIONS IN THE CONSTRUCTION AND OIL AND GAS INDUSTRIES IN TEXAS

In addition to creating tens of thousands of jobs, the methane mitigation industry has the potential to raise standards in the construction and oil and gas industries in Texas.

Texas Construction Industry

Construction is vital to the Texan economy. The industry employed 774,000 workers in December of 2022 and contributed around 5.8 percent of Texas's GDP.[39] Despite the industry's outsized importance to the Texas economy, workers in the Texas construction industry experience wage theft, safety violations, substandard wages, injuries, and fatalities. Texas minimum wage is $7.25.[40] All Texas construction occupation categories fall below the national median wage for the industry.

Table 2. Median Hourly Wage, Selected Occupations, 2021

Occupations	Texas	United States
Plumbers, Pipefitters, and Steamfitters	$23.53	$28.79
Electricians	$23.36	$28.87
Painters, Construction, and Maintenance	$17.81	$21.92
Carpenters	$21.49	$23.20
Construction Laborers	$17.07	$18.16

Data for this table was sourced from the Texas Wages and Employment Projections and the Bureau of Labor Statistics State Occupational Employment and Wage Estimates for May 2021.

Regions with heavy oil and gas employment, such as the Panhandle, South Plains, and North Texas, have median wages lower than the statewide average. The only exception to this trend is the Permian Basin, where construction wages are higher or equal to the statewide average.

Table 3. Median Hourly Wage by Workforce Development Area, Selected Occupations, 2021

Occupations	Panhandle	South Plains	North Texas	Permian Basin	Concho Valley	Statewide	United States
Plumbers, Pipefitters, and Steam-fitters	$22.74	$22.55	$22.04	$23.53	$22.54	$23.53	$28.79
Electricians	$23.22	$21.73	$22.62	$23.64	$22.87	$23.36	$28.87
Painters, Construction, and Maintenance	$17.38	$17.26	$17.14	$18.57	$17.12	$17.81	$21.92
Carpenters	$18.27	$18.11	$17.75	$22.29	$17.75	$21.49	$23.20
Construction Laborers	$14.44	$14.41	$14.16	$17.41	$14.29	$17.07	$18.16

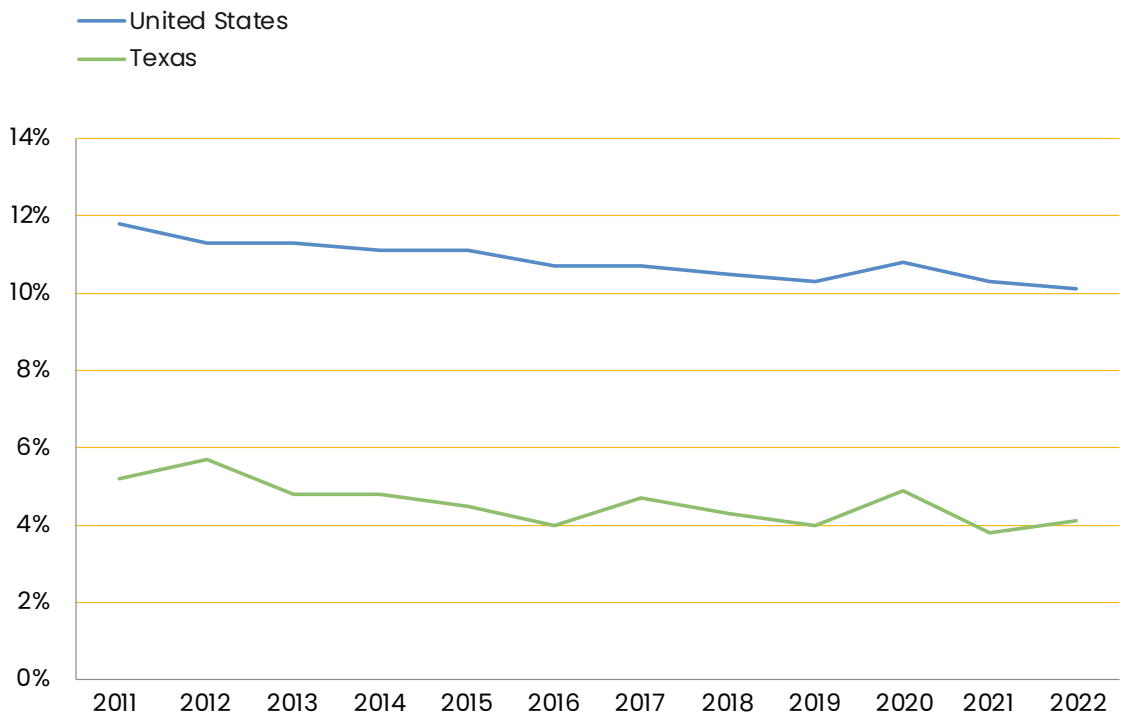
Data for this table was sourced from the Texas Wages and Employment Projections and the Bureau of Labor Statistics State Occupational Employment and Wage Estimates for May 2021.

In Texas**,** only an estimated 18 percent of construction workers have received formal craft training.[41] Of those workers who have formal training, 55 percent complete their training through an employer-provided training program, which are rarely accredited with the Department of Labor.[42] These employer-provided training programs, on average, only provide ten hours of classroom training and twenty hours of on-the-job training.[43] This number of training hours is well below the Department of Labor registered apprenticeship requirement of 2,000 hours of structured on-the-job training and 144 hours per year of job-related classroom instruction.[44]

In terms of benefits for workers in the construction industry, Texas is the only state in the country that does not require workers' compensation insurance coverage.[45] In Workers Defense Project's *Build a Better Texas* report, only 40 percent of surveyed construction workers reported having any workers' compensation coverage, and 78 percent said they lacked health insurance.[46] Additionally, 91 percent of construction workers reported that they do not receive retirement, 88 percent do not receive paid sick days, and 85 percent do not receive paid vacation days.[47]

In addition to lower wages and benefits, union density in the state is also well below the national average. Union membership in Texas is 4.1 percent of the employed population compared to the national membership rate of 10.1 percent in 2022.[48] Only 2.4 percent of construction workers in Texas are union members, compared to 11.7 percent nationwide.[49]

Members of unions as a percent of employed in the United States and Texas, 2011-2021



Data sourced from the Bureau of Labor Statistics.

Texas is a dangerous place for construction workers. The Texas construction industry has one of the highest numbers of fatal injuries in the state. In 2021, the construction industry had 127 fatalities, outpacing mining and manufacturing.[50] In Workers Defense Project's *Build a Better Texas* report, "one in five surveyed construction workers reported suffering a workplace injury that required medical attention, and sixty percent lacked health and safety training."[51]

Texas Oil and Gas Industry

Texas is the country's largest oil and gas-producing state. In 2021, it accounted for 43 percent of the nation's crude oil production and 25 percent of its natural gas production.[52] The state also has the most oil refineries in the country, 31, processing 5.9 million barrels of crude oil daily.[53] According to the Federal Reserve, "thirty percent of the U.S. refinery capacity and 75 percent of the country's petrochemical production is in Texas."[54]

As crucial as the industry is to the Texas economy, it is also very volatile. The Texas oil and gas industry has historically been subject to periods of boom and busts. The bust cycle can have very serious impacts on Texan workers. For example, nearly 60,000 oil exploration and production jobs were lost in Texas during the Coronavirus pandemic.[55] The number of original drilling permits issued by the Texas Railroad Commission in 2020 fell to 6,376, down from 11,970 in 2019.[56]

In 2014, oil prices fell drastically worldwide from $107.95 per barrel in June 2014 to $44.08 per barrel by January 2015.[57] The state lost 2,300 oil and gas jobs in October and November 2014.[58] This drop in oil prices led to a loss of $83 million in potential revenue per day for the industry.[59] Additionally, Texas wages are lower than states with similar oil and gas production levels.

Table 4. Median Hourly Wage, Selected Occupations, 2021

Occupation	Texas	California	United States
Petroleum Pump System Operators, Refinery Operators, and Gaugers	$37.59	$46.93	$38.24
Roustabouts, Oil and Gas	$18.27	$23.74	$18.71
Service Unit Operators, Oil and Gas	$22.38	$29.34	$23.28

Data for this table was sourced from the Bureau of Labor Statistics State Occupational Employment and Wage Estimates for May 2021.

METHODS AND DETAILED RESULTS

This report describes the process for arriving at the total number of workers needed in Texas to address methane emissions under proposed new EPA regulations and to decommission orphaned well sites. The report uses two methods to arrive at the number of workers.

- In the case of methane leak inspection, detection, and repair, the number of hours of work to complete those tasks is used to derive the number of workers needed to perform that work.

- In other methane emissions strategies (replacing pneumatic controllers, replacing compressors, adding flare systems to storage tanks, and decommissioning orphaned well sites) the known and cited costs of installation or maintenance are divided by the assumed hourly cost of work, leading to the calculation of the number of worker hours and thus the estimated number of workers. This latter calculation method stems from more abundant information on the costs related to these tasks rather than the time needed to complete them.

Both strategies rely on identifying the number of sites requiring monitoring, repair, maintenance, and replacement. Again, two strategies are employed.

- Where possible, Texas-specific data (e.g., on the number of active oil and gas well sites) is used.

- When not readily available, U.S. data is used to estimate the number of sites in Texas based on the share of oil and gas wells in Texas in relation to the rest of the country (~41%).

Where relevant, two numbers of workers are calculated, with the lower number being tied as specifically as possible to EPA regulations (which are constrained in their approaches to address methane emissions) and the larger number related to more fully addressing methane emissions.

This report focuses on direct employment counts. The expected number of workers reflect those *directly engaged* in the types of work described.[60] Additional employment and economic activities, both indirect (as a result of purchasing equipment from suppliers), as well as induced (the economic benefits of workers spending their earned income), would result from addressing methane emissions.[61]

The focus in this report on directly engaged work serves several purposes. First, this allows calculations of workers needed to perform known tasks without relying on often proprietary modeling techniques that may inadvertently confuse the reader. Second, focusing on jobs directly engaged in the work ensures the focus remains not only on the work but the quality of the job itself. For example, nearly all of the work described in this report could be performed by union labor, which provides significant benefits to workers. The benefits of union jobs are many and well-documented, including higher wages, better benefits, and better safety protections.[62]

Estimating the Number and Type of Sites Impacted

Using publicly available data from the Texas Railroad Commission, the report identifies the number of well sites in Texas. Outside of well sites, the report uses activity data from the Environmental Protection Agency to estimate Texas-level compressor stations, pneumatic controllers, compressors, and storage tanks.[63]

Leak Detection

Leak detection and repair under the EPA proposal would impact both well-sites and compressor stations for oil and gas production. Compressor stations include gathering and boosting, transmission, and storage sites. The equipment used on well sites and compressor stations includes pipes, generators, valves, connectors, and storage vessels. Malfunctions of any of this equipment can result in methane emissions.

Oil and Gas Wells: In 2022 Texas possessed 277,945 active oil and gas wells.[64] The EPA proposal sets requirements for leak detection and repair ("LD&R") based on annual methane emissions of roughly three tons per year.[65] Under proposed EPA regulations, wells producing methane emissions of at least three tons a year will be subject to quarterly monitoring, with those producing less than three tons being subject to being monitored once a year. Proposed EPA regulations include a group of well sites not subject to monitoring, which may represent "wellhead-only" sites. Utilizing national shares of emissions from all wells from EPA, we estimate 126,729 well sites in Texas (46%) produce at least three tons of methane per year, 61,050 of less than three tons, and a further 90,167 that would likely not be additionally monitored under new regulations.[66] Thus, the EPA proposed regulations would include additional monitoring for 187,779 Texas well sites, while a proposal intending monitoring for all sites would monitor all 277,945.[67]

Compressor Stations: Texas-specific data on the number and type of compressor sites was not readily available. Active oil and gas wells in Texas represent roughly 41% of all active oil and gas wells across the United States (671,882).[68] Thus, the share of compressor stations in Texas are estimated to represent 41% of the number of compressor stations across the United States. Data from the EPA indicate a total of 10,036 compressor sites in the United States, with most being for *gathering and boosting*, and the rest for supporting *transmission*, and *storage*.[69] Texas estimates of compressor stations include 3,073 for gathering and boosting, 900 for transmission, and 141 for storage, for a total of 4,114 compressor stations in Texas.

Pneumatic Controllers

Pneumatic controllers consist of regulators, controllers, and valve actuators. These devices open and close valves to regulate pressure and temperature during oil and natural gas production, processing, transmission, and storage. Methane is released when natural gas is vented while powering the controllers.[70] The EPA proposes that pneumatic controllers have a methane emission rate of zero.[71] Pneumatic controller regulations would apply at every oil and gas site, as well as at each compressor station in Texas. Thus, 277,945 oil and gas wells as well as 4,114 compressor stations (of various types) would fall under the EPA proposal for pneumatic controller requirements.

Compressors

Proposed EPA regulations target most *reciprocating compressors* including those at gathering and boosting stations, gas processing stations, and those used for transmission and storage, though these would not include well pad compressors. Reciprocating compressors use rod packing, a series of rings that fit around the compressor rod, acting as a seal limiting the amount of compressed natural gas that leaks into the atmosphere.[72] According to the EPA, in 2019 there were 31,442 compressors in the U.S. that would fall under new regulations, with an additional 33,653 compressors on well pads not subject to the regulations.[73] Using the same distribution to estimate the number of compressor stations in Texas based on national figures, the estimated number of compressors subject to EPA regulations in Texas is 12,891, with gathering and boosting compressors being the largest share (7,872), followed by transmission compressors (2,564), gas processing plant compressors (1,851), and storage compressors (1,463). An additional 13,798 compressors (well pad compressors) in Texas could also be included in expanded monitoring and evaluation.

Pneumatic controller regulations would apply at every oil and gas site, as well as at each compressor station in Texas. Thus, 277,945 oil and gas wells, as well as 4,114 compressor stations (of various types) would fall under the EPA proposal for pneumatic controller requirements.

Some gas processing and storage stations used a specific type of *centrifugal compressor* (wet seal) known to leak significant amounts of methane.[74] Using national statistics on the number of wet seal centrifugal compressors, the estimated number in Texas come to 759 used in gas processing and another 1,051 used in gas transmission.

Storage Tanks

EPA's Technical Support Documentation includes national-level counts of storage tanks and their methane emissions.[75] Given the large number of comments which led to modifications to initially proposed regulations, other researchers estimate a relatively small number (~22K) will likely be subject to EPA's proposed regulations, though the number of storage tanks likely to need monitoring and installation of appropriate flare controls is much higher (~190K) based on other research.[76] The EPA proposal would likely impact a small share of the overall number of storage tanks in Texas, requiring monitoring of crude oil tanks (1,679) and condensate tanks (7,422) with more than six tons per year of volatile organic compounds. However, addressing methane emissions more thoroughly would require much more effort, including tanks storing more than two tons per year of volatile organic compounds, impacting many more crude oil tanks (66,611) and condensate tanks (14,278).[77]

Orphan Well Sites

Inactive, un-capped wells also leak methane. The Texas Railroad Commission reports that there are approximately 8,723 orphan wells.[78] These well sites are between 12 months to just over 30 years inactive and comprise both gas (2,544) and oil (6,179) wells.

Leak Inspection Time

Leak and Detection Inspection times per site vary depending on the type of site.[79] Standard well sites taking an average of 3.6 hours to inspect for leaks; low-producing well-sites taking just under three hours (2.3); gathering and boosting compressors stations taking 10.4 hours; transmission compressor stations taking 14.9 hours; and, storage compressor stations taking the most amount of time, 28.9 hours.[80] Annual inspection time estimates in the table below show the number of hours needed if inspections occurred quarterly (similar to planned EPA regulations) or monthly.

Table 5. Annual Inspection Hours, by Site Type

Type of Site	Monthly Inspection	Quarterly Inspection
Standard Well Sites	43.0	14.3
Low-Producing Well Sites	27.7	9.2
Compressor Stations: Gathering and Boosting	124.4	41.5
Compressor Stations: Transmission	178.7	59.6
Compressor Stations: Storage	346.7	115.6

Leak Repair Time

Once detected, the time to completely repair a leak varies considerably based on the type of component and the nature of the repair; estimates range from 0.17 hours and 16 hours depending on circumstances.[81] Part of the reason for this wide range of repair times stems from the number of components needing repair when found. For example, repair time at a low-producing well tends to be lower in part because there are likely fewer broken components or parts needing repair. Based on the likely number of components needing repair from EPA[9] and figures on the time to complete a repair by site from Colorado's Air Pollution Control Division[8] the repair time per component in this report is estimated to be roughly 2 hours (2.07).[82] Thus, estimated repair times reflect the work needed to repair the likely number of components found (Table 6).

Table 6. Repair Time by Number of Components

Type of Site	Number of Components Needing Repair Per Inspection[83] (Quarterly)	Repair Time
Standard Well Sites	7	14.5
Low-Producing Well Sites	2	4.14
Compressor Stations: Gathering and Boosting	11	22.77
Compressor Stations: Transmission	16	33.12
Compressor Stations: Storage	48	99.36

The annual number of repairs needed per site does not increase linearly with the number of inspections. If an inspector visits a site more times, it increases the probability of leak detection, but not necessarily the number of needed repairs. Based on existing evidence of a quarterly inspection identifying a specific number of parts needing repair per type, we estimate that additional inspection visits will identify fewer needed repairs per visit, but a handful more (roughly 10%) over the course of the year (Table 7).

Table 7. Quarterly and Monthly Component Repair Needs

Type of Site	Number of Components Needing Repair Per Inspection[84] (Quarterly)	Estimated Number of Components Needing Repair Per Inspection (Monthly)
Standard Well Sites	7	3
Low-Producing Well Sites	2	1
Compressor Stations: Gathering and Boosting	11	4
Compressor Stations: Transmission	16	6
Compressor Stations: Storage	48	18

Using information from Tables 2 and 3, the estimated annual repair time per site in hours varies based on site type and likelihood of identifying a leak based on the inspection schedule, either quarterly or monthly (Table 8).

Table 8. Annual Repair Time by Site and Inspection Schedule

Type of Site	Annual Repair Time Per Site (Quarterly)	Annual Repair Time Per Site (Monthly)
Standard Well Sites	57.96	74.52
Low-Producing Well Sites	16.56	24.84
Compressor Stations: Gathering and Boosting	91.08	99.36
Compressor Stations: Transmission	132.48	149.04
Compressor Stations: Storage	397.44	447.12

Leak Detection and Inspection: Workers Needed

To calculate the number of workers needed to perform leak detection and repair work, each inspector is assumed to have a 40 hour work week, with ten holidays, two weeks of vacation, and one week of sick leave, so provides 1,880 annual work hours.[85] Multiplying the number of sites by type to the time to inspect (or repair) those sites provides the total number of hours needed to address leaks. Dividing that total figure by the annual available work hours per person reveals the number of workers needed to address leaks.

Based on this process, the total number of hours for *quarterly* leak inspections is estimated at 3,413,870 hours yielding 1,816 workers needed. Leak repairs based on quarterly inspections require 10,304,526 hours requiring 5,300 workers to address.

Monthly, rather than quarterly, inspections yield the need for more time and hence more workers. Leak detection would take 10,241,611 hours requiring 5,448 workers. Leak repairs would take 13,702,588 hours, thus needing 7,289 workers.

These two figures provide a range, from quarterly to monthly inspections of between 7,297 and 12,737 workers to address leak detection and repair.

Pneumatic Controller Replacement

Pneumatic controllers consist of regulators, controllers, and valve actuators. These devices open and close valves to regulate pressure and temperature during oil and natural gas production, processing, transmission, and storage. Methane is released when natural gas is vented while powering the controllers.[86] In addition to leak detection and repair, workers would also be needed to retrofit pneumatic controllers. Carbon Limit's cost effectiveness spreadsheet estimates pneumatic controller installation costs of 21% of total installation costs and labor costs of $75 per hour.[87] Utilizing site-level costs accounts for differences in the number of pneumatic controllers per site (Table 9).

Table 9. Pneumatic Controller Replacement Installation Costs and Labor Hours, by Site Type

Site Type	Estimated Labor Installation Costs per Site	Labor Hours per Site
Standard Well Sites	$6,907	92
Low-Producing Well Sites	$6,907	92
Compressor Stations: Gathering and Boosting	$21,544	287
Compressor Stations: Transmission	$15,637	208
Compressor Stations: Storage	$30,371	405

Not all well sites require pneumatic replacements as some sites already use non-emitting controllers, but detailed information on the share likely to need replacing vary and regulatory plans typically focus on the company-level shares of their non-emitting controllers.[88] Not all sites will require pneumatic replacements, though whether sites use pneumatic controllers or an alternative is not universally available. Thus, utilizing estimates of the rate of methane emissions from a set of studied sites, the share of well sites likely needing replacement is estimated to be 75% for well-sites and 90% for compressor stations.[89] Accordingly, the estimated total number of workers required to address retrofit of pneumatic controllers in Texas is estimated at 10,740.

Compressors

EPA regulations cover both reciprocating compressors and centrifugal wet seal compressors. Based on a California Air Resources Board study, an estimated 57.9 percent of *reciprocating compressor* cylinders will need to be replaced in order to reach leak compliance.[90] Estimates for the costs for replacing compressors vary, so this report uses costs from a case-study where the replacement cost $11,070.[91] Assuming labor costs make up 21% of the total replacement cost, we estimate it will take 255 workers to replace the appropriate estimated share of reciprocating compressors. All reciprocating compressors will require monitoring, which is estimated to run at $629 per year to pay for labor, providing a need for 119 workers.[92]

Wet seal centrifugal compressors may either be abated (installing systems to capture leaked gas) or replaced with less-leaky dry seal centrifugal compressors. Costs for replacement are much higher than abatement ($444,000 vs. $70,000), so we assume that roughly 75% of these types of compressors will undergo abatement with the remainder being replaced.[93] Estimates of the number of workers to perform these replacements and abatements total 440. Once replaced or abated, these systems will continue to be monitored via existing leak detection and repair processes.

Storage Tanks

Storage tanks will require flare systems to manage methane emissions under new EPA regulations. The labor for flare installation ($7,393) and maintenance ($2,327) costs are pulled from the Colorado Air Pollution Control Division.[94] Assuming similar labor hour costs, this report estimates the need for 5,577 workers if all storage facilities in Texas are appropriately retrofitted and a much smaller number (627) if only those likely to fall directly under new EPA regulations are addressed.

Decommissioning Orphaned Wells

Orphan wells, those no longer active or producing for a minimum of twelve months, also leak methane into the atmosphere. In December of 2022, there were 8,723 orphan wells in Texas, with some having maintained this inactive and nonproducing status for more than 30 years. Costs associated with capping these sites are estimated to vary by well age, well type (gas or oil), and well depth, among other factors.[95] This report uses the length of orphan status as a proxy for well age, the types of well (gas or oil), and an estimate of the average well depth within the district to estimate the average cost of capping alone or capping and site remediation.[96] Given these levels of variation and published information on orphan wells in Texas, this report estimates an average

cost of between $38,222 per well for plugging only, and an average cost of $92,282 for well plugging and complete site remediation for reported orphan wells.

Though cost differences vary based on multiple factors, the primary drivers of orphan well plugging and site remediation are labor costs. Nearly all activities associated with plugging the well (without site remediation) are labor (90%).[97] For plugging and site remediation, this report estimates labor costs are slightly less of total costs (80%), due to the need for specific equipment and other costs associated with removal of equipment, waste treatment and recycling, and cleaning and treatment of any hazardous waste. Using total labor costs and the previously applied methodology of labor costs per hour and total hours worked in a year provides an estimate of 2,128 workers to plug orphan wells and a total of 5,138 workers to both plug orphan wells and engage in complete site remediation.[98]

Using total labor costs and the previously applied methodology of labor costs per hour and total hours worked in a year provides an estimate of 2,128 workers to plug orphan wells and a total of 5,138 workers to both plug orphan wells and engage in complete site remediation.

TOTAL DIRECT WORKERS

Thus, estimates for the number of workers to address each of these issues based on new EPA regulations and the need to address methane emissions more fully range from a low of 21,606 to a high of 35,006. Most of these direct jobs stem from the need for additional Leak Detection and Repair work.

Table 10. Direct Jobs, by Job Type

	Low	High
Leak Inspection and Detection	1,816	5,448
Leak Repair	5,481	7,289
Pneumatic Controllers	10,740	10,740
Compressors	814	814
Storage Tanks	627	5,577
Orphan Wells	2,128	5,138
Total Workers	21,606	35,006

Two types of jobs are included in these totals. Those that represent the immediate need to replace and/or install abatement to counter methane leakages, and those that include ongoing maintenance, including leak detection and repair (Table 11). Jobs related to replacement and abatement are expected to fulfill immediate needs, so reflect short-term employment. Jobs related to maintenance are expected to continue long-term.

Table 11. Direct Jobs, by Maintenance and Replacement/Abatement Category

	Low	High
Maintenance	**7,566**	**14,191**
Leak Inspection and Detection	1,816	5,448
Leak Repair	5,481	7,289
Compressor Monitoring	119	119
Storage Tanks Maintenance	150	1,335
Replacement/Abatement	**14,040**	**20,815**
Pneumatic Controller Replacement	10,740	10,740
Compressor Replacement/Abatement	695	695
Storage Tanks	477	4,242
Orphan Wells	2,128	5,138

The distinction between short-term job needs and long-term job opportunities is not representative of actual opportunities, as new construction will require the same skill-sets as those engaged in the replacement and abatement process and companies would benefit from previous worker experience. Given how sensitive drilling and transmitting oil and gas is to their relative prices, the estimate of the number of newly hired workers to perform replacement and abatement work likely to be retained long-term in those positions is roughly 15% of the total workers initially needed. Hence, maintained jobs from this type of work are expected to range from 2,128 to 3,122 workers needed in each following year, which, in conjunction with maintenance workers represent a total of 9,672 to 17,313 employed workers every year.

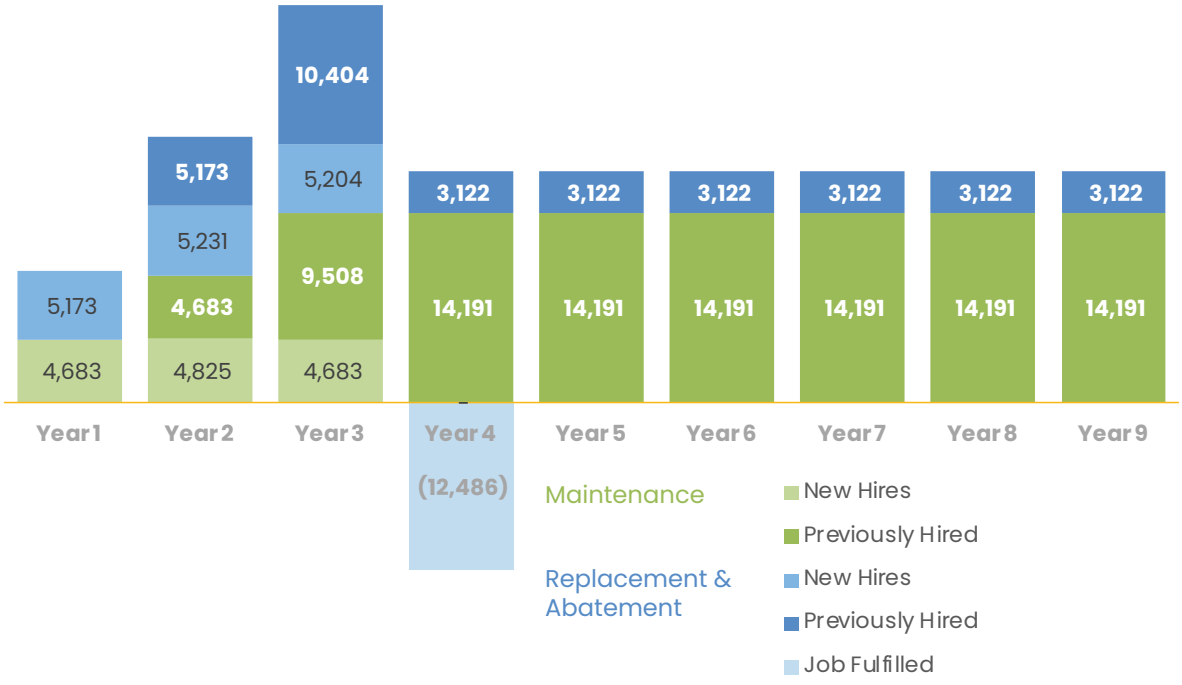
Though these specific jobs are not represented in existing job codes, they fall under a set of skills under the following job titles.[99] The following table represents the mean annual wage for those in those job titles within the U.S., obtained from the Bureau of Labor Statistics.[100]

Table 12. Relevant Job Titles and Mean Wages[101]

Installation, Maintenance, and Repair Occupations (General)	$53,380
Precision Instrument and Equipment Repairers	$54,870
Environmental Engineering Technologists and Technicians	$56,590
Industrial Machinery Installation, Repair, and Maintenance Workers	$58,350
Industrial Machinery Mechanics	$58,780
Industrial Engineering Technologists and Technicians	$61,230
Drafters, Engineering Technicians, and Mapping Technicians	$62,420
Calibration Technologists and Technicians	$62,800
Engineering Technologists and Technicians, Except Drafters	$64,600
Control and Valve Installers and Repairers	$67,310

Provided both the rapid schedule required to meet EPA regulations in a timely manner, and evidence that similar rapid regulatory implementation requirements in Colorado were successfully met, this report assumes that in the first year, just under a quarter of all workers needed in both maintenance and replacement/abatement can be hired and trained.[102] The likely progression of hiring and maintained jobs over a nine year period can be see in Figure 4 below, including the drop in total jobs as a portion of replacement and abatement jobs shift to new construction of wells, compressor stations, and storage tanks.

Figure 4. Number of Jobs, by Year and Type



Distribution of Workers in Texas

Based on the number of oil and gas wells in each workforce region, nearly every region requires additional workers (Table 13). Needed jobs are skewed toward oil and gas producing workforce regions. The Permian Basin would need to supply nearly a quarter of these workers, while the Concho Valley region would need nearly ten percent of workers.

Table 13. Direct Jobs, by Texas Workforce Region

	Direct Jobs	
Workforce Region	**Low**	**High**
Alamo	1,399	2,368
Borderplex	75	131
Brazos Valley	386	611
Cameron County	1	2
Capital Area	2	3
Central Texas	156	262
Coastal Bend	479	850
Concho Valley	1,753	2,758
Deep East Texas	371	668
East Texas	1,417	2,234
Golden Crescent	481	807
Greater Dallas	3	4
Gulf Coast	387	721
Heart of Texas	314	490
Lower Rio Grande Valley	191	309
Middle Rio Grande	750	1,199
North Central Texas	1,095	1,742
North Texas	1,291	2,065
Northeast Texas	50	82
Panhandle	1,723	2,873
Permian Basin	5,148	8,089
Rural Capital	383	682
South Plains	995	1,547
South Texas	662	1,035
Southeast Texas	114	192
Tarrant County	280	429
Texoma	219	350
West Central Texas	1,481	2,503
Total	**21,606**	**35,006**

Some of these job estimates relate to maintenance (long-term) or replacement and abatement (short-term) activities. Once again, regions currently focused on oil and gas production would benefit by seeing an increased need for methane emissions and abatement workers (Table 14).

Table 14. Short- and Long-Term Direct Jobs, by Texas Workforce Region

	Direct Jobs	
Workforce Region	**Short-Term**	**Long-Term**
Alamo	1,395	973
Borderplex	84	47
Brazos Valley	303	308
Cameron County	2	0
Capital Area	2	1
Central Texas	152	110
Coastal Bend	554	296
Concho Valley	1,334	1,425
Deep East Texas	450	218
East Texas	1,086	1,147
Golden Crescent	465	342
Greater Dallas	2	2
Gulf Coast	514	206
Heart of Texas	230	260
Lower Rio Grande Valley	160	148
Middle Rio Grande	610	589
North Central Texas	873	869
North Texas	1,052	1,013
Northeast Texas	45	37
Panhandle	1,634	1,240
Permian Basin	3,903	4,187
Rural Capital	448	234
South Plains	723	824
South Texas	492	543
Southeast Texas	112	80
Tarrant County	191	237
Texoma	177	173
West Central Texas	1,470	1,034
Total	**18,463**	**16,543**

CREATING HIGH QUALITY JOBS IN THE METHANE MITIGATION INDUSTRY

There are a number of ways to fully realize the job-creating potential of methane mitigation and raise job standards in Texas. These opportunities include partnering with Workforce Development Boards and enforcing the Davis-Bacon & Related Acts prevailing wage laws, and utilizing Project Labor Agreements, Labor Peace Agreements, Department of Labor registered apprenticeship programs, and high road employment practices.

Texas Workforce Development Boards

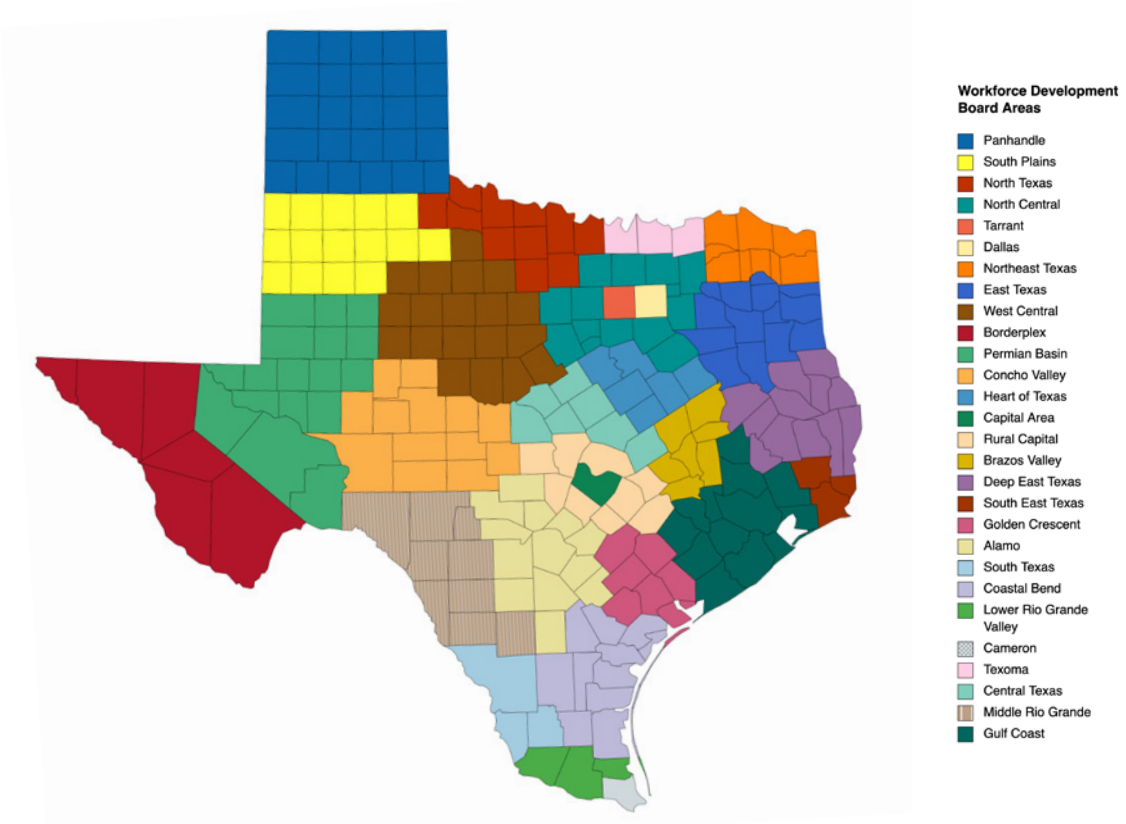
Workforce development Boards could play a powerful role to prepare individuals living in local communities for careers in the budding methane mitigation industry. A Workforce Development Board ("WDB") is an entity of appointed community leaders appointed by elected officials, such as county judges and city mayors, who are responsible for developing and overseeing local workforce services and programs for their respective areas.[103] There are twenty-eight local boards in Texas operating over one hundred and eighty local Workforce Solutions offices.[104]

Workforce Development Boards could also adopt and expand the multi-core curriculum (MC3) program to prepare individuals living in local communities for careers in the methane mitigation industry.

Workforce Development Boards are in part funded by grants from the U.S. Department of Labor Employment & Training Administration (DOLETA).[105] In 2014, Congress passed the Workforce Innovation and Opportunity Act (WIOA) to connect job seekers to employment, education, training, and support services. In 2022, $245 million was allocated and distributed to fund workforce development in Texas. Of this funding, WIOA contributed $165 million.[106] WIOA requires each WDB to include two or more representatives of labor and one or more representatives of a joint labor-management or union-affiliated, registered apprenticeship program.[107] If no union-affiliated registered apprenticeship exists in the local area, the board must appoint a non-union-affiliated registered apprenticeship representative.[108]

The highest concentrations of oil and natural gas plants overlap with the following Workforce Development Boards; the Panhandle, South Plains, Permian Basin, Concho Valley, and Gulf Coast.[109] These WDBs could coordinate employment concerning methane mitigation in the state.

Locations of Workforce Development Boards in Texas



Data sourced from the Texas Workforce Commission.

Workforce Development Boards could also adopt and expand the multi-core curriculum (MC3) program to prepare individuals living in local communities for careers in the methane mitigation industry. The MC3 training program is a 120-hour pre-apprenticeship construction course.[110] The Building Trades National Apprenticeship and Training Committee developed and approved the program in 2008.[111] The goal of the MC3 is to help young people and adults interested in a career in the trades choose and succeed in apprenticeship programs. The curriculum includes chapters concerning general orientation to apprenticeship, construction industry, trade orientation, tools and materials, construction health and safety (OSHA-10 and CPR), basic math, green construction, financial literacy, the heritage of the American worker, and diversity in the construction industry.

Davis-Bacon and Prevailing Wage

Davis-Bacon and Related Acts requires that contractors and subcontractors pay prevailing wages to workers on federally funded public projects.[112] As federal funds become available for methane mitigation in Texas, it is critical that prevailing wages are enforced on these projects. These projects could include the Department of Interior funding to plug and reclaim orphaned oil and gas wells in national parks, forests, wildlife refuges, and other public lands.[113]

Project Labor Agreement (PLA)

A Project Labor Agreement ("PLA") is a pre-hire collective bargaining agreement between a contractor and a labor organization establishing the terms and conditions for a construction project. The federal government currently requires PLAs on many federal construction projects.[114] Expanding this requirement to methane mitigation projects funded by the federal government will ensure that the job is completed promptly and safely. PLA projects have been proven to save taxpayers and investors money by eliminating uncertainty in large-scale construction projects.

Labor Peace Agreement

In addition to construction jobs, the methane mitigation industry will also require maintenance and operation jobs. Labor Peace Agreements ensure that workers have a free and fair process to join to choose a union without interference from the employer. Public dollars for methane mitigation should not go to companies who retaliate against workers who choose to join a union.

DOL Registered Apprenticeship Programs

The federal government should mandate the utilization of students and graduates of DOL-registered apprenticeship programs on current and future methane mitigation initiatives where possible. Only 18 percent of Texas construction workers indicated that they have any training.[115] Among these workers that stated that they received training, 55 percent received training from employer-provided programs.[116] These programs fall below the standards set by the Department of Labor.

High Road Employment Practices

Texas can be a dangerous and even deadly place for construction workers. In addition to the recommendations above, federal efforts to squarely address these dangers as it seeks to mitigate methane should include guarantees to water breaks, mandated OSHA-10 training for workers and OSHA-30 for safety supervisors, rest breaks, and cooling stations for Texas workers as a condition of federal funding.

CONCLUSION

As demonstrated in this report, reducing methane emissions from oil and gas drilling and processing would provide significant numbers of jobs to Texas, adding between 6% and 9% to the number employed in this industry in 2022.[117] Moreover, the time to engage in this work is now. Oil and gas jobs tend to fluctuate in relation to their commodity prices. Despite a significant post-pandemic increase in their prices, recent estimates suggest slightly declining prices over the next two years.[118] Hiring workers to reduce methane emissions now, during this relatively low-price period, will enable the oil and gas industry to address new regulations.

With some of these jobs requiring limited training and education at the high school diploma level, methane emissions reduction efforts also provide opportunities for Texans. With projected yearly earnings above, and in some cases double, the median Texas wage of $31,462 in 2022, these jobs can provide individuals and their families financial security.

In order to ensure that these jobs are high quality union jobs, we recommend that Workforce Development Boards, Davis-Bacon, Project Labor Agreements, Labor Peace Agreements, DOL Registered Apprenticeship Programs, and high-road employment practices are utilized to their full potential in the burgeoning methane mitigation industry.

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