



The U.S. Department of Energy's Office of Fossil Energy and Carbon Management (FECM) supports research and development of technologies that can reduce the volume of natural gas (e.g., methane) flared or vented (released) into the atmosphere during crude oil and natural gas production, processing, transportation, and storage operations. Methane is a potent greenhouse gas (GHG) and minimizing its release across the oil and natural gas supply chain is critical to the realization of a net GHG benefit and reducing climate and environmental impacts of carbon-based fuels. This fact sheet was created by FECM to inform stakeholders on state-level production and regulatory activities, as they relate to natural gas flaring and venting. FECM's research portfolio includes efforts to reduce natural gas flaring through the application of improved technologies to capture and utilize small volumes of natural gas at remote locations, as well as technologies to reduce methane release during upstream production operations, as well as midstream natural gas processing and transportation. While flaring activities in the prolific unconventional shale plays have steadily increased between 2011-2019 due to higher oil production levels and natural gas pipeline takeaway capacity constraints, this trend took a sharp downturn since 2020 as a result of significant decline in demand for oil. Other factors include federal and state regulatory efforts to reduce methane emissions, companies taking voluntary actions and measures to minimize flaring of associated natural gas, and additional pipeline projects connecting sources of supply and consumption.

## Utah Producing Plays and Basins

The large majority of Utah's oil and natural gas production occurs in the eastern half of the state, primarily in portions of the Uinta and Paradox Basins (Figure 1). There is also a limited amount of production along the Wyoming border east of the Great Salt Lake where a portion of the Utah-Wyoming Thrust Belt extends into the state. The [Utah Geological Survey](#) reports that production from the large, historical conventional oil fields declined between 1985 and 2002, but production has recovered somewhat since then due to the discovery of several new conventional fields in central Utah's Hingeline play and increased development drilling in the Uinta Basin.



Figure 1: Utah basins and major unconventional oil and gas plays outlined.  
Source: EIA

Industry is currently investigating unconventional oil plays in Utah that include the Uteland Butte limestone in the Uinta Basin and the Cane Creek Shale and the Gothic-Chimney Rock-Hovenweep Black Shales in the Paradox Basin. The [U.S. Geological Survey](#) (USGS) has estimated mean undiscovered resources of 214 million barrels of oil, 329 billion cubic feet of associated/dissolved natural gas, and 14 million barrels of natural gas liquids in the Uteland Butte. The [USGS](#) also assessed 560 million barrels of undiscovered oil, 12.7 trillion cubic feet (Tcf) of undiscovered natural gas, and 490 million barrels of undiscovered natural gas liquids in the entire Paradox Basin (in portions of Utah, Colorado, New Mexico, and Arizona). Of this total, the Cane Creek Shale accounted for 215 million barrels, and the Gothic-Chimney Rock-Hovenweep Shales

## Utah [Oil](#) and [Natural Gas](#) Statistics (EIA)

	2015	2016	2017	2018	2019	2020	2021
Crude Oil Production (Average Thousand Barrels/Day)	102	83	94	102	101	85	100
Natural Gas Gross Withdrawals and Production (Average MMcf/Day)	1,143	998	863	810	747	663	655
Natural Gas Gross Withdrawals and Production (Vented and Flared) (MMcf/Day)	2.7	1.6	3.3	N/A	2.6	1.6	N/A
Natural Gas Gross Withdrawals and Production (Oil Wells) (MMcf/Day)	124	109	109	103.3	104.6	84	N/A
Natural Gas and Gas Producing Oil Wells (Thousands)	12.7	12.3	12.2	11.9	11.7	11.7	N/A

MMcf – million cubic feet

2021 ranking among 32 U.S. oil and natural gas producing states — [Oil](#): 9 [Natural Gas](#): 13

for 256 million barrels. The larger portion of the assessment units for these shales lies within Utah's state lines.

A shale gas play currently in the early stages of development is the [Mancos Shale](#) in central Utah. Several [other gas plays](#) in the state that have been tested and show some potential are the Manning Canyon Shale in central Utah and the Hermosa Group Shales in the Paradox Basin. The [Potential Gas Committee's 2016 report](#) estimates a total "most likely" technically recoverable resource values for the Uinta and Paradox Basins of 50.78 Tcf and 4.03 Tcf, respectively. According to the U.S. Energy Information Administration (EIA), Utah's proved reserves are [389 million barrels of oil](#) and [2.38 Tcf of natural gas](#) (2020).

## Utah Key Regulations Associated with Flaring and Venting

Utah's oil and gas regulatory authority is the [Division of Oil, Gas and Mining at the Department of Natural Resources](#). The [Rule R649-3](#), entitled *Drilling and Operating Practices*, covers the gas flaring and venting regulations in the state. Effective on December 1, 2018, this regulation is part of the Utah Administrative Code, in chapter R649, concerning Natural Resources; Oil, Gas and Mining.

Section [R649-3-20](#), *Gas Flaring or Venting*, allows flaring or venting in very specific circumstances. Up to 1,800 Mcf of casinghead gas produced from an oil well may be vented or flared from an individual well on a monthly basis, at any time without approval. The operator may vent or flare all produced oil well gas only as needed for conducting a stabilized production test. During the month immediately following the initial stabilized production test, the operator may vent or flare up to 3,000 Mcf of oil well gas without securing additional approval.

With respect to produced gas from a gas well, [R649-3-20](#) mandates that an operator may vent or flare all produced gas well gas as needed during the period of time allowed for conducting a stabilized production test, the multipoint test, or other approved test. Venting or flaring is not permissible beyond the time allowed for conducting the tests. For both oil well and gas well operators, unavoidable or short-term oil well gas venting or flaring is allowed without approval under the following conditions: 1) the division determines that vapor recovery is warranted; 2) emergency situations where shutting in the well would cause waste or create adverse impact on the well or reservoir; and 3) operator notifies the division immediately.

In order to produce a well for testing and evaluation beyond the time or volumes allowed, [R649-3-20](#) requires that an operator must submit a written request to the [Division of Oil and Gas](#) for approval. The request should include all information related to the determination that conserving or marketing the gas is not possible. In these instances, the Division may select to authorize venting or flaring at unrestricted rates for up to 30 days of testing or no more than 50 MMcf of gas vented or flared, whichever is less.

Any venting or flaring beyond these approved conditions must be presented to the [Utah Board of Oil, Gas and Mining](#) for consideration and approval. After reviewing the comprehensive "Request for Agency Action," the Board may either allow the requested venting or flaring, restrict production, or take other appropriate action. In instances with noncompliance with the state venting and flaring restrictions, the Board may issue an order to cease and/or require the operator to provide justification in-person. Additionally, the Division of Oil, Gas and Mining is required to provide notification of the unapproved venting or flaring to all relevant governmental taxing and royalty agencies.

Per [R649-3-32](#), *Incident Reporting*, both major and minor events of unauthorized flaring or venting must be reported. A major event is defined as "more than 500 Mcf of gas at any drilling or producing well site, or at any injection or disposal facility; or more than 1,500 Mcf of gas at any transportation, gathering, or processing facility" (Section 2.2.1 – 2.2.2) and a minor event is "more than 50 Mcf and up to 500 Mcf of gas at any drilling or producing well site, or at any injection or disposal facility; or...any transportation, gathering, or processing facility" (Section 4.2-4.3).

Finally, Utah does not allow gas flaring or venting from any extraction plants that process gas unless it is necessary due to temporary mechanical difficulty or if the gas vented or flared has no commercial value. The operator must provide immediate notification to the Division of Oil, Gas and Mining if there is a prolonged mechanical difficulty or plant shut-downs or curtailment due to scheduled or nonscheduled maintenance or testing operations or other reasons (R649-3-32, Sections 8-9).

## Utah State Points of Contact

### Utah Department of Natural Resource; Division of Oil, Gas and Mining; Oil and Gas Program

Contact the Division of Oil, Gas and Mining regarding the production of oil or natural gas, including flaring and venting of natural gas.

**Website:** <https://oilgas.ogm.utah.gov/oilgasweb/>

**Email:** [ogprogram@utah.gov](mailto:ogprogram@utah.gov)

**Phone:** 801-538-5340

Visit <https://www.energy.gov/fecm/findyourstate-natural-gas-flaring-and-venting-regulations-fact-sheets-state> for a digital version of this fact sheet that includes hyperlinks to information sources.



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Information current as of June 2022.