



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.

Arkansas Producing Plays and Basins

The U.S. Energy Information Administration (EIA) estimates Arkansas' proved reserves to be at [30 million barrels of oil](#) and [5 trillion cubic feet \(Tcf\) of natural gas](#) (2020). The majority of the oil and natural gas production in Arkansas is split between the Arkansas portion of the Arkoma Basin in the northwest-central part of the state and the portion of the Louisiana Salt Basin that extends across the border into the lower fifth of the state ([Figure 1](#)). Unconventional oil and gas plays under development in Arkansas include the [Fayetteville Shale](#) in the Arkoma Basin and the Brown Dense Shale (BDS) in southern Arkansas. One of the first U.S. shale plays to be developed,



Figure 1: Arkansas basins and major oil and gas producing areas outlined
Source: EIA

the Fayetteville Shale, is a dry natural gas formation that extends over nearly 3,000 square miles, with estimates of between 14 and 20 Tcf of technically recoverable natural gas. Production peaked between

2012 and 2014 and has since declined. Another unconventional play is the Lower Smackover/BDS, an oil and gas play underlying part of southern Arkansas. The Upper Jurassic BDS, at depths from 8,000 to 11,000 feet, remains an emerging play, despite testing with more than a dozen wells since 2012, most of which were in northern Louisiana.

Arkansas Key Regulations Associated with Flaring and Venting

The [Arkansas Oil and Gas Commission](#) (AOGC) is in charge of preventing waste and encouraging conservation of the Arkansas oil, natural gas, and brine resources in order to protect the correlative rights associated with those resources.

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

	2014	2015	2016	2017	2018	2019	2020	2021
Crude Oil Production (Average Thousand Barrels/Day)	19	17	15	14	14	13	11	11
Natural Gas Gross Withdrawals and Production (Average MMcf/Day)	3,076	2,768	2,250	1,903	1,616	1,438	1,314	1,230
Natural Gas Gross Withdrawals and Production (Vented and Flared) (Mcf/Day)	Because flaring and venting has been limited to short term events, Arkansas does not keep recorded data.							
Natural Gas Gross Withdrawals and Production (Oil Wells) (MMcf/Day)	9	8	9	7	7	5.5	5.5	N/A
Natural Gas and Gas Producing Oil Wells (Thousands)	10.0	10.2	9.8	9.9	10.9	10.7	10.4	N/A

MMcf - million cubic feet
Mcf - thousand cubic feet

2021 ranking among 32 U.S. oil and natural gas producing states — [Oil](#): 18 [Natural Gas](#): 12

It is also responsible for protecting the environment during the production, extraction, and transportation of those resources. Its regulatory authorities include issuing permits to drill oil, natural gas, and brine production wells, as well as other types of exploratory wells. The AOGC also issues authority to operate and produce wells, by approving well completions and recompletions and conducting compliance inspections during the drilling process and the operational life of the wells. The responsibilities of the [Office of Air Quality](#) of the [Arkansas Department of Environmental Quality](#) (ADEQ) include developing and implementing programs designed to ensure compliance with federal air quality regulations; developing state rules governing air quality; and regulating emissions through a permitting program that sets emission limits that protect public health.

In general, the state of Arkansas prohibits wasting oil and gas, as stated in Arkansas Code, Title 15, Natural Resources and Economic Development, Section [15-72-105](#), entitled, *Prohibition on Wasting Oil or Gas*. This statute defines gas as all natural gas, including casinghead gas, and all other hydrocarbons. However,

Commission Order allows the use of casinghead gas for any beneficial purpose. Furthermore, Title 15, Natural Resources and Economic Development, Section 15-72-208, *Prevention of Wasting Gas*, defines what constitutes waste and the requirements for its prevention. Orders of the Commission administer both statutes.

As described by the AOGC, if the Commission Order permits flaring, an operator must report the volume of gas flared and pay royalties on the flared gas to the mineral owner. However, there is a very limited number of wells permitted to flare for these short periods of time (30 days). Additionally, the Commission's production database includes flaring volumes in the wells' cumulative production and does not count flared gas separately. Due to the maturity of the oil production areas in Arkansas, generally, the oil producing areas do not flare natural gas. Because a limited volume of flaring occurs during the well drilling and completion phases and the Commission Order only allows for a small number of wells to be actively producing, these small volumes of flared gas do not warrant specific data collection. Therefore, the Commission's production database does not maintain such venting and flaring volumes.

Arkansas State Points of Contact

Arkansas Oil and Gas Commission

Contact the AOGC Director's Office for more information about drilling permits, compliance, and conservation of oil and gas resources in the state.

Website: <http://www.aogc.state.ar.us/Pages/Default.aspx>

Email: Larry.Bengal@aogc.state.ar.us

Phone: 501-683-5814

Arkansas Department of Environmental Quality: Office of Air Quality

Contact ADEQ's Office of Air Quality for more information on emission regulations.

Website: <https://www.adeq.state.ar.us/air/>

Email: Bailey.Taylor@adeq.state.ar.us

Phone: 501-682-0639

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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