Tackling Flaring: Learnings from Leading Permian Operators

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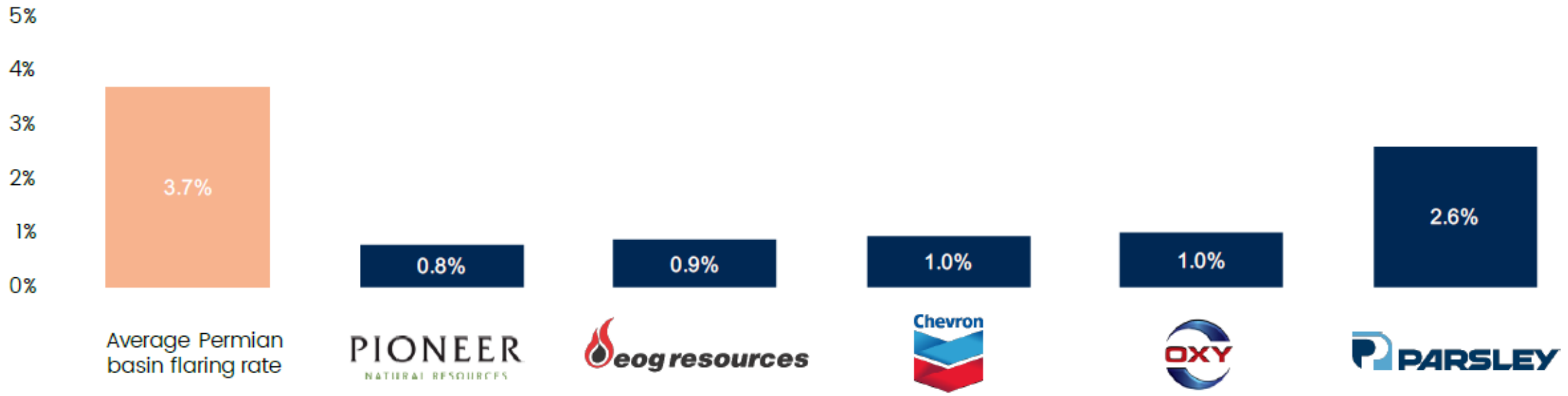
Average Permian Basin natural gas flaring rate vs. top-tier operators interviewed



Source: Texas Railroad Commission (RRC) and New Mexico Energy, Minerals and Natural Resources Department (EMNRD). Public flared/vented and gas production data as of May 27, 2020. Note: Parsley Energy excludes Jagged Peak 2020 acquisition

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Findings: Three main themes facilitating best-in-class flaring performance

1

Strong governance structure coupled with leadership on environmental stewardship

2

Commitment to reduce or eliminate flaring by ensuring that wells do not go online until gas takeaway is in place

3

Best-in-class practices to ensure flare functionality and reduced vapor emissions

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1 Governance and environmental stewardship

- **Sharing best practices** with other producers
- Establishing **cross-functional working committees** dedicated to reducing routine flaring
- **Communicating** flaring **targets and progress** against targets in group settings
- Conducting **internal learning** and technical conferences
- Making flaring intensity data **transparent** and visible to employees
- Setting **aggressive flare intensity** goals
  - Intensity-based; Absolute reduction targets; Year over year improvements; Public statements on appropriate level of flaring intensity
- Tying **compensation metrics** to flaring performance goals

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2

The best flaring practice is to not flare at all

- Strategic leadership decisions requiring gas line be connected on all new wells, eliminating the need to flare associated gas in the first place
  - Infrastructure takeaway must be in place before well comes online, coupled with the willingness to shut in wells if the infrastructure is not in
- Takeaway not a barrier but constraint, *i.e.*, a condition that needs to happen before a project is successful
- Planning, communication, committment
- Strategic, long term partnerships with midstream
- Integrated business model (gathering, processing, compression)

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3

Best operating practices

- Non-routine flaring necessary in the case of operational upsets, high gas line pressures or for safety reasons
- Utilizing trained staff or contractors to routinely and frequently check flares was cited as one of the best practices in terms of both operational efficacy and cost efficiency; in addition
  - Equipment and processes in place to ensure flare tips are lit and functioning properly
  - Emissions monitors and controls incorporated into facilities design
- Pro-active, strategic approach to manage operational upsets
- Use of vapor recovery units on majority if not all, pad sites with the intent of achieving maximum emissions capture efficiency

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Beneficial financial impact of leading practices

- Financial statement impact
  - Protect cash flows
- Risk mitigation
  - Long term investment stability; social license to operate
- Access to capital markets
  - Facilitate access to capital markets, lower bank risk profile, possibly drive a premium to multiples

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Thank You

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Report may be accessed here:
https://www.gaffneycline.com/sites/g/files/cozyhq681/files/2020-06/Tackling%20Flaring_Final.pdf

It is available to download from here:
https://www.gaffneycline.com/methane-management-solutions

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