

2023 ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT

Focusing on a Sustainable Future



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ABOUT THIS REPORT

This report is Cardinal Energy Ltd.'s fifth Environmental, Social and Governance ("ESG") report. This fifth issuance is a transitional report due to the recent announcement by the Canadian Sustainability Standards Board ("CSSB") that will require companies to report sustainability and climate-related information. Accordingly, the 2023 report has been condensed as Cardinal transitions to align climate-related information reporting as outlined by the CSSB. Details of these additional requirements by the CSSB for reporting results in 2025 and beyond are anticipated to be released in the latter part of 2024. In this condensed report, various relevant standards and regulations have been referenced for specific aspects of ESG reporting in jurisdictions in which our operations are situated.

This report was reviewed and approved by our executive team and Board of Directors. References to Cardinal, our, we, the Company and the Corporation used within this report refer to Cardinal Energy Ltd. Additional disclosure is available from our audited financial statements and the associated Management Discussion and Analysis; Annual Information Form; Management Information Circular; and other publicly required information. All these documents are available and can be accessed on our website at www.cardinalenergy.ca or through SEDAR+ at www.sedarplus.ca. Should there be questions regarding this report, please direct them to info@cardinalenergy.ca.

2023 At-a-Glance

Cardinal continues to be a responsible Canadian energy producer with a strong legacy of robust ESG performance. Cardinal is proud to provide sustainable production, positive environmental performance and top-tier shareholder returns as we look to the future. Our corporate focus in 2023 on strategic growth, initiation of a greenfield steam assisted gravity drainage project, asset retirement, continued CO₂ sequestration, emission reduction projects and community involvement provides us with a strong foundation to maintain and strengthen our overall ESG performance.

Highlights in the areas of Environmental Stewardship, Corporate Governance, and Community Engagement can be found on the following pages.

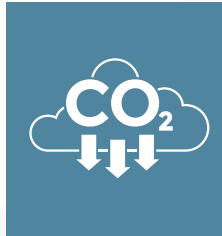


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ENVIRONMENTAL STEWARDSHIP



Cardinal spent \$23 million on asset retirement and decommissioning in 2023, which is more than double the regulatory required level of spend.



Cardinal continues to prioritize CO₂ injection as a direct strategy to mitigate climate related risks. We operate a best-in-class carbon capture and storage project in the Midale Unit in southeastern Saskatchewan and sequestered approximately 270,000 tonnes of CO₂ in 2023.

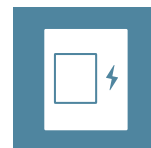


Cardinal abandoned 120 operated well-bores, decommissioned 9 facilities, and received 30 reclamation certificates in 2023.

In 2023, we executed various emission reduction projects including:



Large engine upgrades in Northern Alberta to reduce both greenhouse gas (GHG) and pollutant emissions.



A significant number of variable frequency drive (VFD) installations throughout Central and Northern Alberta to reduce electricity consumption and decrease associated emissions from electricity generation.



Pneumatic pump vent gas capture projects in Northern Alberta to reduce vented methane emissions.



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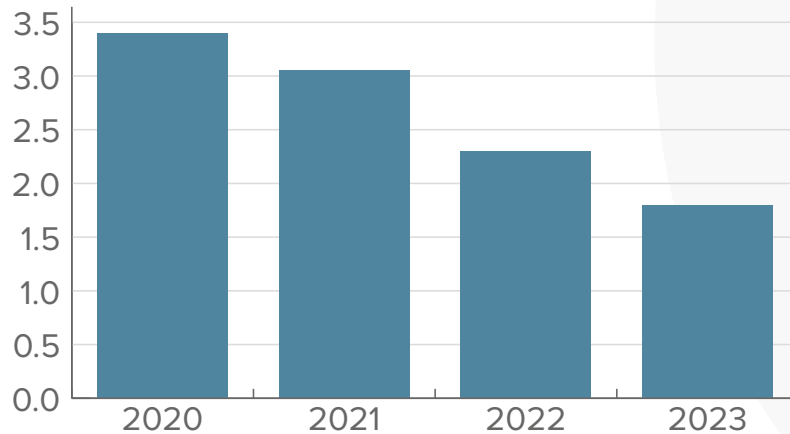
CORPORATE GOVERNANCE

Cardinal upholds its core values of accountability, trust, respect, and integrity. Our Board of Directors is responsible for the stewardship of Cardinal and has four committees: the Audit Committee; the Environment, Social and Governance Committee; the Corporate Governance and Compensation Committee; and the Reserves Committee. **The Board of Directors has direct oversight over ESG metrics and Cardinal's Executive Compensation is tied to these metrics.**



We reduced our fresh water usage intensity by 22%.

*Cardinal Fresh Water Use Intensity
(bbls H₂O/boe production)*





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COMMUNITY ENGAGEMENT

Cardinal operates within many geographically diverse areas in Alberta, Saskatchewan and British Columbia. These areas experience different issues that vary year to year, and Cardinal continued our commitment to working with local organizations over the course of 2023.

Northern Alberta faced unprecedented wildfire danger in 2023. During this time, Cardinal donated firefighting equipment, and employee time to the town of Swan Hills and the Swan Hills fire department.



Cardinal has a charitable donation policy, in which a percentage of funding is earmarked to support civic organizations and foundations within the communities in which we operate, such as a donation made to the Jim Pattison Children's foundation in Saskatchewan.



We believe in a strong partnership with various First Nations living in and around our areas of operation.



Cardinal continued to support food banks along with other family and youth-oriented causes across our operating areas.



PERFORMANCE MEASURES

An update to Cardinal's prior performance measures table has been provided as follows:

	2023	2022	2021
PRODUCTION			
Total production (boe/d)	21,705	21,471	19,090
AIR EMISSIONS¹			
Scope 1 GHG Emissions (10 ³ t CO ₂ e)	234	225	231
GHG sequestered (10 ³ t CO ₂ e)	270	292	242
GHG EI (10 ³ t CO ₂ e/boe)	0.030	0.029	0.033
Scope 2 GHG Emissions (10 ³ t CO ₂ e)	211	234	228
Flared gas (10 ³ m ³)	15,475	12,025	12,404
Vented gas (10 ³ m ³)	4,309	3,598	4,178
Methane emissions (10 ³ t CO ₂ e)	51	50	66
SPILLS			
Reportable Spills ²	13	14	13
PERSONAL SAFETY			
Recordable Injuries ³	1	0	1
Total Recordable Injury Frequency (TRIF) ⁴	0.47	0	0.49
Lost Time Injuries ⁵	1	0	0
Lost Time Injury Frequency (LTIF) ⁴	0.47	0	0
Fatalities	0	0	0
PEOPLE			
Total Staff (incl. contractors)	224	206	198
Gender Diversity (% female)	17%	19%	20%
ABANDONMENT & RECLAMATION			
Wells abandoned during the year (gross operated)	120	150	201
Facilities decommissioned (gross operated)	9	9	20
Pipeline abandoned (km)	194	251	152
Reclamation certificates received (gross operated)	30	7	14
Net ARO spend (Cardinal-funded, MM\$) ⁶	23	22	9
Net ARO spend (Government grant funded, MM\$) ⁶	0.3	5	8

- 1) Air emissions are calculated using industry standards and best practices in the associated jurisdiction for which our Operations take place (including Western Climate Initiative for British Columbia, Alberta Greenhouse Gas Quantification Methodologies under the TIER Regulation for Alberta, The Management and Reduction of Greenhouse Gases for Saskatchewan, and Environment and Climate Change Canada's National Inventory Report).
- 2) Spills reported to a regulatory agency, as required in the jurisdiction where a spill occurs, excluding fresh water spills.
- 3) Recordable injuries include medical aids, restricted work events, and lost time events.
- 4) Injury frequency per 200,000 hours worked.
- 5) Lost time due to a work-related injury, or illness under the instruction of a medical professional.
- 6) Asset retirement obligation, a regulatory requirement associated with retirement of assets.



ADVISORIES

This report is for information purposes only and is being made available by Cardinal to provide information on Cardinal and its business. This report does not constitute an offer to sell to any person, or an offer to the public of, or the solicitation of an offer to subscribe or purchase, any securities of Cardinal, nor shall this report or any part of it, or the fact of its delivery or availability, form the basis of, or be relied upon in connection with, or act as an inducement to enter into, any contract or commitment whatsoever with respect to any securities.

We have taken care to ensure the information in this report is accurate. However, this report includes aspirational goals and estimates, which will differ from actual results, and is for informational purposes only. We disclaim any liability whatsoever for errors or omissions. Further, some information in this report may have been disclosed previously in other Cardinal public disclosure, and such disclosure is not intended in any way to be qualified, amended, modified or supplemented by information herein.

Material may be used within this report to describe issues for voluntary sustainability reporting that are considered to have the potential to significantly affect sustainability performance in our view and may be important in the eyes of internal or external stakeholders. However, material for the purposes of this report should not be read as equating to any use of the word in other Cardinal public reporting or filings. With this report, we hope to increase your knowledge of Cardinal and our operations. However, this report does not provide investment advice, and readers are responsible for making their own financial and investment decisions.

There is no single standard system that applies across companies for compiling and calculating the quantity of GHG, nitrogen oxide, sulphur dioxide emissions and other sustainability metrics attributable to our operations. Accordingly, such information may not be comparable with similar information reported by other companies. Our emission statistics are derived from various internal reporting systems that are generally different from those applicable to the financial information presented in our consolidated financial statements and are, in particular, subject to less sophisticated internal documentation as well as preparation and review requirements, including the general internal control environment. We may change our policies for calculating these emissions and other sustainability metrics in the future without prior notice.

In this report, Cardinal has used a number of oil and gas metrics which do not have standardized meanings and therefore may be calculated differently from the metrics presented by other oil and gas companies. Boe means barrels of oil equivalent. The term Boe may be misleading, particularly if used in isolation. The conversion ratio of six thousand cubic feet per barrel (6 Mcf: 1 Bbl) of natural gas to barrels of oil equivalent is based on an energy equivalency conversion method primarily applicable at the burner tip and does not represent a value equivalency at the wellhead. Given that the value ratio based on the current price of crude oil as compared to natural

gas is significantly different from the energy equivalency of 6:1, utilizing a conversion on a 6:1 basis may be misleading as an indication of value.

This report contains forward-looking statements and forward-looking information (collectively, “forward-looking statements”) related to future, not past events and circumstances – including those which may relate to our strategies, focus, goals, ambitions, aims, targets, plans, objectives, operations, results and financial performance. The use of any of the words “will”, “may”, “anticipate”, “expect”, “objective”, “believe”, “plans”, “intends”, “potential”, “continue”, “guidance”, and similar expressions are intended to identify those forward-looking statements.

Forward-looking statements involve risk and uncertainty because they relate to events and depend on circumstances that will or may occur in the future including, without limitation, those risks considered under “Risk Factors” in Cardinal’s Annual Information Form and which may be outside of our control. Readers are cautioned that the assumptions used in the preparation of such information, although considered reasonable at the time of preparation, may prove to be imprecise and, as such, undue reliance should not be placed on forward-looking statements. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, levels of activity, performance or achievement since such expectations are inherently subject to significant business, economic, competitive, political and social uncertainties and contingencies. Many factors could cause our actual results to differ materially from those expressed or implied in any forward-looking statements made by, or on our behalf, in this report.

We have included the forward-looking statements in this report in order to provide readers with a more complete perspective on our future operations and such information may not be appropriate for other purposes. Cardinal disclaims any intention or obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

This report contains information from publicly available third party sources. Although management believes it to be reliable, Cardinal has not independently verified any of the data from third-party sources referred to in this document or analyzed or verified the underlying studies or surveys relied upon or referred to by such sources, or ascertained the underlying economic assumptions relied upon or referred to by such sources.

The internal projections, expectations or beliefs are based on Cardinal’s capital budget which is subject to change in light of ongoing results, prevailing economic circumstances, commodity prices and industry conditions and regulations. Accordingly, readers are cautioned that events or circumstances could cause results to differ materially from those predicted.