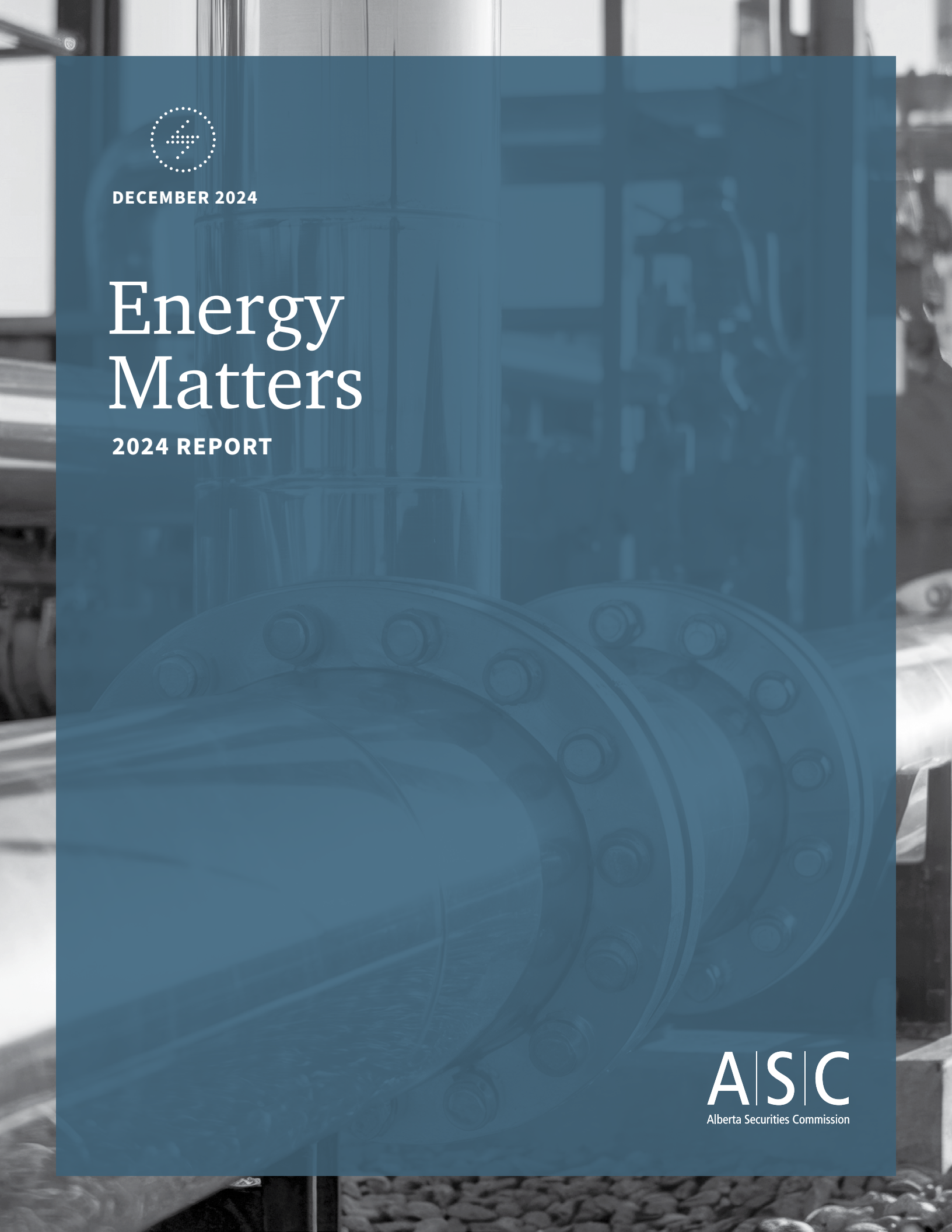

DECEMBER 2024

Energy Matters

2024 REPORT

ASC
Alberta Securities Commission

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We are pleased to share the Alberta Securities Commission's 2024 Energy Matters Report.

As always, the report's principal purpose is to offer guidance to those reporting issuers providing disclosure of oil and gas reserves and resources other than reserves under National Instrument 51-101 *Standards of Disclosure For Oil and Gas Activities* (NI 51-101).

The oil and gas sector continues to be a key contributor to the provincial and national economies and remains a significant component of Alberta's capital market. Our goal is to assist reporting issuers in providing balanced and reliable disclosure to help investors make informed investment decisions.

The key focus areas in this year's report address issues that were identified in our reviews relating to:

- Use of the terms "gross" and "net" in relation to production and reserves in ways that are incorrect or confusing;
- Reporting issuers disclosing less than all reserves, particularly with respect to overriding royalty interests;
- Deficiencies concerning the notice required when an issuer has ceased to be engaged in oil and gas activities and incorrect filing of those notices by reporting issuers that retain interests, such as royalty interests or leases on undeveloped properties; and
- Common recurring deficiencies in relation to reserves reconciliations, such as use of negative volumes or using the acquisition date rather than effective date to account for reserves additions resulting from acquisitions.

In addition, the report includes aggregate reserves data on issuers engaged in oil and gas activities, such as the basis for changes in different reserves categories for senior, intermediate and junior producers, including comparative information for five or more years.

The ASC's Energy Group is a team of experienced and knowledgeable professional engineers, geologists and energy analysts. They conduct reviews of the disclosure required under NI 51-101, compile data respecting the industry, prepare this report and provide other resources.

The team continues to expand their scope to include not only the core oil and gas industry but also adjacent industries, including oil and gas services, pipelines and midstream, renewables, and, beginning last year, issuers engaged in mineral exploration. As part of that expanded focus, this year's report provides guidance on the disclosure of helium.

In addition to reviewing disclosure under NI 51-101, as part of understanding changes in the industry, the Energy Group maintains data on energy sector issuers. The report shares some of that data, including information on market capitalization and financing activity and associated trends over the last five or more years.

For the last three years the Energy Matters Report has included select data on certain sustainability reporting by reporting issuers engaged in oil and gas activities. We have not included that data in this report. This year, to assist us in better understanding the climate-related disclosure being provided by Alberta reporting issuers and to inform our policy analysis in relation to climate-related disclosure, we have expanded our review to cover all reporting issuers, not just those in the energy sector, and have also expanded our review to include additional data points. We hope to publish this new report in spring 2025.

In conducting that review we have noted that a significant number of issuers that had previously published an ESG or sustainability report have not published one for the most recent year and many refer to the uncertainties created by amendments to the *Competition Act* (Canada) as the reason.

Reliable and balanced disclosure is foundational to capital markets. To that end, securities legislation prohibits false and misleading disclosure and provides both for regulatory action and civil action by affected investors where this prohibition is breached. However, securities legislation creates parameters for this liability. For example, defences are generally available in respect of forward-looking statements where the issuer meets certain conditions, such as having a reasonable basis for the statement, acknowledging that actual results could differ materially and stating the underlying material factors and assumptions used in drawing the conclusion. Reporting issuers design their disclosure procedures to comply with these requirements. Unfortunately, the amendments to the *Competition Act* mandate in many cases that before making disclosure, the issuer must ensure it is based on adequate and proper substantiation in accordance with an "internationally recognized methodology," a vague, undefined and potentially illusory requirement. Further, litigation can be initiated by parties that have not been affected by the disclosure. Consequently, even where issuers take all reasonable steps to try to ensure their disclosure is not false or misleading, they may struggle to confirm their compliance with the new *Competition Act* provisions. The result has been unfortunate with many issuers ceasing to make the voluntary climate-related disclosure that many institutional investors have said is important to them. This also has the potential to create concerns as mandatory climate disclosure requirements are introduced domestically or internationally.

This is one of the important considerations for us as we evaluate climate-related disclosure requirements. We recognize the desire expressed by many institutional investors to receive reliable, comparable and decision-useful disclosure of material climate-related risks and we hear the concerns expressed by many issuers regarding the challenges involved in making climate-related disclosure and the associated liability concerns. We are closely monitoring international developments, particularly, given the close connection of our capital markets, those in the United States and we are mindful of competitive considerations.

We continue to look for ways we can provide useful resources for market participants and welcome your feedback. If you have any comments or questions about this report or other initiatives, please reach out to our team. The Energy Group's contact information is provided at the end of this report.

Finally, on Wednesday, January 22, 2025, we will be hosting a webinar to review the information in this report. We look forward to you joining us.

Yours truly,

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Each year the ASC issues four reports: the Annual Report, the Alberta Capital Market Report, the Energy Matters Report and the Corporate Finance Disclosure Report. These reports are created to provide timely and relevant information for market participants and reporting issuers. These reports can be found at www.asc.ca.

1. Introduction

1.1 GENERAL

The Alberta Securities Commission (**ASC**) administers Alberta's securities laws and is a member of the Canadian Securities Administrators (**CSA**), the council of the securities regulators of Canada's provinces and territories. Alberta's securities laws are comprised of the *Securities Act* (Alberta) (**Act**) and the rules, regulations and decisions made under the Act, which are intended to protect investors and foster a fair and efficient capital market. ASC staff endeavour to ensure investors have access to balanced, accurate, relevant and reliable information to make informed investment decisions.

The ASC is the lead regulator within the CSA concerning oil and gas and certain other energy-related disclosure and the Corporate Finance division's Energy Group is responsible for the technical aspects of this effort. It is staffed with experts that review energy-related technical disclosure attributed to energy-related reporting issuers (**RIs**) for which the ASC is the principal regulator (**AB RIs**). The Energy Group functions as subject matter experts in relation to National Instrument 51-101 *Standards of Disclosure For Oil and Gas Activities* (**NI 51-101**, **Instrument**) and energy-related guidance, in addition to communicating with stakeholders on energy-related matters. Furthermore, staff also provide their expertise to other CSA jurisdictions.

The Energy Group works closely with the Sustainability & ESG Disclosure department, the Legal department and the Corporate Disclosure & Financial Analysis department to address the increasing focus of RIs and investors on environmental matters, including the reporting of greenhouse gas (**GHG**) emissions.

The Energy Group's specific responsibilities include:

- Review of oil and gas disclosure, including reserves and resources other than reserves and other oil and gas information, from issuers that report under NI 51-101;
- Maintenance of NI 51-101 and its related guidance, including recommendations concerning amendments to NI 51-101;
- Review of other energy-related technical disclosure from energy industry-related RIs for which the ASC is the principal regulator;
- Review of energy industry-related environmental liabilities disclosure;
- Identification and monitoring of energy industry-related trends, technologies and developments; and
- Engagement with Alberta capital market participants through ASC advisory committees, publications, webinars, presentations, inquiries and other outreach.

The Energy Group is focused on the energy industry and energy-related RIs, which we define as comprising:

- Oil and gas activities as defined in NI 51-101;
- Oil and gas midstream (including pipelines) and oil and gas services;
- Petrochemicals;
- Renewable electricity via wind, solar, hydro, biomass and geothermal;
- Renewable hydrocarbons, also referred to as "green hydrocarbons" and "biofuels";
- Exploration, development and transportation of helium;
- Production and transportation of hydrogen;

- Carbon capture and storage (**CCS**) and carbon capture, utilization and storage (**CCUS**), and their related technologies;
- Electrical generation and transmission;
- Lithium, including its recovery from brines (battery usage);
- Energy storage generally;
- Energy industry-related environmental liabilities;
- Energy industry-related services; and
- Nuclear energy.

The Energy Group also works collaboratively with the Sustainability & ESG Disclosure department to track certain information related to the disclosure of GHG emissions and sustainable financings (also referred to as "transition" and "green" financings). In this regard, the Energy Group's focus is on AB RIs in the energy industry and those required to report under National Instrument 43-101 *Standards of Disclosure for Mineral Projects* (**NI 43-101**).

The 2024 Energy Matters Report (**Report**) provides information concerning energy industry-related subjects, which addresses:

- Oil and gas disclosure from RIs engaged in oil and gas activities;
- Environmental considerations in the attribution of oil and gas reserves;
- Disclosure from other energy industry-related RIs for which the ASC is the principal regulator;
- Energy and the Alberta capital market; and
- Energy Group activities.

Previous reports included results of tracking voluntary disclosure concerning GHG emissions and other sustainability matters in respect of energy-related RIs and RIs that report under NI 43-101, for which the ASC is the principal regulator. The 2024 edition does not include this information, as it is intended to be included in a more comprehensive sustainability report currently being prepared by the Sustainability & ESG Disclosure department. This report is anticipated to be published in the first half of 2025 and is expected to include results of tracking voluntary disclosure for other RIs for which the ASC is the principal regulator.

Please refer to section 7 of the Report for the Energy Group's contact information. Additionally, a glossary of selected terms related to oil and gas activities is located in section 8.

We hope you find the Report informative and look forward to hearing from you.

1.2 OVERVIEW

Canada's safe, secure, reliable and environmentally-responsible energy is an essential component of the world's energy system. Canada is the world's fourth largest producer of oil, the fifth largest producer of natural gas and one of the largest producers of uranium and hydroelectricity. In addition, it is at the forefront of technological development involving enhanced oil recovery, CCS and CCUS, and renewable electricity. The Canadian energy industry continues to demonstrate significant technical expertise, innovation and leadership as it responds to significant challenges associated with energy diversification, energy security and increasing scrutiny and accountability relating to environmental aspects of sustainability.

This last year, the Energy Group continued its efforts to review general and required annual oil and gas disclosure from RIs engaged in oil and gas activities to assess compliance with securities law disclosure requirements, including NI 51-101 and its related forms. NI 51-101 sets out the general disclosure standards and specific annual disclosure requirements for RIs engaged in oil and gas activities. Under section 2.1 of NI 51-101, RIs engaged in oil and gas activities are required to file the following with the securities regulatory authority on an annual basis:

- Form 51-101F1 *Statement of Reserves Data and Other Oil and Gas Information* (**Form 51-101F1**);
- Form 51-101F2 *Report on [Reserves Data][,] [Contingent Resources Data] [and] [Prospective Resources Data] by Independent Qualified Reserves Evaluator or Auditor* (**Form 51-101F2**); and
- Form 51-101F3 *Report of Management and Directors on Oil and Gas Disclosure* (Form **51-101F3**).

In addition, specific circumstances may require the filing of:

- Form 51-101F4 *Notice of Filing of 51-101F1 Information*; or
- Form 51-101F5 *Notice of Ceasing to Engage in Oil and Gas Activities* (**Form 51-101F5**).

NI 51-101 requires disclosure to be prepared in accordance with the Canadian Oil and Gas Evaluation Handbook (**COGE Handbook**), referred to as NI 51-101's "technical standard." The COGE Handbook is maintained and distributed by the Society of Petroleum Evaluation Engineers (**SPEE**) (Calgary Chapter) (www.speecanada.org). It is amended from time to time and RIs engaged in oil and gas activities must ensure that their disclosure complies with amendments upon their publication.

Disclosure reviewed by staff subsequent to the 2023 Energy Matters Report (**2023 Report**) was generally compliant with securities law disclosure requirements, including NI 51-101 and its related forms, as well as the COGE Handbook. The Report contains observations and analyses concerning key areas identified for improvement. Deficiencies involving the following were noted:

- **The Terms "gross" and "net" with respect to production and reserves**
  - Incorrect or inadequate disclosure of gross and net production volumes and reserves estimates.
- **Disclosure of less than all reserves in Form 51-101F1**
- **Ceasing to be engaged in oil and gas activities**
  - Incorrect disclosure concerning RIs that have ceased to be engaged in oil and gas activities and those that believe that they have ceased to be engaged in oil and gas activities.
- **Reserves reconciliations**
  - Errors and deficiencies in the reserves reconciliations required by Form 51-101F1.

Also included in the Report is data, analysis and discussion concerning NI 51-101 disclosure, such as oil and gas reserves estimates that are required to be disclosed under section 2.1 of NI 51-101 and resources other than reserves optionally disclosed under Part 7 of Form 51-101F1. Information concerning environmental considerations in the attribution of reserves is also included. In addition to NI 51-101 matters, the Report contains information concerning the preparation of disclosure involving helium well-flow tests.

Finally, the Report contains data and commentary concerning energy-related capital market activity, including RI statistics, select market data and capital raising activities, including sustainable financings.

1.3 ENERGY GROUP YEAR IN REVIEW

Since the 2023 Report, the Energy Group completed 133 screening reviews of the required annual oil and gas filings per section 2.1 of NI 51-101 for RIs engaged in oil and gas activities. This included filings for 107 AB RIs and 26 for RIs where another Canadian jurisdiction was the principal regulator.

Staff also completed 238 sustainability monitoring reviews concerning disclosure of GHG emissions and certain other sustainability matters – one review for each energy industry-related RI and each RI that reports under NI 43-101, for which the ASC was the principal regulator. These reviews focused on the disclosure of basic information, such as the presence of specific disclosure, the timing and frequency of the disclosure, its preparation and the disclosure method.

To the end of September 2024, staff reviewed nine prospectuses from energy industry-related RIs, including seven for AB RIs and two for which the British Columbia Securities Commission (**BCSC**) was the principal regulator. All of the prospectuses were for RIs engaged in oil and gas activities.

Staff conducted approximately 567 press release screening reviews and seven full press release reviews, six of which were for AB RIs. The sharp decrease in screening reviews since 2022 (see Figure 1) reflects a decline in the number of published press releases. The focus of press release screening reviews is the press release itself, while full press release reviews are more in-depth and incorporate additional disclosure. In addition, staff completed 22 other disclosure reviews to the end of September 2024.

Further information on review types discussed here is contained in section 2 of the Report.

Figure 1: Number of completed disclosure reviews

REVIEW TYPE	JURISDICTION	2024 YTD*	2023	2022	2021	2020	2019	2018
Prospectus – oil & gas	AB	7	8	13	21	3	5	12
	Other	2	2	6	3	0	1	2
Prospectus – other energy	AB	0	2	6	8	–	–	–
	Other	0	3	5	4	–	–	–
Annual oil & gas filing screening	AB	107	104	108	113	129	132	138
	Other	26	24	25	29	41	45	57
Press release screening	All	567	737	1,652	1,766	–	–	–
Press release	AB	6	4	6	38	21	26	15
	Other	1	1	5	3	2	5	0
Other	AB	17	24	11	29	12	20	37
	Other	5	20	4	9	0	3	1
Environmental sustainability monitoring reviews	AB	238	243	164	190	–	–	–
	Other	0	0	52	0	–	–	–

"–" None completed

* Information is included to the end of September for the current year, referred to as "YTD," and subsequently updated to the full year in future reports, with the exception of environmental sustainability monitoring reviews, which are conducted between October 1 and September 30.

As part of its ongoing commitment to engagement with capital market participants, the ASC published the 2023 Report in December 2023. It was emailed to approximately 916 subscribers. In February 2024, staff hosted the 2024 Energy Matters Information Session webinar. The event had 340 registered participants and 192 attendees. In May 2024, staff hosted the National Instrument 51-101 for Officers and Directors webinar. The event had 116 registered participants and 81 attendees. See the Events & Presentations section of asc.ca for information on past and future ASC events.

2. Oil and gas disclosure commentary

2.1 INTRODUCTION

This section discusses key areas of oil and gas disclosure from RIs engaged in oil and gas activities that staff have identified for improvement. It also includes data, analysis and discussion concerning oil and gas reserves estimates required to be disclosed under section 2.1 of NI 51-101 and resources other than reserves optionally disclosed under Part 7 of Form 51-101F1. The content is based primarily on reviews of 2024 disclosure attributed to oil and gas activities that were mostly conducted in 2023 (accounting for variability in financial year-end dates).

The Energy Group applies a rigorous review process to assess compliance with oil and gas securities law disclosure requirements. While this process primarily focuses on AB RIs, staff also routinely review disclosure from RIs for which other Canadian jurisdictions are the principal regulator. This is done in an effort to assist these jurisdictions, while also ensuring the ASC is aware of oil and gas-related disclosure across the CSA.

RIs engaged in oil and gas activities are subject to NI 51-101, including its general standards and specific annual requirements. In addition, they are also subject to the applicable requirements and prohibitions of Canadian securities legislation more broadly.

2.1.1 Types of reviews

The Energy Group conducts or participates in a variety of types of reviews. The type of review generally establishes what specific disclosure and support material will be incorporated into the review. Disclosure reviewed may incorporate disclosure required by section 2.1 of NI 51-101 (including the statement of the reserves data and other information specified in Form 51-101F1 and related reports), management discussion and analyses (MD&A), press releases, prospectuses, investor presentations, and websites, along with material used to prepare disclosure, such as evaluations of oil and gas reserves and resources other than reserves, other technical reports and documentation.

Examples of reviews we conduct or otherwise participate in are noted below, along with some associated details:

- **Screening**
  - **Oil and gas**
    - Encompasses the required annual oil and gas filings, which comprise the statement of the reserves data and other information specified in Form 51-101F1 and reports in accordance with Form 51-101F2 and Form 51-101F3.
    - Findings may result in the initiation of a compliance, technical or continuous disclosure review (see below).
  - **Press release**
    - Involves the press release itself being screened and incorporates other disclosure, as needed.
    - Findings may result in the initiation of a press release review (see below).

- **Environmental sustainability monitoring**
  - Includes disclosure concerning GHG emissions and other sustainability matters.
  - Also involves tracking of certain baseline information such as:
    - Whether or not certain sustainability disclosure has been made.
    - The timing and frequency of such disclosure.
    - How the disclosure was prepared.
    - The method of disclosure.
    - Whether or not specific information has been disclosed.
  - Findings may result in the initiation of a continuous disclosure review (see below).
- **Cease trade order revocation**
  - Incorporates oil and gas and other energy industry-related disclosure contained in required and voluntary filings, as needed.
- **Compliance**
  - Initiated as a result of the identification of a specific issue during a different review type with a limited scope or via files referred from within the ASC or from another CSA jurisdiction.
  - Includes energy industry-related and other disclosure, as needed.
  - Depending on findings, these may result in the initiation of a technical or continuous disclosure review.
- **Continuous disclosure**
  - Encompasses all energy industry-related and other disclosure contained in required and voluntary filings, as needed.
  - Findings may result in the initiation of a technical or compliance review.
- **Notice of intent to be qualified to file a short-form prospectus**
  - Incorporates energy industry-related and other disclosure, as needed.
- **Press release**
  - More in-depth than a press release screening review.
  - Includes other disclosure, as needed.
  - Typically results in a letter sent to the RI.
  - Findings may result in the initiation of a compliance, technical or continuous disclosure review.
- **Prospectus (short-form, long-form and shelf)**
  - Involves the prospectus, along with related evaluations of oil and gas reserves and resources other than reserves, other technical reports and various technical documentation for long-form prospectuses (e.g., initial public offerings), and as needed for short-form and shelf prospectuses.
  - Incorporates other disclosure, as needed.
  - Findings may result in the initiation of a compliance review.

- **Technical**
  - Focuses on evaluations of oil and gas reserves and resources other than reserves, other technical reports and various technical documentation.
  - Incorporates other disclosure, as needed.
  - These may result in the initiation of a continuous disclosure review.

Outcomes of reviews will vary depending on the specific circumstances. Outcomes include:

- No action necessary.
- Advisory comment(s) intended to improve future disclosure.
- Identification of deficiencies, including errors and omissions that may be misleading, with results that include one or more of the following:
  - requirement to correct and refile
  - issuer placed in default
  - management cease trade order
  - cease trade order
  - referral to the ASC Enforcement division

2.1.2 Disclosure expectations

RIs are required to ensure that their disclosure is not misleading and does not omit required facts or facts necessary to make a statement not misleading,[1] focuses on material information, such as that which would be likely to influence a decision by a reasonable investor to buy, hold or sell its securities,[2] and otherwise complies with securities law disclosure requirements.

RIs that are uncertain whether their disclosure complies with securities laws, including NI 51-101 and its technical standard, the COGE Handbook, should seek the advice of an appropriate professional adviser.

General guidance and examples of misrepresentations and misleading statements are provided in section 2(a)(i)(A) of CSA Staff Notice 51-327 *Revised Guidance on Oil and Gas Disclosure* (**CSA SN 51-327**).

Key areas of disclosure identified by staff for improvement are discussed below. This includes section 2.5 Reserves Reconciliations. Historically, staff have addressed this subject due to a multitude of related issues over the years. While the number of occurrences of any particular issue tends to fluctuate, we maintain this section to help reduce the chance of their recurrence. Therefore, this section is a helpful reference for those who prepare disclosure concerning reserves reconciliations, particularly qualified reserves evaluators and qualified reserves auditors.

[1] No person or company shall make a statement that the person or company knows or reasonably ought to know:
(a) in any material respect and at the time and in the light of the circumstances in which it is made,
(i) is misleading or untrue, or
(ii) does not state a fact that is required to be stated or that is necessary to make the statement not misleading,

and

(b) would reasonably be expected to have a significant effect on the market price or value of a security, a derivative or an underlying interest of a derivative. (Section 92(4.1) *Securities Act* (Alberta))

[2] Section 1.4(2) of NI 51-101

2.2 THE TERMS "GROSS" AND "NET" WITH RESPECT TO PRODUCTION AND RESERVES

Concern: Incorrect or inadequate disclosure of gross and net production volumes and reserves estimates.

Staff have observed disclosure of production and reserves that:

- Uses the terms "gross" and "net" in a manner that does not correspond with their definitions per CSA Staff Notice 51-324 *Revised Glossary to NI 51-101 Standards of Disclosure for Oil and Gas Activities* (**CSA SN 51-324**) and does not clarify the intended meaning of those terms being used;
- Does not clarify whether the disclosure actually represents gross or net production or reserves.

Disclosing production or reserves in a manner that does not make clear whether it represents gross or net production volumes or reserves estimates may be misleading. This is because an RI must be clear what its ownership is in any production or reserves that it discloses. The difference in magnitude between gross and net production or reserves may result in such disclosure being materially misleading.

CSA SN 51-324 defines gross as:

> (a) In relation to a *reporting issuer's* interest in *production* or *reserves*, its "company *gross reserves*", which are the *reporting issuer's* working interest (operating or non-operating) share before deduction of royalties and without including any royalty interests of the *reporting issuer*.
> (b) In relation to wells, the total number of wells in which a *reporting issuer* has an interest.
> (c) In relation to *properties*, the total area of *properties* in which a *reporting issuer* has an interest.

Paragraph (a) defines "gross" in relation to an RI's interest in production or reserves as being its **working interest share** before deduction of royalty obligations. This may be referred to as its "company gross production" or "company gross reserves" or simply "gross production" or "gross reserves."

CSA SN 51-324 defines "net" as:

> (a) In relation to a r*eporting issuer's* interest in *production* or *reserves*, the *reporting issuer's* working interest (operating or non-operating) share after deduction of royalty obligations, plus the *reporting issuer's* royalty interests in *production* or *reserves*.
> (b) In relation to a *reporting issuer's* interest in wells, the number of wells obtained by aggregating the *reporting issuer's* working interest in each of its *gross* wells.
> (c) In relation to a *reporting issuer's* interest in a *property*, the total area in which the *reporting issuer* has an interest multiplied by the working interest owned by the *reporting issuer*.

Paragraph (a) defines net in relation to an RI's interest in production or reserves as being its **working interest share** after deduction of royalty obligations. This may be referred to as its "company net production" or "company net reserves" or simply "net production" or "net reserves."

The COGE Handbook generally refers to company gross and company net when discussing production and reserves. For example, per section 1.4.4.2.2:

> **Company Gross Reserves** are defined as the working interest share of Reserves prior to the deduction of interests owned by others (burdens). […]

> **Company Net Reserves** are defined as the working, net carried, and royalty interest Reserves after deduction of all applicable burdens. […]

Beyond addition of the "company" prefix to gross reserves and net reserves, these definitions do not vary materially from their corresponding terms in CSA SN 51-327.

However, the COGE Handbook does differentiate company gross reserves from gross reserves. Section 3.2.1 of the COGE Handbook states:

> **Gross Reserves:** These are the total Reserves to be recovered from a property/entity.

So, gross reserves refers to the total reserves attributed to a property or entity without accounting for working interests, before deduction of royalties and without including any royalty interests.

The term "lease gross" is often used to refer to total production or total reserves without regard to working interests and without adjustments for royalties. For NI 51-101 disclosure, it is generally preferable to refer to lease gross production and lease gross reserves to reduce the possibility of causing confusion in case an RI endeavours to disclose total production or total reserves, respectively, attributed to a property or entity, unadjusted for its particular working interest. If so done, an RI should also provide additional information that makes clear what it means by the term it uses and avoid implying that it has ownership in production or reserves that it does not. It is strongly suggested that it not prominently feature, otherwise draw attention to or discuss production or reserves that it does not own in a manner that is not balanced, accurate, relevant and reliable, as doing so has the potential to be misleading.

EXAMPLE OF DISCLOSURE THAT *DID NOT* MEET OUR EXPECTATIONS

Current production is 800 bbl/d of heavy crude oil with an expectation of a Q3 exit production rate of 925 bbl/d of heavy crude oil.

Staff's comments on this disclosure:

It does not specify whether the current and forecast production rates are net or gross or even to whom they are attributed. For that reason, it is not clear whether the production rates represent the company's working interest share. Because the disclosure does not specify whether the production rates are net or gross, it is also not clear if they are before or after the deduction of royalties.

EXAMPLE OF DISCLOSURE THAT *DID* MEET OUR EXPECTATIONS

The Company's current net production is 800 bbl/d of heavy crude oil with an expectation that it will exit Q3 at a net production rate of 925 bbl/d of heavy crude oil.

Staff's comments on this disclosure:

It specifies that the current and forecast production rates are net and are attributed to the company making the disclosure. If the company is using the term "net" as defined in CSA SN 51-101, the production rates represent its working interest share and it is after deduction of royalties. If the company is not using the term "net" as defined in CSA SN 51-324, its disclosure must make clear what it means by its use of the term "net" or else it may be considered misleading.

EXAMPLE OF DISCLOSURE THAT *DID NOT* MEET OUR EXPECTATIONS

Total proved heavy oil reserves were 1,000,000 bbl at December 31, 2023.

Staff's comments on this disclosure:

It does not specify whether the reserves are net or gross or even to whom they are attributed. For that reason, it is not clear whether the reserves represent the company's working interest share. Because the disclosure does not specify whether the reserves are net or gross, it is also not clear if they are before or after the deduction of royalties.

EXAMPLE OF DISCLOSURE THAT *DID* MEET OUR EXPECTATIONS

The Company's gross total proved heavy oil reserves were 1,000,000 bbl at December 31, 2023.

Staff's comments on this disclosure:

It specifies that the reserves are gross and are attributed to the company making the disclosure. If the company is using the term "gross" as defined in CSA SN 51-101, the reserves represent its working interest share and it is before deduction of royalties and without including any of the company's royalty interests. If the company is not using the term "gross" as defined in CSA SN 51-324, its disclosure must make clear what it means by its use of the term "gross" or else it may be considered misleading.

2.3 DISCLOSURE OF LESS THAN ALL RESERVES IN FORM 51-101F1

Concern: Disclosure of less than all reserves in Form 51-101F1 or more simply, not disclosing certain reserves that it has ownership in.

Staff have identified instances whereby RIs have accounted for less than all of their reserves in their disclosure under Part 2 of Form 51-101F1, which requires disclosure of reserves data. These situations have frequently been caused by RIs not having certain overriding royalty interests evaluated or audited by their independent qualified reserves evaluator or independent qualified reserves auditor. This results in reserves not being attributed that

otherwise would be and consequently their exclusion from required disclosure per Part 2 of Form 51-101F1. This is most prevalent with smaller RIs, including those that file a long-form prospectus, which requires. annual oil and gas disclosure under Part 2 of NI 51-101.

Reasons provided to staff by RIs that have not disclosed required overriding royalty interests information include that they were not aware that this disclosure was required by NI 51-101 and that they did not consider the interests material. An interest in an oil and gas overriding royalty is considered an oil and gas ownership interest for the purposes of NI 51-101. If it is the only oil and gas interest owned by the RI, it will likely be considered material. If the interest is material, it is required to be accounted for in an RI's disclosure under Part 2 of NI 51-101.

If an RI discloses less than all reserves in its Form 51-101F1, it will typically also fail to meet other disclosure requirements. For example, the annual reconciliation of changes in estimates of gross proved reserves (in total), gross probable reserves (in total) and gross proved plus probable reserves (in total), required by item 4.1 of Form 51-101F1, will not be correct. Disclosure concerning undeveloped reserves per item 5.1 may not meet requirements, while disclosure pertaining to properties and wells, production history and production estimates, per Part 6, may also not meet requirements.

Per section 1.3 of NI 51-101, the Instrument only applies to RIs engaged directly or indirectly in oil and gas activities. Furthermore, section 1.4 states it only applies to information that is material to an RI. Information is considered material if it would be likely to influence a decision by a reasonable investor to buy, hold, or sell a security of the RI.

An RI that has ownership in an oil and gas overriding royalty is considered to be engaged in oil and gas activities. Per section 1.1 of NI 51-101, oil and gas activities includes the following:

> (a) searching for a *product type* in its natural location;
>
> (b) acquiring *property* rights or a *property* for the purpose of exploring for or removing *product types* from their natural locations;
>
> (c) any activity necessary to remove *product types* from their natural locations, including construction, drilling, mining and production and the acquisition, construction, installation and maintenance of *field* gathering and storage systems including treating, *field* processing and *field* storage; […]

Section 1.3 of 51-101CP makes clear that the definition of oil and gas activities is intended to be broad.

The term "property," used in the definition of oil and gas activities, is defined in CSA SN 51-324 to include:

> (a) fee ownership or a lease, concession, agreement, permit, licence or other interest representing the right to extract *oil* or *gas* subject to such terms as may be imposed by the conveyance of that interest;
>
> (b) royalty interests, *production* payments payable in *oil* or *gas,* and other non-operating interests in *properties* operated by others; […]

Oil and gas activities includes the ownership of properties and royalty interests are a type of property. Therefore, an RI that has an oil and gas royalty interest is engaged in oil and gas activities and subject to NI 51-101.

Specific disclosure requirements related to oil and gas ownership interests are found in Form 51-101F1. Part 2, for example, addresses the disclosure of reserves data. Item 2.1.1 requires the disclosure of gross and net reserves volumes by country and in the aggregate, estimated using forecast prices and costs for each product type, by the following specified reserves categories:

> (a) *proved developed producing reserves*;
> (b) *proved developed non-producing reserves*;
> (c) *proved undeveloped reserves*;
> (d) *proved reserves* (in total);
> (e) *probable reserves* (in total);
> (f) *proved* plus *probable reserves* (in total); and
> (g) if the *reporting issuer* discloses an estimate of *possible reserves* in the statement:
> (i) *possible reserves* (in total); and
> (ii) *proved* plus *probable* plus *possible reserves* (in total).

Item 2.1.2 requires in part, disclosure of the net present values of future net revenue attributed to the reserves volumes disclosed per the specified categories in item 2.1.1. Item 2.1.3 requires in turn, disclosure of specified elements of future net revenue attributed to these reserves categories.

The specific ownership interests in reserves data to be accounted for in item 2.1 of Form 51-101F1 are clarified in Instruction (1) of item 2.1. This specifies that an RI is to disclose all of the reserves in which it has a direct or indirect ownership, working interest or royalty interest.

The farming out of mineral rights will often result in lessees receiving the right to compensation in the form of an overriding royalty, in return. This may be in the form of a fixed percentage of gross production or according to a sliding scale schedule. If reserves can be attributed to an overriding royalty and if they are material, they are required to be disclosed per item 2.1 of Form 51-101F1. Related disclosure requirements per Form 51-101F1 may also apply.

2.4 CEASING TO BE ENGAGED IN OIL AND GAS ACTIVITIES

Concern: Incorrect disclosure concerning RIs that have ceased to be engaged in oil and gas activities.

Staff have identified inadequate or erroneous disclosure concerning RIs that have ceased to be engaged in oil and gas activities, including:

- Failure to file the required notice with the securities regulatory authority declaring the RI is no longer engaged in oil and gas activities;
- Failure to file the notice within the required 10 days;
- Filing a notice that contains material errors and deficiencies, including the:
  - Absence of required signatures;
  - Presence of signatures from individuals that do not satisfy the requirements to sign;
  - Missing or incorrect execution dates;
- Filing the notice in circumstances when it should not have been filed;
- Failure to update other disclosure to reflect that the RI is no longer engaged in oil and gas activities, which suggests that it intends to remain engaged in oil and gas activities when it does not.

These issues are most often associated with small RIs that are not principally regulated by the ASC. In some cases, this incorrect disclosure may be misleading, particularly in situations where either investors are not informed in a timely manner that an RI has changed its business focus and is no longer engaged in oil and gas activities, or conversely, in situations where an RI remains engaged in oil and gas activities but has informed investors that it is not and has filed the notice in error.

An RI that ceases to be engaged in oil and gas activities is required by section 6.2 of NI 51-101 to file a notice prepared in accordance with Form 51-101F5 *Notice of Ceasing to Engage in Oil and Gas Activities*, no later than 10 days after it ceased to be engaged, directly or indirectly, in oil and gas activities.

Section 2.3 of the Report discusses oil and gas activities and makes clear that the term's definition is intentionally broad. An RI that does not have reserves, but satisfies at least one of the following, will likely be considered by staff to be engaged in oil and gas activities and therefore subject to NI 51-101, although its specific disclosure obligations may vary:

- Has resources other than reserves;
- Has a direct or indirect ownership, working or royalty interest in any oil and gas property, including prospects and unproved properties, or is seeking to acquire such an interest;
- Is involved in the search for a product type in its natural location;
- Makes or receives production payments; or
- Has an agreement with a foreign government or authority in which it participates in the operation of properties or otherwise serves as the producer of its reserves.

An RI that sells its major properties, but retains undeveloped oil and gas leases will be considered to still be engaged in oil and gas activities. An RI that sells its working interests, but retains a gross overriding royalty, even if it is not receiving payments, will also be considered to still be engaged in oil and gas activities. If an RI files an executed Form 51-101F5 in a situation where it should not have, the RI remains subject to NI 51-101, including its annual oil and gas filing obligations per Part 2 of NI 51-101.

The Form 51-101F5 is required to be executed by four individuals, comprising the chief executive officer, an officer other than the chief executive officer and two directors. As discussed in section 2.9 of 51-101CP, the term "chief executive officer" refers to the individual who has the responsibilities normally associated with this position or who acts in a similar capacity. This determination should be made irrespective of an individual's corporate title.

The notice must also be correctly dated and filed within 10 days.

If the notice is not executed, dated and filed as required, it will generally be considered to be deficient.

Failure to file the Form 51-101F5 on time and when required to do so, may make an RI's business activities and intentions unclear and be potentially misleading. If an RI files a properly executed Form 51-101F5, yet fails to update its other disclosure, including its forward-looking information to make clear that it is no longer engaged in oil and gas activities, its disclosure may also be misleading. This includes disclosure contained in websites, investor presentations, annual information forms, MD&A, risk factors and press releases. RIs are also required to maintain accurate and current corporate information on SEDAR+. This includes their industry classification referred to as its North American Industry Classification System code (NAICS code).

2.5 RESERVES RECONCILIATIONS

Concern: Incorrect disclosure regarding item 4.1 of Form 51-101F1, which requires disclosure of an annual reserves reconciliation.

Staff have identified a variety of errors and deficiencies concerning reserves reconciliations in recent years that has led to incorrect disclosure. The following are the most common of these errors and deficiencies:

- Opening balances failing to match closing balances from the previous financial year, which they should;
- Negative volumes occurring where they should not;
- Erroneous and potentially misleading uses of reserve change categories, particularly "technical revisions";
- Using reserve change categories that are not specified by NI 51-101 and therefore must not be used;
- Erroneous reserves changes due to the use of incorrect dates for acquisitions and dispositions;
- Incorrect production volumes;
- Absence of required explanations regarding disclosure in each reserve change category;
- Incorrect closing balances for a given reserve change category due to erroneous mathematical summation, including in situations where optional disclosure of barrels of oil equivalent (**BOE**) occurs;
- Missing or inconsistent units of measure.

Incorrect reserves reconciliation disclosure is a recurring concern, with errors and deficiencies identified in the disclosure of RIs of all sizes. Some deficiencies are easy to identify, while others are only identified through detailed analyses of disclosure and scrutiny of associated reserves evaluations. In some cases, this incorrect disclosure may be misleading, such as the erroneous use of reserve change categories, particularly "technical revisions," which is discussed below.

This section has historically been included as a helpful reference for those involved in the preparation and disclosure of reserves reconciliations. Reserves reconciliations are included in evaluations of oil and gas reserves that are prepared by qualified reserves evaluators for the purposes of disclosure under section 2.1 of NI 51-101. Both NI 51-101 and the COGE Handbook provide information concerning their preparation. It is imperative that those involved in the preparation and disclosure of reserves reconciliations understand the associated requirements to avoid future disclosure issues.

Item 4.1 of Form 51-101F1 requires disclosure of an annual reconciliation of changes in estimates of gross proved reserves (in total), gross probable reserves (in total), and gross proved plus probable reserves (in total). This disclosure is required by country, product type specified in item 4.1.2(b) and reserve change category specified in item 4.1.2(c), and instruction (4) of item 4.1. In addition, item 4.1.2(c) requires an explanation concerning disclosure that occurs in each reserve change category.

Product types are specified in item 4.1.2(b) as:

> (i) *bitumen*;
> (ii) *coal bed methane*;
> (iii) *conventional natural gas*;
> (iv) *gas hydrates*;
> (v) *heavy crude oil*;
> (vi) *light crude oil* and *medium crude oil* combined;
> (vii) *natural gas liquids*;
> (viii) *shale gas*;
> (ix) *synthetic crude oil*;
> (x) *synthetic gas*;
> (xi) *tight oil*;

Substances such as oil, condensate, liquids, gas, natural gas, solution gas, associated gas, non-associated gas, sulphur and helium are not "product types" within the meaning of NI 51-101, as they are not specified in item 4.1.2(b).

Reserve change categories specified in item 4.1.2(c) are:

> (i) extensions and improved recovery;
> (ii) technical revisions;
> (iii) discoveries;
> (iv) acquisitions;
> (v) dispositions;
> (vi) economic factors;
> (vii) *production*.

Instruction (4) of item 4.1 requires that reserves changes attributed to infill drilling either be included in reserve change category "extensions and improved recovery" or in a separate reserve change category labelled "infill drilling." The COGE Handbook describes infill drilling as drilling that occurs within a known accumulation. Categories not specified in item 4.1.2(c) or instruction (4) are not reserve change categories and must not be used.

The reconciliation compares reserves data at the "effective date" of the most recent financial year (the financial year for which the disclosure is being prepared), with the corresponding estimates at the last day of the preceding financial year, which is its closing balance. This closing balance serves as the current year's "opening balance." The "closing balance" for the current year is the sum of the changes during the current year added to its opening balance.

Effective date is defined in section 1.1 of NI 51-101 as:

> [T]he date as at which, or for the period ended on which, the information is provided;

Additional information concerning terminology and preparation of reserves reconciliations is contained in section 2.7(6) of 51-101CP and section 4.6.2 of the COGE Handbook. However, please note that for the purposes of complying with Alberta securities laws, in the event of a conflict between the COGE Handbook and NI 51-101, the Instrument takes precedence.

Staff note the following common disclosure errors and deficiencies with respect to the reserves reconciliation required by item 4.1 of Form 51-101F1, along with corrective information and examples.

- **Reserve change categories extensions and improved recovery, infill drilling and discoveries** — The incorrect recording of negative volumes to these categories. Once a volume has been assigned, subsequent changes should be identified either as "technical revisions" or "economic factors" and accounted for in the respective reserve change categories, **except as noted in section 4.6.2.4 of the COGE Handbook**.

- **Reserve change category technical revisions** — It is incorrect to record negative volumes that exceed 100 per cent of the opening balance. It is also incorrect to attribute reserves changes as technical revisions if they should be attributed to a different reserve change category.

  Technical revisions are expected to show changes in pre-existing reserves estimates in respect of carried-forward properties over the period of the reconciliation and are the result of new technical information. They are not the result of capital expenditures.[3]

  It is technically impossible to remove a volume that is in excess of the associated opening balance through a technical revision. Therefore, a negative technical revision that exceeds 100 per cent of the opening balance is incorrect.

  It is not appropriate to account for changes in reserves estimates that result from capital expenditures as technical revisions.[4] Doing so may result in misleading disclosure. This can be the case even if the RI acknowledges in its disclosure that technical revisions have been incorrectly recorded. Staff will continue efforts to identify misattributed technical revisions.

- **Reserve change category acquisitions** — We note RIs using incorrect dates to account for reserves additions that occur through acquisitions. The correct date to reconcile changes in reserves acquired during the most recent financial year is the **effective date** of the most recent financial year.

  RIs are required to use reserves estimates at the effective date — not the acquisition date – plus any production since the acquisition date. This production must also be included in reserve change category "production." If there have been changes in the reserves estimates between the acquisition date and the effective date (other than due to production), the RI should explain this in a footnote to the reconciliation table.[5]

  a) **Acquisition date** — The term "acquisition date" is not defined nor clarified in NI 51-101 and its related forms, 51-101CP or Staff Notices. Staff consider it to mean the date at which the RI has attained a direct or indirect ownership, working or royalty interest in particular reserves. Ownership is discussed in section 1.4.4.2 of the COGE Handbook.

[3] Section 2.7(6)(c) of 51-101CP

[4] Section 2.7(6)(c) of 51-101CP

[5] Section 2.7(6)(c) of 51-101CP

b) **Activities after the acquisition date** — Reserves estimates attributed to activities that have occurred on an acquired property after the acquisition date of the property, yet prior to the effective date of the most recent financial year, must not be included in the reserve change category "acquisitions." They should be accounted for in the appropriate reserve change category.

These activities typically involve the drilling or recompletion of wells and related pursuits. The results of such activities are to be reflected in reserve change categories "extensions and improved recovery," "discoveries" or "infill drilling," as appropriate. They should not be included in the reserve change category "acquisitions," since they occurred subsequent to the acquisition date.

RIs should explain why disclosure has been made in each applicable category. Staff suggest that these explanations occur in conjunction with the explanations required by item 4.1.2(c) of Form 51-101F1, which is discussed below under "Explanations."

In summary, the estimates to be used in the reserve change category "acquisitions" are the sum of:

- The estimates of the reserves data by product type attributed to the acquisition at the effective date of the most recent financial year (the financial year for which the disclosure is being prepared); and
- The production by product type that has occurred from the acquisition, accrued from the date ownership was attained, to the effective date of the most recent financial year.

Although reserves estimates may be evaluated at any point during a particular financial year, reserves are only reconciled for the purposes of item 4.1 as at the last day of the most recent financial year.

Reconciliation steps regarding acquisitions are:

1. **Evaluate** all of the RI's reserves at the effective date of the RI's most recent financial year. Include all properties, wells, etc., owned at the beginning of the most recent financial year and those acquired **during** the most recent financial year.
2. **Determine** the RI's share of the gross production volume, by product type, derived from the acquisition. Include production that has occurred from the acquisition date to the effective date of the most recent financial year.
3. **Add** the results from step 2 to the acquired properties, wells, etc., identified and evaluated in step 1. This exercise is **mechanical** and is not influenced or affected by estimates from any evaluation of the acquisition (commissioned by the RI or any other party) that may have occurred at or around the date that ownership was attained.
4. **Enter** the results from step 3 into the reconciliation table adjacent to the reserve change category "acquisitions," per the appropriate product type and reserves category, be it gross proved reserves (in total), gross probable reserves (in total) or gross proved plus probable reserves (in total).
5. **Assign** to the appropriate reserve change category, reserves estimates originating from activities occurring on the acquired property, wells, etc., subsequent to the acquisition date and prior to the effective date of the most recent financial year (these activities typically involve the drilling or recompletion of wells and related pursuits). It is incorrect to account for these reserves estimates under reserve change category "acquisitions."

- **Reserve change category dispositions** — We see RIs using incorrect dates to account for reserves reductions as a result of dispositions. As discussed in section 4.6.2 of the COGE Handbook, reserves that are disposed of are to be recorded at the "disposition date", which is the date at which the RI's ownership has ceased. Production that has occurred subsequent to the last day of the preceding financial year to the disposition date is accounted for under reserve change category "production."

- **Reserve change category production** — In some cases, RIs disclose volumes that do not match those disclosed under item 6.9.1(a) of Form 51-101F1 for the same country and product type. These volumes should match, unless production from entities that do not have reserves assigned is included. If they do not match, an explanation must be provided. Staff suggest that these explanations occur in conjunction with the previously noted explanations required by item 4.1.2(c) of Form 51-101F1, which is discussed below under "Explanations."

- **Opening balance** — Some RIs fail to disclose volumes for the current year that match the closing balance from the previous financial year for the same country, product type and reserves category. These should match.

- **Closing balance** — Some RIs disclose volumes that do not match those disclosed for the same country, product type and reserves category under item 2.1.1 of Form 51-101F1. These should match.

- **Units of measure** — Some RIs fail to disclose the units of measure in the reconciliation or use inconsistent units of measure. Although no particular unit of measure is specified in Form 51-101F1, switching between units of measure is confusing and may be misleading. Consistency of units is addressed in general instruction (7) of Form 51-101F1, which advises against switching between Imperial units and Système International (SI) units without a compelling reason. If switching does occur, the reason for doing so should be disclosed.

- **Reserve change category usage** — RIs must only use the reserve change categories specified in item 4.1.2(c) or instruction (4) of item 4.1. It is inappropriate for RIs to use other reserve change categories. Although section 4.6.2.2 of the COGE Handbook provides recommended "change categories" (equivalent to "reserve change categories"), not all change categories have equivalent reserve change categories. RIs must use the reserve change categories specified in NI 51-101.

- **Volume summation** — Volumes should correctly sum, but sometimes they do not. The closing balance for each product type for each reserves category must equal the sum of the volumes disclosed in each associated reserve change category. Additionally, the gross proved plus probable reserves (in total) for each product type must equal the sum of the gross proved reserves (in total) and the gross probable reserves (in total).

  Incorrect summation, both vertically and horizontally in the reserves reconciliation may result from mathematical error or incorrect preparation of the reconciliation. The latter will often be associated with technical revisions and the re-categorization of reserves.

  Also, RIs that optionally disclose BOEs as part of their reconciliation must ensure that the conversion is done appropriately and that the constituent values sum correctly.

- **Explanations** — Some RIs fail to provide the required explanations accompanying disclosure in changes in individual reserve change categories. We expect RIs to provide detailed explanations of changes in individual reserve change categories. Item 4.1.2(c) of Form 51-101F1 requires separate identification **and** explanation of disclosure in each reserve change category.

Without an explanation, a change may occur that cannot be easily understood. For example, a large technical revision, an acquisition, or a re-categorization of reserves from probable reserves to proved reserves may have occurred. In the absence of an explanation for the latter, for example, the re-categorization could go unnoticed if the proved plus probable reserves (in total) is unchanged.

EXAMPLE OF DISCLOSURE THAT *DID* MEET OUR EXPECTATIONS

	TOTAL OIL		
	Total proved (Mbbl)	Total probable (Mbbl)	Total proved + probable (Mbbl)
FACTORS			
Opening balance	0	125	**125**
Discoveries	0	0	**0**
Extensions	75	(75)	**0**
Infill drilling	0	0	**0**
Improved recovery	0	0	**0**
Technical revisions	0	0	**0**
Acquisitions	0	0	**0**
Dispositions	0	0	**0**
Economic factors	0	0	**0**
Production	(10)	0	**(10)**
Closing balance	**65**	**50**	**115**

Explanation: The Company assigned probable heavy oil reserves of 125 Mstb to a location on its ABC Property in 2021. In the first quarter of 2022, the location was drilled, tested and put on production and 75 Mstb of proved heavy oil reserves were subsequently assigned. The probable reserves assignment remains unchanged. The production in the reconciliation is attributed to this new well.

Staff's comments on this disclosure:

- *This reserves reconciliation correctly portrays how a re-categorization of reserves from probable to proved is to be prepared and disclosed.*
- *It would be inappropriate for the RI to reconcile the proved reserves as a positive technical revision and the probable reserves as a negative technical revision.*
- *Instead, the proved reserves should be entered as an addition in the reserve change category that the reserves for the probable location were initially attributed, which in this example is reserve change category "Extensions."*
- *The probable reserves component will be entered as a negative change in the original reserve change category that the reserves for the probable location were initially attributed, which in this example is reserve change category "Extensions."*

- *All subsequent changes to the reserves associated with this drilled location will be attributed to reserves change category "Technical Revisions."*
- *The reserves reconciliation correctly adds up both vertically and horizontally.*
- *An explanation accompanies the reserves reconciliation that explains the disclosure in the individual reserve change categories.*
- *The correct reserve change categories are used.*
- *The units of measure are consistent.*

Instruction (5) of item 4.1 of Form 51-101F1 notes that a reconciliation is not required for RIs that became engaged in oil and gas activities after the last day of their preceding financial year. Remember, the opening balance of the reserves reconciliation is equivalent to the associated estimates at the last day of the preceding financial year (the closing balance). If an RI became engaged in oil and gas activities after the last day of their preceding financial year, the opening balance in its reconciliation would be zero, as the RI would not have had reserves at the last day of the preceding financial year and a reconciliation could therefore not be done.

If an RI had reserves at the effective date of the preceding financial year, but an evaluation of these reserves is unavailable, reserves estimates will not be available for the opening balance and a reconciliation cannot practicably be undertaken. In such a situation, a zero opening balance is not appropriate. Instead, the RI must disclose the reason for the absence of the reconciliation.

Additional information concerning preparation of the reserves reconciliation is provided in 51-101CP. For example, section 2.7(6)(a) discusses a scenario in which an RI has reserves at the effective date of its most recent financial year, but had no reserves at the start of that year (at which time the RI was presumably engaged in oil and gas activities). If the added reserves are material to the RI, a reconciliation must be provided. The opening balance will be zero, reflecting the lack of reserves at the start of the financial year. Section 5.10(4) of 51-101CP discusses reserves reconciliations with respect to long-form prospectuses.

2.6 NI 51-101 DISCLOSURE INSIGHTS

We find that NI 51-101 disclosure can provide valuable insights into various oil and gas topics both in respect of individual RIs and collectively for groups of RIs engaged in oil and gas activities. This includes such things as reserves and resources other than reserves, significant economic factors or uncertainties that affect reserves data, costs, important properties and facilities, land expiries, forward contracts, exploration and development activities and production estimates. Our insights into oil and gas reserves, resources other than reserves and production respecting AB RIs are explored in this section.

Analysis of an RI's reserves estimates and their variability over time, can be particularly informative with respect to its specific activities and the quality of its reserves estimates. Instrumental to this analysis is the annual reserves reconciliation required by item 4.1 of Form 51-101F1.

For example, an RI's pursuit of new reservoirs or efforts to expand or increase recoveries from existing reservoirs, can be assessed in part through its disclosure in the reserve change categories "discoveries" and "extensions and improved recovery," respectively. The quality of reserves estimates on the other hand, can be judged using disclosure in the "technical revisions" reserve change category. This information can help determine whether reserves estimates have been meeting the associated certainty levels and hence have been assigned as required in accordance with the COGE Handbook. This process of "reserves validation" is described in section 4.6.1 of the COGE Handbook.

With appropriate sampling and analysis, activities and reserves quality can also be assessed for groups of issuers that report under NI 51-101. Figure 2 presents a series of aggregated reserves reconciliations for AB RIs. These demonstrate changes in grouped and summed estimates of gross proved plus probable reserves (in total), disclosed by reserve change category for the constituent RIs. The information reflects oil and gas activities disclosed in 2024, but having been mostly conducted in 2023 (reflecting variability in financial year-end dates). An RI's contribution to its group reconciliation is based solely on the reserves volumes it has disclosed in each reserve change category. While generalized, a review of the changes that have occurred to volumes between the opening and closing balances for each group of RIs can help assess the overall quality of reserves data disclosed by AB RIs.

The following steps were taken to generate the reconciliations in Figure 2:

1. Quarterly average gross daily production volumes were obtained for each AB RI engaged in oil and gas activities at the end of 2023. Item 6.9 of Form 51-101F1 requires these volumes to be disclosed by country and product type for the most recent financial year. The volumes were summed for each RI and an annual average gross daily production volume for each was determined.

2. The RIs were ranked by their annual average gross daily production volume.

3. The RIs were then categorized into groups referred to as "production groups" based on annual average gross daily production volumes as follows:
   a. "Seniors" are those RIs with >100,000 BOE per day of production (based on a conversion ratio of six thousand cubic feet of gas for one barrel of oil);
   b. "Intermediates" are those RIs with 10,000 to 100,000 BOE per day of production; and
   c. "Juniors" are those RIs with <10,000 BOE per day of production.

4. The RIs ranked highest by their average gross daily production volume were selected from each production group, with 10 senior, 20 intermediate and 40 junior RIs selected. Fifty juniors have historically been selected, but only 40 met the criteria for this analysis.

5. Within each group of selected RIs, volumes disclosed by each RI in each applicable reserve change category specified in item 4.1.2(c) of Form 51-101F1 for gross proved plus probable reserves (in total) were summed. No weighting or adjustment was applied.

6. The per cent change between the opening balance of 2023 (the closing balance of 2022) and the closing balance of 2023 was calculated. Figure 2 illustrates these results by production group. Positive and negative changes fall to the right and left of the opening balance (denoted as "0" per cent), respectively.

Figure 2: 2023 reconciliations of summed gross proved plus probable reserves (in total) for AB RIs, by production group

Figure 2a: Seniors

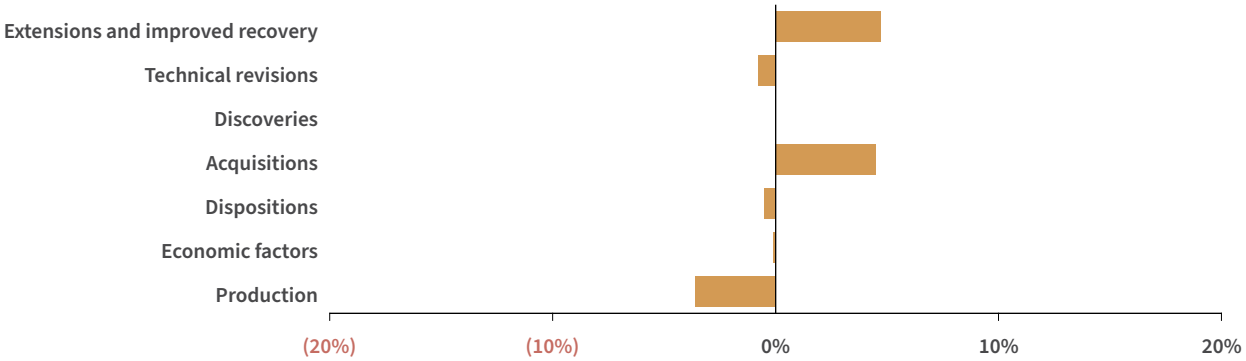


Figure 2b: Intermediates

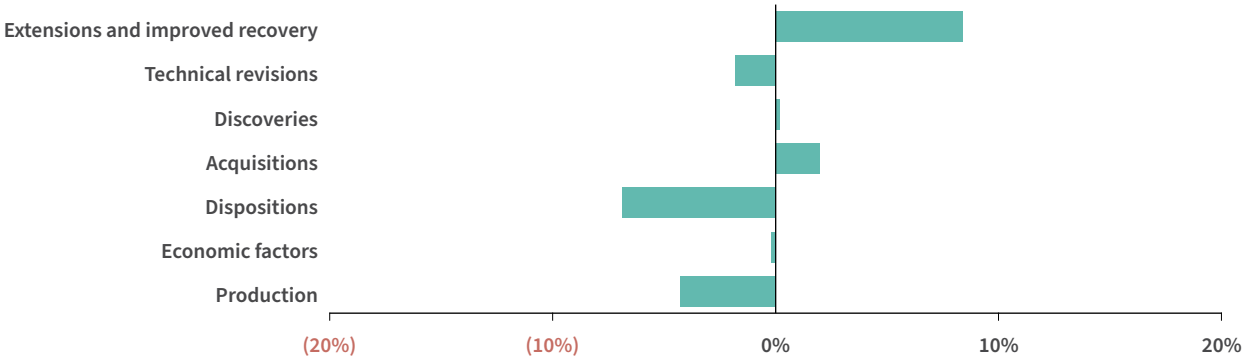
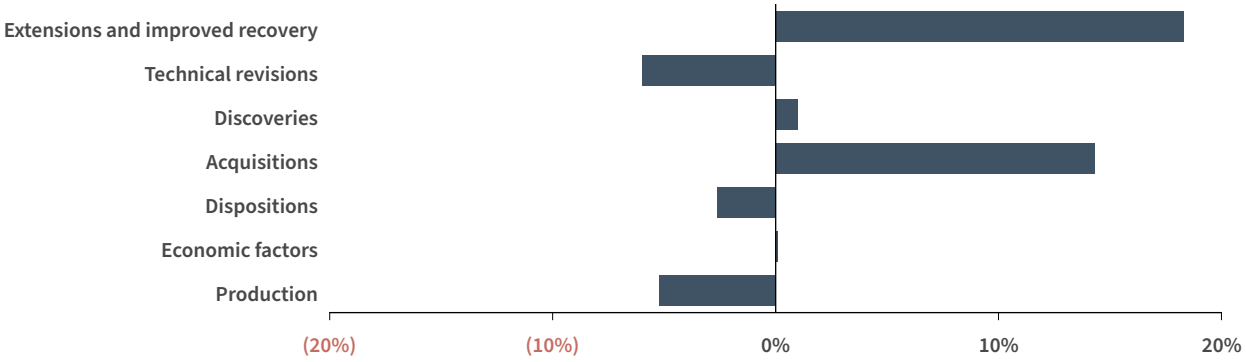


Figure 2c: Juniors



As illustrated in Figure 2, changes in extensions and improved recovery, which result from capital expenditures for step-out drilling in previously discovered reservoirs, and changes associated with the installation of improved recovery schemes, are five per cent for the seniors, eight per cent for the intermediates and 18 per cent for the juniors. All seniors recorded extensions and improved recovery, with one of them accounting for 47 per cent of the group change. All but two of the intermediates recorded extensions and improved recovery, with five accounting for 63 per cent of the total for the production group. Twenty of the juniors recorded extensions and improved recovery, with one accounting for 63 per cent of the group total and three accounting for 78 per cent.

Regarding technical revisions, positive and negative changes are generally attributed to better or poorer reservoir performance, respectively, than initially forecast. For a given entity, proved reserves should be adjusted positively over time, while proved plus probable reserves should remain relatively constant. Technical revisions in Figure 2 concern proved plus probable reserves (in total), which are negative one per cent for the seniors, negative two per cent for the intermediates and negative six per cent for the juniors. Eight of the seniors recorded negative technical revisions. Ten intermediates recorded negative technical revisions, while 20 juniors did, with three accounting for 44 per cent of the group total.

Discoveries have been recorded by one of the seniors, four of the intermediates and two of the juniors, including one junior accounting for 76 per cent of the group change.

Changes in acquisitions are five per cent for the seniors, two per cent for the intermediates and 14 per cent for the juniors. Six seniors, nine intermediates and 13 juniors recorded acquisitions, with three of the seniors accounting for 88 per cent of the group total, one of the intermediates accounting for 59 per cent, and one of the juniors accounting for 53 per cent of the production group's total.

Changes in dispositions are negative one per cent for the seniors, negative seven per cent for the intermediates and negative three per cent for the juniors. Eight seniors, nine intermediates and seven juniors recorded dispositions.

All three production groups had adjustments for economic factors of zero per cent.

Figures 3 through 5 illustrate changes in the reserve change categories extensions and improved recovery, discoveries and technical revisions, respectively, for gross proved plus probable reserves (in total), for each production group in Figure 2, for 2014 to 2023. While generalized, the purpose is to illustrate the multi-year changes in each reserve change category for each production group. This can assist in the identification of disclosure trends and issues concerning proved plus probable reserves (in total).

Figure 3: Summed extensions and improved recovery for gross proved plus probable reserves (in total) for AB RIs, by production group

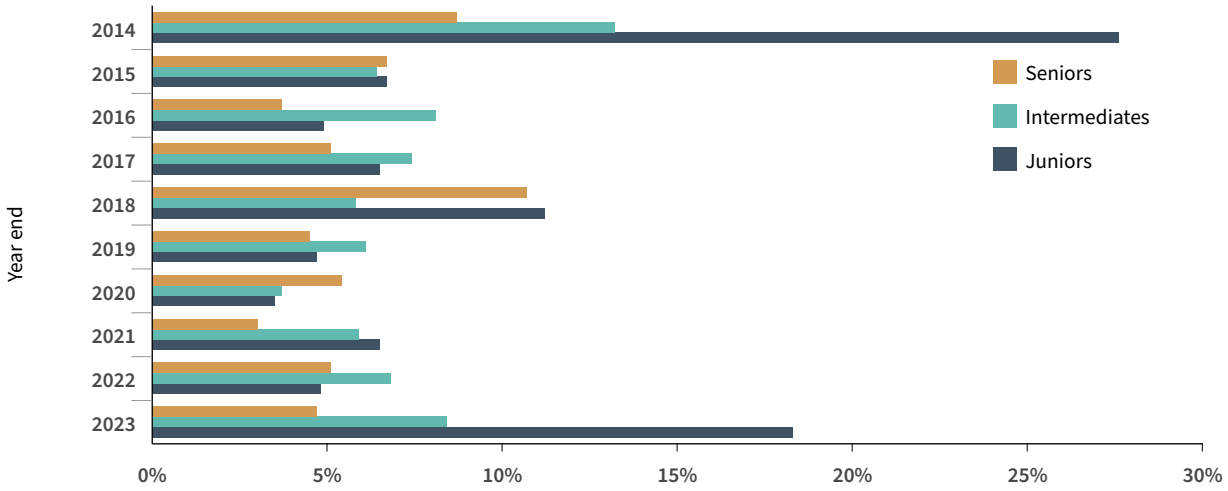


Figure 4 illustrates the average percentage change in discoveries for each production group, for 2014 to 2023. The percentage change for the juniors increased sharply in 2020 and then decreased to more typical historical levels. The percentage change for the intermediates has remained consistent since 2014, while no percentage change was recorded for the seniors for the fifth consecutive year.

Figure 4: Summed discoveries for gross proved plus probable reserves (in total) for AB RIs, by production group

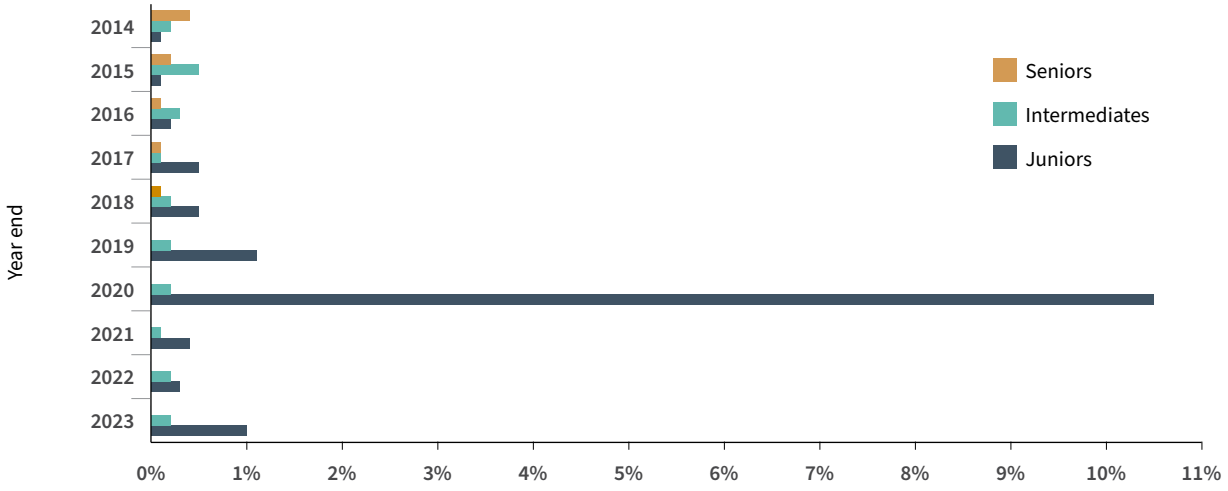


Figure 5 illustrates the average percentage change in technical revisions for each production group, for 2014 to 2023. Although the reserves quality varies for individual RIs within each group, the changes in gross proved plus probable reserves (in total) remained relatively constant until recently for the juniors and intermediates, appearing to approximate the associated certainty levels described in the COGE Handbook. The juniors have recorded negative technical revisions for four consecutive years, while the intermediates have for the last three. The seniors have been negative for all years, although the magnitude has decreased for three consecutive years.

In summary, certainty levels for proved plus probable reserves (in total) are not being met. The ASC will continue to pay particular attention to negative technical revisions in its reviews of disclosure and will continue to address these concerns with RIs.

Figure 5: Summed technical revisions for gross proved plus probable reserves (in total) for AB RIs, by production group

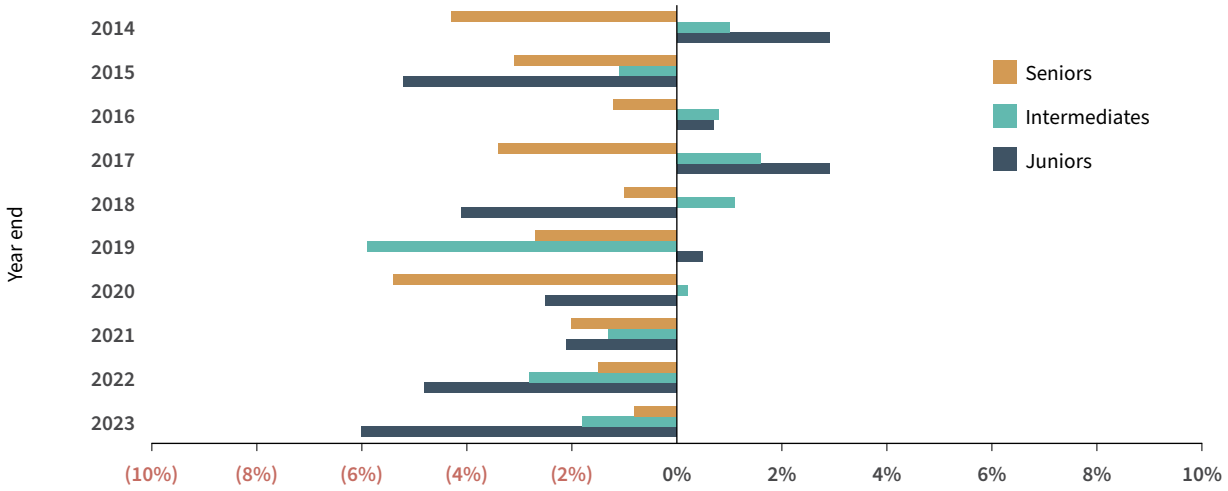
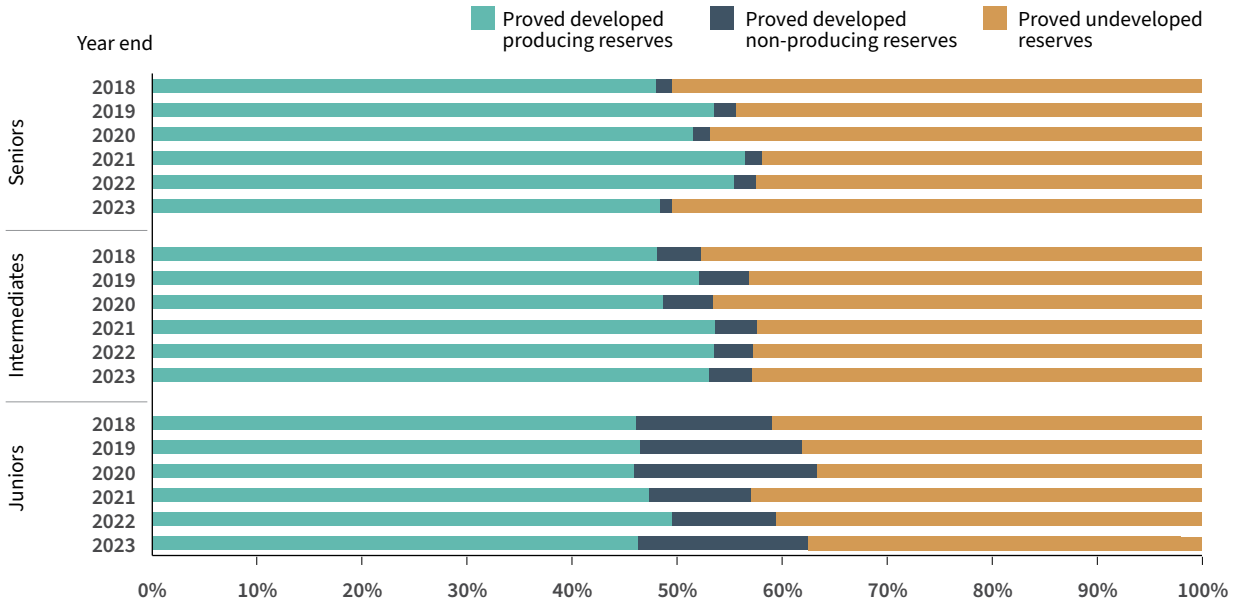


Figure 6 shows the average percentage allocation of gross proved developed producing reserves, proved developed non-producing reserves and proved undeveloped reserves, which together comprise the gross proved reserves (in total) attributed to AB RIs, by production group, for 2018 to 2023. It was constructed using disclosure per item 2.1 of each constituent RI's Form 51-101F1, which requires disclosure by each of these reserves categories. It includes data for 87 RIs that had gross proved reserves (in total) attributed. All RIs within each production group were included, as they are through the remainder of this section. Each RI's contribution is based solely on the volume it has disclosed in each of these reserves categories, with no weighting or adjustment applied.

Figure 6: Average percentage allocation of gross proved reserves (in total) for AB RIs, by production group



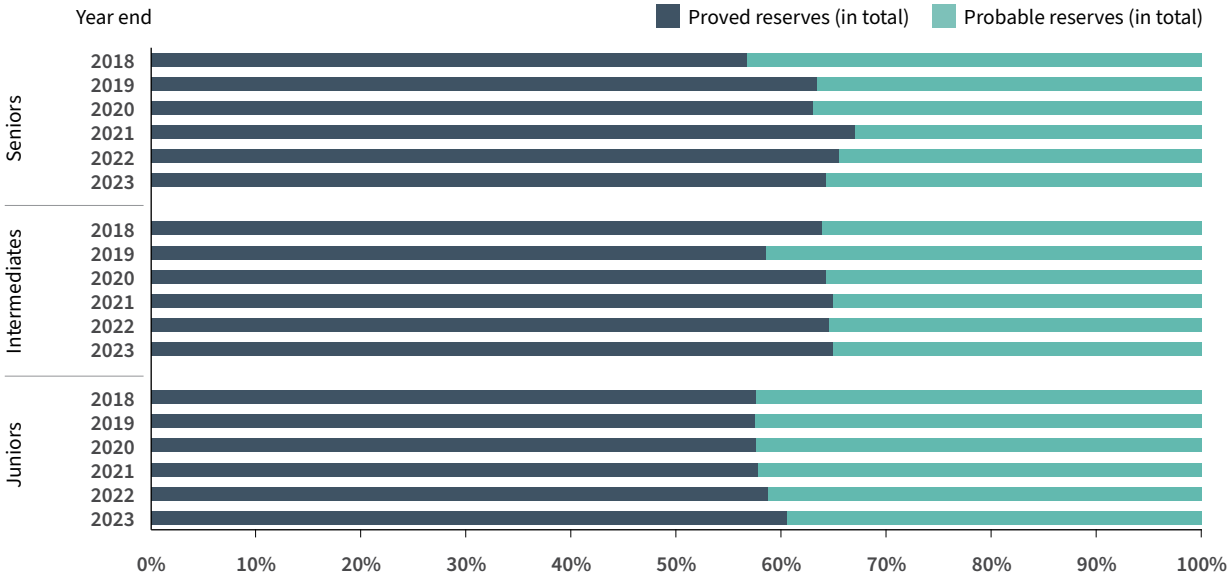
As illustrated, the average percentage of gross proved developed producing reserves is typically highest for the seniors and lowest for the juniors, for each year. The juniors tend to have the lowest average percentage of gross proved undeveloped reserves, but the highest percentage of gross proved developed non-producing reserves, followed by the intermediates.

Proved developed non-producing reserves are reserves that have either not previously been on production or have previously been on production, but are shut in and the date of production resumption is unknown. Junior RIs generally have a larger percentage of non-producing reserves because they tend to be more sensitive to low commodity prices than larger issuers and have relatively inferior access to the capital and services needed to place wells on production.

However, other than in circumstances discussed in section 1.4.7.2.1.8 of the COGE Handbook, reserves should not typically be classified as developed non-producing for an extended period of time, so elevated percentages of proved developed non-producing reserves could be indicative of incorrectly classified reserves. The ASC will continue to monitor proved developed non-producing reserves in its reviews of disclosure and will address these concerns with RIs.

Figure 7 shows the average percentage allocation of gross proved plus probable reserves (in total) to its constituent gross proved reserves (in total) and gross probable reserves (in total), attributed to AB RIs, by production group, for 2018 to 2023. It was constructed using disclosure per item 2.1 of each constituent RI's Form 51-101F1, which requires disclosure by each of these reserves categories. It includes data for 87 RIs that had gross proved plus probable reserves (in total) attributed. Each RI's contribution is based solely on the volume it has disclosed in each of these reserves categories, with no weighting or adjustment applied.

Figure 7: Average percentage allocation of gross proved plus probable reserves (in total) for AB RIs, by production group

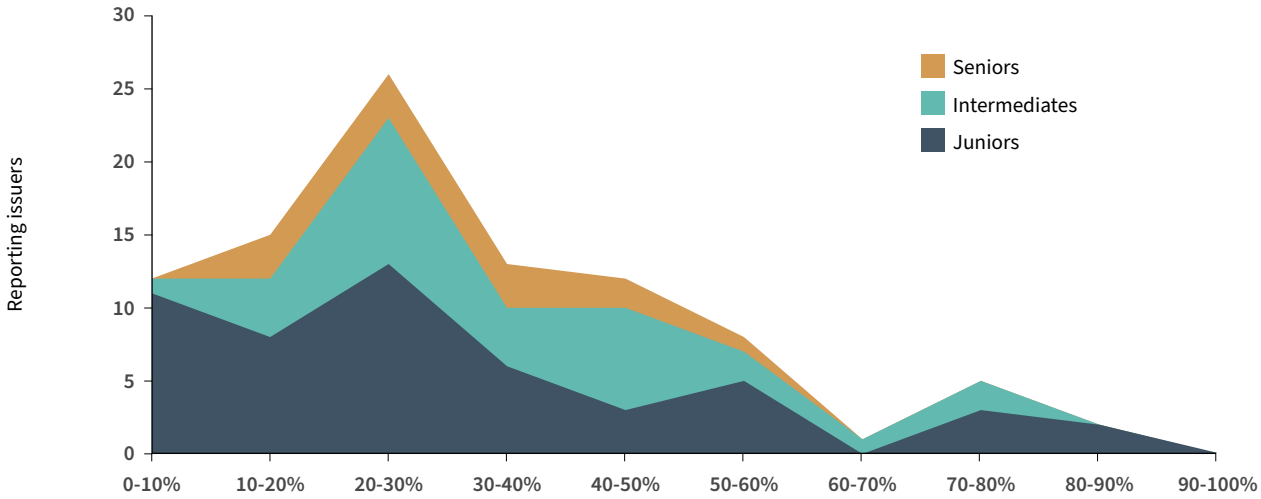


As illustrated, the average gross proved reserves (in total) for the juniors is consistently around 60 per cent. The seniors and intermediates typically have similar allocations of just over 60 per cent. The juniors have the smallest percentage allocation of gross probable reserves (in total).

Figures 8 and 9 show ratios of specified categories of reserves for AB RIs by production group, for 2023. The information was obtained from disclosure per item 2.1 of each constituent RI's Form 51-101F1. Each figure includes data for 87 RIs that had gross proved plus probable reserves (in total) attributed. Each RI's contribution is based solely on the volume it has disclosed in each specified reserves category, with no weighting or adjustment applied.

Per Figure 8, most of the RIs have less than 30 per cent of their gross proved plus probable reserves (in total) attributed to gross proved developed producing reserves.

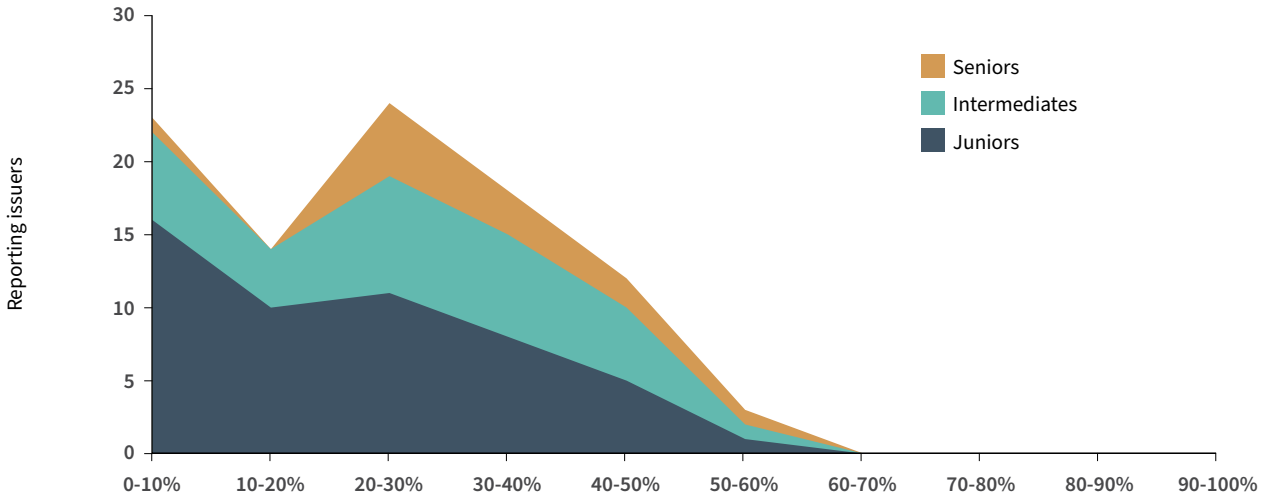
Figure 8: Percentage of gross proved developed producing reserves to gross proved plus probable reserves (in total) for AB RIs, by production group



Higher percentages of gross proved developed producing reserves relative to gross proved reserves (in total) and gross proved plus probable reserves (in total), are indicative of higher relative percentages of reserves that have both a high degree of certainty of recovery and do not require significant additional capital investment for this recovery (production) to occur.

Figure 9 shows that no RI has more than 60 per cent of its gross proved plus probable reserves (in total) attributed to gross proved undeveloped reserves, with all but three RIs under 50 per cent.

Figure 9: Percentage of gross proved undeveloped reserves to gross proved plus probable reserves (in total) for AB RIs, by production group

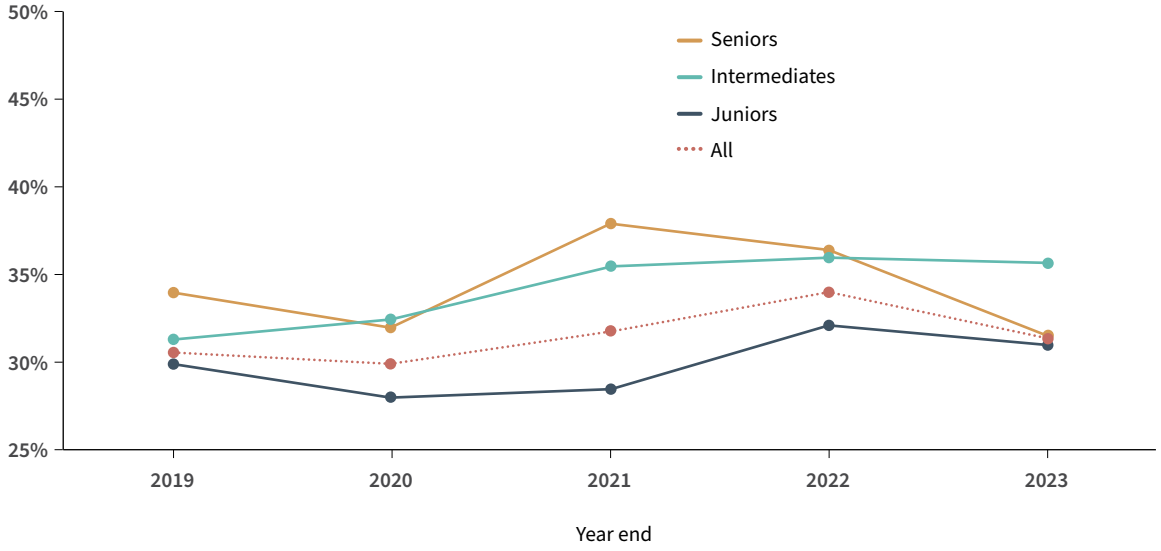


Higher percentages of gross proved undeveloped reserves relative to gross proved reserves (in total) and gross proved plus probable reserves (in total), is indicative of higher relative percentages of reserves that require capital investment for production to occur.

Figures 10 and 11 show average ratios of specified categories of reserves for AB RIs, by production group, for 2019 to 2023. The information was obtained from disclosure per item 2.1 of each constituent RI's Form 51-101F1. Each figure includes data for 87 RIs that had gross proved plus probable reserves (in total) attributed. Each RI's contribution is based solely on the volume it has disclosed in each specified reserves category, with no weighting or adjustment applied.

As shown in Figure 10, the juniors have had the lowest average percentage of gross proved developed producing reserves to gross proved plus probable reserves (in total), with the seniors having the highest, for three out of the five years. The 2023 addition of the two new seniors accounts for the dramatic change to the production group in 2023.

Figure 10: Average percentage of gross proved developed producing reserves to gross proved plus probable reserves (in total) for AB RIs, by production group



As shown in Figure 11, the juniors have had the lowest average percentage of gross proved undeveloped reserves to gross proved plus probable reserves (in total), with the seniors having the highest. Again, the 2023 addition of the two new seniors caused the results for this group to rise significantly.

Figure 11: Average percentage of gross proved undeveloped reserves to gross proved plus probable reserves (in total) for AB RIs, by production group

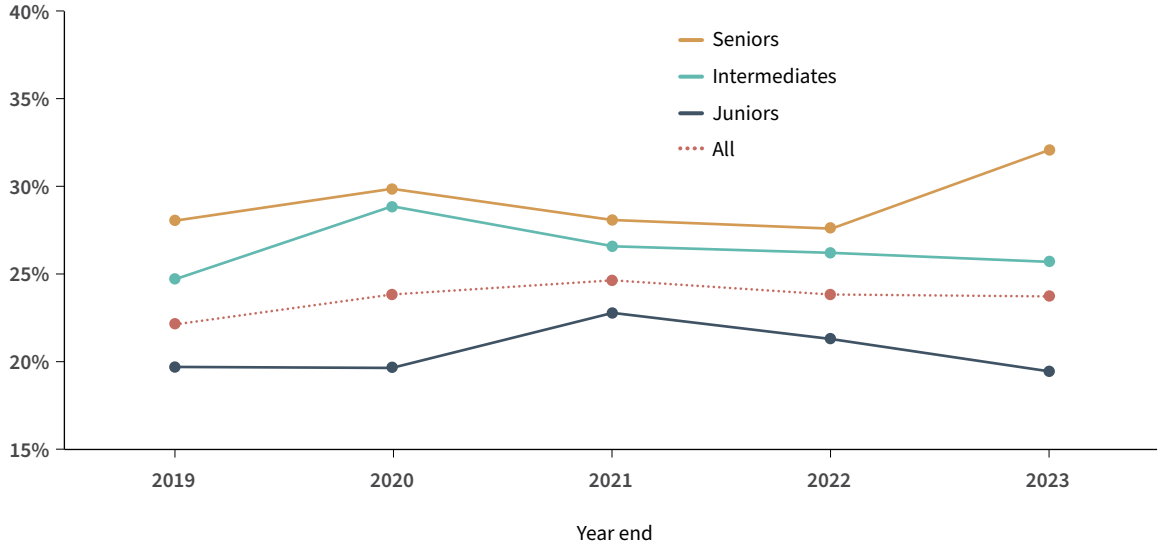
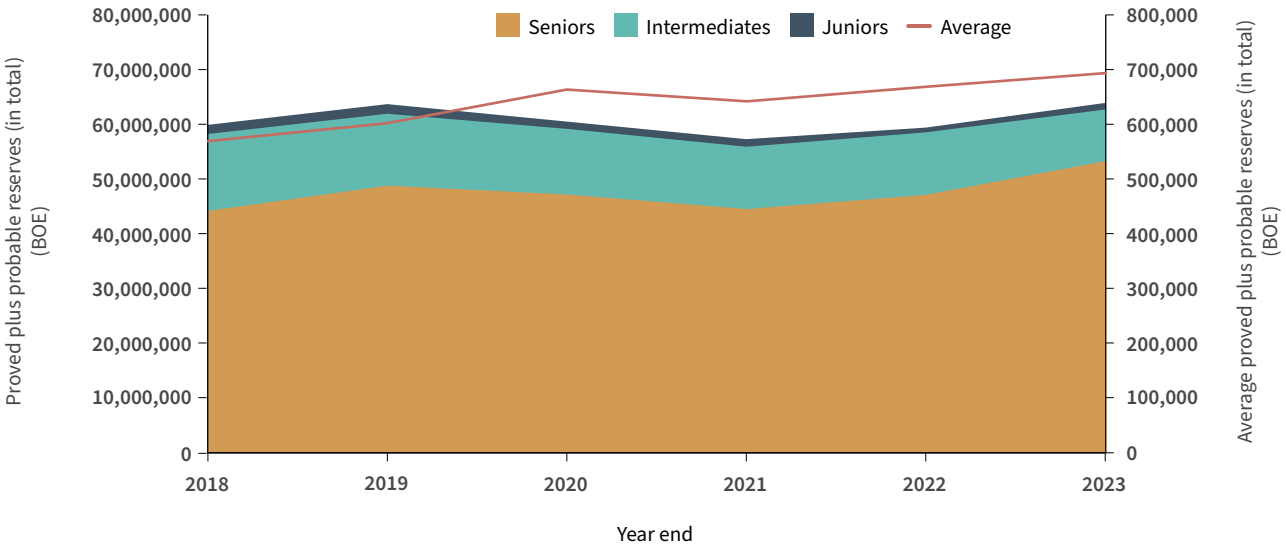


Figure 12 illustrates the summation of gross proved plus probable reserves (in total) for AB RIs, for 2018 to 2023, by production group and the average proved plus probable reserves (in total) per RI. It was constructed using disclosure per item 2.1 of each constituent RI's Form 51-101F1, which requires disclosure per this reserves category. This data was then summed for the RIs in each production group, while an average per RI was determined. It includes data for 87 RIs that had gross proved plus probable reserves (in total) attributed in 2023. Each RI's contribution is based solely on the volume it has disclosed in this reserves category, with no weighting or adjustment applied.

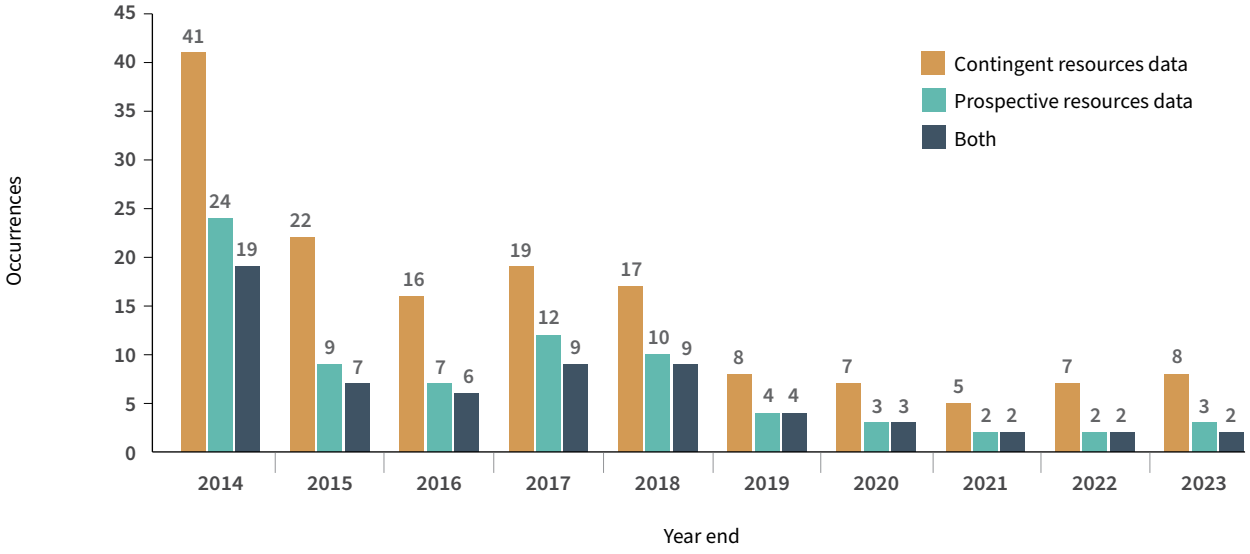
Figure 12: Summed gross proved plus probable reserves (in total) for AB RIs, by production group and average reserves per RI



As shown, gross proved plus probable reserves (in total) for AB RIs in 2023 was slightly above what it was in 2018. The contribution from the juniors has decreased annually since 2019. The average proved plus probable reserves (in total) per RI has increased from 576,000 to 693,000 BOE over the period, a 20 per cent increase, including a three per cent increase in 2023 over 2022. This has occurred in spite of a decrease in the number of AB RIs engaged in oil and gas activities over the period, as discussed in section 5 of the Report.

Figure 13 illustrates the number of occurrences of disclosure of contingent resources data, prospective resources data or both, in the Form 51-101F1 for AB RIs, for 2014 to 2023. It accounts for disclosure of one or both of these by an RI. Disclosure occurrences of contingent resources data increased in 2023 over 2022, as it did in 2022 versus 2021, while occurrences for prospective resources data increased by one in 2023, after being flat for the previous two years.

Figure 13: Disclosure occurrences of contingent resources data, prospective resources data or both, by AB RIs



We understand that investors and RIs have been prioritizing financial performance and return of capital in recent years, over production and reserves growth. This has resulted in less optional disclosure of contingent resources data and prospective resources data, which is typically done to indicate future production and reserves growth opportunities.

Figure 14 illustrates the information shown in Figure 13 by production group.

Figure 14: Disclosure occurrences of contingent resources data, prospective resources data or both, wby AB RIs, by production group

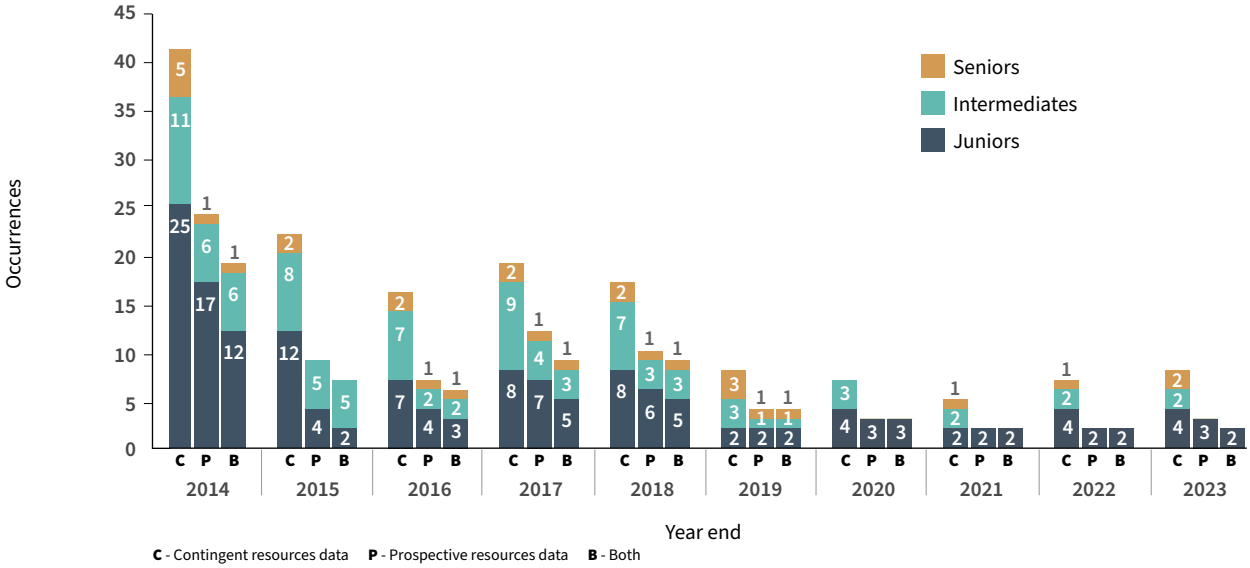


Figure 15 shows the percentage of AB RIs engaged in oil and gas activities that disclosed contingent resources data, prospective resources data or both, in Form 51-101F1, for 2014 to 2023, by production group.

Figure 15: Percentage of AB RIs engaged in oil and gas activities, that disclosed contingent resources data, prospective resources data or both, by production group

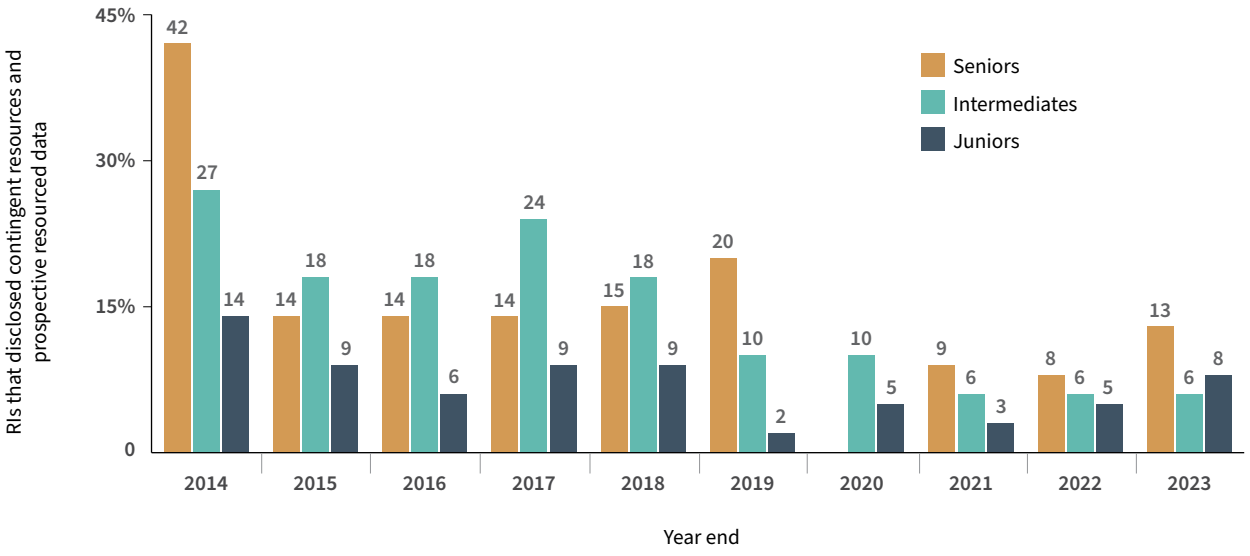


Figure 16 indicates the locations where RIs engaged in oil and gas activities for which the ASC was the principal regulator, for 2018 to 2023, have one or more of reserves data, contingent resources data or prospective resources data attributed. This information was obtained from each RI's Form 51-101F1, specifically section 2.1 for reserves data and generally Part 7 for contingent resources data and prospective resources data.

Figure 16: Locations where AB RIs have reserves data, contingent resources data or prospective resources data attributed

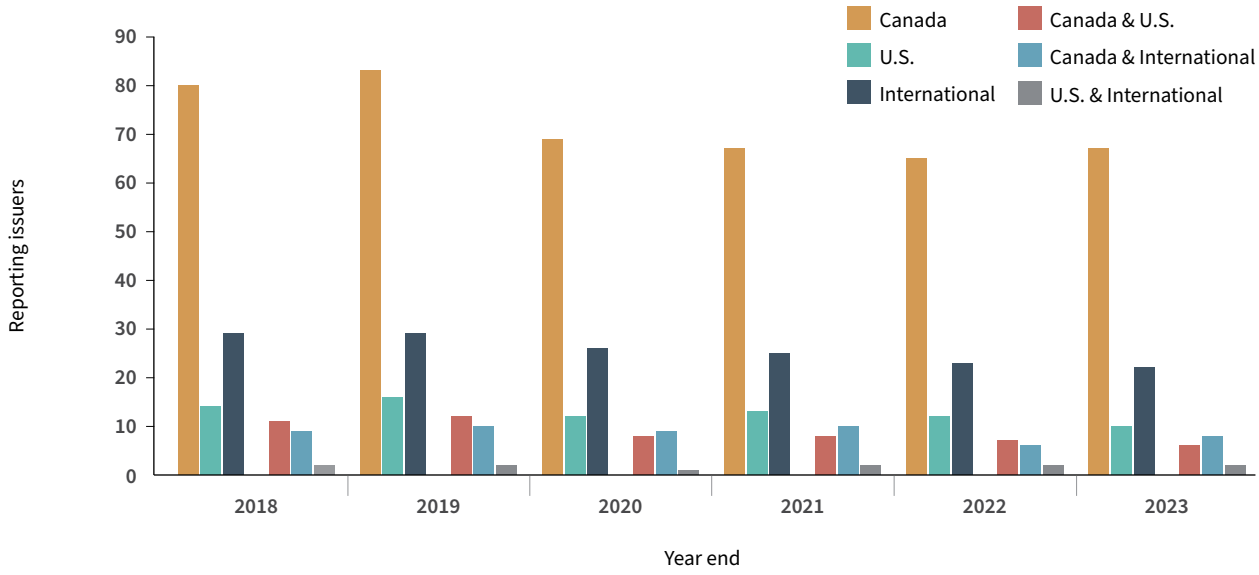
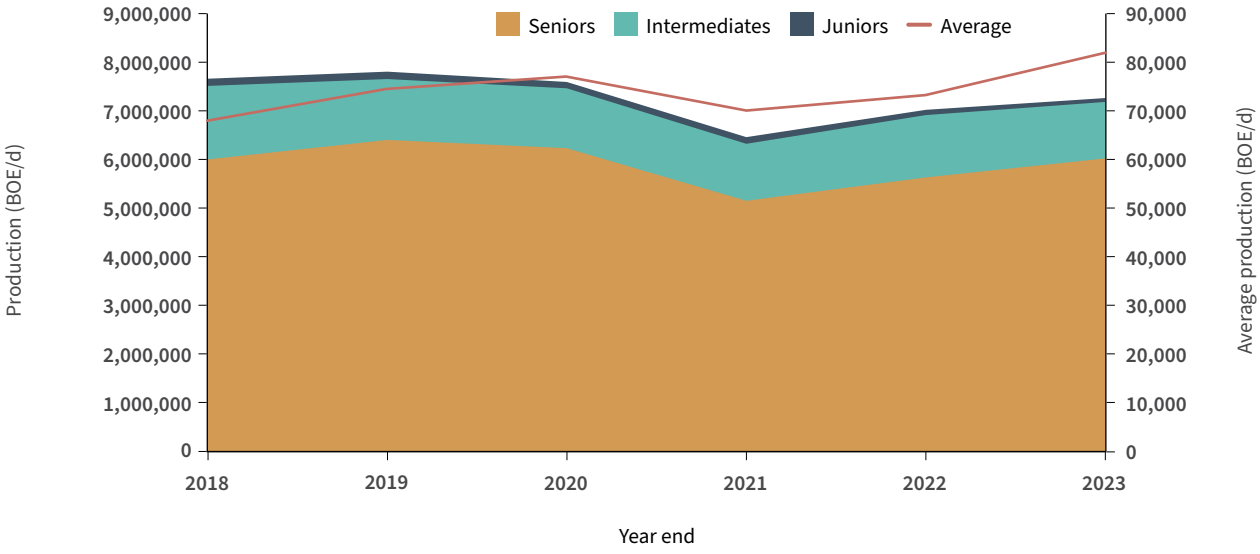


Figure 17 illustrates the summation of production for AB RIs, for 2018 to 2023, by production group and the average production per RI. It was constructed using disclosure per item 6.9 of each constituent RI's Form 51-101F1, which requires the disclosure of quarterly average gross daily production volumes by country and product type for the most recent financial year. The volumes were summed for each RI and an annual average gross daily production volume for each RI was determined in BOE. This data was then summed for the RIs in each production group, while an average per RI was determined. It includes data for 90 RIs that had production disclosed under item 6.9, down from 112 in 2018. Each RI's contribution is based solely on the production volume it has disclosed, with no weighting or adjustment applied.

Figure 17: Summed production for AB RIs, by production group and average production per RI



As shown, there has been a decrease in production over the period for AB RIs. The contribution from the juniors has also decreased since 2019, while it has remained relatively consistent for the seniors and intermediates. The average production per RI has increased from 68,000 BOE/d to almost 83,000 BOE/d over the period, a 21 per cent increase, including a 12 per cent increase in 2023 over 2022. There has been a decrease in the number of AB RIs engaged in oil and gas activities over the period, while the average production per RI has increased.

3. Environmental considerations regarding oil and gas reserves

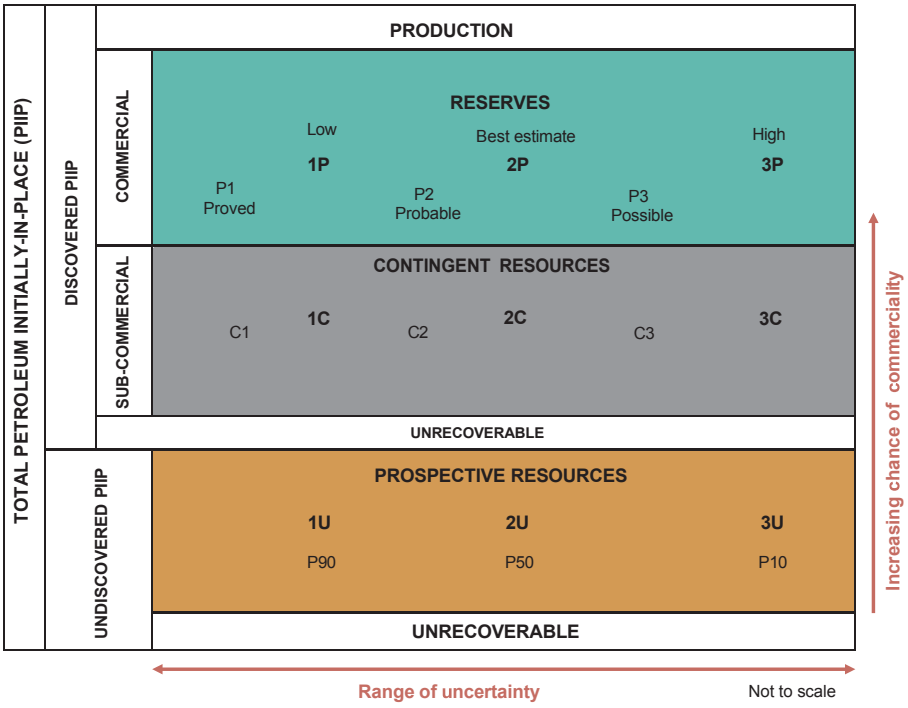
There continues to be strong interest in environmental matters amongst Canadian capital market stakeholders. Staff are regularly asked if certain environmental considerations are accounted for in oil and gas reserves estimates disclosed under NI 51-101. In short, all environmental considerations are required to be accounted for, but we take the opportunity here to expand on this response in hopes of encouraging continued confidence in the reliability and durability of NI 51-101, its technical standard, the COGE Handbook and the applicable requirements and prohibitions of Canadian securities legislation more broadly.

Per section 5.3 of NI 51-101, all reserves and resources other than reserves must be disclosed using the applicable terminology and category set out in the COGE Handbook and must be classified in the most specific category that they can be classified.

Commercial status differentiates reserves from resources other than reserves, including contingent resources and prospective resources. Commerciality is effectively a measure of risk. By definition, reserves are commercial, with effectively no risk, while resources other than reserves are sub-commercial, with measurable risk, due to the presence of one or more contingencies.

The relationship between commerciality and resource classification is illustrated in Figure 18, modified from the Society of Petroleum Engineers-Petroleum Resource Management System (**SPE-PRMS**).

Figure 18: SPE-PRMS resources classification framework



The likelihood that a project will achieve commerciality is referred to as the “chance of commerciality”, which increases upwards in Figure 18.

Chance of commerciality is defined in CSA SN 51-324 as:

> The product of the *chance of discovery* and the *chance of development*. [COGE Handbook]

Numerically:

- Reserves:
  - Are discovered and chance of development is effectively 100 per cent.
  - **Therefore, chance of commerciality is effectively 100 per cent.**
- Contingent resources:
  - Are discovered and chance of development is <100 per cent.
  - **Therefore, chance of commerciality is <100 per cent.**
- Prospective resources:
  - Are undiscovered and chance of development is <100 per cent
  - **Therefore, chance of commerciality is <100 per cent.**

CSA SN 51-324 defines commercial.

> When a *project* is commercial this implies that the essential social, environmental, and economic conditions are met, including political, legal, regulatory, and contractual conditions. Considerations with regard to determining commerciality include:
>
> - economic viability of the related development *project*;
> - a reasonable expectation that there will be a market for the expected sales quantities of *production* required to justify development;
> - evidence that the necessary *production* and transportation facilities are available or can be made available;
> - evidence that legal, contractual, environmental, governmental, and other social and economic concerns will allow for the actual implementation of the recovery *project* being *evaluated*;
> - a reasonable expectation that all required internal and external approvals will be forthcoming. Evidence of this may include items such as signed contracts, budget approvals, and approvals for expenditures, etc.
> - evidence to support a reasonable timetable for development. A reasonable time frame for the initiation of development depends on the specific circumstances and varies according to the scope of the project. Although five years is recommended as a maximum time frame for classification of a project as commercial, a longer time frame could be applied where, for example, development of economic projects are deferred at the option of the producer for, among other things, market-related reasons or to meet contractual or strategic objectives.

For additional information, see section 1.3.7.2 of the COGE Handbook.

The definition of commercial requires there to be evidence that legal, contractual, environmental and governmental concerns will allow for the implementation of the recovery project being evaluated. It is reasonable to assume that individual concerns may not be independent. For example, an environmental concern may have governmental and legal aspects.

Unless there is evidence that all concerns can be satisfied, the chance of commerciality for a particular project will be less than 100 per cent. Reserves cannot be attributed if commerciality is less than 100 per cent. If reserves were previously attributed, they will need to be removed.

The definition of commercial also requires a project to be economically viable. Determining economic viability must account for the costs associated with satisfying environmental concerns. Such costs will typically involve taxes, levies, regulatory applications, environmental impact assessments, legal fees, etc. The time needed to satisfy environmental concerns must also be considered when determining a reasonable timetable for development of reserves (which is also cited in the definition of commerciality). The specific environmental concerns that must be satisfied will vary by project and can change over time. Some examples of current interest involve:

- GHG emissions and mitigation;
- Water requirements, availability and usage;
- G round and surface water protection;
- Wastewater management;
- Environmentally-sensitive areas, wildlife migration routes, etc.;
- Biodiversity, species at risk and habitat preservation;
- Soil conservation;
- Energy usage; and
- Abandonment and reclamation of wells, facilities, properties, etc.

4. Emerging energy-related disclosure commentary

This section discusses the preparation of disclosure concerning well-flow tests involving helium (**He**). The Alberta capital market continues to experience increasing activity in emerging energy-related matters, including activity related to the exploration, development, removal, transportation and sale of He.

At the end of September 2024, there were eight Canadian RIs involved in the exploration and development of subsurface reservoirs containing He, its removal, transportation and sale. Alberta was the principal regulator for three of the eight RIs. For each of these RIs, He was their main or only focus.

Because Canadian RI interest in He is relatively new, dedicated disclosure standards like NI 51-101 or NI 43-101 do not currently exist for it. The information here is meant to assist both RIs and prospective RIs with providing He well-flow test disclosure. This includes He well-flow test disclosure in prospectuses or other disclosure documents that incorporate prospectus requirements.

Similar to its approach concerning RIs engaged in oil and gas activities, the Energy Group has developed a rigorous review process for emerging energy-related subjects, including He. This process focuses on the assessment of disclosure for compliance with securities law regulatory requirements . While efforts are primarily directed towards RIs for which the ASC is the principal regulator, staff also review select disclosure from those that are principally regulated by other Canadian jurisdictions.

The following is a summary of the emerging energy industry-related disclosure subjects discussed in each previous edition of the Energy Matters Report:

- 2021 Report: Disclosure preparation concerning the exploration, development, removal and sale of He; the exploration and development of natural, subsurface accumulations of hydrogen as well as its production from feedstock; the recovery of lithium from oilfield brines for use in batteries; and CCUS.
- 2022 Report: Staff's updated views on the preparation of He disclosure; disclosure preparation concerning the manufacture and sale of renewable hydrocarbons, also referred to as "green hydrocarbons" and "biofuels"; and the development of geothermal energy.
- 2023 Report: The preparation of disclosure concerning renewable electrical generation via wind, solar, hydro and biomass, in addition to associated facilities and technologies.

Interest in He has grown in recent years, owing to increased prices and supply concerns. Helium is typically found in relatively small quantities alongside other substances, including nitrogen, carbon dioxide, water, and hydrocarbons like natural gas. Following recovery, specialized processing is used to separate He from these substances, before it is subjected to additional purification prior to sale. Recovered hydrocarbons are generally sold, consumed in facility operations or reinjected. Due to the frequent natural association of hydrocarbons and He, oil and gas activities leads some RIs to unintentionally become involved with He, while other RIs set out to be involved solely with He and unintentionally encounter hydrocarbons. Furthermore, He and hydrocarbons share similar exploration and development techniques, equipment and infrastructure.

As described in more detail in the 2022 Report, an RI engaged in oil and gas activities that produces He from a property as a by-product (per NI 51-101, a by-product is recovered as a consequence of producing a product type), must provide the disclosure required by NI 51-101 in respect of by-products. Issuers otherwise producing He will not generally be required to comply with NI 51-101. However, we strongly encourage them to consider the requirements and principles of the Instrument, appropriately adapted for He, to help inform them in identifying

material matters requiring disclosure. NI 51-101 provides a useful framework for identifying and disclosing information that is typically material to investors.

The Appendix A – Glossary of the COGE Handbook defines flow test as:

> A test of the ability of a well to produce fluids usually at a constant rate.

It defines production test as:

> Tests conducted to determine the productivity of a given reservoir.

More specifically, well-flow tests are used to obtain information concerning subsurface rock units (reservoirs) that contain accumulations of various liquids and gases. These reservoirs are accessed via the drilling of a wellbore with a drill bit. The information obtained can help facilitate estimation of the productive capability of these reservoirs and their fluids, as well as the estimation of the recoverable volumes and their economic values. These tests are ideally conducted under controlled conditions, but useful information can also be obtained from tests conducted under less-than-ideal circumstances and sometimes even from uncontrolled well-flow events.

Section 3(a) of CSA SN 51-327 discusses well-flow test disclosure concerning oil and gas. With some adaptation, staff consider the information to be relevant to the disclosure of substances other than oil and gas recovered from subsurface rock units via well-flow tests. This includes, but is not limited to He, hydrogen, carbon dioxide, nitrogen and water.

In considering what information with respect to a particular well-flow test involving He may be material to an investor, RIs should consider disclosing the information listed below, which has been adapted from section 3(a) of CSA SN 51-327. Information concerning hydrocarbons should also be provided if recovered alongside He. As discussed above, if an RI that recovers He is determined to be engaged in oil and gas activities, its disclosure must comply in full with NI 51-101.

- The stratigraphic interval(s) for which test results are being disclosed.
- The specific type of test (examples include wireline, drillstem test (DST), or production test).
- Duration of the test.
- Rates of flow during the test and if they are peak, average, end or stabilized.
- Percentage of He and other fluids recovered and if they are peak, average, end or stabilized.
- Flowing pressures and if they are peak, average, end or stabilized.
- If the interval was stimulated, the type of stimulation, proppant used, load fluid volumes and their recovery status.
- Recovered fluid types and volumes (accounting for any load fluid; reporting the recovery of load fluid without stating that it is load fluid would be regarded as misleading), including for He, nitrogen, carbon dioxide, hydrogen sulphide, water and hydrocarbons.
- Sampling and measurement information.

- Other relevant pressure data, such as shut-in measurements and times and whether they represent wellhead or bottom hole readings.
- Significant production or pressure declines during the test.
- If a pressure transient analysis or well test interpretation has not been carried out, a cautionary statement should be made to the effect that the data should be considered to be preliminary until such analysis or interpretation has been done.
- A cautionary statement that the test results are not necessarily indicative of initial production rates, long-term performance or of ultimate recovery.
- Further disclosure may be necessary to avoid being misleading, including details about sampling and measurement methods and procedures, equipment, distinguishing between field and laboratory tests where applicable, and elaborating on any unique, unusual or unexpected aspects related to the well-flow test.

To ensure accurate and factual disclosure, RIs should assess whether well-flow test results are significantly different than initially forecast and discussed in previous disclosure. A balanced approach to disclosure is important. In addition, they should consider disclosing any other information that may be material and necessary to ensure their disclosure is not misleading. General principles relating to balanced, complete and accurate disclosure, focused on materiality, will also apply. Drawing attention to positive results while ignoring or downplaying negative results may be considered misleading. Misleading by omission of information is specifically prohibited by section 92(4.1)(a)(ii) of the Act.

EXAMPLE OF DISCLOSURE THAT *DID* MEET OUR EXPECTATIONS

The Company-operated ABC well (80% working interest) was production tested on September 1st from the ABC Formation. Over 72 hours, the well flowed at an average rate of 1.1 mmcf/d at a flowing wellhead pressure of 4,7671 kPa on a 0.5 inch diameter choke.

A shut in wellhead pressure of 6,960 kPa and a bottom hole pressure of 7,370 kPa were measured immediately prior to the test. A shut in wellhead pressure of 6,600 kPa and a bottom hole pressure of 7,050 kPa were measured at the end of the test.

Two samples were collected for laboratory analyses at the end of the test by laboratory personnel. The first sample was damaged during transport and was discarded. The other sample measured 0.7% helium, 95% nitrogen, 1% carbon dioxide, 3% methane and less than 1% of other minor component gases. No water or other hydrocarbons were recovered.

The well was shut in for pressure build up immediately following the production test. A pressure transient test and analysis will be conducted. Following this, additional production testing and sampling will be conducted. Information will be provided as it becomes available.

The information provided here should be considered preliminary. The test results so far are not necessarily indicative of long-term performance or of ultimate recovery. If the project is commercialized, the Company intends to use any natural gas it recovers to power its on-site facilities.

Staff's comments on this disclosure:

This disclosure contains all of the basic information that staff expect to see in well-flow test disclosure and more. This included:

- *The date, company interest in the interval being tested, type of test, and stratigraphic interval.*
- *The average flow rate, along with the associated flowing pressure.*
- *The percentages of the recovered fluids, which can be applied to the average flow rate to determine the amount of each produced fluid provided.*
- *Sampling information, including the number of samples collected and the fact that one was damaged during transportation and therefore not used.*
- *Shut-in pressures, along with their measurement points.*
- *A cautionary statement that addresses the lack of a pressure transient analysis to date, plus information indicating that one is imminent.*
- *An additional cautionary statement that addresses that the test results disclosed are not necessarily indicative of long-term performance or of ultimate recovery.*
- *The intended use of recovered methane in on-site facilities instead of it being sold. In the absence of other information, this suggests that the RI may not be engaged in oil and gas activities and therefore is not required to comply with NI 51-101. However, this decision is ultimately the responsibility of the RI to make.*

In assessing whether disclosure is material to an RI, staff will generally assume that disclosure featured prominently in investor presentations, promotional materials or press releases is material.

RIs are reminded that there should be a reasonable basis for any forward-looking information and that material risks and assumptions must be disclosed.

Please contact staff with disclosure questions relating to well-flow tests involving He.

5. Energy and the Alberta capital market

This section explores the relationship between energy and the Alberta capital market with respect to RIs for which the ASC is the principal regulator. It also makes some comparisons to other jurisdictions, both within and outside of Canada. Key aspects of the overall Alberta capital market are discussed, along with their changes over time. This includes the number of RIs for which the ASC is the principal regulator, the industry attribution of these RIs and their respective market capitalizations. While some comparative information is provided for other industries, the emphasis is on the energy industry. There is detailed scrutiny of its various established and emerging sub-industries and their capital raising activities via prospectus offerings and the exempt market. Due to its increasing importance, information concerning clean energy-related project funding provided by the Government of Canada is also included.

REPORTING ISSUER STATISTICS

Figure 19 illustrates the number of RIs for which the ASC was the principal regulator, by industry, at September 30, 2024. The largest industry, by far, is energy, with 186 RIs or 40 per cent of Alberta RIs.

Figure 19: Number of AB RIs, by industry

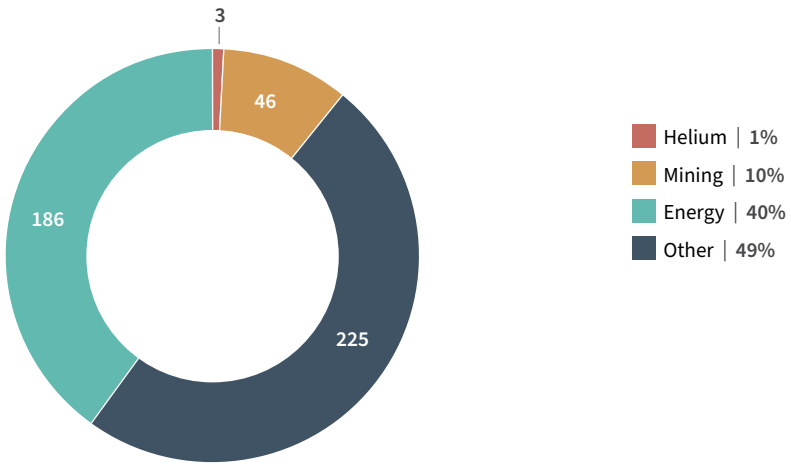
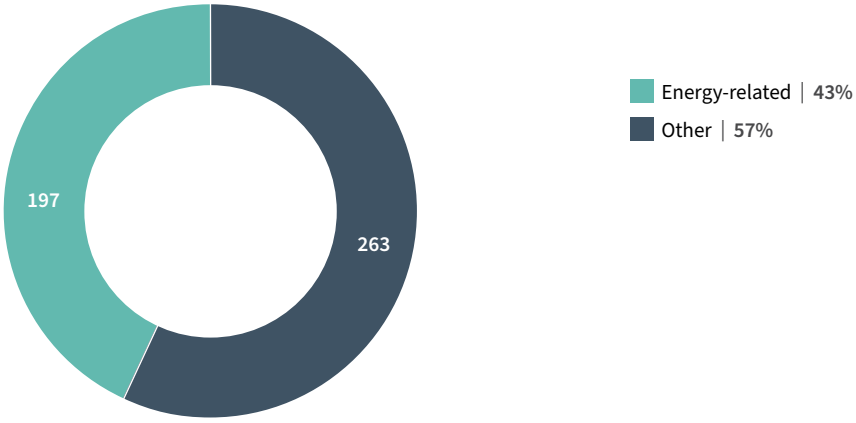


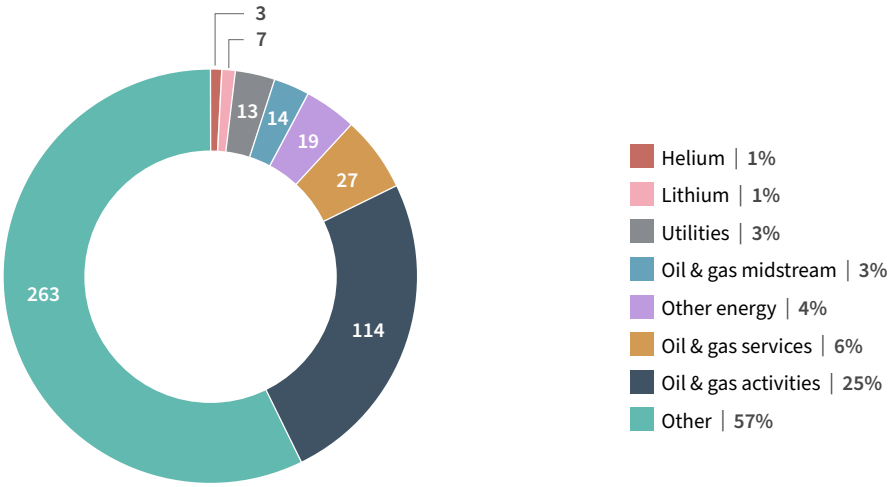
Figure 20 shows the RIs from Figure 19 categorized as “Energy-related” or “Other.” As indicated, 197 RIs or 43 per cent of Alberta RIs are attributed to the former. Energy-related includes RIs focused on lithium (seven RIs), uranium (one RI) and helium (three RIs).

Figure 20: Number of energy-related AB RIs compared to AB RIs



In Figure 21, the “Energy-related” category from Figure 20 is broken into its constituent energy sub-industries, with the number of RIs attributed to each indicated. As shown, 114 RIs or 25 per cent of energy-related RIs are attributed to “Oil & gas activities.”

Figure 21: Number of energy-related AB RIs, by sub-industry, compared to AB RIs



Regarding the individual sub-industries in Figure 21 "Oil & gas activities" represents RIs engaged in oil and gas activities per NI 51-101; "Oil & gas midstream" includes RIs involved with oil and gas pipelines; "Oil & gas services" includes RIs involved in such things as oil and gas drilling, well services and equipment; "Utilities" includes RIs that are involved in electrical generation via traditional and renewable means, transmission or distribution; "Lithium" includes RIs that report under NI 43-101 and are involved in the production and sale of lithium, including six involved with its recovery from brines, while "Other energy" includes RIs involved in other energy-related sub-industries, including energy services (five RIs), clean technology (eight RIs), and renewable hydrocarbons (five RIs).

Many RIs categorized within "Oil & gas activities" and "Oil & gas midstream" are increasingly pursuing projects beyond their traditional oil and gas focus. For example, many RIs in the former are pursuing non-traditional projects that involve CCS and CCUS, as well as their related technologies, in addition to renewable hydrocarbons, electricity co-generation, wind energy, and various clean technologies. Some RIs in "Oil & gas midstream" are pursuing projects related to renewable hydrocarbons, and are developing renewable electrical generation projects that are typically the domain of RIs in "Utilities."

Figure 22 presents a snapshot of the number of energy-related AB RIs by their respective sub-industry, for 2021 to the end of September 2024. Note that throughout this section, information for any given year is as of December 31, except for the current year, which is as of September 30 and discussed as "year to date" (**YTD**).

Figure 22: Number of energy-related AB RIs, by sub-industry

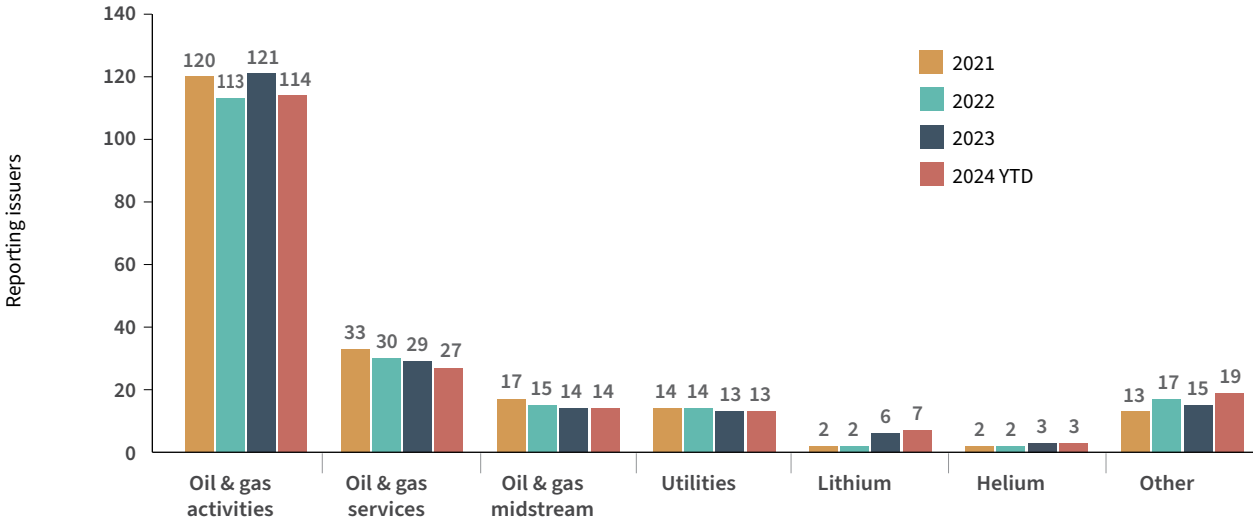
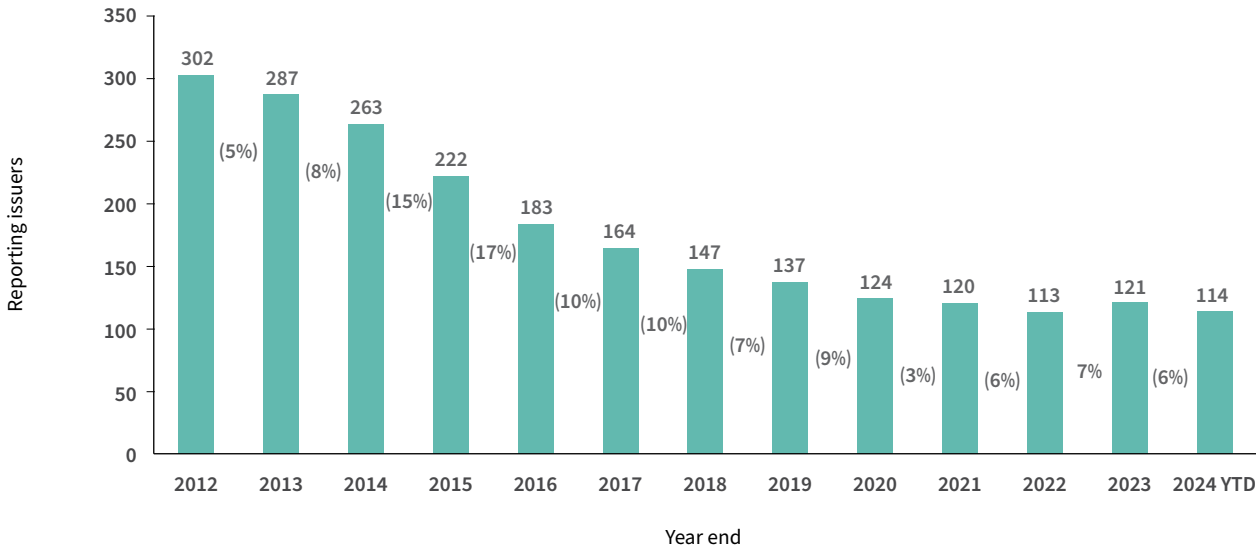


Figure 22 shows an overall decline in the number of RIs attributed to "Oil & gas activities," "Oil & gas services," "Oil & gas midstream" and "Utilities." However, there has been a modest increase in the number of RIs attributed to "Lithium," "Helium" and "Other."

Figure 23 shows the number of AB RIs engaged in oil and gas activities for 2012 to the end of September 2024. The figure illustrates a steady decrease to 2022, followed by an increase in 2023 and a subsequent decrease in 2024 YTD. There were 121 RIs engaged in oil and gas activities at the end of 2023, down from 302 at the end of 2012, representing a decrease of 60 per cent. At the end of September 2024, there were 114, representing a 62 per cent decrease since 2012 and a six per cent decrease over 2023.

Figure 23: Number of AB RIs engaged in oil and gas activities



As shown in Figure 24, the reduction in RIs engaged in oil and gas activities is principally attributed to a reduction in the number of junior RIs, which dropped from 210 in 2012 to 65 at the end of September 2024, a 69 per cent decrease. Intermediate RIs have also notably declined, from 41 to 34 during that period, a 17 per cent drop. To construct this figure, RIs were grouped into "production groups" as follows, using production disclosed per item 6.9 of Form 51-101F1:

- "Seniors" are those RIs with >100,000 BOE per day of production (based on a conversion ratio of six thousand cubic feet of gas for one barrel of oil);
- "Intermediates" are those RIs with 10,000 to 100,000 BOE per day of production; and
- "Juniors" are those RIs with <10,000 BOE per day of production.

All RIs within each production group were included. Throughout this section, production groups are constructed using the same methodology.

Figure 24: Number of AB RIs engaged in oil and gas activities, by production group

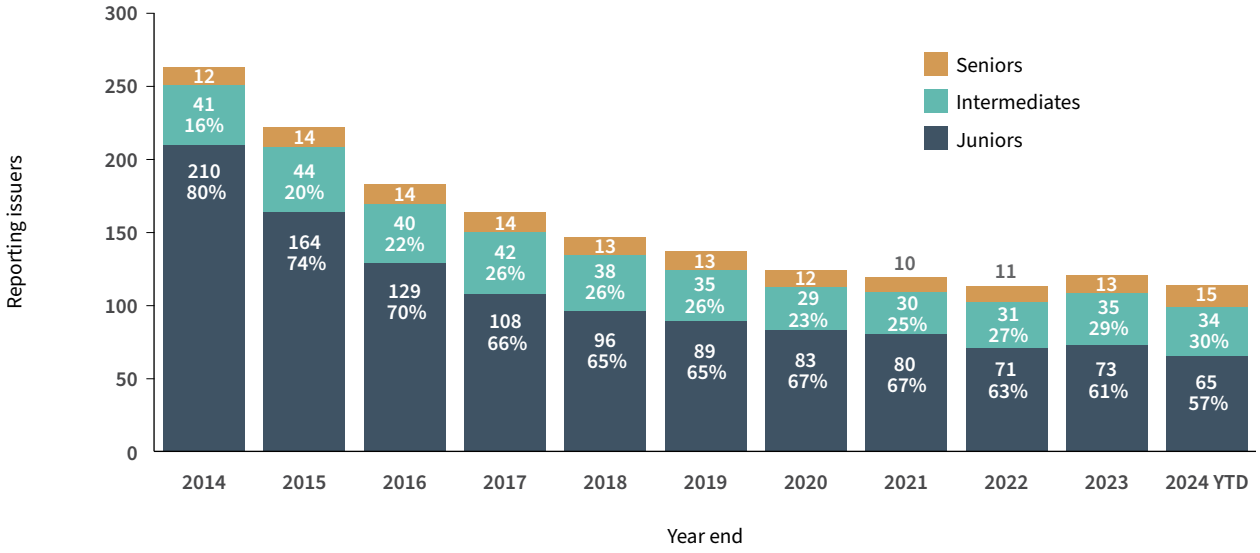


Figure 25 provides the reasons for the changes that occurred in the number of RIs from the beginning of 2024 to the end of September 2024 for each production group. There have been four new RIs (negative seven net) to date in 2024. This includes one RI that was privatized, one that was acquired by a company not principally regulated by the ASC, one that was acquired by an RI principally regulated by the ASC, five that have had a cease trade order issued, and one for which the BCSC was previously the principal regulator.

Figure 25: Net change in AB RIs engaged in oil and gas activities, by production group

	REPORTING ISSUERS[1]				REASON FOR CHANGE
	Seniors	Intermediates	Juniors	**TOTAL**	
	–	–	–	**0**	receivership/bankruptcy
	–	–	(1)	**(1)**	change in industry/acquired by a company in another industry
	(1)	–	(2)	**(3)**	privatized/acquired by a company not principally regulated by the ASC/ceased to be RI principally regulated by the ASC
	–	(2)	–	**(2)**	acquired by an RI principally regulated by the ASC
	–	–	(5)	**(5)**	CTO
	1	–	3	**4**	new RI[3]
TOTAL	0	(2)	(5)	**(7)**	

[1] Does not capture changes due to movement between RI groups.
[2] "–" = no occurrences
[3] New RI includes CTO revocations.

Figure 26 shows the number of RIs engaged in oil and gas activities from Canadian jurisdictions for which the ASC was not the principal regulator, for 2017 to the end of September 2024. The number of RIs has decreased 51 per cent over the period. However, the number increased seven per cent over 2023.

Figure 26: Number of non-AB RIs engaged in oil and gas activities

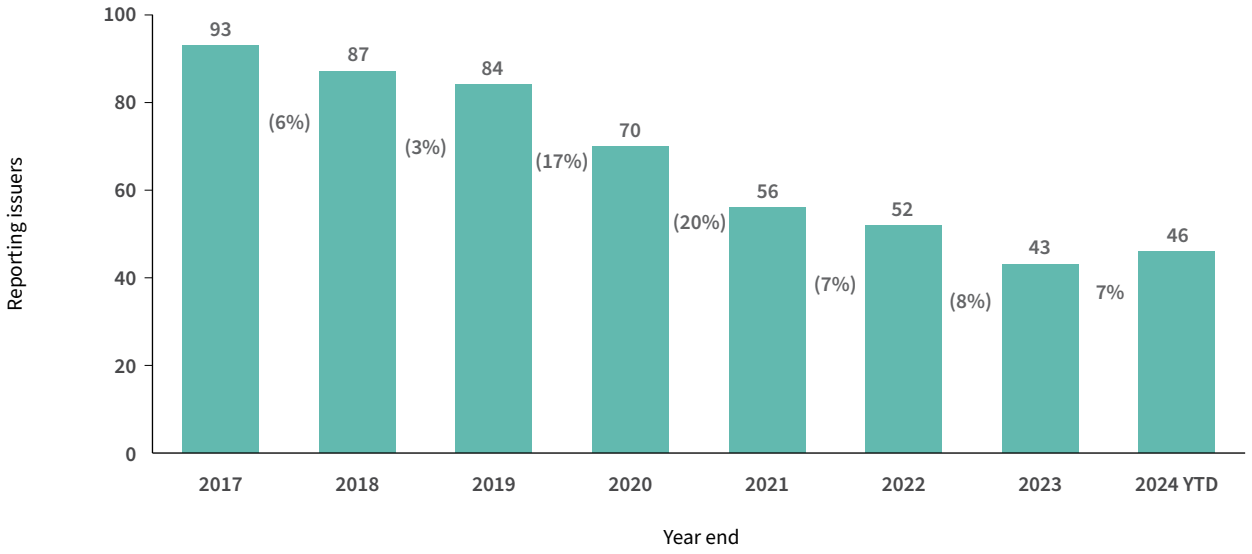


Figure 27 shows the RIs from Figure 26 grouped by production group, using the methodology employed to construct Figure 31. As illustrated, the majority of RIs are junior RIs.

Figure 27: Number of non-AB RIs engaged in oil and gas activities, by production group

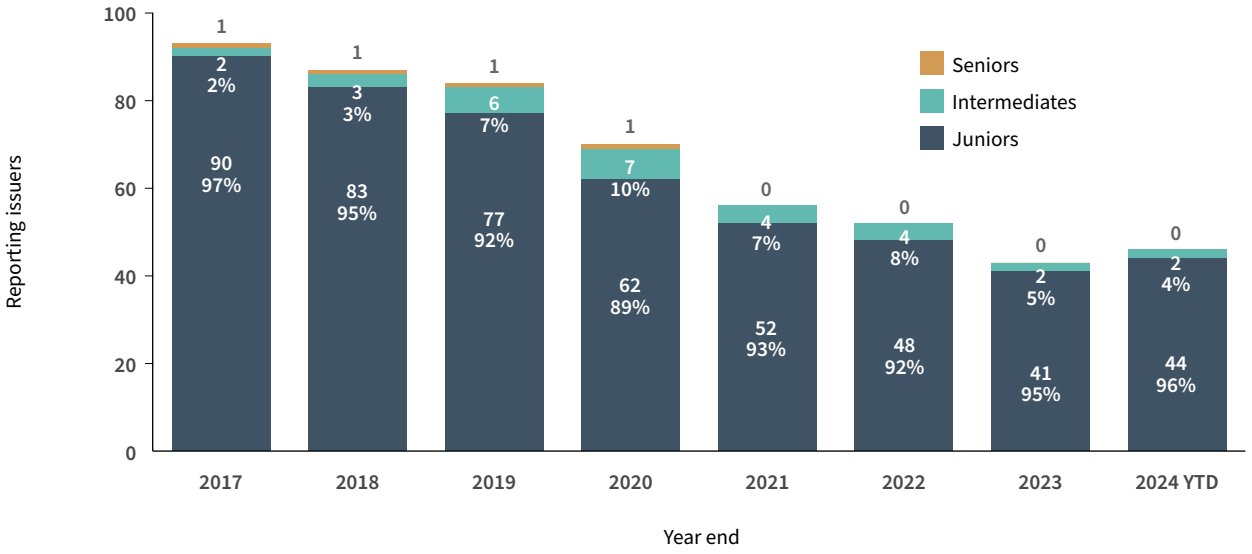
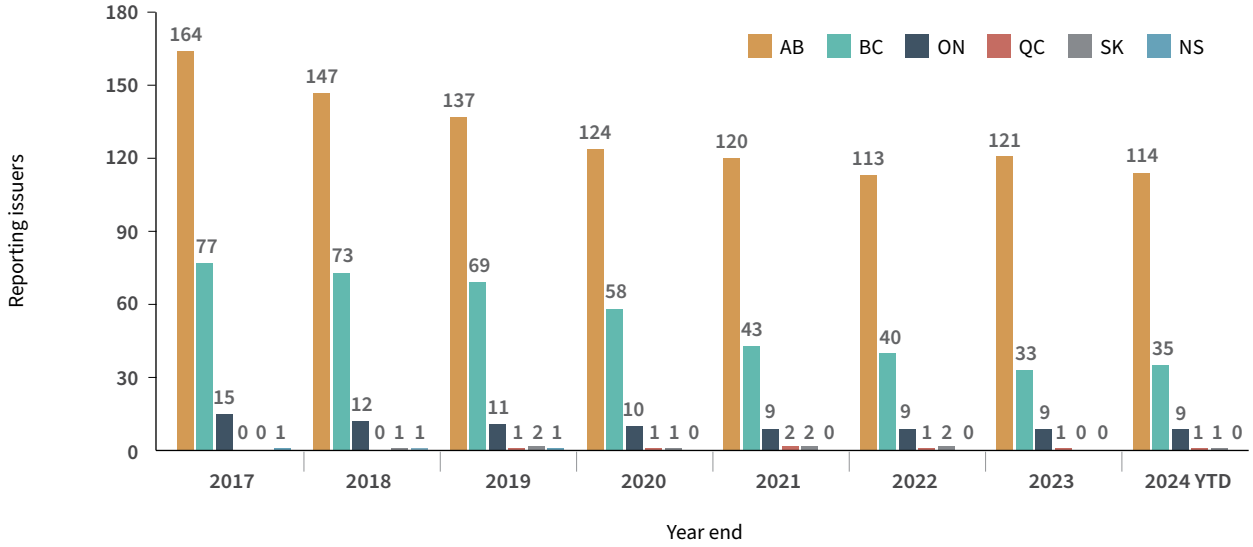


Figure 28 indicates the principal regulator of all Canadian RIs engaged in oil and gas activities for 2017 to the end of September 2024. The BCSC is the principal regulator of the majority of RIs that are not principally regulated by the ASC.

Figure 28: RIs engaged in oil and gas activities, by principal regulator



REPORTING ISSUER MARKET CAPITALIZATIONS

Figure 29 illustrates the market capitalization of RIs for which the ASC was the principal regulator, by industry, at September 30, 2024. The industry with the largest market capitalization, by far, is energy, at $678 billion or 64 per cent of the market capitalization of Alberta RIs. Note that throughout this section, market capitalizations are based on closing prices attributed to the most active marketplace for the common equity of each constituent RI in each industry. For most of the RIs, this is the Toronto Stock Exchange (TSX) or the TSX Venture Exchange (TSXV). Pricing data for this figure and all others in the Report is in Canadian dollars, unless otherwise noted.

Figure 29: Market capitalization of AB RIs, by industry

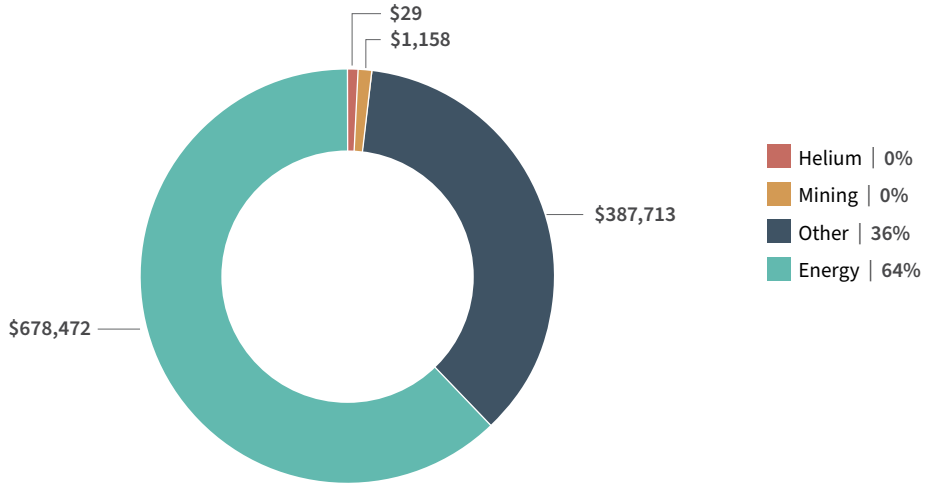
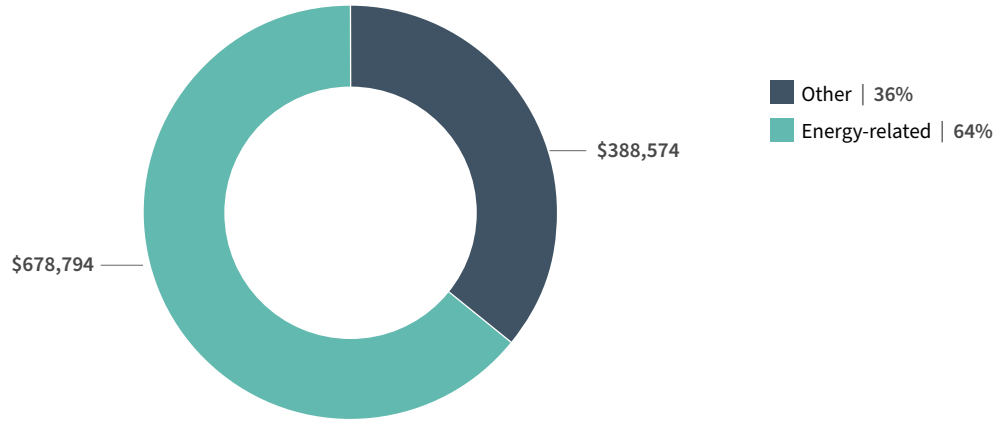


Figure 30 shows the market capitalization of RIs from Figure 29 categorized as “Energy-related” or “Other.” The former accounts for $679 billion, or 65 per cent of the market capitalization of Alberta RIs.

Figure 30: Market capitalization of energy-related AB RIs compared to AB RIs



In Figure 31, the market capitalization of the “Energy-related” category from Figure 30 is attributed to its constituent energy sub-industries. As indicated, $389 billion, or 36 per cent of the market capitalizations of energy-related RIs is attributed to “Oil & Gas Activities.”

Figure 31: Market capitalization of energy-related AB RIs, by sub-industry, compared to AB RIs

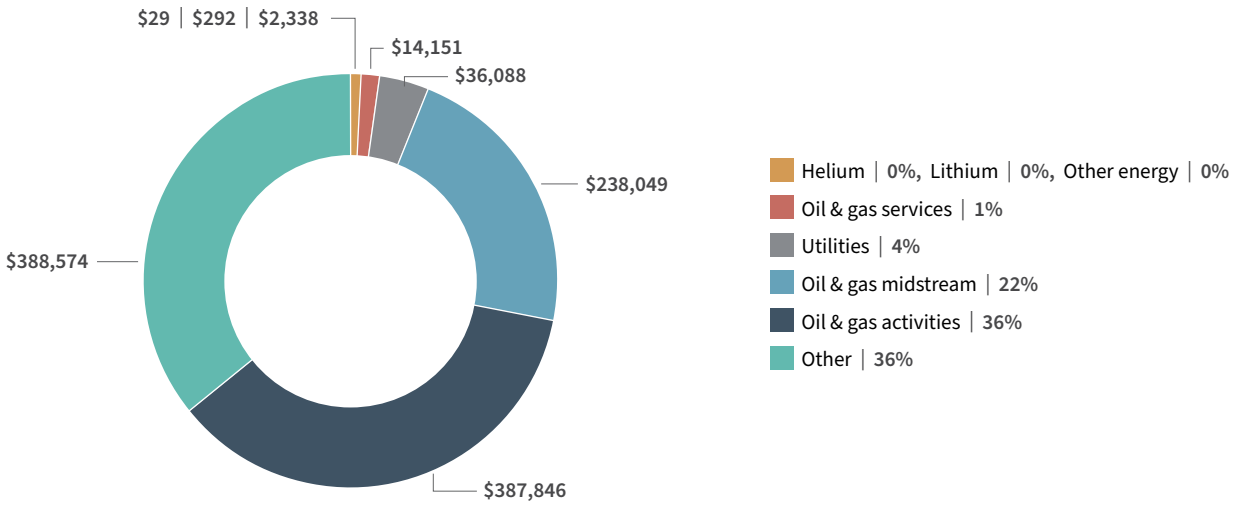


Figure 32 illustrates the market capitalizations of the energy-related sub-industries for 2021 to the end of September 2024.

Figure 32: Market capitalization of energy-related AB RIs, by sub-industry

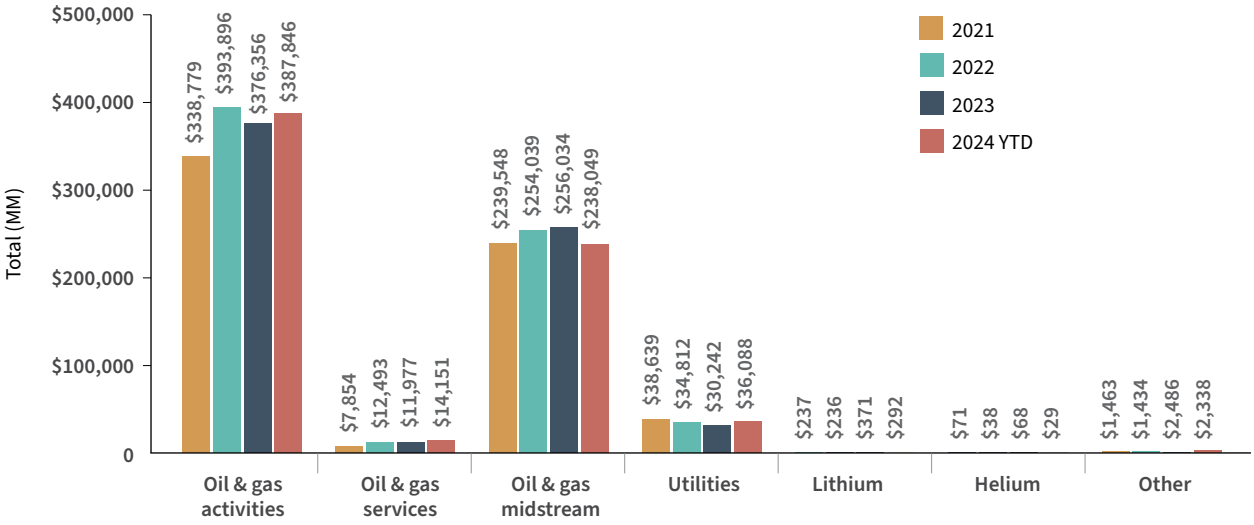


Figure 33 illustrates the average market capitalization of RIs within each of the energy-related sub-industries presented in Figure 32.

Figure 33: Average market capitalization of energy-related AB RIs, by sub-industry

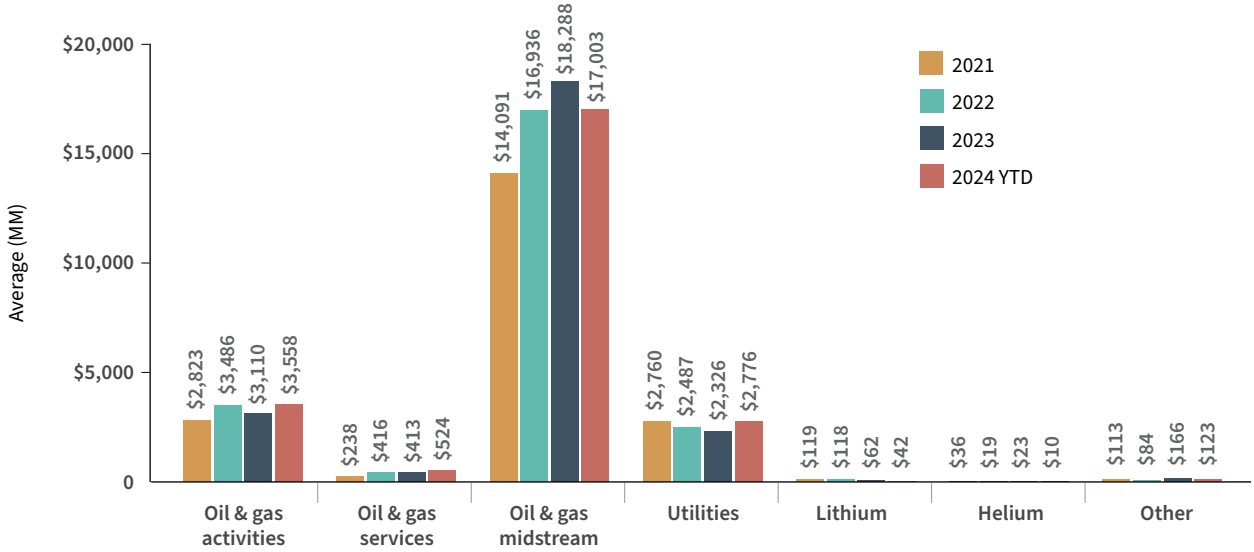
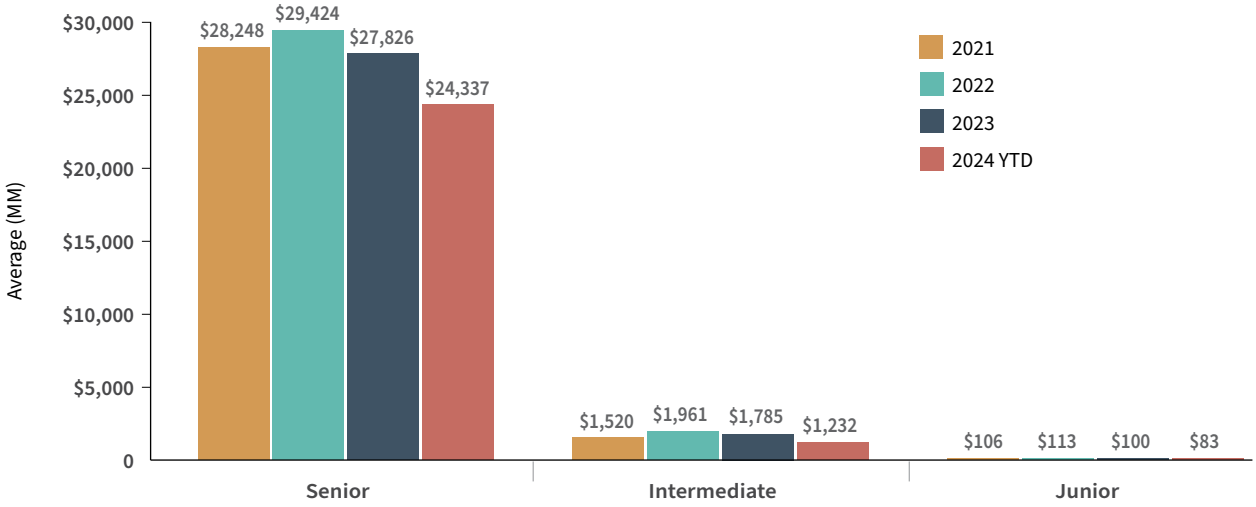


Figure 34 shows the average market capitalization of the RIs engaged in oil and gas activities presented in Figure 33, by production group.

Figure 34: Average market capitalization of AB RIs engaged in oil and gas activities, by production group



FINANCING ACTIVITIES

Figure 35 shows the amount of capital raised through prospectus offerings by RIs engaged in oil and gas activities for which the ASC was the principal regulator, for 2016 to the end of September 2024, along with the number of these offerings. The offerings include various types of equity and debt securities, such as common shares, units, debentures, convertible debentures, rights, subscription receipts, bonds and notes. Figure 35 accounts for prospectuses filed in Alberta, while the amount includes capital raised in Alberta and Canadian jurisdictions outside Alberta, as applicable. The 2024 YTD activity consists of three offerings by three different RIs.

Figure 35: Capital raised through prospectus offerings and the number of such offerings, by AB RIs engaged in oil and gas activities

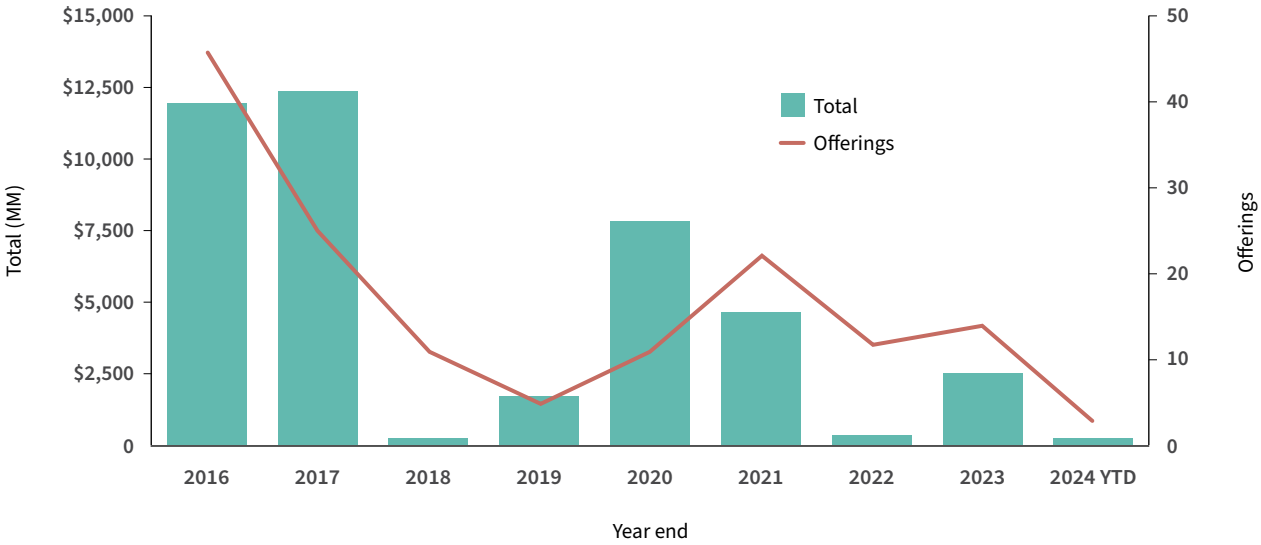


Figure 36 attributes the amounts shown in Figure 35 to production group. Two of the three 2024 YTD offerings is attributed to intermediates and the other is attributed to a junior RI.

Figure 36: Capital raised through prospectus offerings and the number of such offerings, by AB RIs engaged in oil and gas activities, by production group

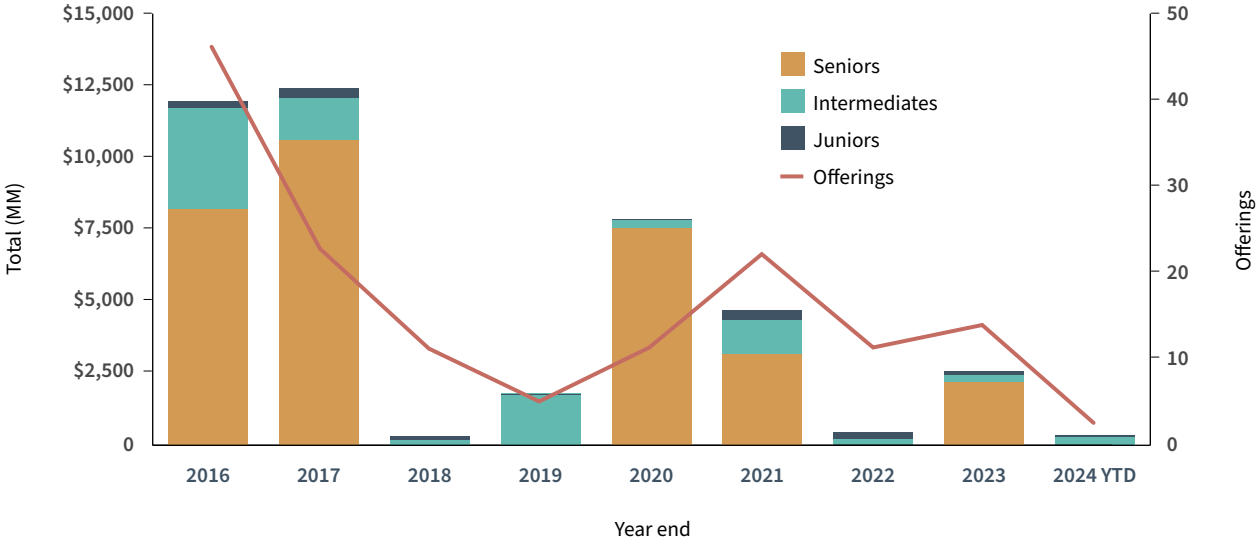


Figure 37 attributes the amounts shown in Figure 35 to securities category, be it equity, debt or both. All of the offerings to the end of September 2024 were for equity.

Figure 37: Capital raised through prospectus offerings and the number of such offerings, by AB RIs engaged in oil and gas activities, by securities category

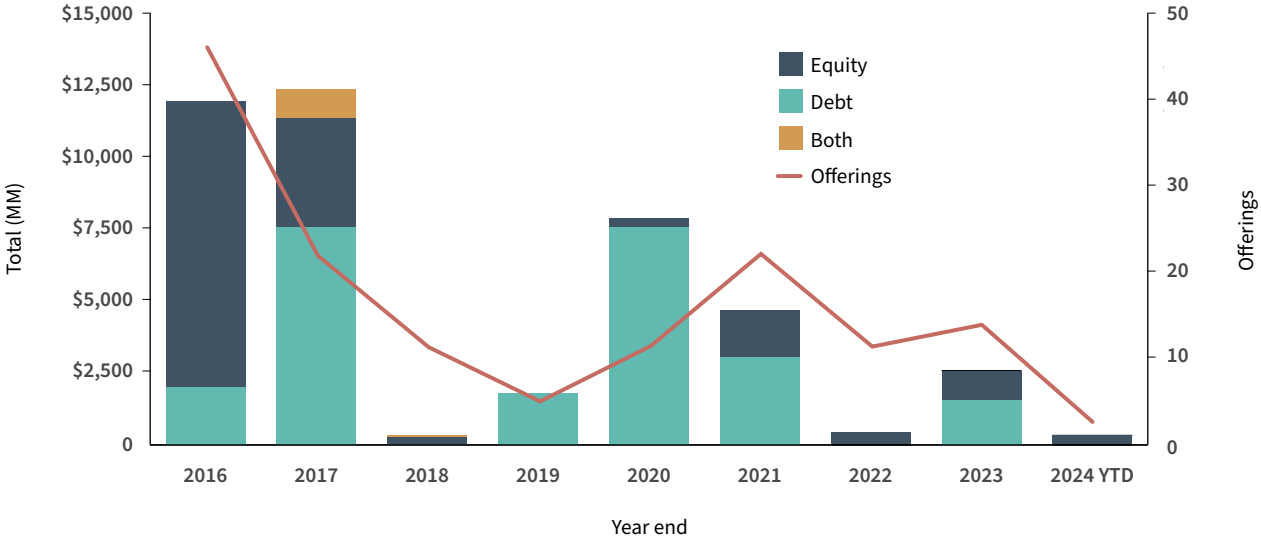
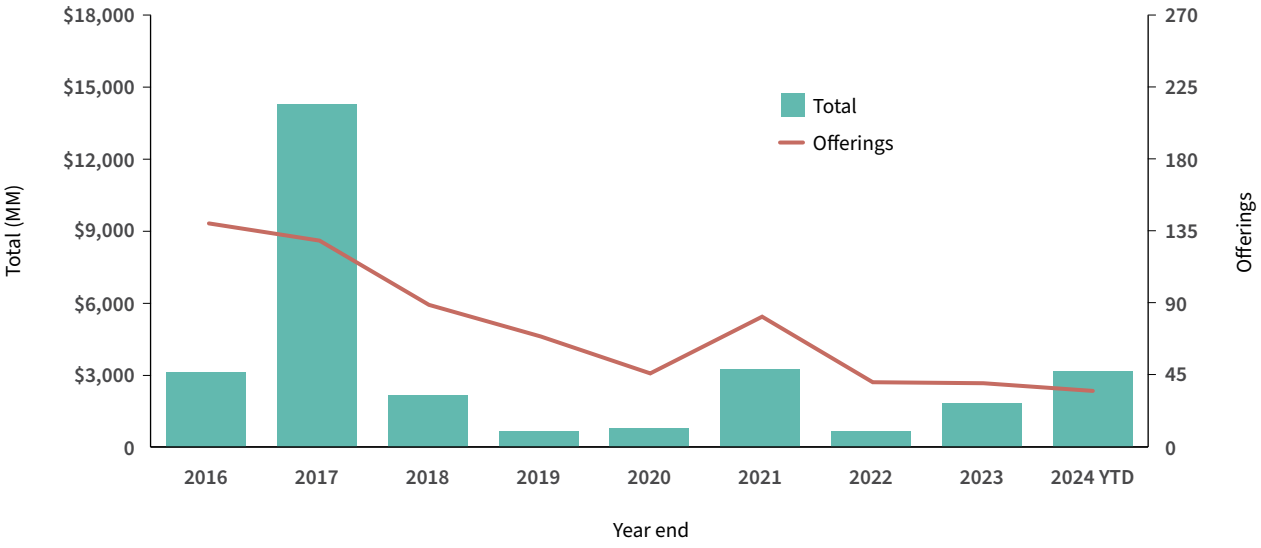


Figure 38 shows the amount of capital raised under exemption from the prospectus requirement (capital not raised via prospectus) by RIs engaged in oil and gas activities for which the ASC was the principal regulator, for 2016 to the end of September 2024, and the number of these offerings. The offerings include various types of equity and debt securities. The amounts include capital raised in Alberta and Canadian jurisdictions outside Alberta, as applicable and as reported. The 2024 YTD activity consists of 35 offerings by 24 different RIs.

Figure 38: Capital raised in the exempt market and the number of such offerings, by AB RIs engaged in oil and gas activities



There are a number of prospectus exemptions available, most of which are set out in National Instrument 45-106 *Prospectus Exemptions*. Both RIs and non-RIs rely on prospectus exemptions to raise capital. Most prospectus exemptions used for capital raising purposes are required to be reported to applicable securities regulators using Form 45-106F1 *Report of Exempt Distribution*. Reports filed with the ASC are required to report on the distributions made in Alberta, but may not report sales to investors in other jurisdictions.

Figure 39 attributes the amounts raised from Figure 38 to production group. The 2024 YTD activity includes 24 offerings attributed to one senior, five intermediates and 18 junior RIs. Most of the capital raised is attributed to the intermediates RIs.

Figure 39: Capital raised in the exempt market and the number of such offerings, by AB RIs engaged in oil and gas activities, by production group

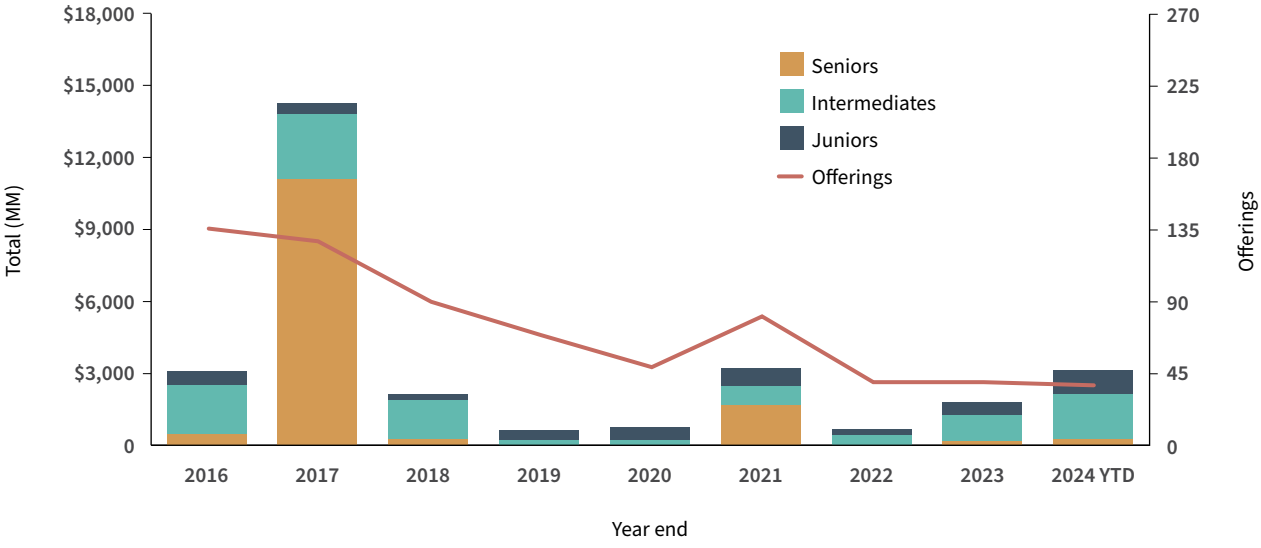


Figure 40 includes information presented in Figure 35 and Figure 38, for comparison. At the end of September 2024, the amount raised and the number of offerings YTD is higher in the exempt market.

Figure 40: Capital raised through prospectus offerings and in the exempt market, and the number of such offerings from each, by AB RIs engaged in oil and gas activities

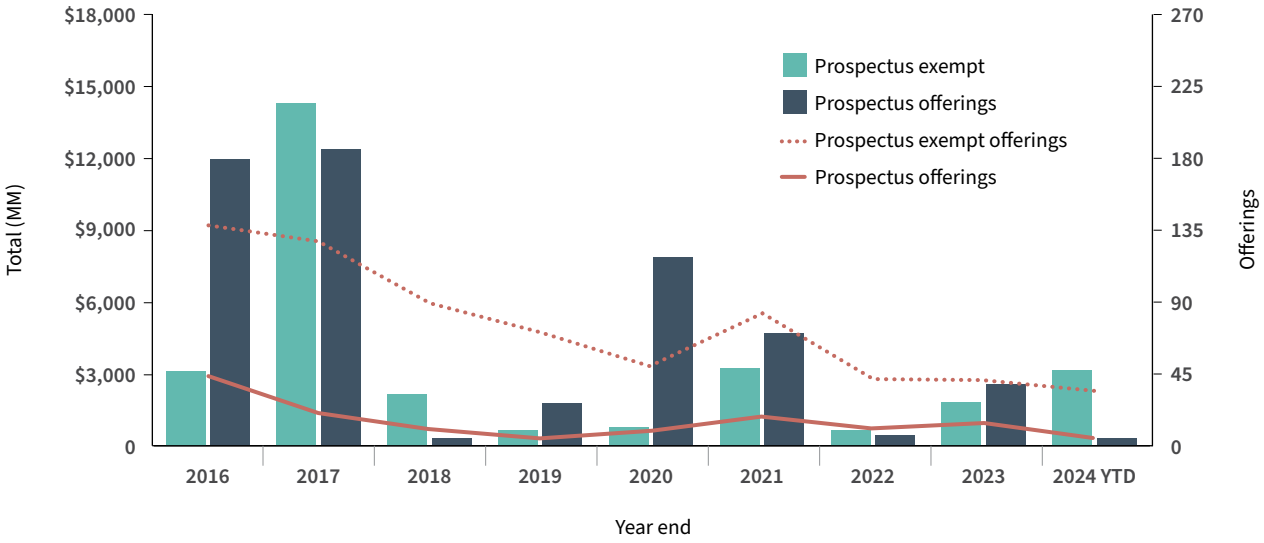


Figure 41 illustrates the amount of capital raised in Alberta by Alberta-based oil and gas issuers that are not RIs, for 2016 to the end of September 2024, and the number of these offerings. It represents capital raised under exemption from the prospectus requirement (capital not raised via prospectus), is based on information reported to the ASC and is incomplete, as some offerings are not required to be reported (e.g., issuers relying on the private issuer prospectus exemption). The amount raised includes capital raised in Alberta and Canadian jurisdictions outside Alberta, as applicable and as reported. The 2024 YTD activity consists of 22 offerings by 14 different issuers.

Figure 41: Capital raised in the exempt market and the number of such offerings, by oil and gas issuers based in Alberta that are not RIs

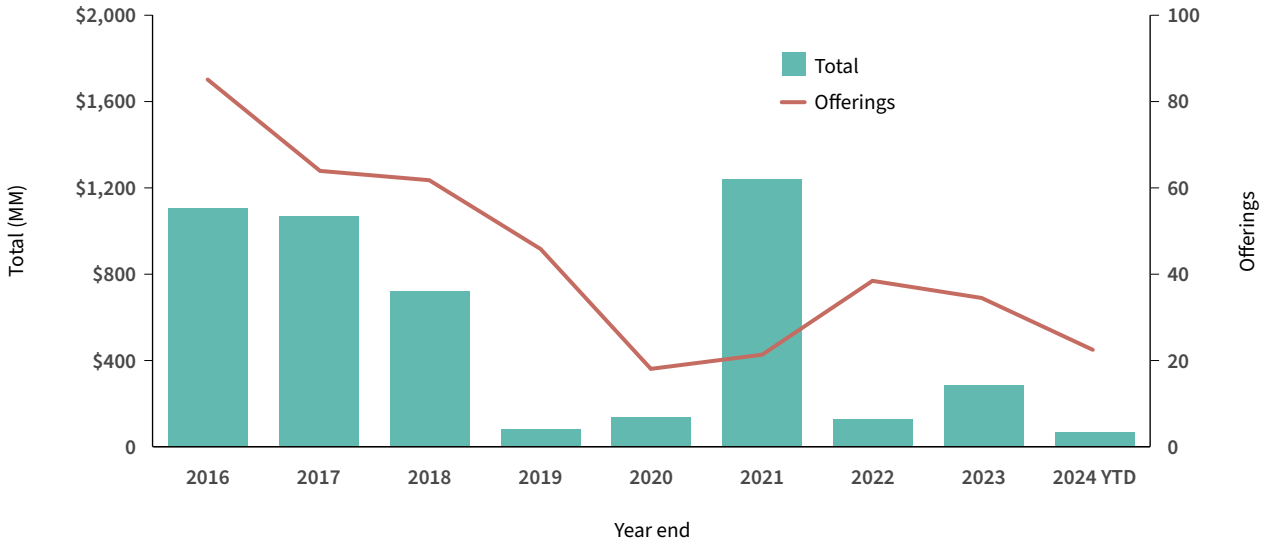


Figure 42 shows the amount of capital raised through prospectus offerings by RIs involved in oil and gas midstream and oil and gas services for which the ASC was the principal regulator, for 2016 to the end of September 2024, and the number of these offerings. The offerings include various types of equity and debt securities, such as common shares, units, debentures, convertible debentures, rights, subscription receipts, bonds and notes. As long as the prospectus was filed in Alberta, the offering is included in Figure 42. The amount raised includes capital raised in Alberta and Canadian jurisdictions outside Alberta, as applicable. The 2024 YTD activity consists of 14 offerings by four different RIs involved in oil and gas midstream and one offering by an RI involved in oil and gas services. In the absence of a prospectus exemption, capital would be raised through securities issuance via prospectus.

Figure 42: Capital raised through prospectus offerings and the number of such offerings, by AB RIs involved in oil and gas midstream and oil and gas services

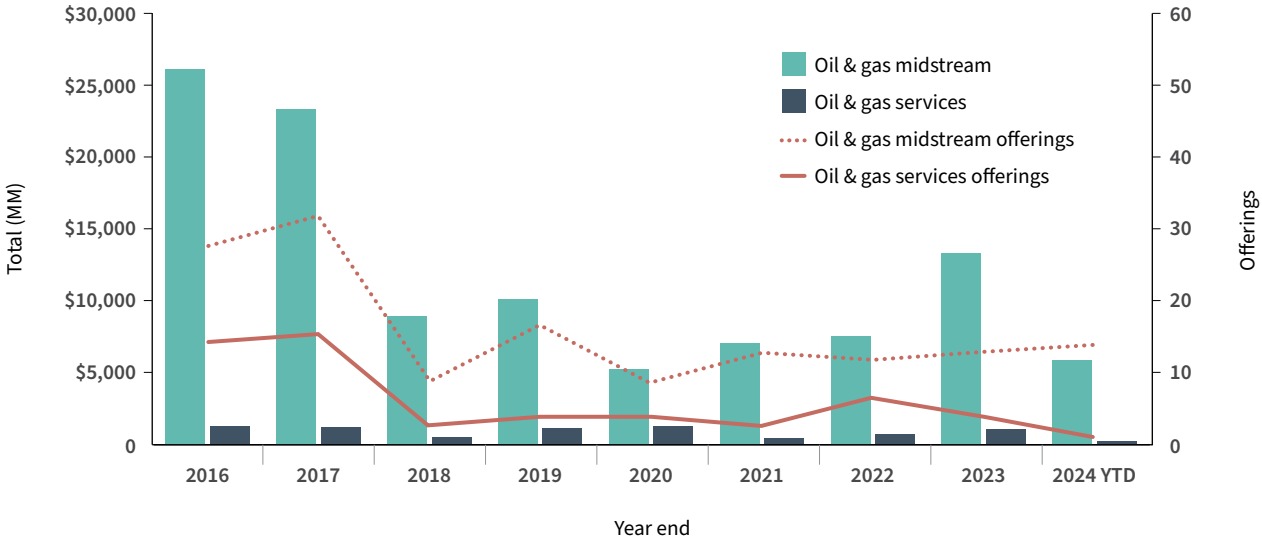


Figure 43 attributes the amounts raised in Figure 42 to securities category, be it equity, debt or both.

Figure 43: Capital raised through prospectus offerings by AB RIs involved in oil and gas midstream and oil and gas services, by securities category

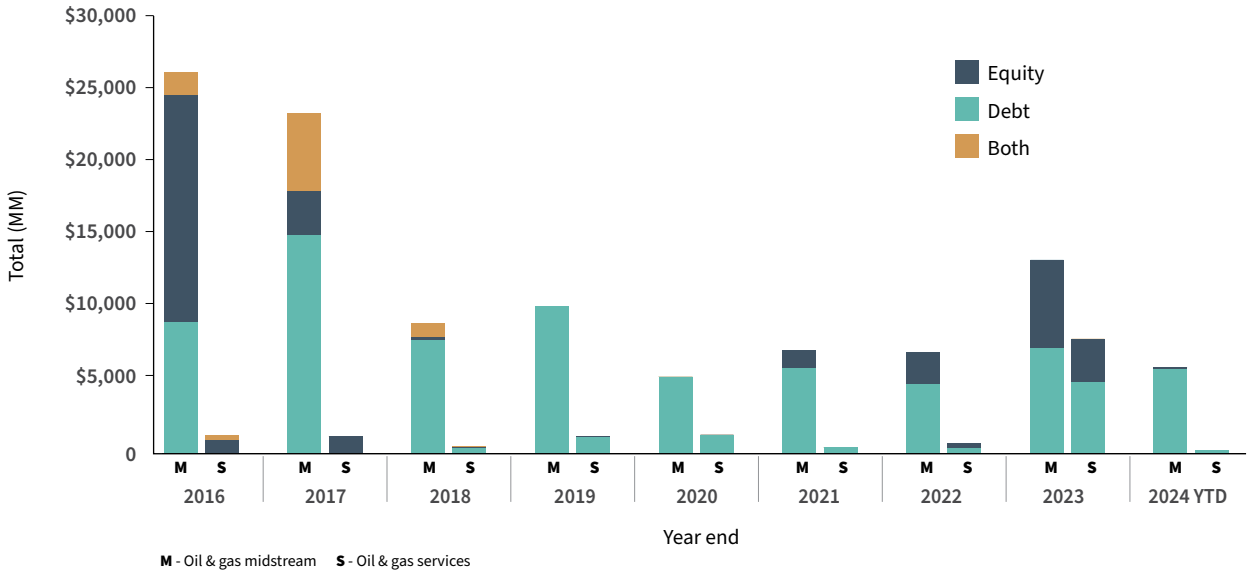


Figure 44 includes information presented in Figure 35 and Figure 42, for comparison.

Figure 44: Capital raised through prospectus offerings and the number of such offerings, by AB RIs engaged in oil and gas activities and those involved in oil and gas midstream and oil and gas services

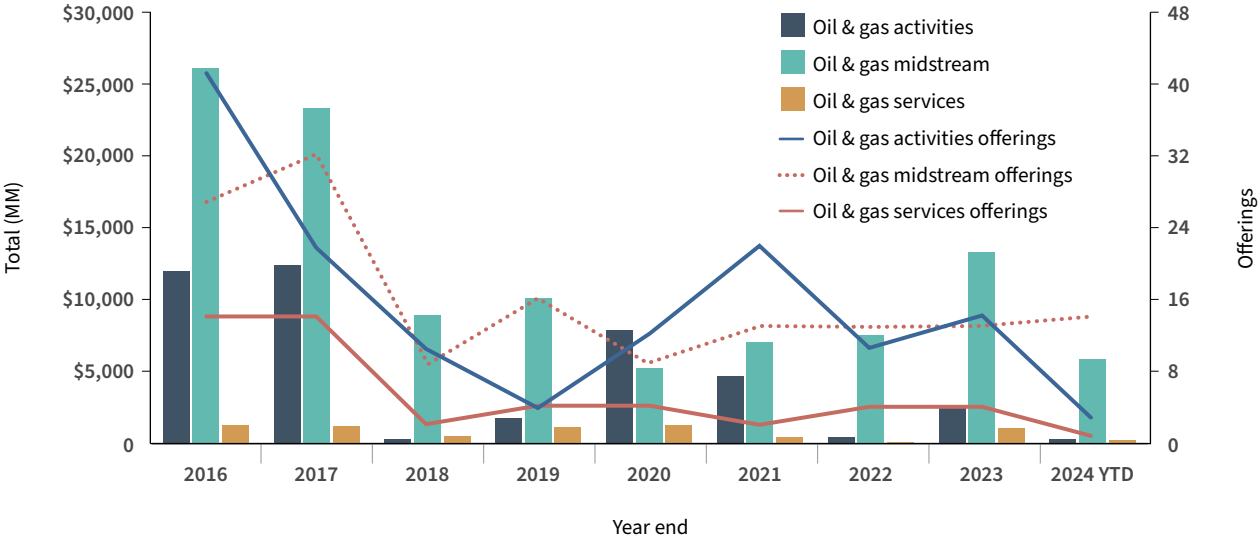


Figure 45 includes information presented in Figure 37 and Figure 43, for comparison.

Figure 45: Capital raised through prospectus offerings by AB RIs engaged in oil and gas activities and those involved in oil and gas midstream and oil and gas services, by securities category

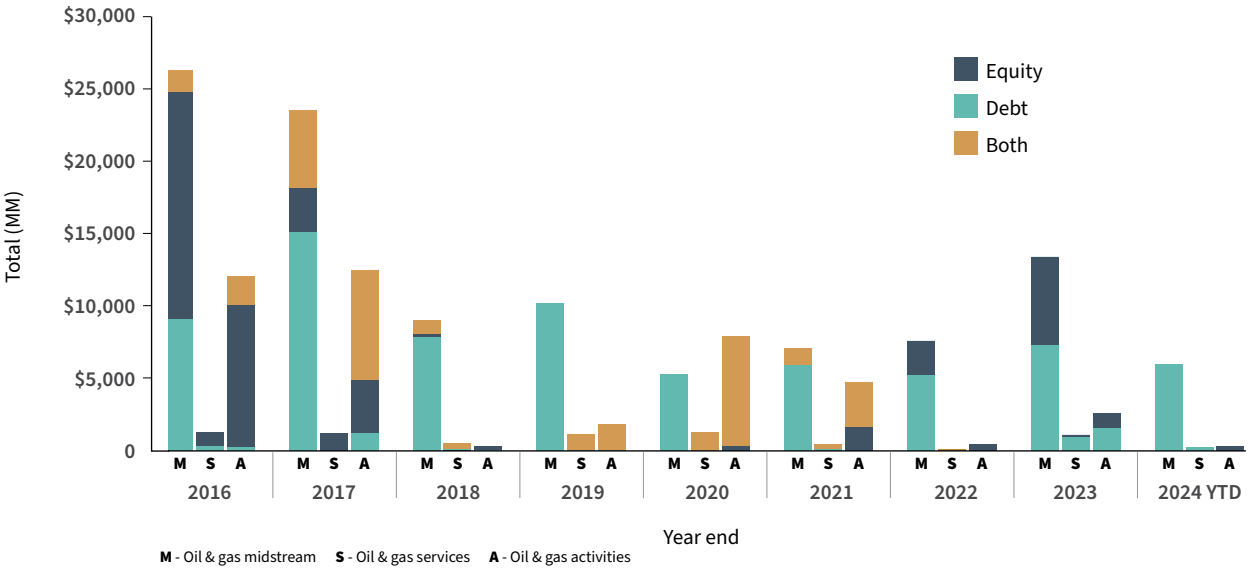


Figure 46 shows the amount of capital raised through prospectus offerings by RIs involved in utilities, lithium, helium and other energy-related sub-industries for which the ASC was the principal regulator, for 2016 to the end of September 2024, and the number of these offerings. The offerings include various types of equity and debt securities, such as common shares, units, debentures, convertible debentures, rights, subscription receipts,

bonds and notes. As long as the prospectus was filed in Alberta, the offering is included in Figure 46. The amount raised includes capital raised in Alberta and Canadian jurisdictions outside Alberta, as applicable. The 2024 YTD activity consists of two offerings by one RI involved in utilities.

Figure 46: Capital raised through prospectus offerings and the number of such offerings, by AB RIs involved in utilities, lithium, helium and other energy-related sub-industries

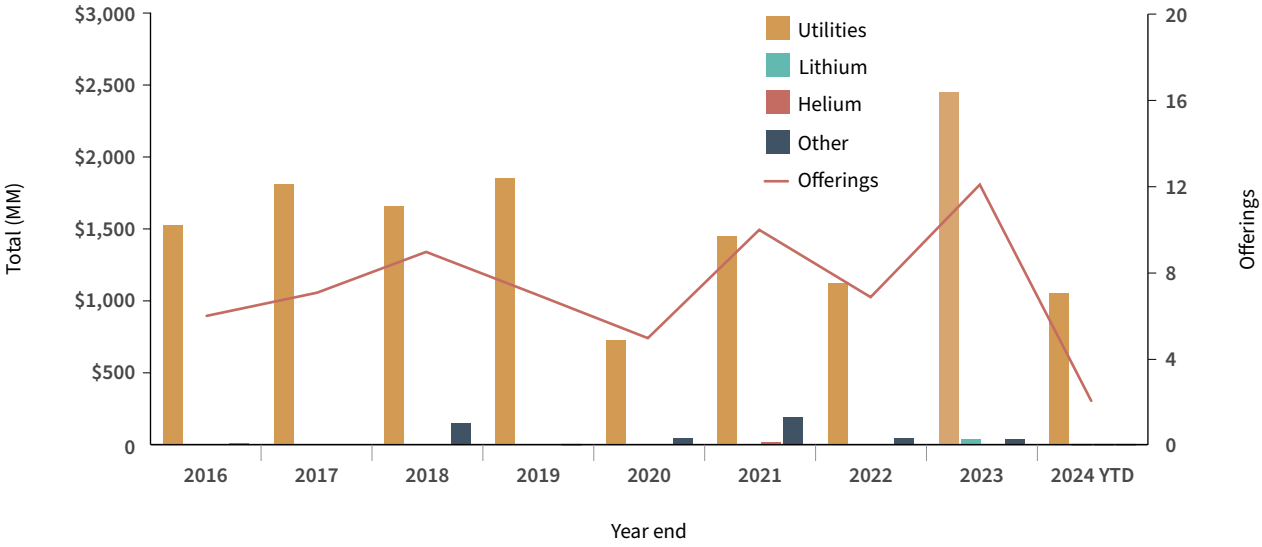


Figure 47 attributes the amounts raised in Figure 46 to securities category, be it equity, debt or both.

Figure 47: Capital raised through prospectus offerings by AB RIs involved in utilities, lithium, helium and other energy-related sub-industries, by securities category

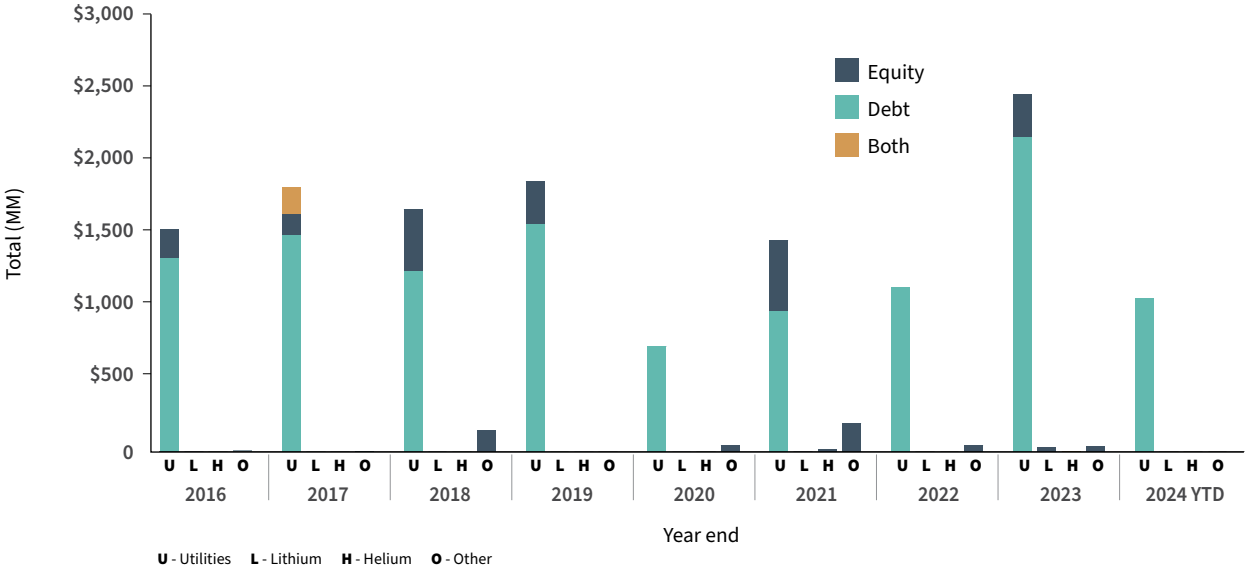


Figure 48 lists sustainable financings by RIs engaged in oil and gas activities and RIs involved in oil and gas midstream for which the ASC was the principal regulator, for 2022 to the end of September 2024. These are also referred to as "transition" and "green" financings. The figure accounts for all of these types of financings identified by staff for energy-related RIs. It comprises four sustainability-linked notes and a green bond financing, with all being prospectus offerings. All are accounted for in previous figures in this section. No sustainable financings have occurred YTD in 2024.

Sustainability-linked bonds and notes are securities for which the proceeds can be used for various purposes. They are linked to improved performance related to certain sustainability criteria or key performance indicators, such as the RI's GHG emissions, water management, health and safety or diversity of its directors. These bonds and notes typically specify varied borrowing costs associated with attaining or failing to attain the specified targets (decreased or increased coupon rate, respectively).

Green bonds are similar to sustainability-linked bonds and notes, but their proceeds must be used for a specific environmental improvement project(s), such as the RI's reduced GHG emissions, water management, etc.

Figure 48: Sustainable financings by energy-related AB RIs

ENERGY SUB-INDUSTRY	AMOUNT (MM)	SECURITIES TYPE	DATE CLOSED	DATE DUE	COUPON
Oil & gas midstream	$400	Sustainability linked notes	Q2 2023	Q2 2023	5.36%
Oil & gas midstream	$400	Green bond	Q4 2022	Q4 2029	7.75%
Oil & gas midstream	$900	Sustainability linked notes	Q4 2022	Q4 2032	6.10%
Oil & gas activities	$100	Sustainability linked notes	Q3 2022	Q4 2027	7.25%
Oil & gas activities	$200	Sustainability linked notes	Q1 2022	Q4 2027	7.25%

Figure 49 lists sustainable credit facilities initiated by RIs engaged in oil and gas activities and RIs involved in oil and gas midstream for which the ASC was the principal regulator, for 2022 to the end of September 2024. These account for all of the sustainable credit facilities identified by staff for energy-related RIs. No new sustainable credit facilities have been identified by staff since 2022.

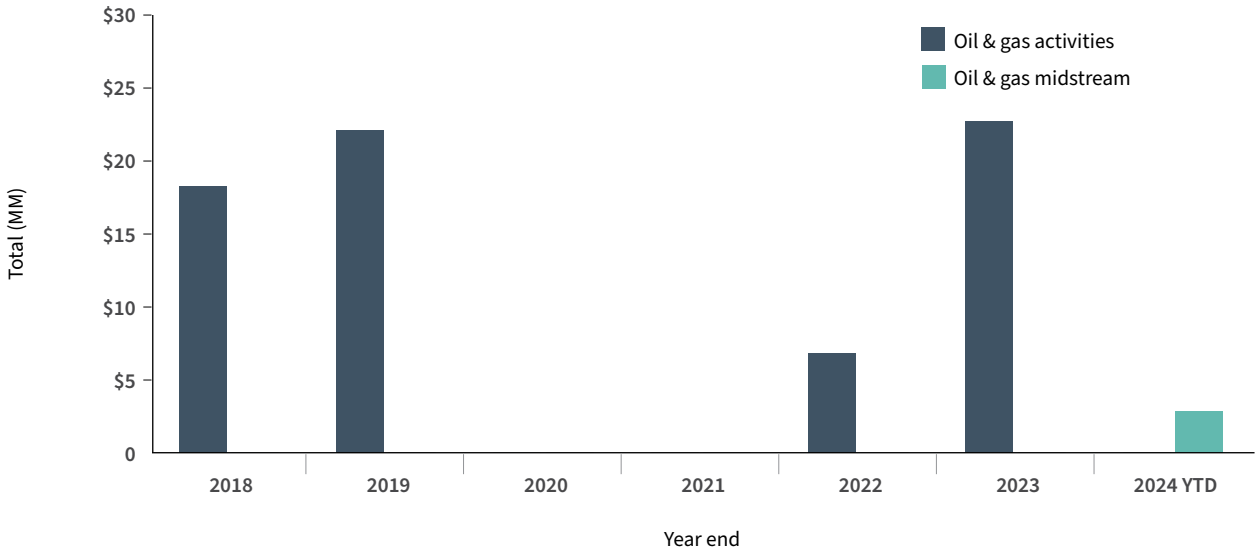
Sustainable credit facilities are intended to incentivize RIs to improve performance related to certain sustainability criteria or key performance indicators, such as an RI's GHG emissions, water management, health and safety, or diversity of its directors. These loans typically specify varied borrowing costs associated with attaining or failing to attain the specified targets (decreased or increased coupon rate, respectively). Note that many of the RIs that have sustainable credit facilities often have other credit facilities in place that do not have sustainability criteria attributed to them.

Figure 49: Sustainable credit facilities for energy-related AB RIs

ENERGY SUB-INDUSTRY	CURRENT AMOUNT (MM)	DATE INITIATED
Oil & gas midstream	$1,000	Q3 2022
Oil & gas midstream	$3,000	Q3 2022
Oil & gas activities	$450	Q2 2022
Oil & gas activities	$2,000	Q1 2022
Oil & gas activities	$700	Q4 2021
Oil & gas activities	$700	Q3 2021
Oil & gas activities	USD $1,265	Q2 2021
Oil & gas midstream	$750	Q2 2021
Oil & gas midstream	$1,000	Q1 2021

Figure 50 shows clean energy-related project funding provided by the Government of Canada (through Natural Resources Canada) to RIs engaged in oil and gas activities and RIs involved in oil and gas midstream for which the ASC was the principal regulator.[6] For 2018 to the end of September 2024, there have been 16 funding events to 10 different RIs, totalling $69 million. In 2024 YTD, there have been three funding events for two RIs involved in oil and gas midstream totalling $3 million.

Figure 50: Government of Canada clean energy-related funding provided to AB RIs engaged in oil and gas activities



The Government of Canada and various provincial governments have become important sources of capital for RIs with projects that utilize emerging, unproven technologies that may not otherwise meet funding criteria. Staff intend to continue to monitor this type of funding and provide additional information in future reports.

[6] www.natural-resources.canada.ca/science-and-data/funding-partnerships/opportunities/current-investments/21146

6. Energy Advisory Committee

The Energy Advisory Committee (**EAC**) provides the ASC with information and advice on energy-related matters. It is comprised of volunteer members (**Members**) with energy-related backgrounds that are appointed to three-year terms. Meetings are normally held three times per year and are attended by Members and select ASC staff and Executive Management.

The EAC's mandate is to:

- Review and provide feedback on issues and current developments regarding the:
  - Evaluation of oil and gas reserves and resources other than reserves.
  - Disclosure concerning oil and gas activities.
  - Evaluation and disclosure regarding other energy-related matters.
- Comment on related current and proposed Alberta securities laws and regulatory policies.
- Provide informal advice to staff.

The ASC thanks the Members for their contributions.

CURRENT MEMBERS:

Robyn Bourgeois
Birchcliff Energy Ltd.

Steven J. Golko
Sproule

Nicole Labrecque
Cenovus Energy Inc.

Dr. John Lacey
Enjay Holdings Alberta Ltd.

Ian McDonald
CNOOC International

Lesley Mitchell
Deloitte

Rob Morgan

Larry Petropoulos
BMO Capital Markets

Michael Verney
McDaniel & Associates Consultants Ltd.

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7. Contact information

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8. Glossary of terms

The following terms and their respective definitions concern oil and gas activities, as defined in NI 51-101 *Standards of Disclosure For Oil and Gas Activities*. They are sourced from section 1.1 of NI 51-101 and CSA Staff Notice 51-324 *Revised Glossary to NI 51-101 Standards of Disclosure for Oil and Gas Activities*.

"**anticipated results**" means information that may, in the opinion of a reasonable person, indicate the potential value or quantities of resources in respect of the reporting issuer's resources or a portion of its resources and includes:

(a) estimates of volume;

(b) estimates of value;

(c) areal extent;

(d) pay thickness;

(e) flow rates; or

(f) hydrocarbon content.

"**audit**" in relation to reserves data, the process whereby an independent qualified reserves auditor carries out procedures designed to allow the independent qualified reserves auditor to provide reasonable assurance, in the form of an opinion that the reporting issuer's reserves data (or specific parts thereof) have, in all material respects, been determined and presented in accordance with the COGE Handbook and are, therefore, free of material misstatement.

Because of

(a) the nature of the subject matter (estimates of future results with many uncertainties);

(b) the fact that the independent qualified reserves auditor assesses the qualifications and experience of the reporting issuer's staff, assesses the reporting issuer's systems, procedures and controls and relies on the competence of the reporting issuer's staff and the appropriateness of the reporting issuer's systems, procedures and controls; and

(c) the fact that tests and samples (involving examination of underlying documentation supporting the determination of the reserves and future net revenue) as opposed to complete evaluations, are involved; the level of assurance is designed to be high, though not absolute.

The level of assurance cannot be described with numeric precision. It will usually be less than, but reasonably close to, that of an independent evaluation and considerably higher than that of a review.

"**COGE Handbook**" means the "Canadian Oil and Gas Evaluation Handbook" maintained by the Society of Petroleum Evaluation Engineers (Calgary Chapter), as amended from time to time.

"**commercial**" when a project is commercial this implies that the essential social, environmental, and economic conditions are met, including political, legal, regulatory, and contractual conditions.

Considerations with regard to determining commerciality include:

- economic viability of the related development project;
- a reasonable expectation that there will be a market for the expected sales quantities of production required to justify development;
- evidence that the necessary production and transportation facilities are available or can be made available;
- evidence that legal, contractual, environmental, governmental, and other social and economic concerns will allow for the actual implementation of the recovery project being evaluated;
- a reasonable expectation that all required internal and external approvals will be forthcoming. Evidence of this may include items such as signed contracts, budget approvals, and approvals for expenditures, etc.
- evidence to support a reasonable timetable for development. A reasonable time frame for the initiation of development depends on the specific circumstances and varies according to the scope of the project. Although five years is recommended as a maximum time frame for classification of a project as commercial, a longer time frame could

be applied, where, for example, development of economic projects are deferred at the option of the producer for, among other things, market-related reasons or to meet contractual or strategic objectives.

"**contingent resources data**" means:

(a) an estimate of the volume of contingent resources; and

(b) the risked net present value of future net revenue of contingent resources.

"**effective date**" in respect of information, means the date as at which, or for the period ended on which, the information is provided.

"**evaluation**" means, in relation to reserves data or resources other than reserves, the process whereby an economic analysis is made of a property to arrive at an estimate of a range of net present values of the estimated future net revenue resulting from the production of the reserves or resources other than reserves associated with the property.

"**first point of sale**" " means the first point after initial production at which there is a transfer of ownership of a product type.

"**forecast prices and costs**" means future prices and costs that are:

(a) generally accepted as being a reasonable outlook of the future;

(b) if, and only to the extent that, there are fixed or presently determinable future prices or costs to which the reporting issuer is legally bound by a contractual or other obligation to supply a physical product, including those for an extension period of a contract that is likely to be extended, those prices or costs rather than the prices and costs referred to in subparagraph (a).

"**future net revenue**" means a forecast of revenue, estimated using forecast prices and costs or constant prices and costs, arising from the anticipated development and production of resources, net of the associated royalties, operating costs, development costs, and abandonment and reclamation costs.

"**gas**" includes natural gas, conventional natural gas, coal bed methane, gas hydrates, shale gas, and synthetic gas.

"**gross**"

(a) In relation to a reporting issuer's interest in production or reserves, its "company gross reserves," which are the reporting issuer's working interest (operating or non-operating) share before deduction of royalties and without including any royalty interests of the reporting issuer.

(b) In relation to wells, the total number of wells in which a reporting issuer has an interest.

(c) In relation to properties, the total area of properties in which a reporting issuer has an interest.

"**independent**" in respect of the relationship between a reporting issuer and a person or company, means a relationship between the reporting issuer and that person or company in which there is no circumstance that could, in the opinion of a reasonable person aware of all relevant facts, interfere with that person's or company's exercise of judgement regarding the preparation of information which is used by the reporting

"**net**"

(a) In relation to a reporting issuer's interest in production or reserves, the reporting issuer's working interest (operating or non-operating) share after deduction of royalty obligations, plus the reporting issuer's royalty interests in production or reserves.

(b) In relation to a reporting issuer's interest in wells, the number of wells obtained by aggregating the reporting issuer's working interest in each of its gross wells.

(c) In relation to a reporting issuer's interest in a property, the total area in which the reporting issuer has an interest multiplied by the working interest owned by the reporting issuer.

"**oil**" includes crude oil, bitumen, tight oil and synthetic crude oil.

"**oil and gas activities**" includes the following:

(a) searching for a product type in its natural location;

(b) acquiring property rights or a property for the purpose of exploring for or removing product types from their natural locations;

(c) any activity necessary to remove product types from their natural locations, including construction, drilling, mining and production, and the acquisition, construction, installation and maintenance of field gathering and storage systems including treating, field processing and field storage;

(d) producing or manufacturing of synthetic crude oil or synthetic gas;

but does not include any of the following:

(e) any activity that occurs after the first point of sale;

(f) any activity relating to the extraction of a substance other than a product type and their by-products;

(g) extracting hydrocarbons as a consequence of the extraction of geothermal steam.

"**preparation date**" in respect of written disclosure, means the most recent date to which information relating to the period ending on the effective date was considered in the preparation of the disclosure.

"**property**" includes:

(a) fee ownership or a lease, concession, agreement, permit, licence or other interest representing the right to extract oil or gas subject to such terms as may be imposed by the conveyance of that interest;

(b) royalty interests, production payments payable in oil or gas, and other non-operating interests in properties operated by others; and

(c) an agreement with a foreign government or authority under which a reporting issuer participates in the operation of properties or otherwise serves as "producer" of the underlying reserves (in contrast to being an independent purchaser, broker, dealer or importer).

A property does not include supply agreements, or contracts that represent a right to purchase, rather than extract, oil or gas.

"**prospective resources data**" means:

(a) an estimate of the volume of prospective resources, and

(b) the risked net present value of future net revenue of prospective resources.

"**qualified reserves auditor**" means an individual who:

(a) in respect of particular reserves data, resources or related information, possesses professional qualifications and experience appropriate for the estimation, evaluation, review and audit of the reserves data, resources and related information; and

(b) is a member in good standing of a professional organization.

"**qualified reserves evaluator**" means an individual who:

(a) in respect of particular reserves data, resources or related information, possesses professional qualifications and experience appropriate for the estimation, evaluation and review of the reserves data, resources and related information; and

(b) is a member in good standing of a professional organization.

"**qualified reserves evaluator or auditor**" means a qualified reserves auditor or a qualified reserves evaluator.

"**reserves**" means proved, probable or possible reserves.

"**reserves data**" means an estimate of proved reserves and probable reserves and related future net revenue, estimated using forecast prices and cost.

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