

# Report to Mining and Petroleum Competence Board on practising certificates and certificate of competence examination results 2018–2023

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# Introduction

The Resources Regulator annually prepares a report for the NSW Mining and Petroleum Competence Board on:

- the number of practising certificates held by holders for each statutory function
- certificate of competence exams competent/not yet competent rates (pass or fail) over the past 6 years from 2018 to 2023 and certificates issued, and

where data is available from year-to-date in 2023 for oral exams, then it has been included to show a more complete picture for the round of exams for the function.

## Scope

Data was obtained from the Regulator's Activity Compliance and Enforcement System (ACES) and published examiners' reports on the Regulator's website.

## Observations

The following summary observations were made for the results provided for the overall statistics and for each statutory function, noting they were essentially the same as those in the 2022 report:

- 1) Practising certificate numbers for each class of mine and functions within each need to be considered against the numbers of mines provided in brackets to assist in determining whether there are sufficient numbers.
- 2) Mutual recognition of interstate certificates continues to be low, so is not greatly contributing to the number of NSW practising certificate holders.
- 3) The number of candidates undertaking exams in 2023 and pass rates is on par with the years before the Covid-impacted year of 2020.
- 4) The number of candidates attempting the exams for certain functions continues to remain low such as mining, electrical and mechanical engineering managers and engineers.
- 5) The competent versus not-yet-competent rates across all functions have remained generally constant, with coal being lower than the combined metalliferous/extractives rates.
- 6) The competent versus not-yet-competent rate for each function continues to be mainly constant for each, with some particularly low recently (mining, mechanical and electrical engineering managers and engineers) whereas some are improving (open cut examiner oral exams, though it dipped in 2023) or high consistently such as underground mine supervisor.
- 7) Blueprinting of exams for electrical, mechanical and quarry manager functions for 2022 (before pausing other functions) does not seem to have had any impact on results.
- 8) The most certificates of competence issued continue to be the underground mine supervisor and deputy by far, given the larger number of candidates that are attempting them.

## Recommendations

Consistently low rates for candidates attempting exams and being competent for certain functions be considered by the board as part of its strategic plan work.

## Practising certificates issued

Figures provided are from 27 January 2024 and 28 March 2023. Total practising certificates held is 3432. This is about a 6.5% decrease in the 2023 number (3674).

<b>Class of mine (number) and functions</b>	<b>at 28 March 2023</b>	<b>27 January 2024</b>
<b>Open cut coal mines (36)</b>		
Mining engineering manager	146	129
Open cut examiner	508	480
Electrical engineer	48	43
Mechanical engineer	43	37
Total	745	689
<b>Underground coal mines (27)</b>		
Mining engineering manager	178	140
Undermanager	346	301
Deputy of an ug coal mine	1064	1068
Electrical engineering manager	107	89
Mechanical engineering manager	93	74
Ventilation auditor	8	3
Ventilation officer	99	68
Dust control measures auditor	6	2
Total	1901	1745
<b>Underground mines other than coal (25)</b>	<b>at 28 March 2023</b>	<b>27 January 2024</b>

Class of mine (number) and functions	at 28 March 2023	27 January 2024
Mining engineering manager	112	109
Underground mine supervisor	343	323
Total	455	432
Mines other than ug or coal mines (340)		
Quarry manager	90	88
- tier 1 for 24 quarries (can also practise at tier 2 and 3)		
Quarry manager of specific non-coal mine(s)		
- tier 2 (all and specific) for 316 quarries	483	478
- tier 3 for 2,850 quarries	Not applicable	Not applicable
Total	573	566
Total all above certificates issued	3,674	3,432

## Practising certificates granted via mutual recognition

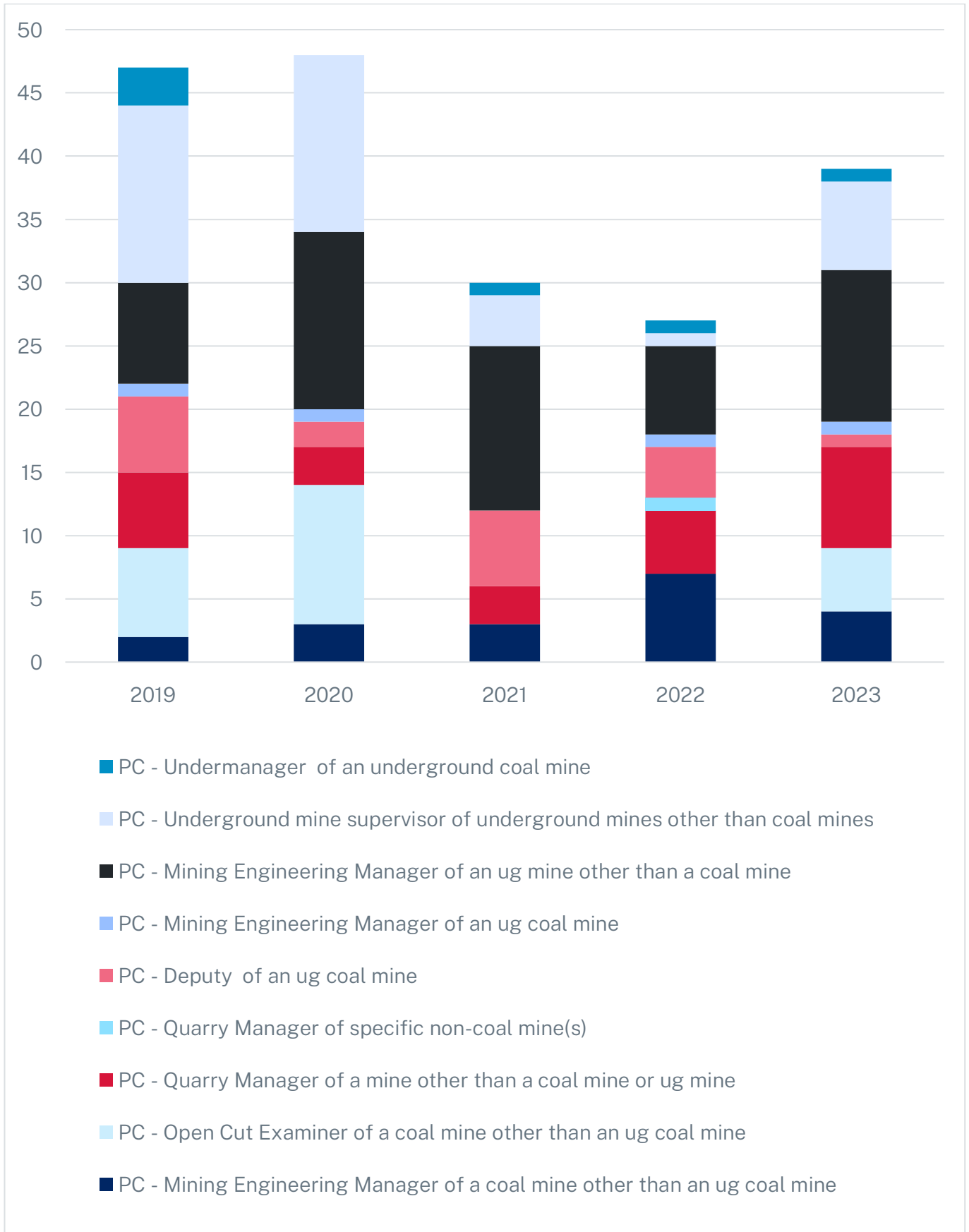
The numbers decreased annually between 2020 and 2022, and increased in 2023.

The top 3 functions recognised were in the metalliferous and extractive sectors in order of numbers granted:

1. Mining engineering manager of underground mines other than coal (55).
2. Underground mine supervisor (41).
3. Quarry manager (25).

Open cut examiners were 23 and deputies 19. This may be due to a potentially greater movement of NSW holders to Queensland. This observation is anecdotal, based on the number of verifications of NSW practising certificates requested by the Resources Safety and Health Queensland for their mutual recognition processes.

Figure 1: Practising certificates issued and by function from 2019 to 2023 for mutual recognition



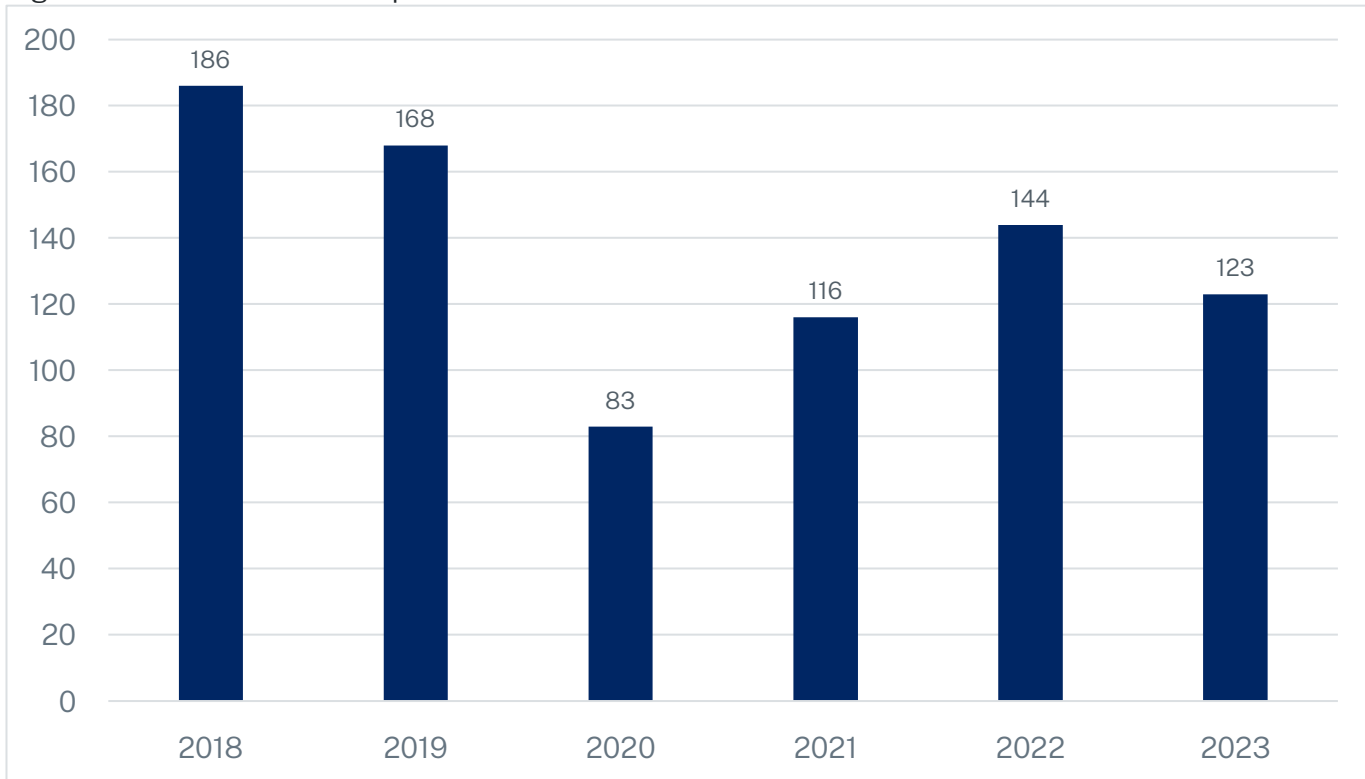


# Exam outcomes across mine classes and functions

## All functions – certificates of competence issued

The graph shows the number of certificates of competence issued in the past 5 years, from 2018 – 2023. The numbers show there was a decrease in 2020, in part due to COVID-19 reducing the number of exams held as scheduled and candidates being unable to attend. The numbers slowly increased coming out of the pandemic and normal examination schedules resumed.

Figure 2: Certificates of competence issued 2018 - 2023

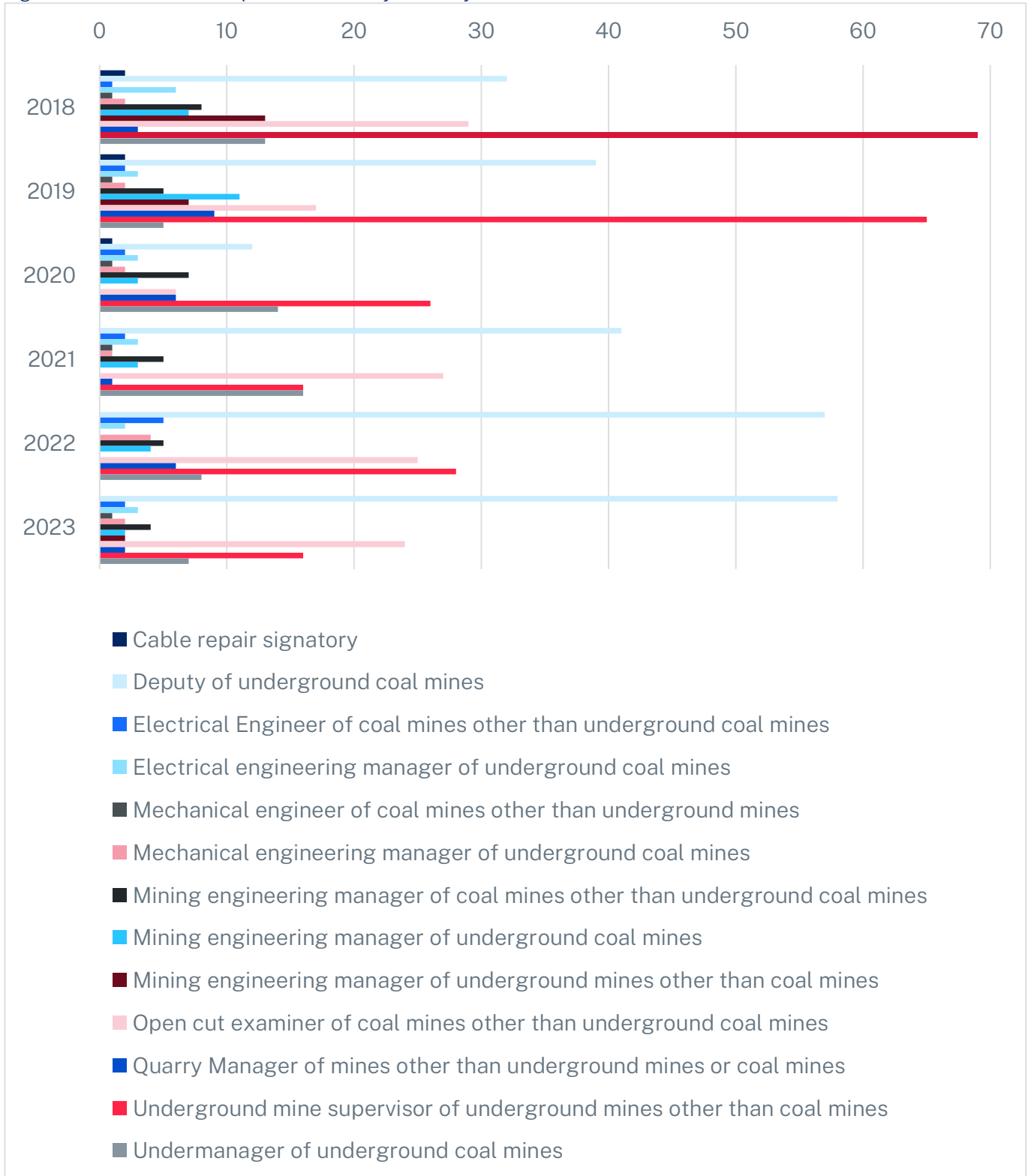


**Note:** certificates issued in a year may not match the number of candidates who passed oral exams. Certificates can be issued for oral exams completed late in the previous year.

## Certificates of competence issued by statutory function

The graph shows a larger number of certificates issued to the underground mine supervisor of underground mines other than coal mines (function commenced in 2017) and the deputy underground coal mine, which is reflective of the number of candidates who attempted the exams processes for them.

Figure 3: Certificates of competence issued by statutory function from 2018 - 2023

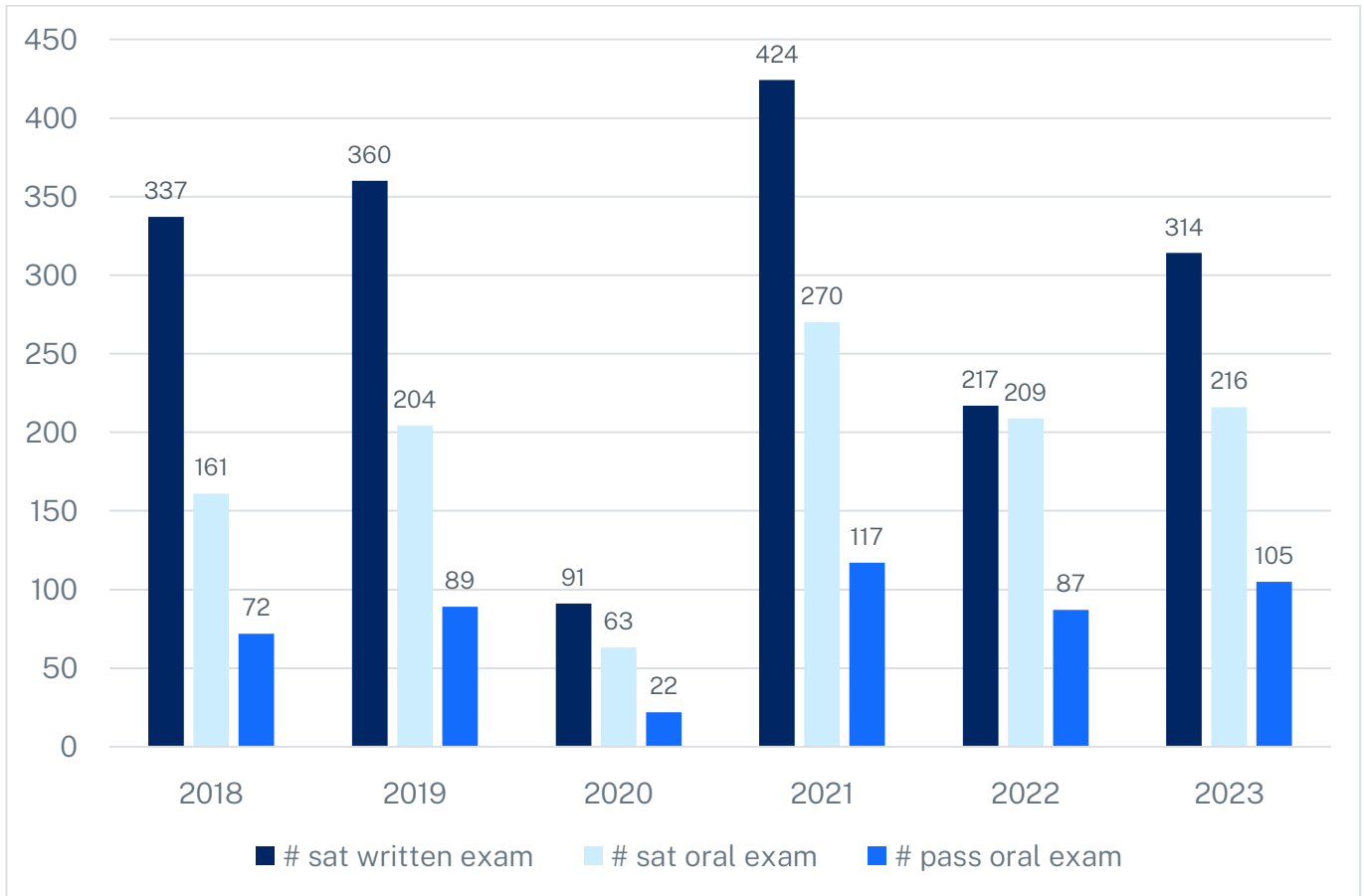


## Examination results

This graph shows the number of candidates progressing through the exam events. This data excludes the underground mine supervisor of underground mines and cable repair signatory as they do not sit written examinations. Results for the number who pass written exams cannot be provided given the number of exams for each function (up to 3 to fit into the graph each year).

We saw an increase in the number of candidates sitting exams in 2021 after COVID-19 restrictions eased. Numbers in 2023 have returned to pre covid levels with no significant changes.

Figure 4: written and oral examination candidate numbers and pass rates 2018 - 2023

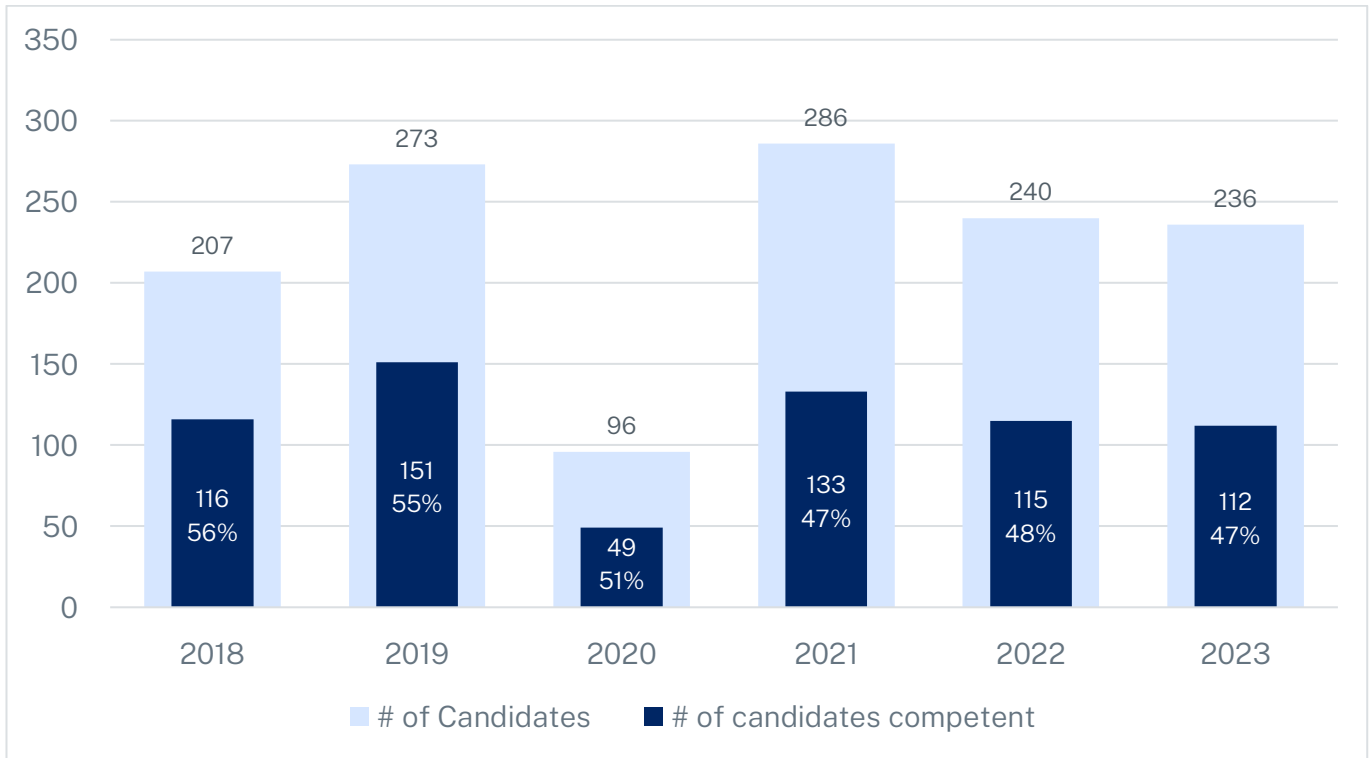


Three hundred and fourteen (314) candidates sat written exams in 2023, up by 97 from 2022 (217) with similar numbers undertaking oral exams ( 216 and 209) but the number of certificates of competence granted was reduced in 2023 (123) compared to 144 in 2022. This can be attributed mainly to fewer candidates undertaking and passing the underground mine supervisor oral only exam in 2023 (16 versus 28 in 2022).

## Oral examination results

This graph shows results across all statutory functions. There is a sharp decrease in the number of candidates in 2020 due to COVID-19.

Figure 5: oral examination candidate numbers and results 2018 - 2023



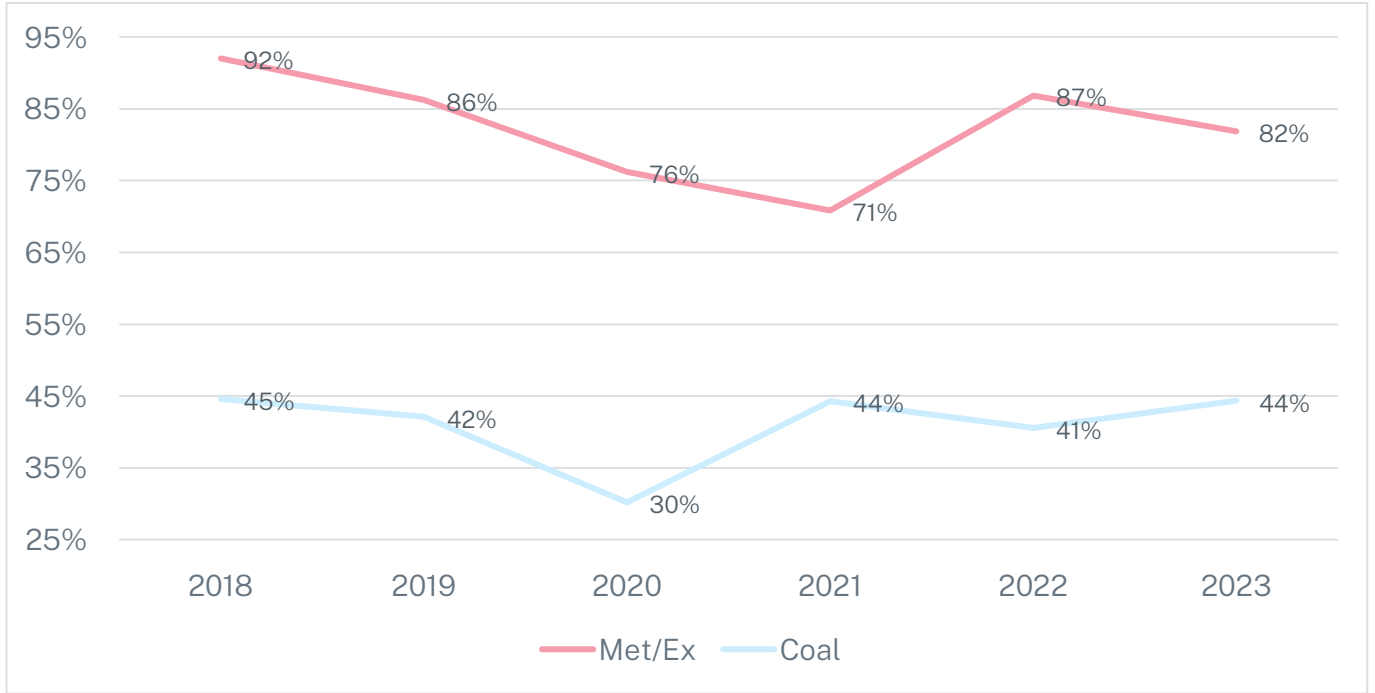
## Oral examination competent rate – coal vs metalliferous/extractive

This graph shows the oral exam competent rate of coal versus metalliferous/extractives (met/ex). Met/ex consists of:

- the mining engineering manager of underground mines than coal
- underground mine supervisor of underground mines other than coal mines, and
- quarry manager of mines other than underground mines or coal mines.

We cannot account for the drop in competent rate for met/ex in 2021, apart we were coming out of COVID19 restrictions. 2023 results are on par with pre-Covid levels.

Figure 6: Oral examination candidate competent rate – coal vs metalliferous/extractive (Met/ex) 2018 - 2023



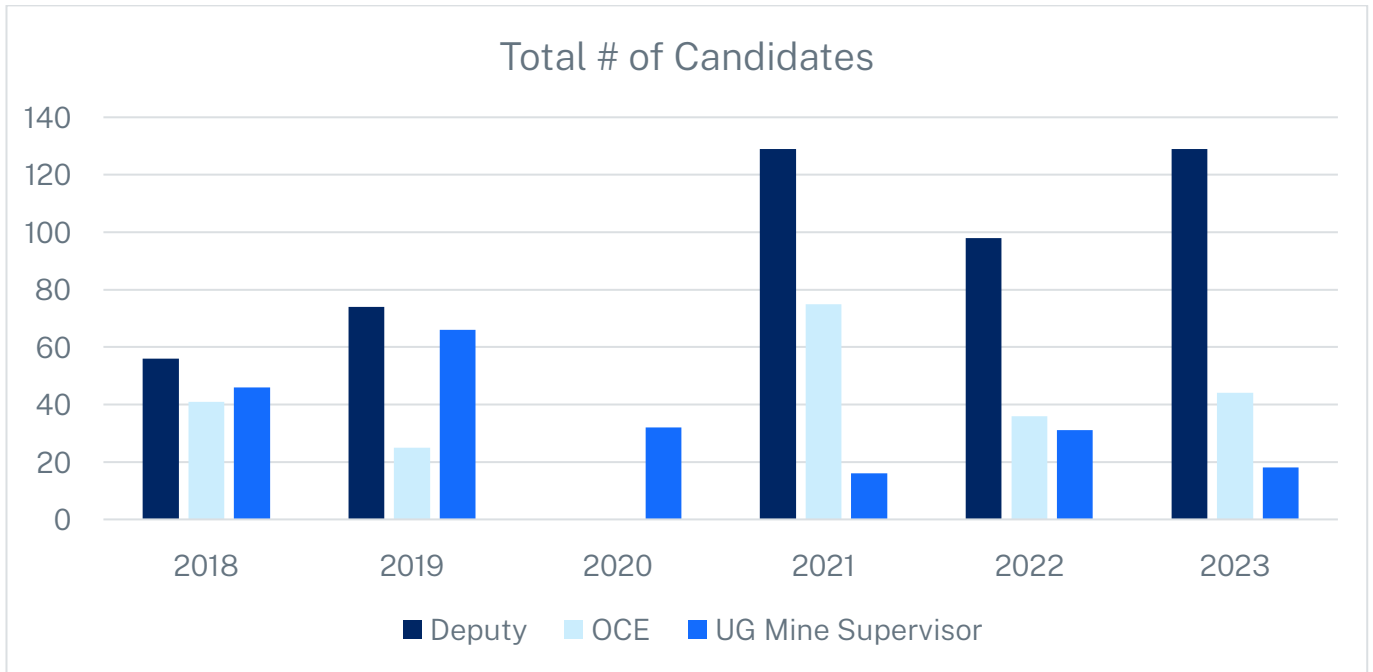
### Oral examination competency rates

The graph below shows the competent rate for the supervisor level. There is no oral exam for the open cut examiner and deputy functions in 2020 due to COVID-19. Rates seem constant for across the years, other than 2020.

Figure 7: supervisor functions oral examination pass rate 2018 - 2023



Figure 8: number of candidates undertaking an oral exam by supervisor function 2018 - 2023



The graph below shows the competent rate for the manager level. There were no candidates for:

- the mining engineering manager of underground mines other than coal in 2019
- mining engineering manager of coal mines other than underground coal mines and mining engineering manager of underground mines other than coal function in 2020 due to COVID-19.

The bar with 0% means all candidates were not yet competent.

The results should be considered against those exams with small numbers of candidates being examined (e.g. Mining engineering manager for underground mines other than coal) which will be more severely impacted by a candidate(s) passing or failing.

Figure 9: manager oral examination pass rate by function 2018 - 2023

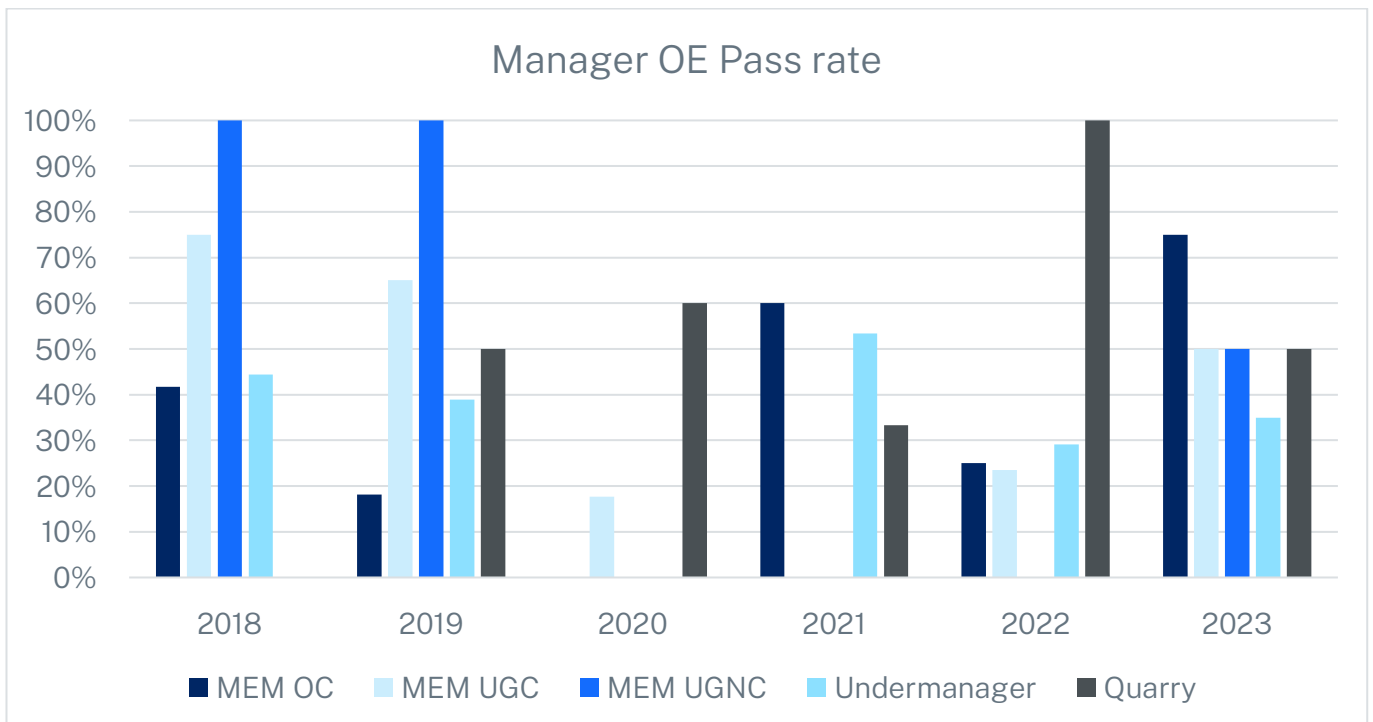
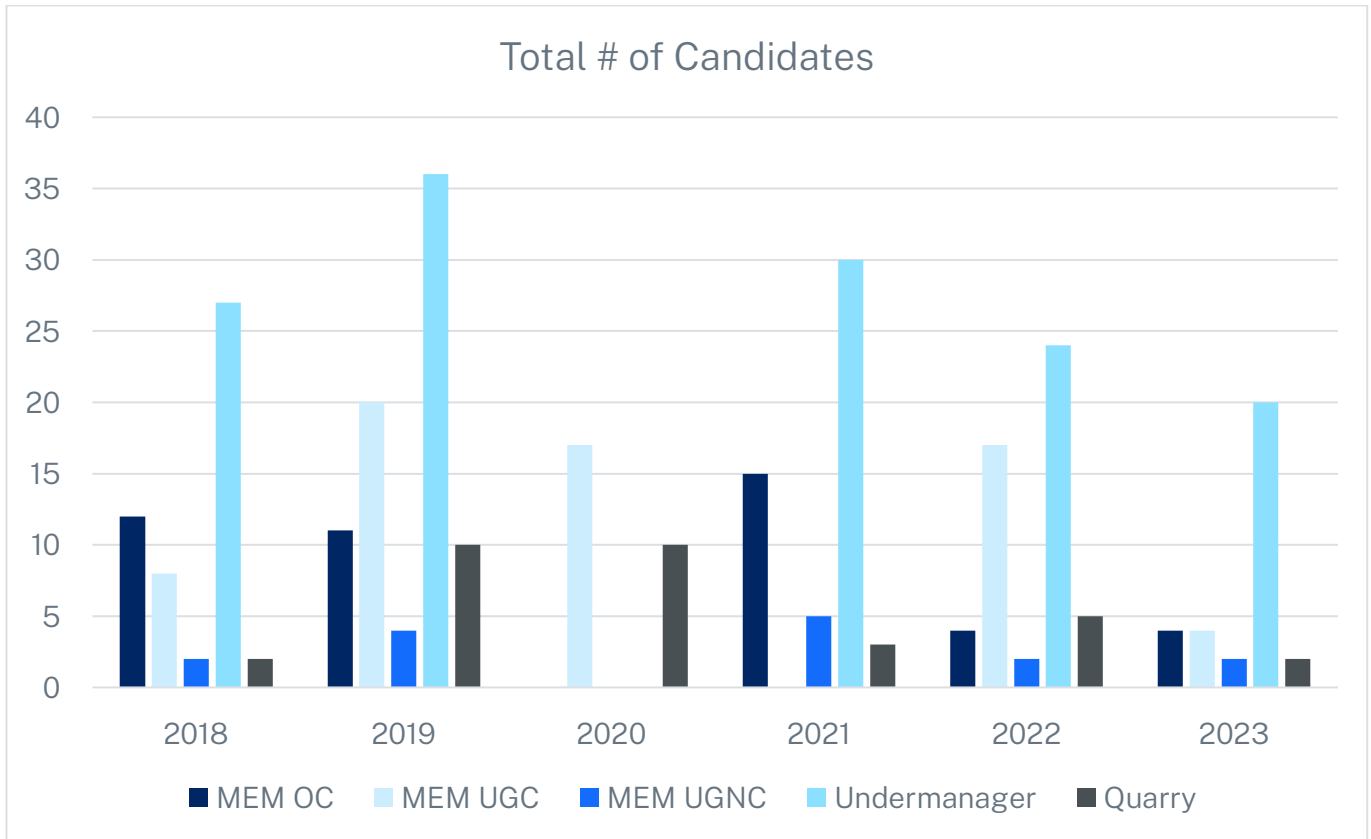


Figure 10: number of candidates undertaking an oral exam by manager function 2018 - 2023



## Individual statutory function exam results

For each of the functions that follow, graphs of the written examination(s) and oral examination results will be provided as applicable. The number of candidates is displayed on the vertical Y axis, and the calendar year across the horizontal X axis. Any notes necessary to assist with understanding the results are provided.

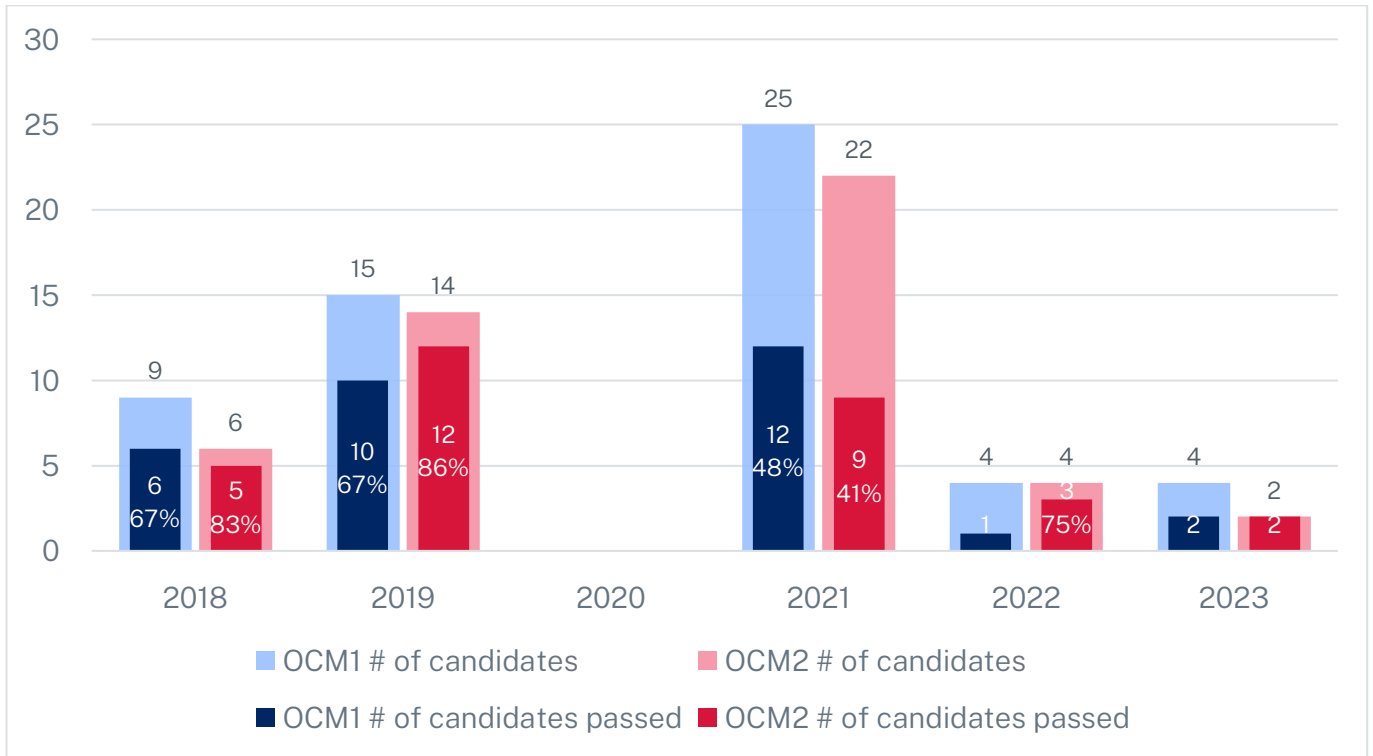
### Coal mines

#### Mining engineering manager

##### Written exams:

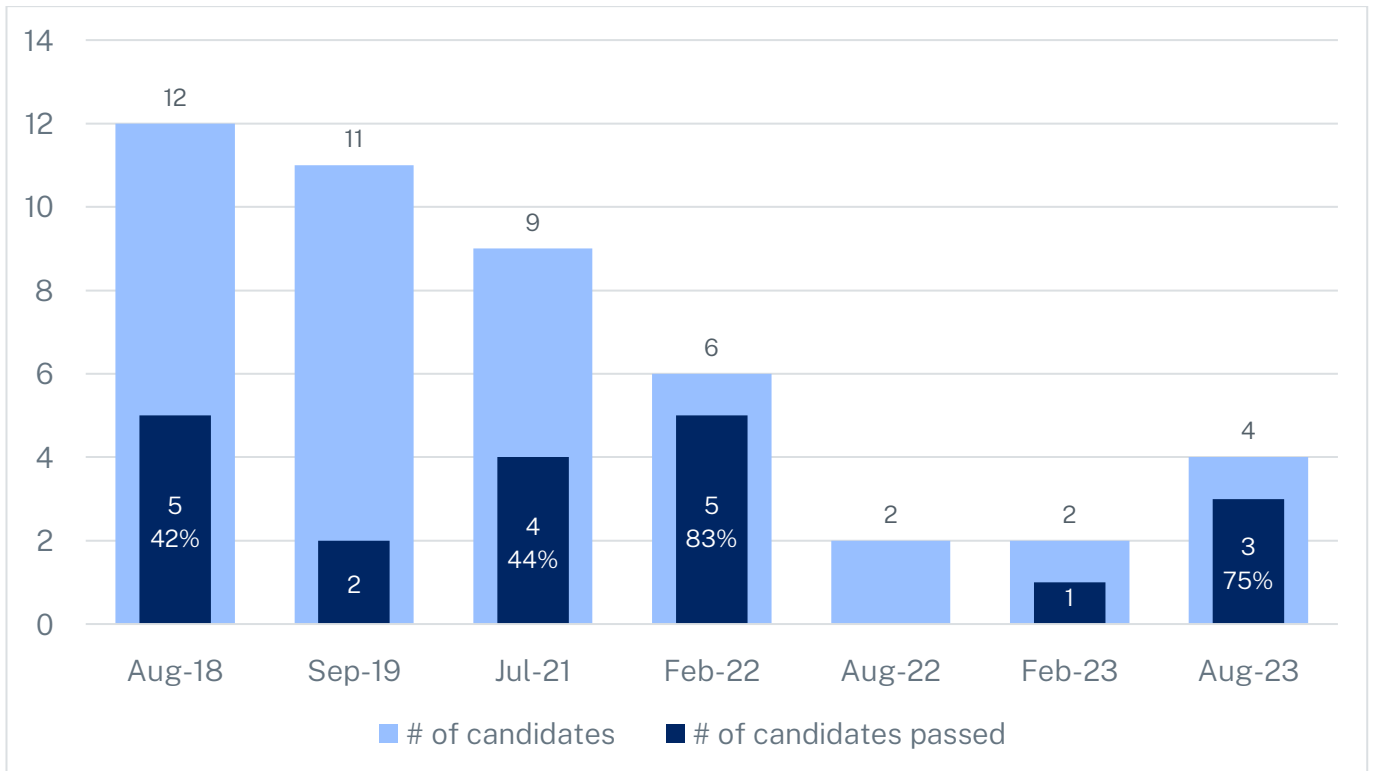
There is no written exam in 2020 due to COVID-19. OCM1 is the legislation paper and OCM2 is the open cut mining practice paper. 2023 has the best success rate for OCM 2 (practise) while OC1 (legislation) is down overall compared to pre-COVID-19. We account the differences due to the low numbers sitting (4 and 2), where individual results greatly affect results due to low sample size.

Figure 11: coal mines mining engineering manager written exam candidate numbers and pass rate 2018 - 2023



**Oral exams:**

Figure 12: coal mines mining engineering manager oral exam candidate numbers and pass rate 2018 - 2023



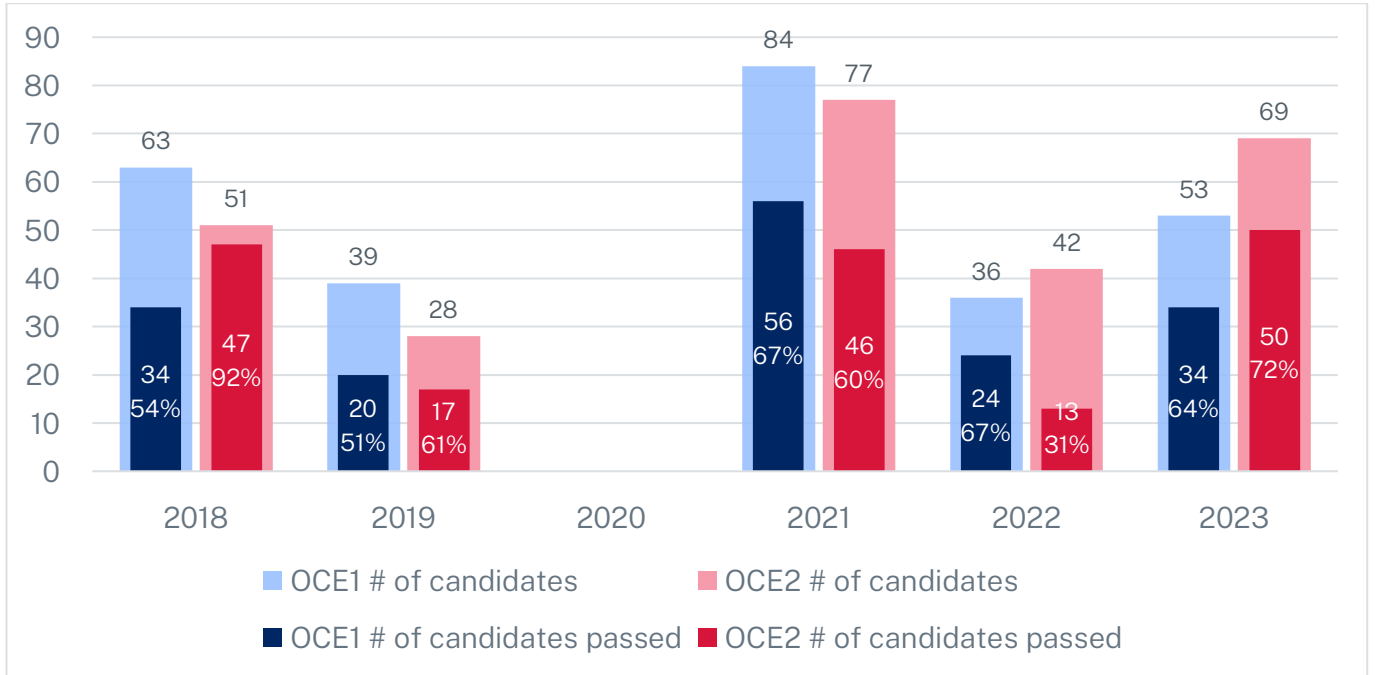


## Open cut examiner

### Written exams:

There was no written exam in 2020 due to COVID-19 restrictions. OCE1 is the legislation paper and OCM2 is the open cut mining practise paper. Results have fluctuated from year-to-year and papers.

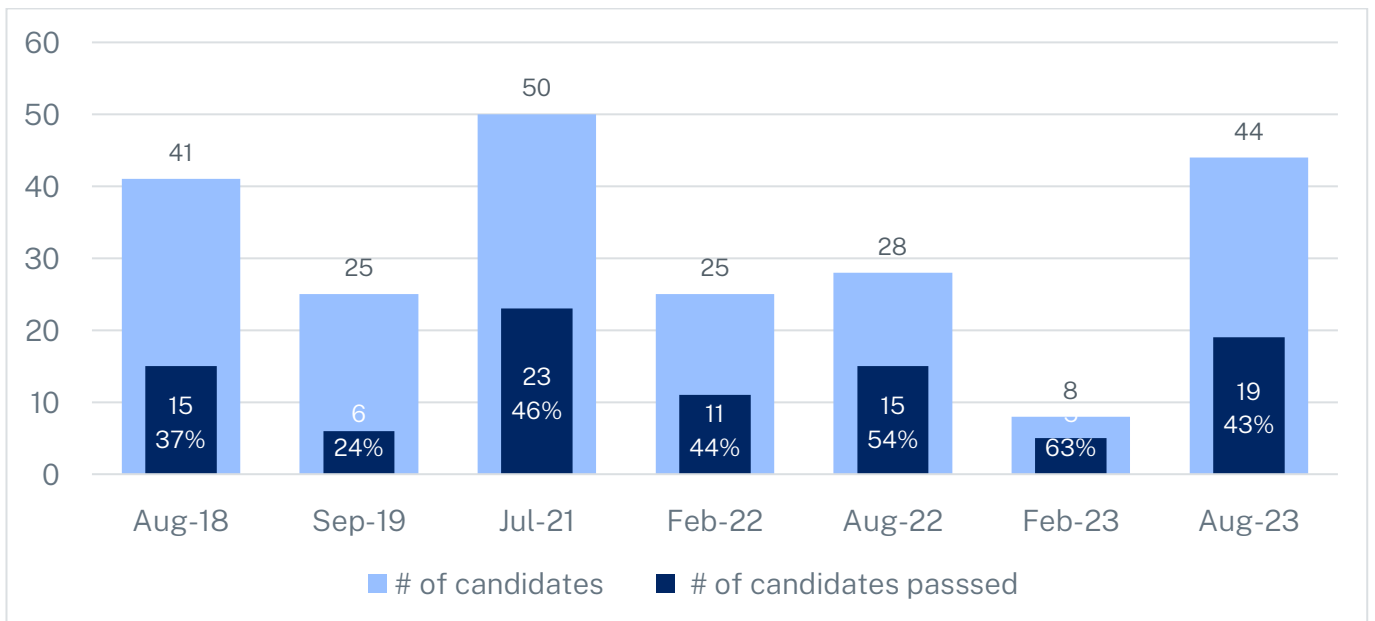
Figure 13: open cut examiner written exam candidate numbers and pass rates 2018 - 2023



### Oral exams:

There was an increase in the competent rate to February 2023 (8 sat) but then dipped in August (44 sat).

Figure 14: open cut examiner oral exam candidate numbers and pass rates 2018 - 2023

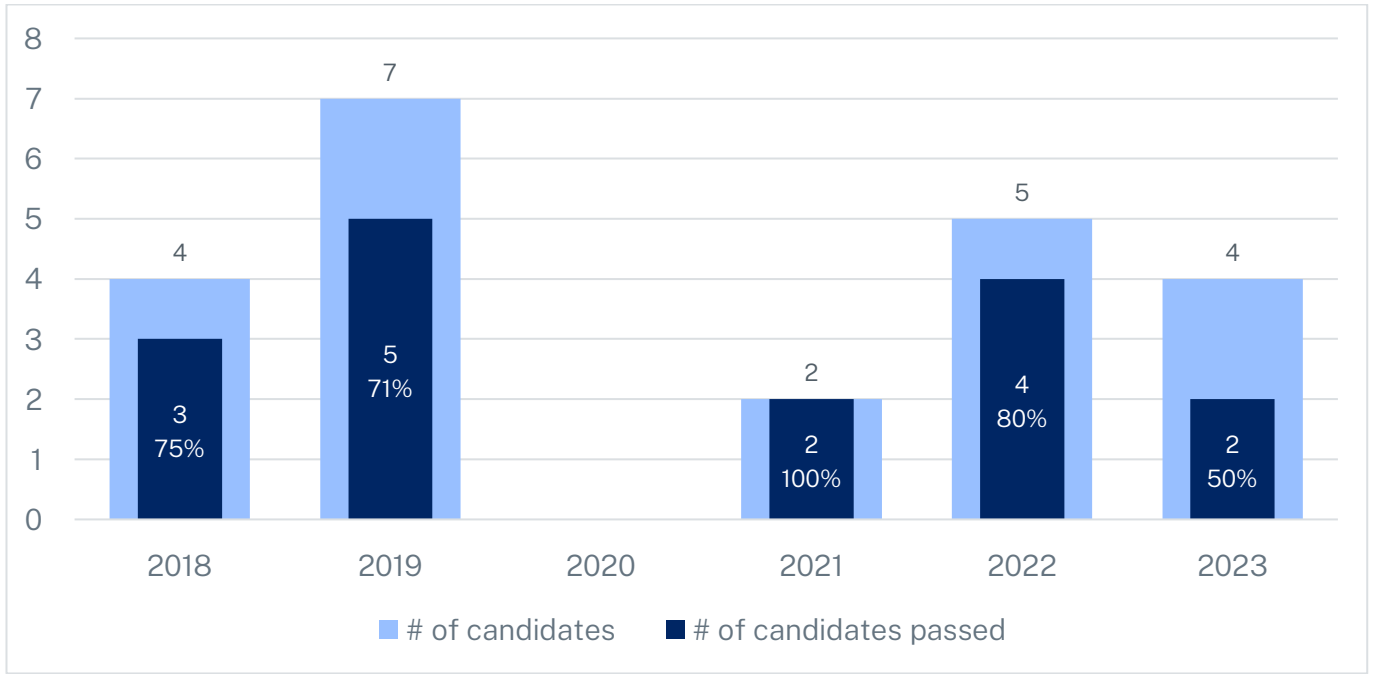


## Electrical engineer

### Written exams:

There were no written exams in 2020 due to COVID-19 restrictions. There is 1 combined paper CM3. Blueprinting in 2022 only exams does not seem to have made any significant change to results. Failure rate was higher in 2023, where only 4 candidates sat.

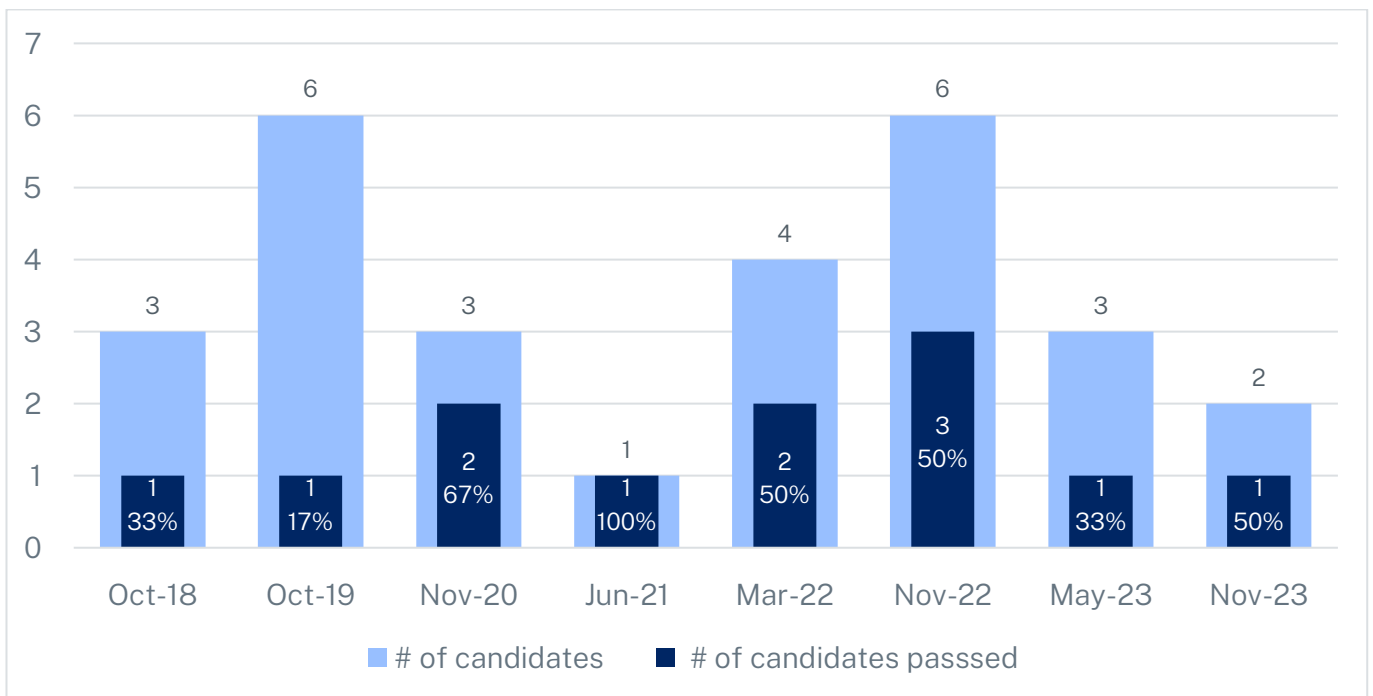
Figure 15: electrical engineer written exam candidate numbers and pass rates 2018 - 2023



### Oral exams:

Results fluctuate from year to year, with no upward trend overall.

Figure 16: electrical engineer oral exam candidate numbers and pass rates 2018 - 2023

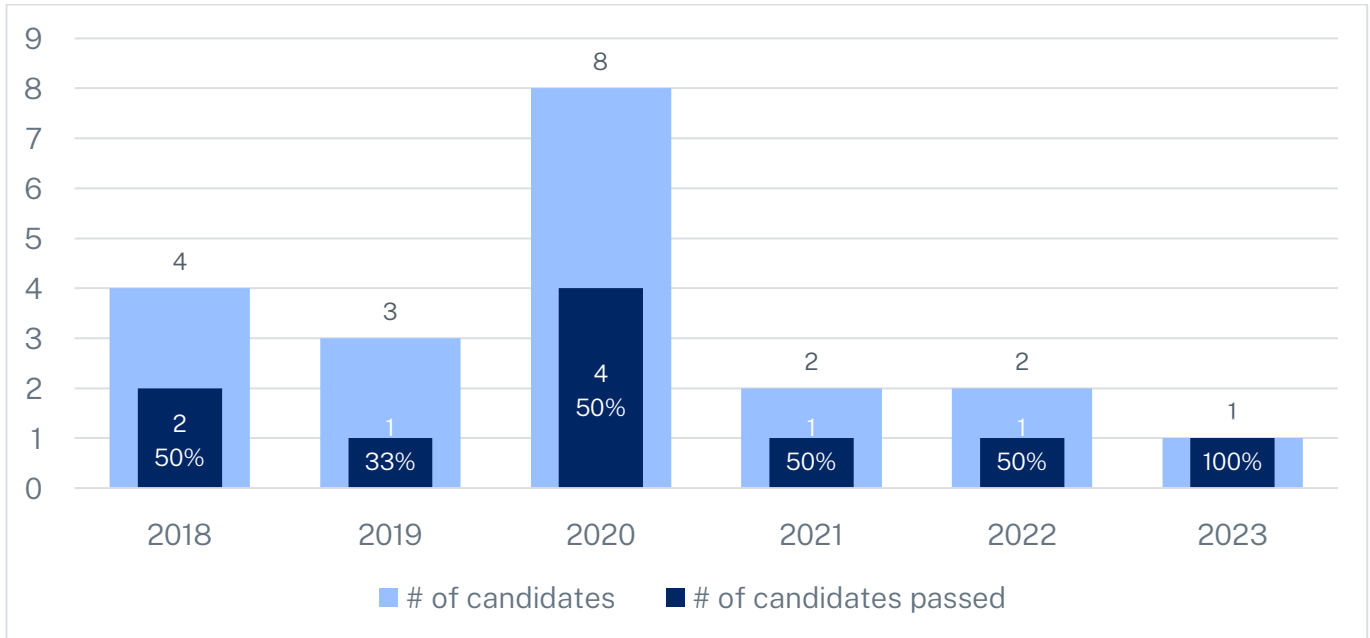


## Mechanical engineer

### Written exams:

The competent rate is consistent throughout the years, except 2023, where there was 1 candidate sat. There is 1 combined paper CM3. Blueprinting in 2022 only exams does not seem to have made any significant change to results.

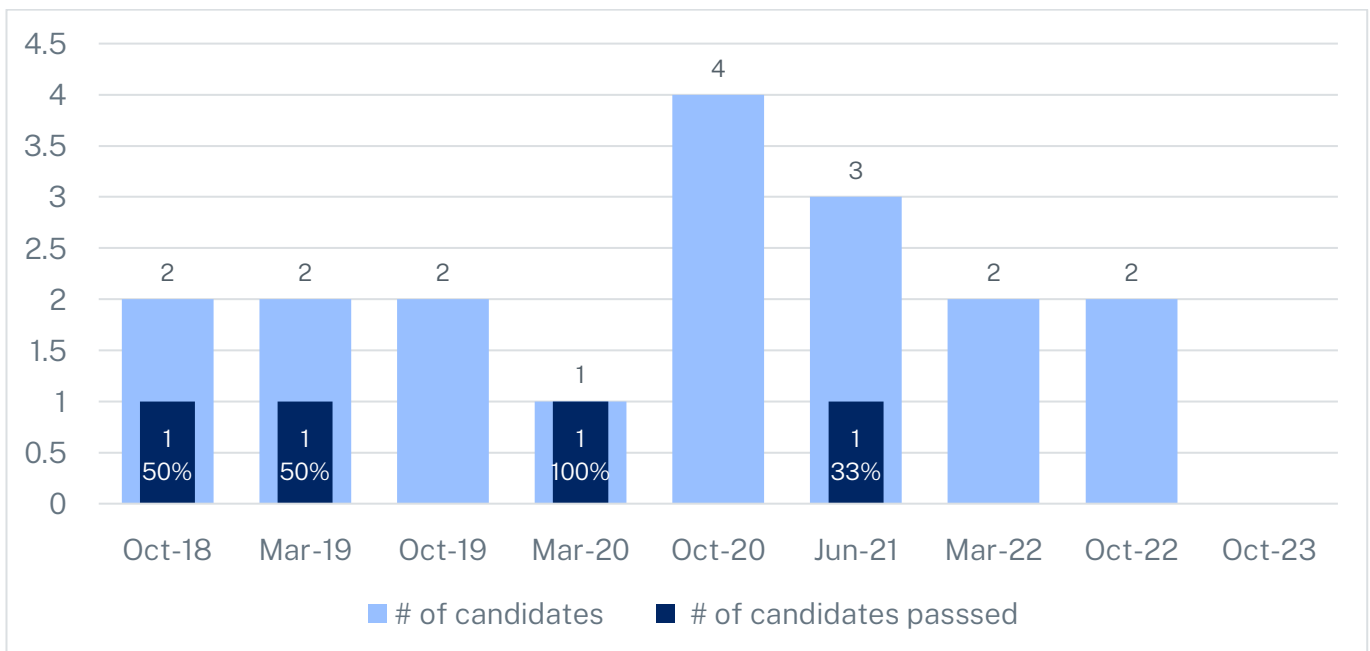
Figure 17: mechanical engineer written exam candidate numbers and pass rates 2018 - 2023



### Oral exams:

The not yet competent rate is high throughout the years, acknowledging there is a smaller number of candidates sitting. No candidate sat in October 2023.

Figure 18: mechanical engineer oral exam candidate numbers and pass rates 2018 - 2023



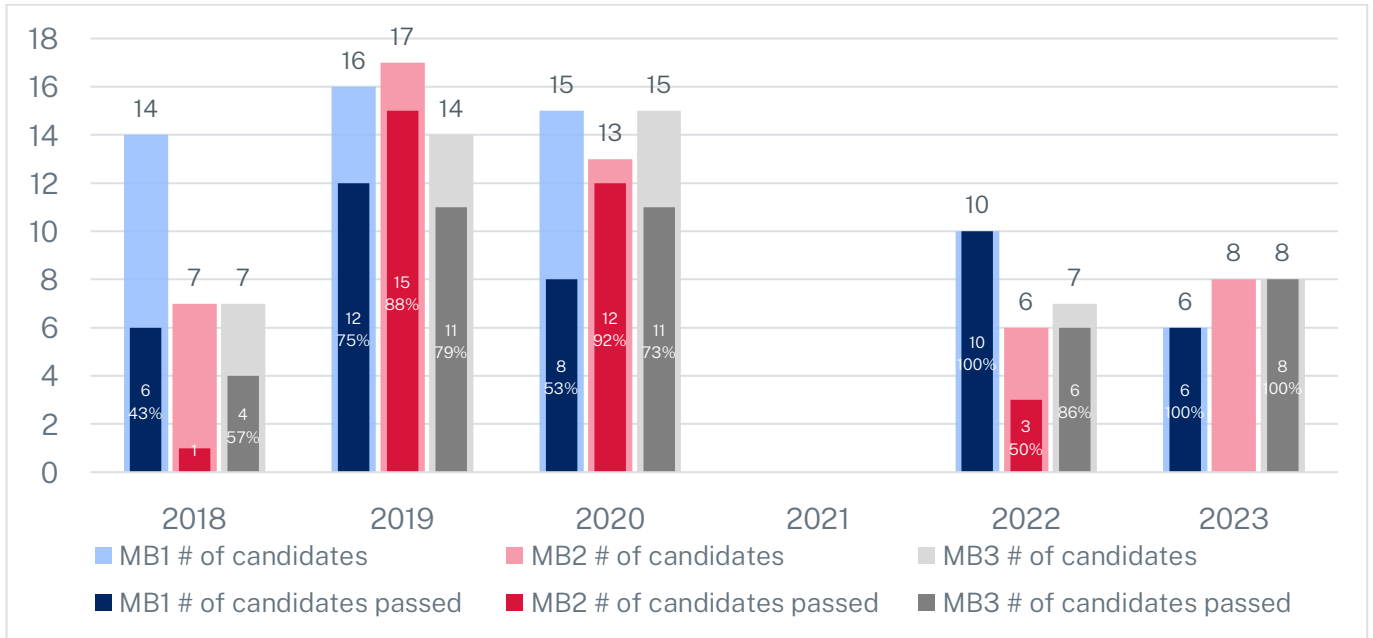
## Underground coal mines

### Mining engineering manager

#### Written exams:

There were no written exams in 2021. MB1 is the legislation paper, MB2 is the ventilation paper and MB3 is the coal mining practice paper. All 8 candidates failed the MB2 paper in 2023.

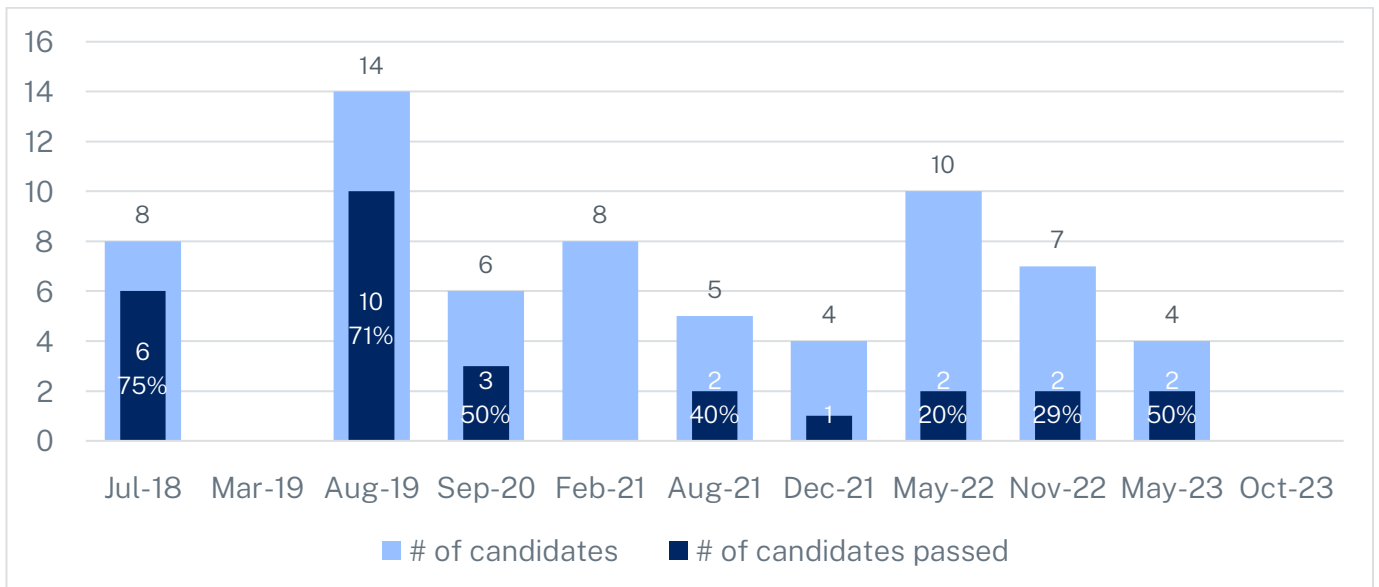
Figure 19: mining engineering manager underground coal mines written exams candidate numbers and pass rates 2018 - 2023



#### Oral exams:

There were no candidates in March 2019 or October 2023. The not yet competent rate is consistently high since September 2020.

Figure 20: mining engineering manager underground coal mines oral exam candidate numbers and pass rates 2018 - 2023

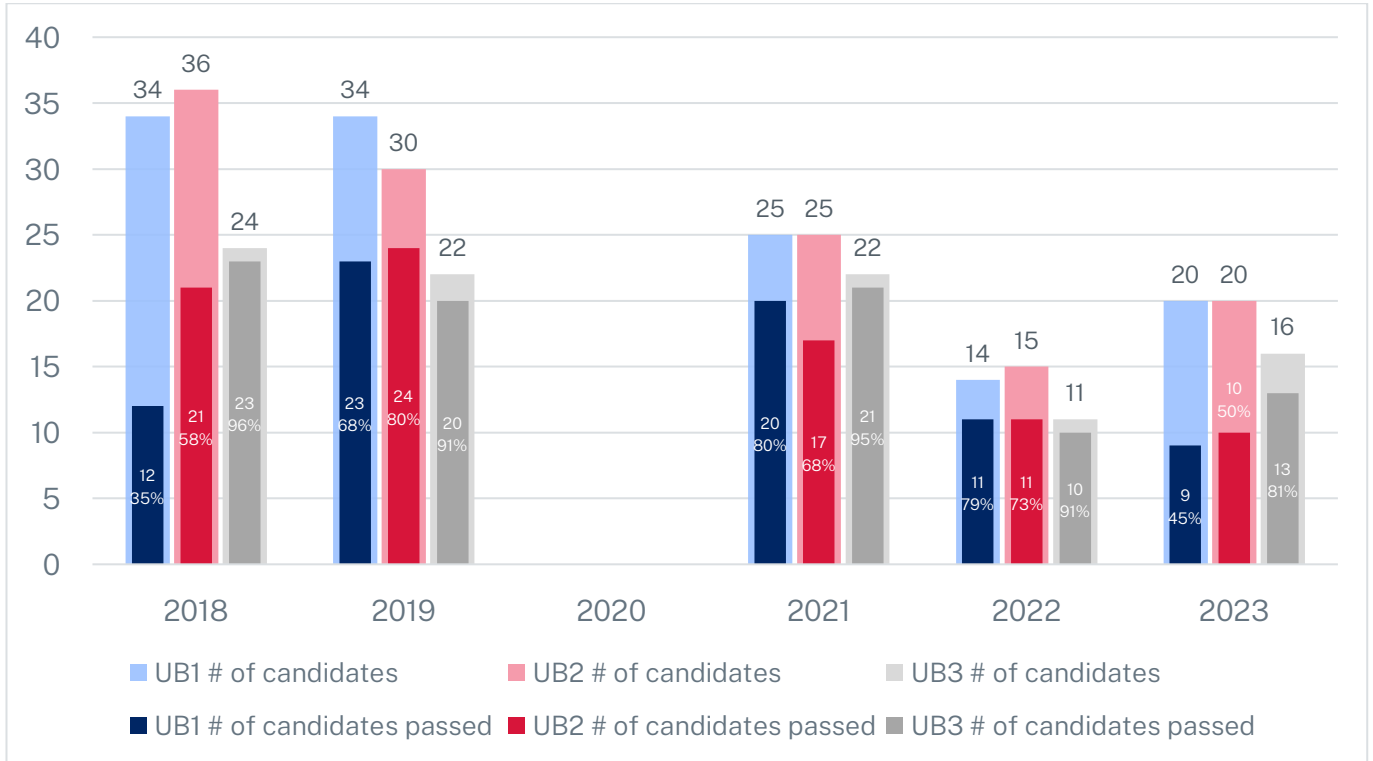


## Undermanager

### Written exams:

There was no exam in 2020 due to COVID-19. UB1 is the legislation paper, UB2 is the ventilation paper and UB3 is the coal mining practice paper. Results in 2023 went down to 2018 levels.

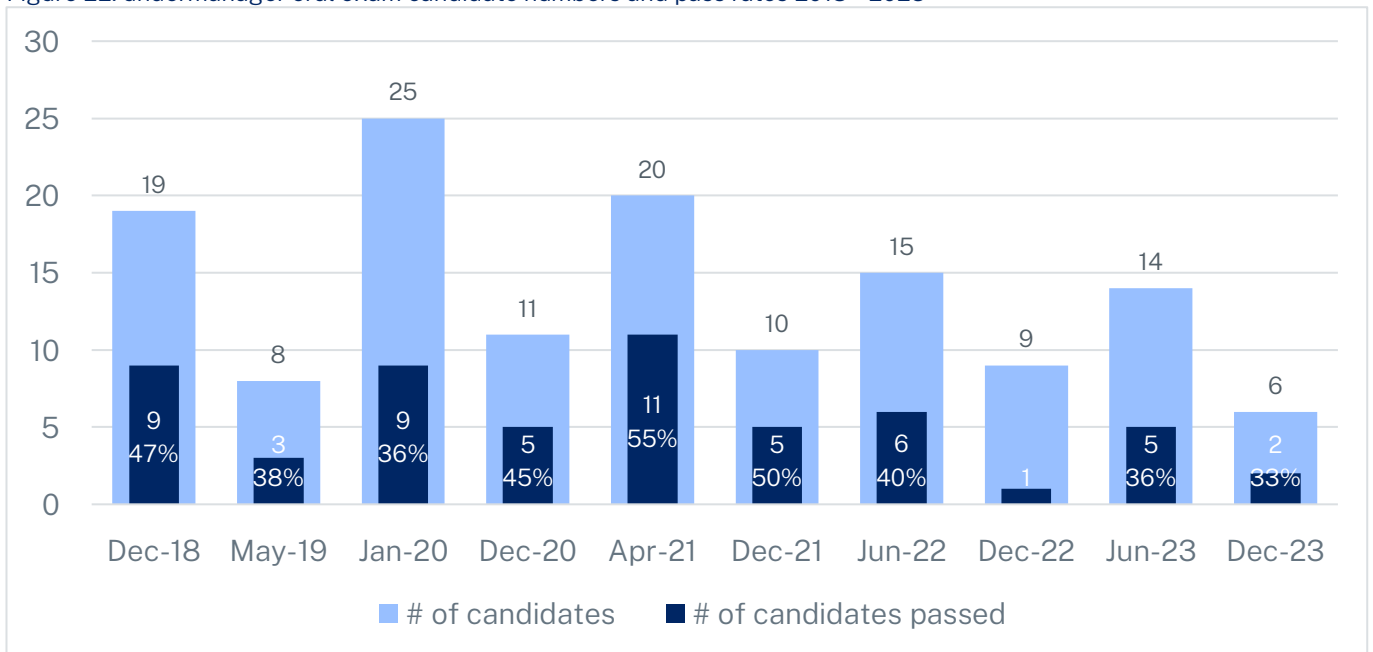
Figure 21: undermanager written exams candidate numbers and pass rates 2018 - 2023



### Oral exams:

The data shows a decrease in the competent rate.

Figure 22: undermanager oral exam candidate numbers and pass rates 2018 - 2023

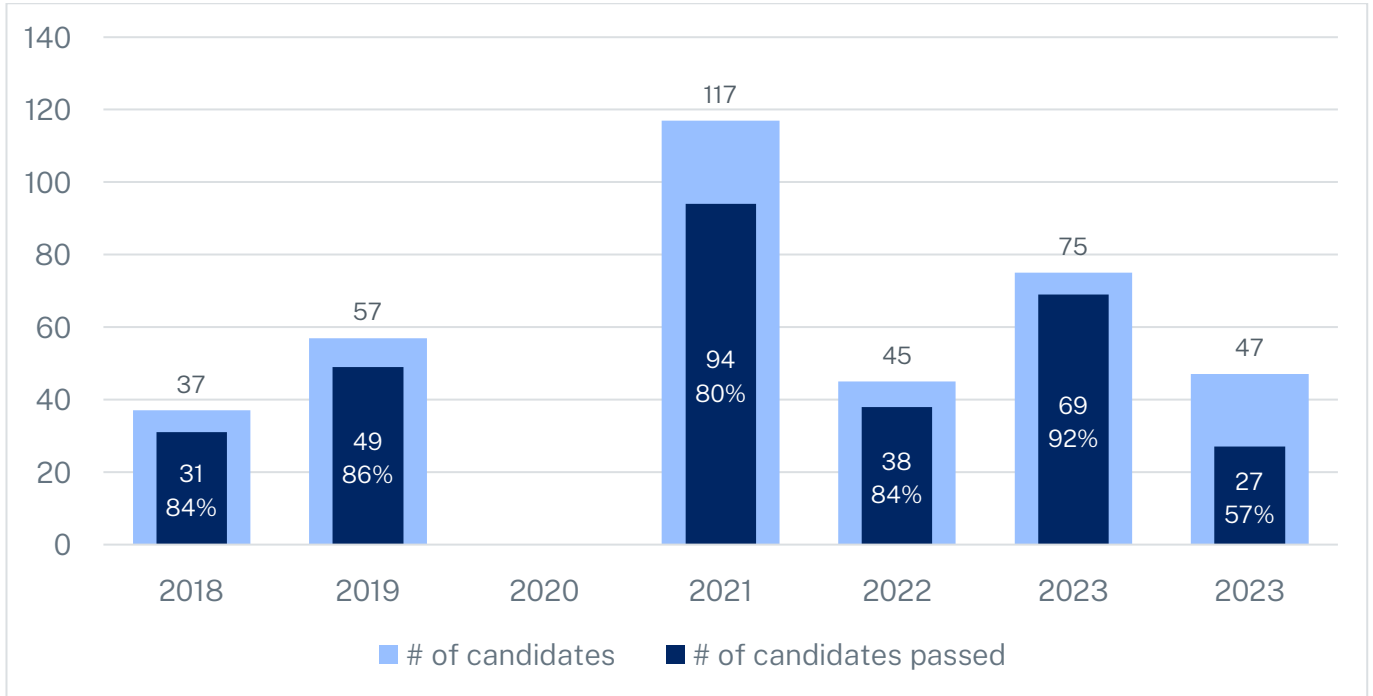


## Deputy

### Written exams:

There was no written examination in 2020 due to COVID-19. There is only one combined paper. Results dropped in 2023.

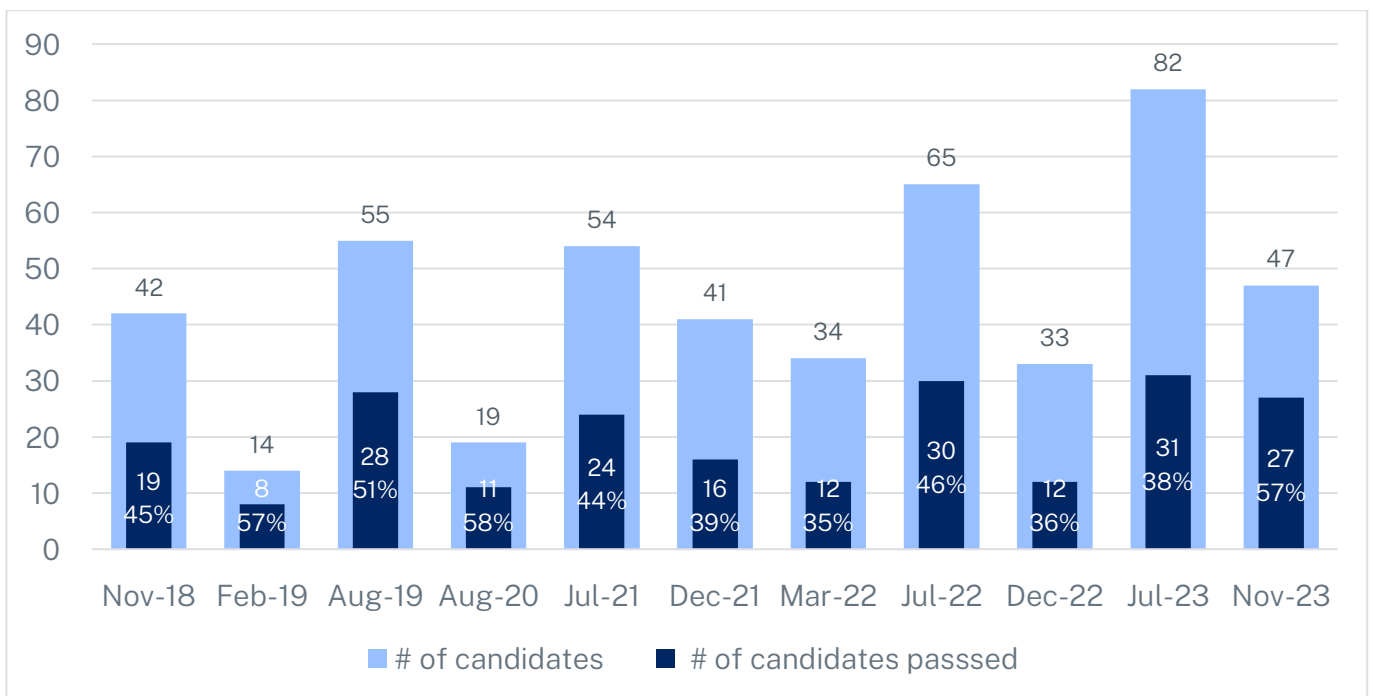
Figure 23: deputy written exam candidate numbers and pass rates 2018 - 2023



### Oral exams:

The competent rate is lower recently despite general and oral briefing sessions being provided.

Figure 24: deputy oral exam candidate numbers and pass rates 2018 - 2023

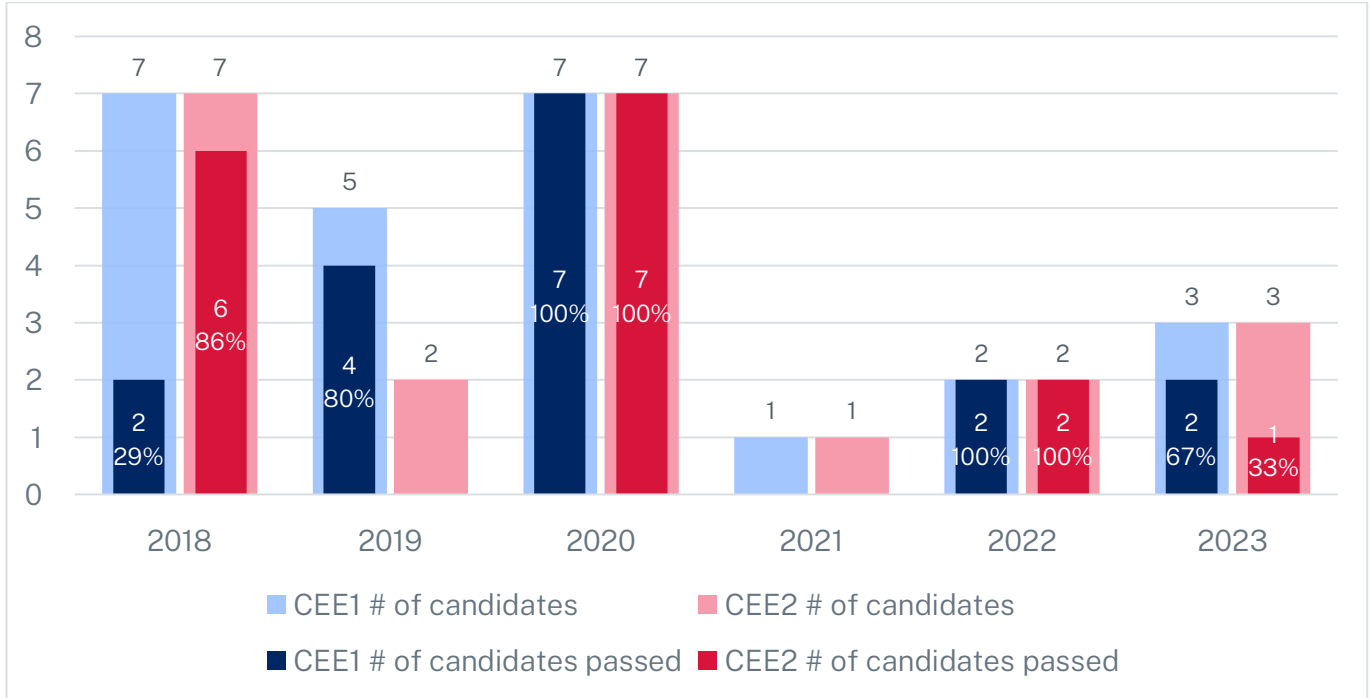


## Electrical engineering manager

### Written exams:

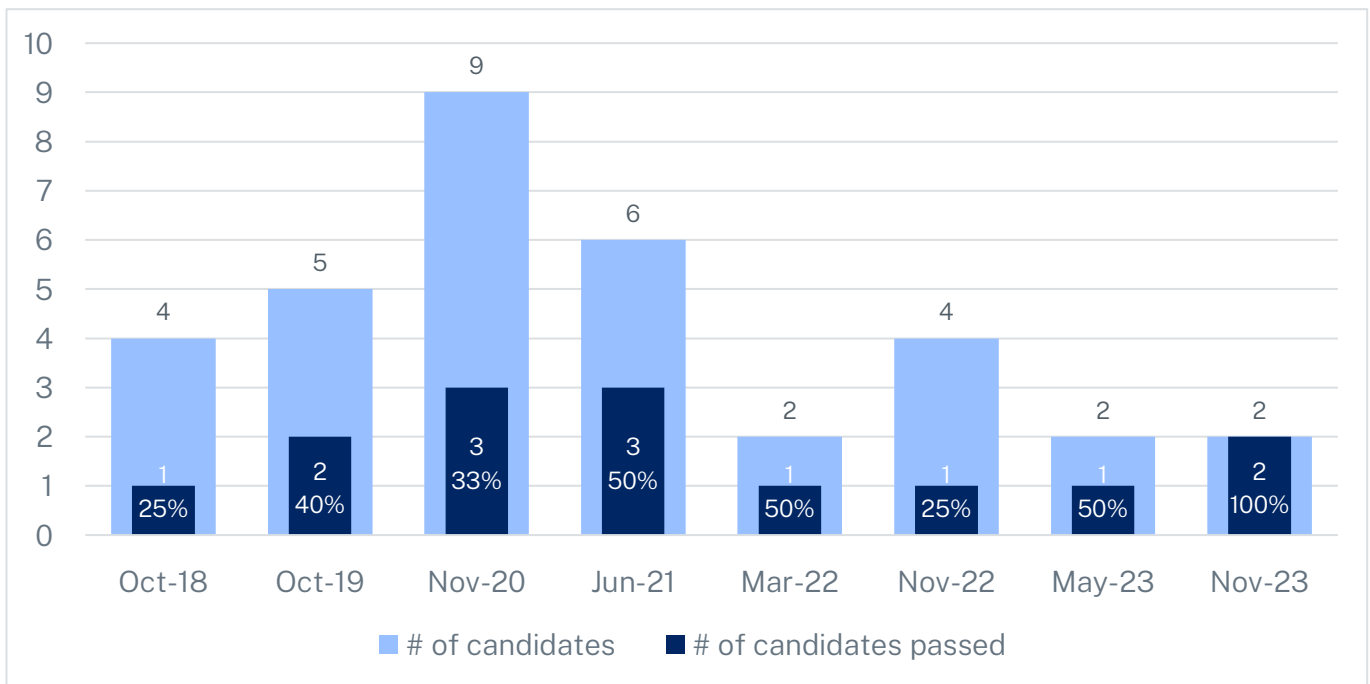
There was 0% competent for CEE2 in 2019 and 0% competent for both papers in 2021. CEE1 is the Electrical engineering applied to coal mines paper and CEE2 is the legislation and Australian standards paper. Number of candidates attempting since 2021 have been a maximum of 3. Blueprinting in 2022 only exams does not seem to have made any significant change to results.

Figure 25: electrical engineering manager written exams candidate numbers and pass rates 2018 - 2023



**Oral exams:** maximum number attempting since 2022 has been 4 (2 in 2023)

Figure 26: electrical engineering manager oral exam candidate numbers and pass rates 2018 - 2023

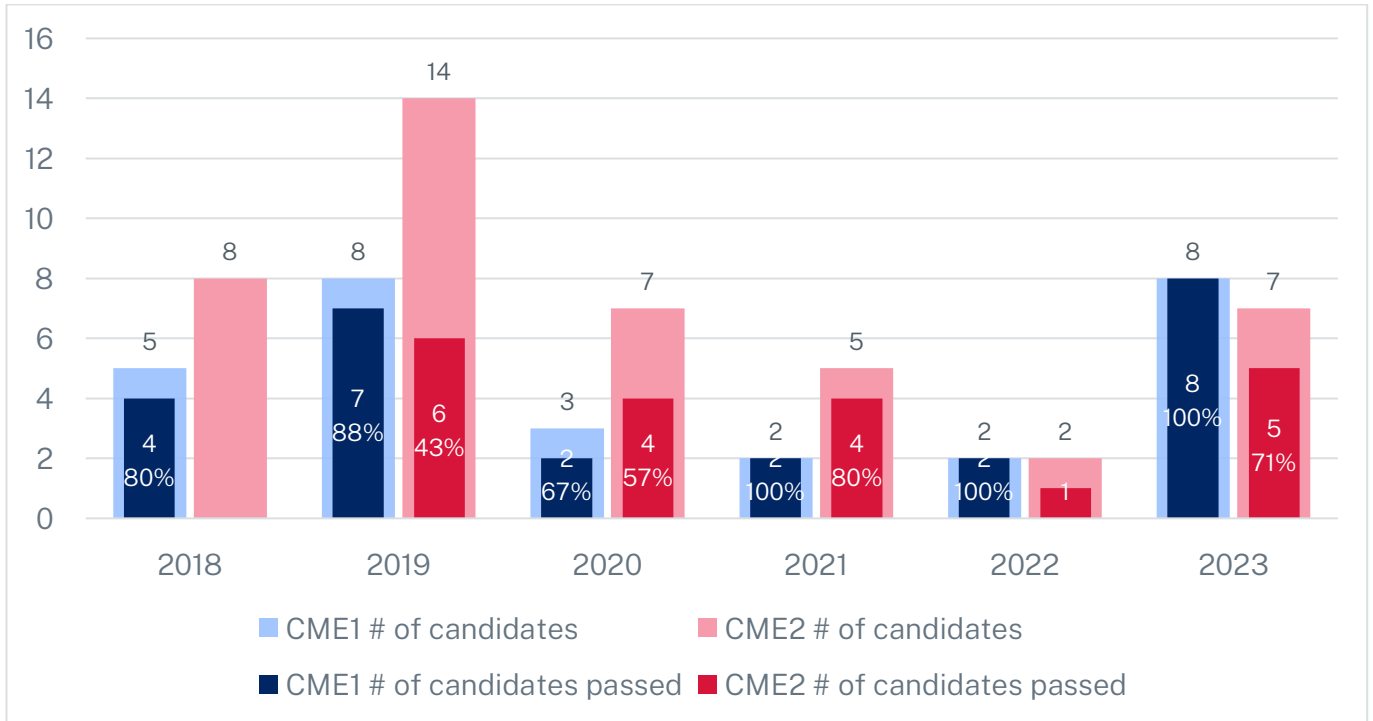


## Mechanical engineering manager

### Written exams:

There is a high competent rate for CME1. CME1 is the mechanical engineering applicable to underground coal mines paper and CME2 is the legislation and Australian standards paper. Blueprinting in 2022 only exams does not seem to have made any significant change to results.

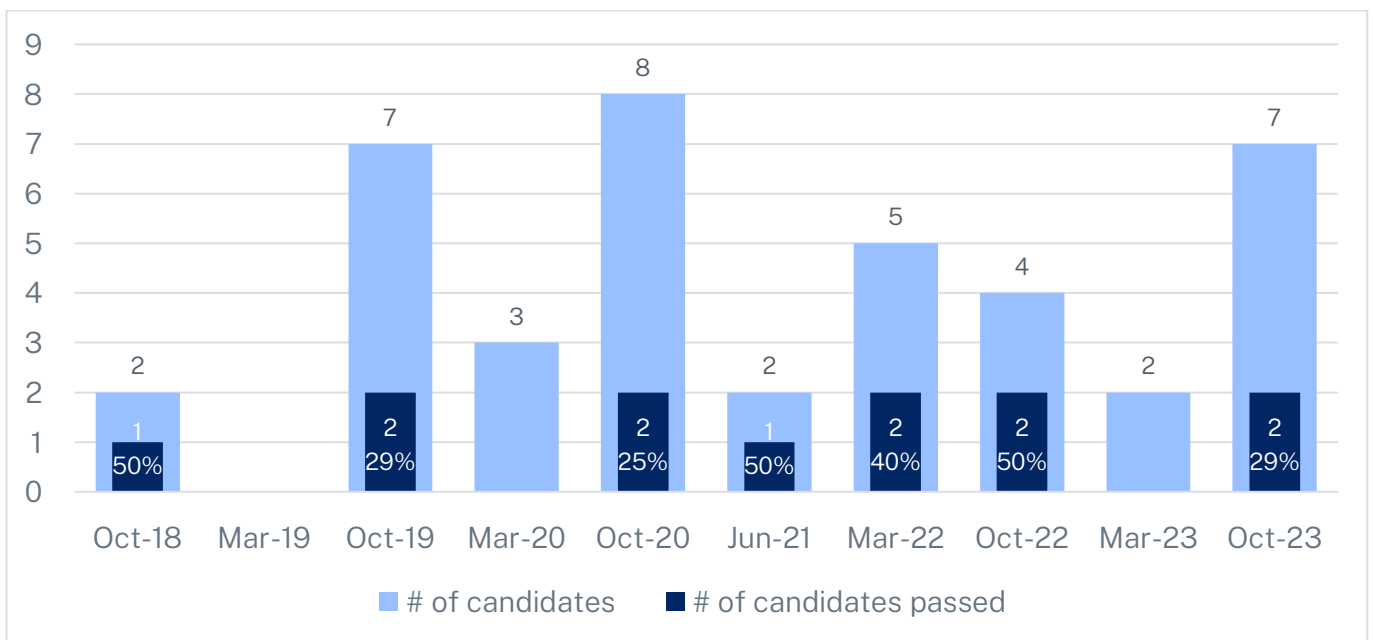
Figure 27: mechanical engineering manager written exams candidate numbers and pass rates 2018 - 2023



### Oral exams:

There is a low competent rate throughout the years. There were no candidates in March 2019.

Figure 28: mechanical engineering manager oral exam candidate numbers and pass rates 2018 - 2023





## Underground mines other than coal

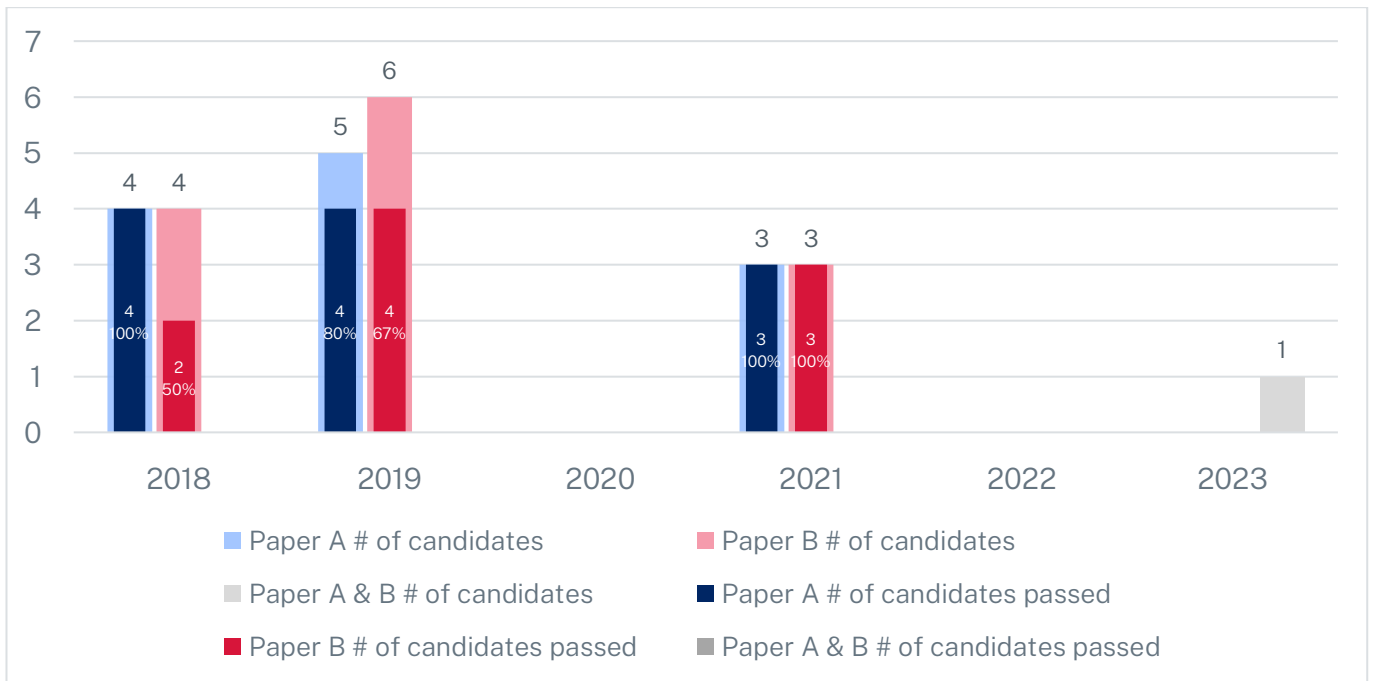
### Mining engineering manager

#### Written exams:

There were no candidates in 2020 and 2022. (note: there was 1 candidate in 2023).

Note: papers A and B were combined in 2023 for a legislation and practise paper only.

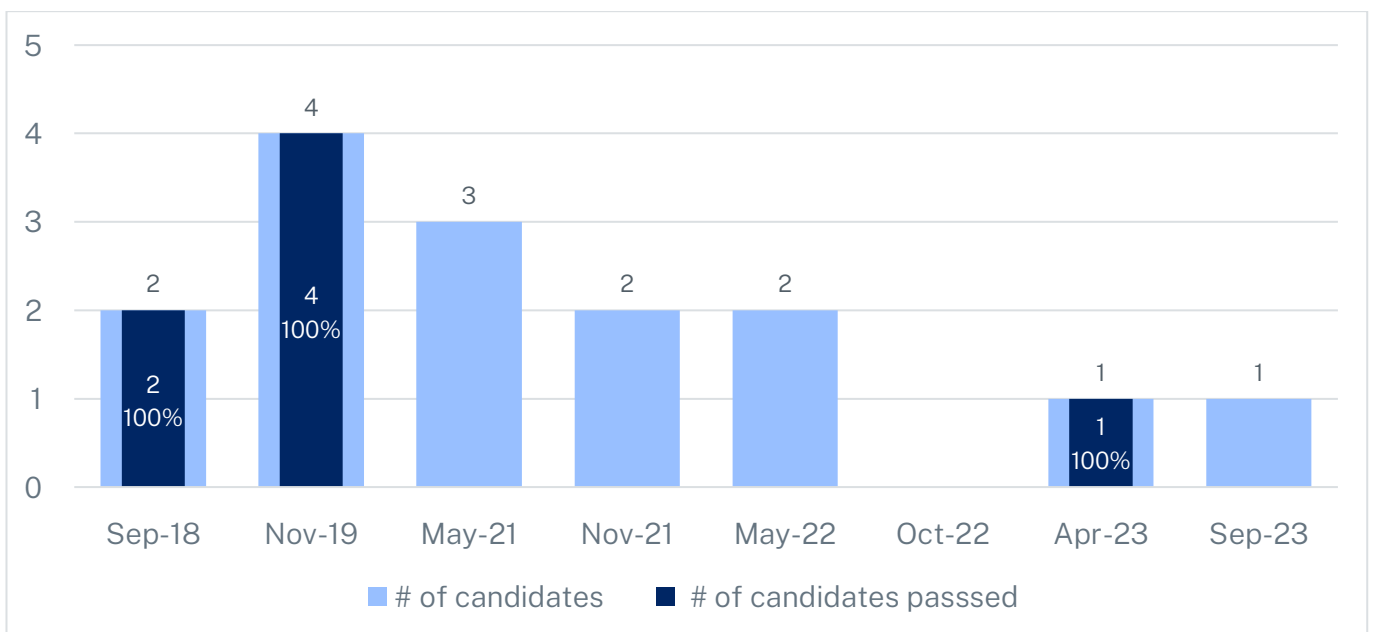
Figure 29: mining engineering manager underground mines written exams candidate numbers and pass rates 2018 - 2023



#### Oral exams:

The data shows a low competent rate and there were no candidates in October 2022.

Figure 30: mining engineering manager underground mines oral exam candidate numbers and pass rates 2018 - 2023

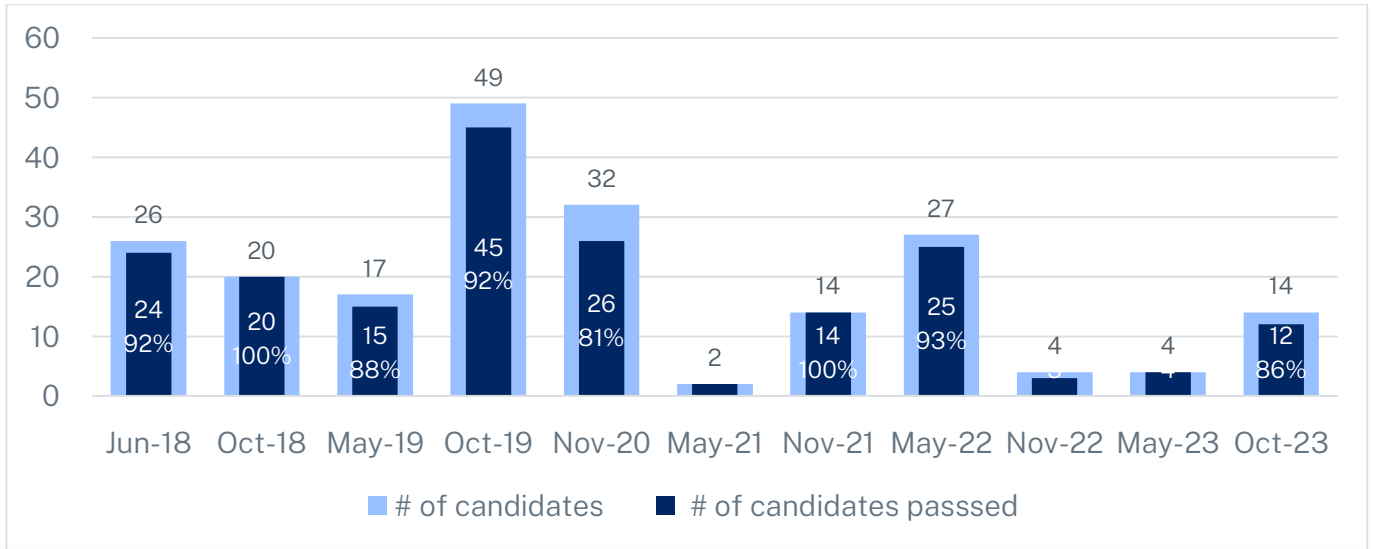


## Underground mine supervisor

### Oral exams (no written):

The data shows a consistently high competent rate.

Figure 31: underground mine supervisor oral exam candidate numbers and pass rates 2018 - 2023



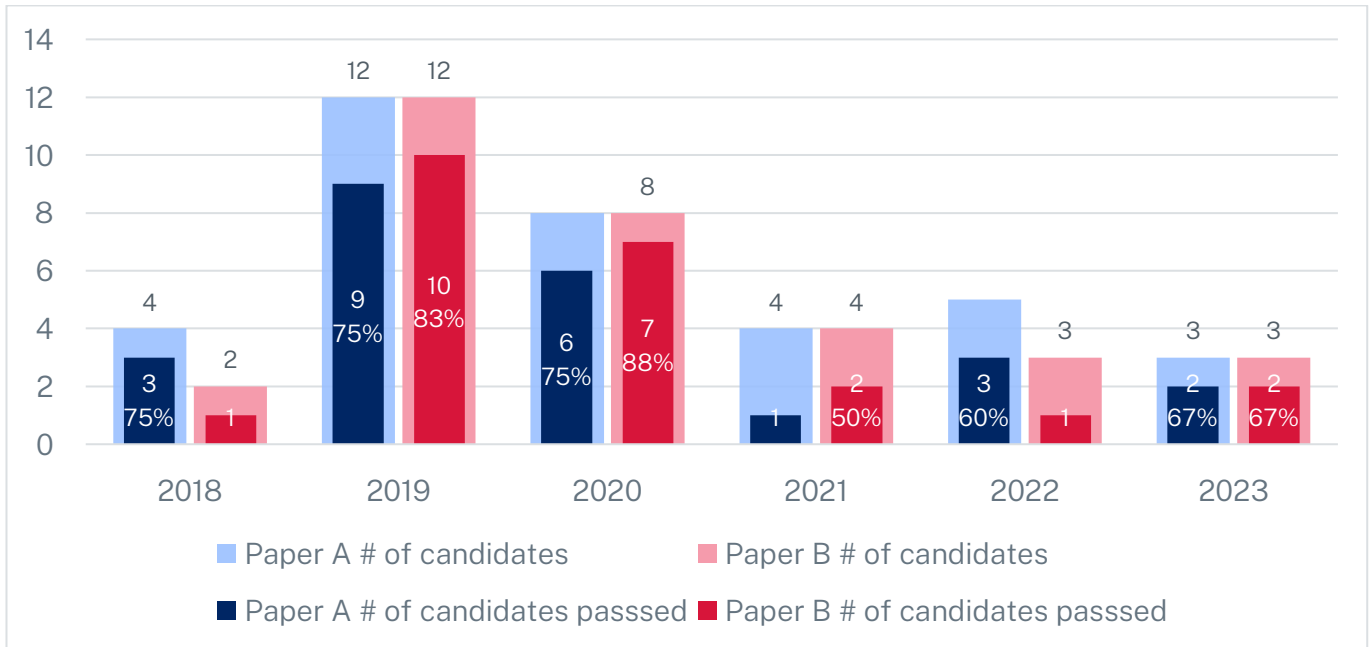
## Mines other than underground mines or coal mines

### Quarry manager of mines other than underground mines or coal mines

#### Written exams:

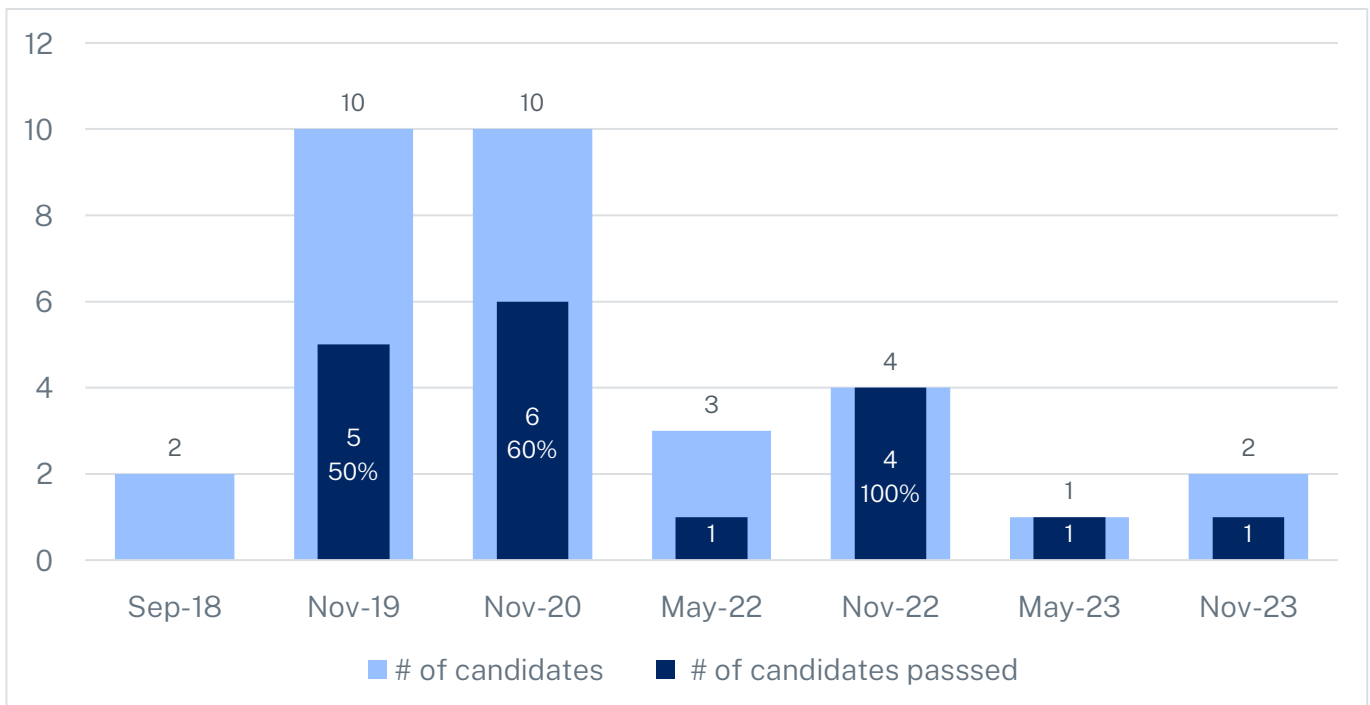
We conducted pilot online written exams in 2022, which were successful. Numbers undertaking exams have been a maximum of 4 candidates between the 2 papers. Blueprinting in 2022 only exams does not seem to have made any significant change to results.

Figure 32: quarry manager written exam candidate numbers and pass rates 2018 - 2023



**Oral exams:** it flows on from the written exams that low numbers are undertaking the oral exams.

Figure 33: quarry manager oral exam candidate numbers and pass rates 2018 - 2023



## Cable repair signatory

### Oral exams only:

There was no candidates in 2021 and 2022. Two candidates sat in 2023.

Figure 34: cable repair signatory oral exam candidate numbers and pass rates 2018 - 2023

