

Dear Commissioners

Thank you for the opportunity to make this written submission regarding the Greenhouse Gas Emissions predicted for the Bowdens Project.

I am not an expert in GHG but it seems to me that Bowdens, RW Corkery and Co and Ramboll Australia Pty Ltd are not experts either.

Greenhouse Gas Emissions

The Bowdens Project EIS states in Paragraph 4.5

4.5 Greenhouse Gas

The greenhouse gas assessment of the Project was undertaken by Ramboll Australia Pty Ltd.

The EIS states that the risk assessment undertaken for the project (Section 3.3.1 and Appendix 7) identifies Scope 1 (on site), Scope 2 (off site generation and Scope 3 (off site impacts) greenhouse gas (GHG) emissions as a key risk source. The assessed risk of impacts associated with GHG emissions after the adoption of standard mitigation measures was low.

The EIS states “only major sources of Scope 3 emissions are accounted and reported by organisations.”

BOWDENS SILVER PTY LIMITED
Bowdens Silver Project
Report No. 429/25

SPECIALIST CONSULTANT STUDIES
Part 2: Air Quality Assessment

Table 8.1
Scope 1, 2 and 3 Emission Sources from the Bowdens Silver Project

Scope	Source
Scope 1	Direct emissions from fuel combustion (diesel) by on-site plant and equipment during mining and rehabilitation.
	Emissions from explosive usage.
	Emissions associated with vegetation stripping
Scope 2	Indirect emissions associated with the consumption of purchased electricity.
Scope 3	Indirect upstream emissions from the extraction, production and transport of diesel fuel.
	Indirect upstream emissions from electricity lost in delivery in the transmission and distribution network.
	Downstream emissions generated from transportation of silver / lead concentrate by road from Mine Site to Parkes.
	Downstream emissions generated from transportation of silver / lead concentrate by rail from Parkes to Port Pirie.
	Downstream emissions generated from transportation of zinc concentrate by road from Mine Site to Port of Newcastle or Port Botany.
	Employee travel
	Downstream emissions generated from international transportation of product by ship

Table 8.1 – Scope 1,2 and 3 Emission Sources from the Bowdens Silver Project

This table is found in the Ramboll Australia Pty Ltd Air Quality Assessment as part of the EIS. It is not the same table (Table 4.36) found on page 4-99 of the EIS. Transport to Kelso has been included in the EIS table without any changes to the emissions calculations in Table 4.37.

RW Corkery and Co must not alter tables and other material in “expert” reports without explanation. See below Table 4.36 which states Source Ramboll (2020) Table 8.1 which it is not.


comparisons between organisations, for example in benchmarking GHG intensity of products or services. Typically, only major sources of Scope 3 emissions are accounted and reported by organisations.

The GHG emission sources for both direct and indirect emissions are summarised in Table 4.36 whilst the estimated annual GHG emissions for each source are presented in Table 4.37. These represent the most significant sources associated with the Project.

Table 4.36
Scope 1, 2 and 3 Emission Sources from the Bowdens Silver Project

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Scope	Source
Scope 1	Direct emissions from fuel combustion (diesel) by on-site plant and equipment.
	Emissions from explosives usage.
	Emissions associated with vegetation stripping
Scope 2	Indirect emissions associated with the consumption of purchased electricity.

 R. W. CORKERY & CO. PTY. LIMITED

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Table 4.36 (Cont'd)
Scope 1, 2 and 3 Emission Sources from the Bowdens Silver Project

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Scope	Source
Scope 3	Indirect upstream emissions from the extraction, production and transportation of diesel fuel.
	Indirect upstream emissions from electricity lost in delivery in the transmission and distribution network.
	Downstream emissions generated from transportation of silver / lead concentrate by road from the Mine Site to Parkes or Kelso.
	Downstream emissions generated from transportation of silver / lead concentrate by rail from Parkes or Kelso to Port Pirie.
	Downstream emissions generated from transportation of zinc concentrate by road from Mine Site to Port of Newcastle or Port Botany.
	Employee travel
	Downstream emissions generated from international transportation of product by ship

Source: Ramboll (2020) – Table 8.1

Project Year	Scope 1			Scope 2	Scope 3					
	Diesel – on site	Explosives	Vegetation clearing ¹	Electricity	Diesel – on site (extraction, processing, distribution)	Electricity (T&D losses)	Product transport			Employee travel
							Road	Rail	Shipping	

Table 4.36 EIS (Source Ramboll (2020) Table 8.1)

There seems to be an error in table 8.1. in the Ramboll Australia Pty Ltd report and also in Table 4.36 in the EIS. I am not concerned about Scope 1 and Scope 2 Emission Sources as I am certain that there are formulas and rules around their reporting to the NRER and these will have been checked by the DPE.

It is the Scope 3 Emission Sources that are of concern. When we inspect the downstream emissions it is noted that 4 down stream emissions are generated from silver / lead concentrate, it is unclear whether employee travel relates to silver / lead concentrate but it may so it will be included

- Downstream emissions generated from transportation of silver / lead concentrate by road from Mine Site to Parkes (or Kelso),
- Downstream emissions generated from the transportation from Parkes (or Kelso) to Port Pirie,
- Employee travel
- Downstream emissions generated from international transportation of product by ship

Ramboll Australia Pty Ltd have neglected to include the activity that occurs at Port Pirie. The EIS states that only major sources of Scope 3 emissions are accounted and reported by organisations.

I, as a beginner at GHG, am confused as to why a major downstream activity like the extraction of silver and lead from the silver / lead concentrate is excluded from the Emission Sources.

There is no reference in any material regarding Greenhouse Gas emissions as to what happens to the silver / lead concentrates in Port Pirie.

With a quick google of Port Pirie, this GHG beginner, has discovered that the Nystar Smelter is located at Port Pirie and is South Australia's worst polluter.



Nystar Smelter in Port Pirie, South Australia (SA's worst polluter)

The EIS states GHG emissions is a key risk source. Why then has the applicant, RW Corkery and Co and Ramboll Australia Pty Ltd not assessed all the GHG Emission Sources. Even if the GHG emissions are minor, which I suspect they are not, they should be included.

In the paragraph 4.5.3 Assessment of Impacts, the statement *"given Australia's contribution to global greenhouse gas emissions is approximately 1.3%, the contribution of the Project to global emissions is approximately 0.000052%."* This calculation does not include the emissions generated by the smelting of the silver / lead concentrate at Port Pirie so cannot be accurate. The report goes on to compare its Scope 3 emissions with coal mine emissions. How can that comparison be accurate or even approximate. In any event, an activity that adds to Australia's contribution to global greenhouse gas emissions is not acceptable, whatever the size of that contribution.

Clause 14 of the Mining SEPP states that:

"in determining a development application for development application for development for the purposes of mining, petroleum production or extractive industry, the consent authority must consider an assessment of the greenhouse gas emissions (including downstream emissions) of the development, and must do so having regard to any applicable State or national policies, programs or guidelines concerning greenhouse gas emissions"

Will the consent authority will be able to consider an assessment of the greenhouse gas emissions given that the greenhouse gas emissions from a major downstream activity of the project, being the processing of the silver / lead concentrate, have been excluded from greenhouse gas calculations and the assessment of this project.

Ramboll Australia Pty Ltd has no regard for any policies, programs or guidelines concerning greenhouse gas emissions other than the NGER scheme. I believe Ramboll Australia Pty Ltd and RW Corkery have provided the DPE with false and misleading information.

The DPE makes the statement in its assessment on page vii *"The Department has considered other impacts of the project, including rehabilitation and final landform, hazards and risks, blast and vibration, greenhouse gas emissions and historic heritage. The Department considers that these impacts have been sufficiently minimised and that residual impacts can be appropriately managed"*

and/or offset and regulated through the recommended conditions". Not very helpful for a GHG beginner.

In the table on page 79 of the SSD Assessment under the heading *Other Issues* the DPE makes the following statements.

Greenhouse Gas Emissions

- *The project would produce over its life around:*

- *444,442 t CO₂-e of scope 1 greenhouse gas (GHG) emissions;*

- *812,319 t CO₂-e of scope 2 GHG emissions; and*

- *166,055 t CO₂-e of scope 3 GHG emissions.*

- *This is a conservative estimate as it accounts for vegetation clearing but not the return of vegetative biomass through rehabilitation, and it does not consider the use of silver in photovoltaic cells that produce green power generation (and displace fossil fuel generated power).*

- *The assessment also does not consider decarbonisation of the electricity network as part the NSW Government's commitment to net zero by 2050. In its response to submissions on the second amendment, Bowdens Silver noted that this decarbonisation is expected to reduce the project's scope 2 emissions by up to 54%.*

- *Bowdens Silver is also actively investigating options for further reducing the GHG emissions and has undertaken an initial feasibility study for the development of a 12.4 MW solar farm on a property owned by the company to supply power to the mine. Although not proposed as part of this application, if developed the solar farm could reduce scope 2 emissions by around 72%, roughly the equivalent of purchasing 35% of its power from a certified green power source.*

- *In comparison to other metal ore mining projects, the project's scope 1 emissions would be less than half the average and would be much lower than the average scope 1 emissions from a coal mining operation.*

- *The Department considers that the project's GHG emissions are reasonably low, and that the mine's products would assist in society's decarbonisation over the coming decades. The Department has recommended conditions requiring Bowdens Silver to take all reasonable steps to minimise the energy efficiency of the development and to describe the measures to be implemented to ensure the greenhouse gas emissions are minimised in an air quality and greenhouse gas management plan.*

These comments do not show any independent analysis by the DPE. They have simply repeated information given to them by Bowdens including the statement regarding a solar farm which is neither costed, planned or approved. The DPE have not considered any policies or guidelines regarding greenhouse gas emissions as they should have.

In page 81 of the SSD Assessment the DPE states

"486. The Department has assessed other impacts of the project, including rehabilitation and final landform, agriculture impacts, hazards and risks, blast and vibration, greenhouse gas emissions, and historic heritage and considers that these and other impacts have been minimised to the greatest extent practicable and that residual impacts can be appropriately managed and/or offset and regulated".

The DPE have not been able to assess the “*other impacts*” of the project in particular greenhouse gas emissions as they have only had access to incorrect data and calculations and would therefore be unable to undertake a proper assessment.

Other impacts

The DPE lumps together the “other impacts” of the project

- *rehabilitation and final landform,*
- *agriculture impacts,*
- *hazards and risks,*
- *blast and vibration,*
- *greenhouse gas emissions, and*
- *historic heritage*

These “other impacts” have also, like greenhouse gas emissions, been assessed improperly.

- rehabilitation and final landform – the Tailings Storage Facility, the Waste Rock Embankment and the mine pit will not be returned to their former state. But instead, will not only be visually abhorrent but will leak and seep acid mine drainage and saline water poisoning waterways and groundwater and will also enable lead dust to blow over and pollute surrounding land forever,
- agriculture impacts - these have not been assessed, no farmer in or near Lue has been consulted or their opinions considered regarding water availability, actual rainfall, actual high rainfall events, land use, current farming practices or any other impact to agriculture,
- hazards and risks – there are many risks and hazards including the risk of an earthquake and the failure of the single wall tailings storage facility, excessive traffic including wide loads, heavy vehicles, buses and earthmoving equipment on a narrow local country road, polluted and contaminated water, polluted and contaminated land and soil, lead poisoning and excessive noise at Lue School and in Lue and on surrounding land with no proper assessment or the distance lead dust can travel. Lead has been found in Antarctica so it is not unreasonable to accept that lead dust and pollution could reach Sydney and other large population centres. Any risk of lead poisoning to the health of the general population of NSW, or any member of that population, is unacceptable.
- blast and vibration – will generate excessive noise, dust and other harmful impacts to Lue residents and surrounding farms,
- greenhouse gas emissions – no correct data available to assess this impact and GHG is a high risk source,
- historic heritage – there are no assessments on the impacts to historic properties and homesteads near the mine site, and regarding Aboriginal Cultural Impacts the results of assessments are disputed and the treatment of Aboriginal Cultural sites within the mine site are not adequate to protect those sites.

The Bowdens Project has the opportunity to be NSW’s worst polluter. With expected pollutants being lead & acid mine drainage poisoning our waterways, depletion and contamination of the aquifer, spillage of hazardous materials in a traffic accident and dust containing lead and heavy metals and hazardous chemicals blowing all over the state. The damage to people and land, the environmental and social impacts, near the mine site and in the region cannot be measured, is unassessed and must be determined to be unacceptable.

There now seems to be a cluster of evidence that the DPE has not been able to assess this SSD independently, accurately or competently. Bowdens and RW Corkery and Co have provided dubious expert reports in favour of this Application and their consultants modelling and conclusions have been labelled by NSW DPE experts as inadequate, optimistic, biased and not consistent with best practice.

While the EIS was released during COVID lockdown and many people worked from home including DPE employees there is no reason for some of the conclusions that the DPE has reached. An unbiased onlooker might wonder why the DPE recommended such a risky project, with so many adverse environmental, social and economic impacts and no guaranteed benefits.

The NSW EPA in its advice has made no comments regarding Greenhouse gas emissions but has advised regarding Air Quality Impacts *“that failing to achieve in practice the assumed levels of control, including but not limited to surface watering and surface stabilisation, will increase the risk of adverse air quality impacts due to wind erosion from the proposed operations”*.

One young submitter noted *“its a little bit whiffy”*.

The DPE has clearly not assessed or confirmed the greenhouse gas emissions that will be produced by this project. Unfortunately time and funding constraints have prevented me from asking an expert to look at the greenhouse gas calculations and determine whether or not the greenhouse gas emissions are high or low or comparable to other greenhouse gas emitters like coal mines. Given that the SEARs flagged a high risk of greenhouse gas emissions it is most likely that the t CO₂-e produced by smelting a tonne of concentrate could be significant. According to the project description 310,000 tonnes of mineral concentrates would be produced, 60% zinc concentrate and 40% silver / lead concentrate. That is equal to 124,000 tonnes of silver / lead concentrate that will be transported and processed at the Nystar smelter Port Pirie.

The US EPA has a default emission factors for Lead Production which can give an estimate of the metric ton CO₂ /metric ton product. For example Direct Smelting has an emission factor of .25 metric tons / metric ton of product. The Nystar smelter does not publish its CO₂ emissions per tonne of product so an accurate calculation of greenhouse gas emissions per tonne of processed Silver / lead concentrate cannot be provided at this time.

Table 1. Default Emission Factors for Lead Production

Production Type	Emission Factor (metric ton CO ₂ /metric ton product)
Imperial Smelt Furnace (ISF)	0.59
Direct Smelting (DS)	0.25
Treatment of Secondary Raw Materials	0.20

Source: 2006 IPCC Guidelines for National Greenhouse Gas Inventories

Should the Commissioners agree I am prepared to locate an unbiased expert not associated with either the DPE or the Applicant and I am willing to obtain an unbiased report should the IPC require it for their determination.

Conclusion

The Bowdens Project will after consideration be shown to have little merit with the environmental, social and economic impacts of this project having a lesser benefit than the environmental, social and economic benefits of not proceeding with the project.