

SOCIAL AND ENVIRONMENTAL IMPACT ASSESSMENT:  
PROPOSED MINING OF THE Z20 URANIUM DEPOSIT

FINAL DRAFT SCOPING REPORT

**EXECUTIVE SUMMARY**

- Mining of the Z20 ore body including disposal of waste rock;
- An infrastructure corridor across the Khan River;
- Production of sulfuric acid at Rössing;
- Processing plant modifications;
- Changes to the present Tailings Storage Facility; and
- Establishment of a new High Density Tailings Storage Facility on the Rössing Dome

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FINAL DRAFT

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## PROJECT DETAILS

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	NamPower
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	TransNamib
	Erongo Regional Council
	Arandis Town Council
	Swakopmund Town Council
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<b>Internet copies</b>	Rössing Uranium Ltd
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# EXECUTIVE SUMMARY

## Introduction

Rio Tinto Rössing Uranium Limited (Rössing Uranium) appointed Aurecon Namibia (Pty) Ltd (Aurecon) and SLR Environmental Consulting (Namibia) (Pty) Ltd (SLR) to undertake a Social and Environmental Impact Assessment (SEIA) for the proposed mining of the Z20 uranium deposit.

## Project location and context

The Rössing Uranium Mine is located in the Erongo Region of Namibia. The Z20 uranium deposit is situated south of the existing Rössing Uranium Mine and the Khan River, where the Mining License Area 28 overlaps with the Namib-Naukluft National Park (NNNP). The existing socio-economic and biophysical characteristics are described in the Draft Scoping Report (DSR).

## Proposed project

It is envisaged that the Z20 uranium deposit would be mined as a satellite open pit as it contains uranium bearing alaskite rocks, utilising conventional blast, load and haul methodology. The Z20 deposit contains roughly 720Mt of ore and waste, of which 160Mt of ore could potentially be mined.

The proposed mining project would therefore entail the following:

- Mining of the Z20 ore body and disposal of Z20 waste rock;
- Expansion of the approved Acid Plant;
- Processing plant modifications;
- Changes to the present Tailings Storage Facility (TSF); and
- Establishment of a new High Density TSF on the Rössing Dome.

An infrastructure corridor would need to be established to link the Z20 site to the existing Rössing Uranium Mine across the Khan River, which would include:

- RopeCon/ RailCon aerial conveyor;
- Asphalt access road; and
- Other services including a water supply pipeline, power supply and fuel supply pipeline.

Please see Figure 1 for the proposed layout of these project components.

The motivation for the proposed mining project is driven by economic informants as the Z20 ore deposit is a substantial discovery in Mining License Area 28 (MLA) which will constitute a significant addition to the economic value of Rössing Uranium's ore inventory.

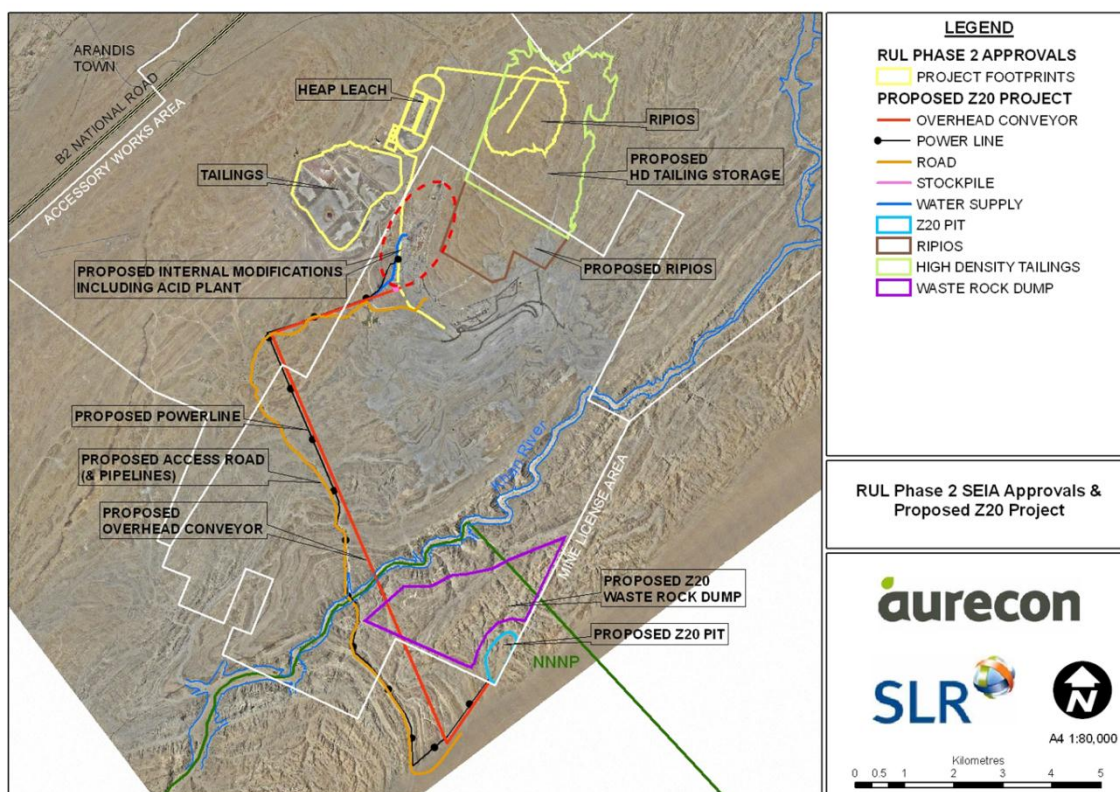


Figure 1: Proposed layout of project components

### Alternatives assessed

Various alternatives were investigated during project conceptualisation phases, as per Table 1 below.

Table 1: Alternatives investigated and assessed for project components

Infrastructure corridor component	Alternatives investigated	Alternative assessed by SEIA specialists
Product transport	<ul style="list-style-type: none"> <li>Conventional troughed aerial conveyor;</li> <li>Tube or pipe conveyor;</li> <li>Aerial ropeway system.</li> </ul>	Aerial ropeway system.
Access roads	<ul style="list-style-type: none"> <li>B2 to the Z20 uranium deposit;</li> <li>C21 to Z20 uranium deposit;</li> <li>Access from B2 via Valencia;</li> <li>Access via Zhonghe Resources; and</li> <li>New access.</li> </ul>	New road from Rössing Uranium Mine to the Z20 uranium deposit (14.4km in length).
Water supply pipeline	<ul style="list-style-type: none"> <li>Attach water pipeline to conveyor system;</li> <li>Below ground;</li> <li>Above ground.</li> </ul>	Combination of below ground and above ground.
Diesel supply pipeline	<ul style="list-style-type: none"> <li>Attach diesel pipeline to the conveyor;</li> <li>Construct diesel pipeline above ground along the access road route;</li> </ul>	Attaching the diesel supply line to the RopeCon/ RailCon.

	<ul style="list-style-type: none"> <li>Construct diesel pipeline below ground along the access road route; and</li> <li>Transport by road tanker.</li> </ul>	
<b>Power supply infrastructures</b>	Aboveground transmission lines	Above ground transmission lines
<b>No-Go Alternative</b>	The assessment of the no-go option requires a comparison between the options of proceeding with the project with that of not proceeding with the project. The assessment of this option requires input from the various investigations so that the full extent of social, economic and environmental considerations can be taken into account.	

## Social and Environmental Impact Assessment (SEIA) Process

The activities to be undertaken as part of this SEIA are summarised below.

**Table 2: Summary of the SEIA process**

<b>Phase 1 – Project initiation/screening (August to October 2012)</b>	
<ul style="list-style-type: none"> <li>Internal screening and appointment of independent environmental consultants (SLR and Aurecon)</li> <li>Meet with MET and Ministry of Mines and Energy (MME)</li> <li>Submit two applications for environmental clearance certificates to MET and copies to MME</li> </ul>	
<b>Phase 2 – Scoping/assessment (October to December 2012)</b>	
<ul style="list-style-type: none"> <li>Notify IAPs and regulatory authorities of the proposed project (via newspaper advertisements, this document, letters, e-mails)</li> <li>Public scoping meetings and open day</li> <li>Key stakeholder meetings</li> <li>Assess the impacts of the proposed RopeCon/ RailCon aerial conveyor</li> <li>Define outstanding issues and terms of reference for further investigations relating to all other project components</li> <li>Compile Scoping Report (including assessment findings and social and environmental management plan (SEMP) for the infrastructure corridor)</li> <li>Make reports available for comment by regulatory authorities and other IAPs.</li> <li>Submit a final Scoping Report, SEMP (for RopeCon/ RailCon aerial conveyor) and Issues and Response Report to MET</li> </ul>	
<b>Phase 3 – SEIA/SEMP (all other project components) (January to May 2013)</b>	
<ul style="list-style-type: none"> <li>Commission outstanding specialist investigations</li> <li>Assess impacts of proposed project and compile SEIA/SEMP report</li> <li>Make the report available to regulatory authorities and other IAPs for review</li> <li>Submit final SEIA/SEMP report and Issues and Response Report to MET</li> <li>Circulate notification of record of decision to IAPs</li> </ul>	

## Public Participation Process

The scoping phase public participation process is summarised in Table 2 below:

**Table 2: Summary of the SEIA Scoping public participate process**

TASK	DETAILS	DATE
<b>Stakeholders notification (relevant authorities and IAPs)</b>		
<b>Notification to</b>	SLR met with MET:DEA to provide information on the proposed	<b>18 October</b>

<b>MET (DEA) and submit Applications for Authorisation</b>	<p>project; to discuss the proposed SEIA process to be followed; to provide information on the public participation process; and to obtain initial comments on the project and the proposed SEIA process. A follow up meeting was held with the MET Environmental Commissioner on the 7<sup>th</sup> of November 2012.</p> <p>The two applications for authorisation were submitted to MET and copies submitted to MME:</p> <ol style="list-style-type: none"> <li>1. The Infrastructure corridor associated with the proposed mining of the Z20 resource by Rössing Uranium Ltd</li> <li>2. The proposed mining of the Z20 resource by Rössing Uranium Ltd.</li> </ol>	<b>2012</b>
<b>Stakeholder identification</b>	<p>A stakeholder database was developed for the project by referring to various other projects' databases in the Erongo Region. This database will be updated during the SEIA as required.</p>	<b>September/ October 2012</b>
<b>Distribution of background information document (BID)</b>	<p>BIDs with covering letters were distributed via email to the authorities and IAPs on Rössing Uranium's stakeholder database and hard copies were placed at the following places:</p> <ul style="list-style-type: none"> <li>• Swakopmund Public library,</li> <li>• Arandis Public library, and</li> <li>• The Uranium Institute in Swakopmund.</li> </ul> <p>Hard copies of the BID were also distributed during the Scoping focus group meetings, public meetings and public open day. The purpose of the BID was to provide stakeholders with the opportunity to register as IAPs in the SEIA process and to obtain their initial comments on the proposed mining project and SEIA process of the Z20 uranium deposit.</p>	<b>12 October 2012</b>
<b>Site notices</b>	<p>Site notices were erected to inform the general public of the proposed project and the public participation process. One was placed at Rössing Uranium's Swakopmund office and another at the entrance to the mine site. A further nine copies of these notices (A3 size) were placed at the following places in Swakopmund:</p> <ul style="list-style-type: none"> <li>• Stadtmitte;</li> <li>• Woermann &amp; Brock in Mondesa;</li> <li>• Woermann &amp; Brock in Vineta;</li> <li>• Spar in Ocean View;</li> <li>• Two inside the Woermann &amp; Brock complex in the Sam Nujoma Drive;</li> <li>• Pick &amp; Pay;</li> <li>• Rossmund Golf Course; and</li> <li>• Brauhaus Restaurant.</li> </ul>	<b>12 October 2012</b>
<b>Newspaper Advertisements</b>	<p>Block advertisements were placed as follows:</p> <ul style="list-style-type: none"> <li>• The <i>Republikein</i>; and</li> <li>• The <i>Namib Times</i>.</li> </ul>	<b>12 &amp; 19 October 2012</b>
<b>Focus Group Meetings, public meetings, open day and submission of comments</b>		
<b>Focus group meetings</b>	<p>Focus group meetings were held with key stakeholders and affected parties as follows:</p> <ul style="list-style-type: none"> <li>• Representatives of the media in Swakopmund;</li> <li>• The ATC in Arandis;</li> <li>• The Labour Unions at Rössing Uranium;</li> </ul>	<b>23-26 October 2012</b>



	<ul style="list-style-type: none"> <li>Members of the Erongo Regional Council, NACOMA and the local Ministry of Environmental and Tourism (Directorate Parks and Wildlife) at the Rossmund Conference Centre in Swakopmund. The Swakopmund Town Council was invited to the same meeting but an apology was sent that no one could attend.</li> </ul> <p>The Director and Chief Park Warden from the MET – Directorate of Parks and Wildlife in Windhoek.</p> <ul style="list-style-type: none"> <li>Two separate meetings with representatives from MAWF (Hydrology and Geohydrology).</li> <li>The Mining Commissioner (Ministry of Mines and Energy) in Windhoek.</li> </ul> <p>The same project information was presented at all the meetings.</p> <p>A focus group meeting was arranged for the River Farmers and the Tourism Industry in Swakopmund but no one attended. A number of apologies were, however, received.</p>	
<b>Open day and Public meetings</b>	<p>A public meeting was held on the 23rd of October in Arandis. This meeting was very well attended.</p> <p>A public open day was held between 13:00 and 18:00 on 24 October 2012 at the Rossmund Golf Course in Swakopmund where relevant project and social and environmental related information was presented by means of a poster display. A public meeting followed in the same venue at 18:00 on the same day where the project and SEIA process were presented and comments/concerns received and discussed.</p> <p>The same project information was presented at all the meetings.</p>	<b>23-26 October 2012</b>
<b>Comments and Responses</b>	<p>Minutes of the meetings and all comments received during the meetings and open day, by email, fax and SMS as well as the Summary Issues and Response Report.</p>	<b>12 - 31 October 2012</b>
<b>Review of Draft Scoping Report</b>		
<b>IAPs and authorities (excluding MET) review of scoping report and SEMP</b>	<p>Copies of the Scoping Report (and SEMP) are available for review at the following places:</p> <ul style="list-style-type: none"> <li>Swakopmund Public Library,</li> <li>Arandis Public Library;</li> <li>The Uranium Institute in Swakopmund; and</li> <li>Rössing Uranium Offices in Swakopmund.</li> </ul> <p>Electronic copies of the report will be made available on request (on a CD). Summaries of the scoping report were distributed to all authorities and IAPs that are registered on the IAP database via e-mail.</p> <p>Authorities and IAPs will be given 21 days to review the scoping report and submit comments in writing to SLR. The closing date for comments is 14 December 2012.</p>	<b>16 November to 14 December 2012</b>
<b>MET review of scoping report and SEMP</b>	<p>A copy of the final scoping report, including authority and IAP review comments, will be delivered to MET on completion of the public review process.</p>	<b>December 2012</b>

## Potential socio-economic and biophysical impacts

Potential impacts on the social and biophysical environment associated with all the phases of the proposed project were identified during the screening and scoping process and are summarised in Table 3 below.

**Table 3: Potential impacts associated with project components**

Aspects	Potential impacts
<b>Potential social and environmental impacts associated with the infrastructure corridor</b>	
<b>Socio-economic</b>	<ul style="list-style-type: none"> <li>• Creation of jobs and other economic opportunities</li> <li>• Overarching social impact on public health and safety</li> <li>• Additional electricity requirements impacting on the national power grid</li> <li>• Construction and operational related health, safety and aesthetic impacts</li> <li>• Negative impacts related to a construction camp</li> </ul>
<b>Air quality</b>	<ul style="list-style-type: none"> <li>• Particle emissions during road construction</li> <li>• Release of gases and particles from vehicles/construction equipment tailpipe emissions</li> <li>• Wind-blown dust from conveyor</li> <li>• Dust generation from tipping</li> <li>• Gases and Particulates released as a result of rehabilitation activities</li> </ul>
<b>Visual</b>	<ul style="list-style-type: none"> <li>• Visual impact caused by landscape changes</li> </ul>
<b>Noise</b>	<ul style="list-style-type: none"> <li>• Noise pollution resulting from blasting activities, land clearing and bulk earthworks</li> <li>• Noise pollution as a result of helicopter operations</li> <li>• Nuisance factor caused to local residents and tourists due to increased noise</li> </ul>
<b>Radiation</b>	<ul style="list-style-type: none"> <li>• Fugitive radioactive dust emissions from the ore transport</li> <li>• Spillage of ore from aerial conveyor</li> </ul>
<b>Biodiversity</b>	<ul style="list-style-type: none"> <li>• Physical destruction and/or general disturbance of biodiversity</li> </ul>
<b>Archaeology</b>	<ul style="list-style-type: none"> <li>• Altering of sensitive archaeological and/or heritage sites</li> </ul>
<b>Surface water</b>	<ul style="list-style-type: none"> <li>• Spillage of ore and leakage of diesel from aerial conveyor and diesel supply line</li> </ul>
<b>Potential social and environmental impacts associated with other project components</b>	
<b>Socio-economic</b>	<ul style="list-style-type: none"> <li>• Impact on the economic sustainability of Arandis</li> <li>• Positive impact resulting from temporary and permanent employment creation</li> <li>• The potential impacts on occupational and public health and safety</li> <li>• Impact on housing and accommodation</li> <li>• Impact on local economies</li> <li>• Impact on the availability of schooling</li> <li>• Impact on service infrastructure</li> <li>• Operation of the plant would require additional electricity supply</li> <li>• Impact on human health through accidental releases of the hazardous compounds</li> <li>• Construction and operational related health, safety and aesthetic impacts</li> <li>• Influx of people</li> <li>• Increase in social pathologies</li> <li>• Negative impacts related to a construction camp</li> </ul>
<b>Air quality</b>	<ul style="list-style-type: none"> <li>• Air emissions and occupational, public health and safety</li> <li>• Potential increase in sulphur dioxide, nitrogen dioxide, hydrogen sulphide, carbon monoxide and gaseous emissions</li> <li>• Potential increase in PM<sub>10</sub> and total suspended particles</li> <li>• Impacts associated with Blasting Activities</li> </ul>
<b>Visual</b>	<ul style="list-style-type: none"> <li>• Visual impact on surrounding receptors</li> </ul>
<b>Noise</b>	<ul style="list-style-type: none"> <li>• Blasting noise and vibration resultant from mining activities</li> </ul>

<b>Radiation</b>	<ul style="list-style-type: none"> <li>• Additional sources of radioactive dust emissions</li> <li>• Fugitive radioactive dust emissions from construction activities</li> <li>• Increased emission of radon gas</li> <li>• Exposure to radiation through surface water and groundwater pathways</li> </ul>
<b>Biodiversity</b>	<ul style="list-style-type: none"> <li>• Physical destruction and/or general disturbance of biodiversity</li> </ul>
<b>Archaeology</b>	<ul style="list-style-type: none"> <li>• Potential disturbance/destruction of archaeological sites and landscapes.</li> </ul>
<b>Surface water</b>	<ul style="list-style-type: none"> <li>• Increased water consumption</li> <li>• Changing surface water flow through impeding existing drainage patterns</li> <li>• Erosion of soil from exposed areas</li> </ul>
<b>Groundwater</b>	<ul style="list-style-type: none"> <li>• Pollution of groundwater</li> <li>• Dewatering the Z20 mine pit will lower the existing ground water levels</li> </ul>
<b>Traffic</b>	<ul style="list-style-type: none"> <li>• Increase in traffic volumes to the mine impacting on the B2 and the B2 intersection</li> </ul>

## Assessment methodology

The methodology applied during this SEIA entailed a rating system where each impact is described according to fixed criteria to ascertain the significance of the impact, with and without mitigation.

## Impact assessment

A discussion of all the potential impacts that were assessed for the proposed Z20 infrastructure corridor is provided below. A tabulated summary of the cumulative impacts is presented in Table 4 below.

## Socio-economic conclusions

Most of the socio-economic issues were covered by the other specialist's investigations. Therefore the conclusions for the visual-, air quality-, noise-, radiation- and biodiversity impact assessments that follows below are relevant as well as the SEMP.

The socio-economic impacts described in Section 8 shall be investigated and assessed further in the SEIA phase, and mitigation measures will be suggested.

## Visual impact assessment conclusions

The Erongo Regions' most predominant features are the extreme arid nature of the coastline and surrounding Namib Desert. A component of the Erongo Region's sense of place is created by the mining industry, which plays an important role in employment, mineral production, total export earnings and social advancement in Namibia.

The Z20 uranium deposit is located south of the Khan River in the NNNP. The Khan River was identified by MME (2010) as a special red flag area and rated high for this category. The landscape along the corridor is dominated by the rocky outcrops formed by the erosion of the Khan River and a small section of the gravel plains of the Welwitschia plains to the east. With the large rocky outcrops surrounding the meandering dry Khan River, the landscape value is rated as Moderate to High. As the proposed corridor is mainly located in the lower-lying valley areas of the Panner Gorge, Khan River and Khan River tributary, the visibility of the project is contained and has a local geographic zone of influence.

The remoteness of the location reduces the visual exposure to people other than visitors in the Khan River that will be subjected to high exposure. The Khan River is a known 4x4 route that is utilised by local 'Swakopmunders' and tourists for desert recreation. Should permission be granted for this proposal, it must be recognised that the current landscape character of this section of the Khan River area will be degraded.

Without mitigation, the visual significance would be High Negative due to permanent high exposure to the Khan River receptors and the proximity to the NNNP.

Should the overhead conveyor not be removed post closure, landscape decay could take place and further reduce the attraction value of the Khan River and surrounding areas. With effective mitigation, the visual significance would be reduced to Moderate in the long term with opportunities for the proposed Z20 access road winding through the Panner Gorge and across the Khan River to become a tourist route.

### **Biodiversity impact assessment conclusions**

The current assessment showed that there are no fatal flaws from a biodiversity perspective and that most impacts can potentially be decreased to at least a level of Low to Medium Negative with appropriate mitigation or avoidance.

Important exceptions to the rule are the expected loss of two springs which could be a critical resource for numerous animals and plants and the likelihood of cumulative impacts both because of this loss and as a result of interference of movement of animals by the construction and maintenance of the access road and water pipeline. Additional cumulative impacts could occur as a result of the associated loss of small parcels of habitat in the important Khan River Mountain / Hillslope habitats.

The loss of the springs cannot be mitigated and can only be avoided by an alternative route for the access road.

There is a proviso on the expected impacts as a result of the loss of the two springs and the interference of movement by the road and pipeline. The magnitude, extent and importance of these impacts can only be assumed at this stage because there are no data available on the distribution, types and temporal dynamics of natural water points, or on the frequency of use of these resources by animals.

### **Archaeology impact assessment conclusions**

The duration of impacts on archaeological sites must be considered as long term. However, there will be little direct impact from the aerial ropeway other than the footings of the support pylons. The other components of the infrastructure corridor will be confined to the Panner Gorge on the northern side of the Khan valley, and the area of possible encroachment on the archaeological sites is easily defined and managed.

The significance of impact in the case of the Pleistocene sites would be considered as Medium to High significance without mitigation. In the case of the relatively insignificant sites (i.e. all except the four Pleistocene sites) the impact rating of the sites could be reduced adopting appropriate mitigation measures.

## Noise impact assessment conclusions

A conservative approach was followed in the estimation of predicted noise impacts. Impacts were predicted for the day- and night-time hour during which noise impacts would be most significant. Construction and decommissioning phase noise impacts are likely to be similar.

Impacts were predicted for the day- and night-time hour during which noise impacts would be most significant as follows:

- The increase in noise level over reported baseline noise levels for the construction phase were:
  - Between 1.9km and 5km during the day.
- The increase in noise levels over reported baseline noise levels for the operational phase were:
  - Between 500m and 2.5km during the day; and
  - Between 1.4km and 1.7km during the night.
- The significance of cumulative noise impacts at noise sensitive receptors located on the plains to the north of the Khan River is Very Low negative.
- The significance of cumulative noise impacts on visitors to Khan River valley close to the infrastructure corridor crossing is Medium negative due to very quiet surroundings.
- Overall, with noise mitigation and management measures in place, impacts may be reduced to range between Very Low negative and Medium negative.

## Surface Water impact assessment conclusions

The planned infrastructure corridor for the Z20 mining area will consist of amongst others an aerial RopeCon/ RailCon conveyor system and a road bridge. These will cross the Khan River in the vicinity of Panner Gorge, just south of the current Rössing Mine.

The aerial conveyor system will be mounted on towers located on the rocky ridges at the edge of the river channel so this infrastructure will have no physical footprint in the Khan River.

The road bridge will cross the Khan River at Panner Gorge and will consist of a double-lane road deck approximately 10m wide (1 lane per direction) and elevated 3.6m above the river channel. From the review of available literature on rainfall and flooding in the area of interest, it is concluded that the likely risks to surface water associated with these structures are Low to Very Low.

## Air Quality impact assessment conclusions

PM<sub>10</sub> ground level concentrations and dust fallout rates for the proposed operations were assessed in order to identify all possible detrimental impacts on the surrounding environment and human health. It can be concluded that the proposed Z20 infrastructure corridor will have high PM<sub>10</sub> impacts near the conveyor transfer points with no mitigation in place. With the recommended mitigation measures applied, concentrations will be retained at the source. Dust fallout can be of high significance along the conveyor if not controlled, but is assessed to be low based on the proposed RopeCon/ RailCon design and enclosure of the transfer points.

## Radiation impact assessment conclusions

The total incremental doses due to unmitigated or mitigated infrastructure corridor operations are all below 10µSv/a. Cumulative doses, from the baseline and the proposed infrastructure corridor

operations, ranged from a trivial  $4.2\mu\text{Sv/a}$  to a maximum value of  $95.9\mu\text{Sv/a}$  (at the Khan Mine site during unmitigated operations).

This low dose is approximately three times lower than the dose constraint of  $300\mu\text{Sv/a}$ . There seems to be no significant difference between the impacts of the current baseline operations and the cumulative impacts where the infrastructure corridor operations are added to the baseline operations.

There is no significant difference between the No-Go option and the go-ahead of the construction and operation of the infrastructure corridor. The decision to go forward with this project is therefore not depended on the radiological assessment, but rather on other specialist studies and/or project considerations.

The SEIA impact significance is therefore Very Low negative for both unmitigated and mitigated operations. There seems to be no significant difference between the impacts of the current baseline operations and the cumulative impacts where the infrastructure corridor operations are added to the baseline operations. Since the impact significance is low for both instances it implies that the No-Go option is not dependent on the outcome of this radiological assessment, but rather other specialist studies and project considerations.

**Table 4: Summary of Impact Assessment Ratings for all impacts**

Impact	Significance rating	
	Without mitigation	With mitigation
<b>Socio-economic</b>		
No social study conducted for phase 1		
<b>Air quality</b>		
PM <sub>10</sub> impact during the construction phase	Low (-)	Low (-)
PM <sub>10</sub> impact during the operational phase	High (-)	Low (-)
PM <sub>10</sub> impact during the decommissioning phase	Low (-)	Very low (-)
Dust fallout impact during the construction phase	Low (-)	Low (-)
Dust fallout impact during the operational phase	High (-)	Low (-)
Dust fallout impact during the decommissioning phase	Low (-)	Very low (-)
<b>Radiation</b>		
Dust inhalation, external exposure and radon inhalation during construction and operational	Very low (-)	Very low (-)
<b>Biodiversity</b>		
Impact on watercourse habitat loss due to road construction	High (-)	Low (-)
Impact of road construction and operation on animal movement	Medium (-)	Low to medium (-)
Impact of road construction and operation on Husab Sand Lizard	High (-)	Low (-)
Impact of aquatic habitat loss due to road construction	High (-)	High (-)
Impact of Hillslope habitat loss due to conveyor construction	Very low (-)	Very low (-)
Impact of conveyor and power line on bird populations	Low (-)	Very low (-)
Impact of road operation on susceptible vertebrate populations	Low (-)	Very low (-)
Impact on Khan Hillslope habitat range-restricted endemics	Medium (-)	Medium (-)
Impact on integrity of NNNP	High (-)	High (-)
<b>Archaeology</b>		
Impact on sensitive archaeological sites	High (-)	Medium (-)
<b>Noise</b>		
Day time cumulative noise impact significance at noise sensitive	Very low (-)	Very low (-)

receptors located on the ay plains as a result of the infrastructure corridor		
Construction phase impacts within the Khan River valley	Medium (-)	Medium (-)
Day time cumulative noise impact significance at noise sensitive receptors located on the plains as a result of the infrastructure corridor	Very low (-)	Very low (-)
Night time cumulative noise impact significance at noise sensitive receptors located on the plains as a result of the infrastructure corridor	Very low (-)	Very low (-)
Day time cumulative noise impact significance within the Khan River valley as a result of the infrastructure corridor	High (-)	Medium (-)
Night time cumulative noise impact significance within the Khan River valley as a result of the infrastructure corridor	High (-)	Medium (-)
<b>Surface water</b>		
Impact assessment of aerial conveyor on surface water	Low	Very low
Impact assessment of access road on surface water	Low	Very low
<b>Visual</b>		
Construction phase impact assessment rating	Medium (-)	Medium (-)
Operational phase impact assessment rating	High (-)	Medium to High (-)
Decommission phase impact assessment rating	High (-)	Low (+)

The Terms of References for the specific work required to assess the social and environmental impacts associated with the other project components are described in the Final Draft Scoping Report.

## SEIA STATEMENT

In the mitigated scenario, the potential negative impacts associated with the proposed infrastructure corridor are expected to be mainly between low and medium significance. However three potential impacts relating to visual and biodiversity cannot be mitigated and the potential impacts cannot be avoided.

The potential cumulative negative impacts associated with the integrity of the NNNP was assessed as high and cannot be mitigated, taking into consideration existing and future mining and exploration activities. The proposed linear infrastructure south of the Khan River is also located within the NNNP and will cumulatively contribute to this issue.

The other potential impact that cannot be mitigated relates specifically to the proposed road and the potential impact on the Khan Hillslope habitat range-restricted endemics (i.e. loss of two springs which could be a critical resource for numerous animals and plants). It must further be noted that the potential for mitigation to decrease expected impacts on animal movement is unknown and the assessment for this impact is therefore dependent on adequately demonstrating the extent of use of the tributaries and the bridge underpass by animals, to put the impact into its proper regional context.

There is a proviso on the expected impacts as a result of the loss of the two springs and the interference of movement by the road and pipeline. The magnitude, extent and importance of these impacts can only be assumed at this stage because there are no data available on the distribution,

types and temporal dynamics of natural water points or on the frequency of use of these resources by animals.

A study therefore needs to be done to properly quantify the extent of the risk that these developments pose, and to better place the overall impact into context, or to avoid the proposed road route by an alternative route for access to the proposed Z20 mining area.

Also, the proposed infrastructure corridor will run to a certain extent parallel to the proposed (already approved) linear infrastructure for the Husab mine. The two proposed “infrastructure corridors” cross the Khan River approximately 5km from each other. This contradicts the recommendation provided in the SEMP for mines to develop infrastructure corridors together, so that lines for road, power and water are clustered together to reduce to total area of disturbance.

Cumulative impacts from repeated views of mining related road and other infrastructure within the river valley could degrade the existing natural wilderness sense of place and reduce the viability of the Khan River as a tourist attraction.

In this regard, the collaboration between different mines (in this case between Rössing Uranium and Swakop Uranium) must be considered as a preferred option should the proposed Z20 mining and associated activities be approved.

It is therefore recommended that Rössing Uranium should give serious consideration to a solution for the Z20 project that does not require construction of a highly intrusive road. Two possible alternatives might be a road based on the largely unused road to Zhonghe Resources, or a possible shared-use agreement with the new Husab Project access road. Alternatives should be based on a general principle of reducing the number of infrastructure corridors across the Khan valley.

The RopeCon/ RailCon aerial conveyor system will, however, have less significant impacts when compared to the impacts of the road with its associated infrastructure (i.e waterline and powerline). It is therefore the opinion of Aurecon and SLR that the RopeCon/ RailCon aerial conveyor can be approved based on this assessment. Approval of the other components could only be considered pending the proposed further studies prescribed in this report.

## **Way forward**

The Draft Scoping report will be available for review for a 21-day comment period from 16 November 2012 to 14 December 2012. The closing date for comments is 14 December 2012 after which a copy of the final scoping report, including authority and IAP review comments, will be delivered to MET on completion of the public review process.