



ANNIVERSARY

# **Public Participation**

- It is understood that a Public Participation Plan is no longer required- please confirm?
- Compilation of an I&AP database to be updated throughout.
- The following letters will be emailed to all I&APs on the database, where email addresses are available.
  - Letter 1 Release of the Draft Scoping Report for public comment (30 days)
  - Letter 2 Submission of the Final Scoping Report to CA for decision-making
  - Letter 3 Release of the Draft EIA Report for public comment (30 days)
  - Letter 4 Submission of the Final EIA Report to CA for decision-making
  - Letter 5 Decision on the Environmental Decision
- Executive Summary of the Draft Scoping and Draft EIA Report will be emailed to all I&APs, where email addresses are available.
- The Draft Scoping Report with all its supporting documentation will be uploaded to the project website and similar online platforms (e.g. Google Drive) for I&APs to access it.

# **Public Participation**

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• As a supplementary mechanism, the Draft Scoping and EIA Reports will also be uploaded to other alternative web-platforms such as Google Drive. The same will be undertaken for Final EIA Report.

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- If an I&AP cannot access the report via the project website, via the alternative web-platforms such as Google Drive, and if additional information is required (other than what is provided in the Executive Summary), then the I&AP can contact the EAP, who will then make an electronic copy available via courier or post (where possible).
- SMS texts will also be sent to all I&APs on the database, where cell phone numbers are available, to inform them of the proposed project and how to access the Draft Scoping and EIA Reports; as well as the notification of the Environmental Decision.
- Where possible, communication will be made with the ward councillor or similar community forums to request that they send notifications of the project and report availability and executive summaries via their local networks (such as WhatsApp groups, Neighbourhood Watch groups, other social media mechanisms etc.).
- In order to notify and inform the public of the proposed project, to invite I&APs to register on the project database, as well as to inform I&APs of the release of the Draft Scoping and EIA Reports for comment, the processes will be advertised in English and Afrikaans in one local newspaper at the commencement of the 30-day comment period.
- Site notice boards will be placed at the entrance of the key affected farm portions on which the proposed project will be constructed, as well as at well-known retail or government facilities in the Secunda area.
- Submit a hard and electronic copy of all reports and required information to DARDLEA via courier.





Y E A R A N N I V E R S A R Y

# **Proposed Schedule**

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Key Milestones	Proposed Timeframe
Project Initiation and Pre-Application Consultation with DARDLEA	May 2022
Submit Application Form to DARDLEA for the Vhuvhili SEF	Early June 2022
Release Draft Scoping Report for 30-day commenting period	Early June 2022 – Early July 2022
Submit Final Scoping Report to DARDLEA for Decision-Making	Mid-July 2022
Decision-Making on the Final Scoping Report (44 days)	August 2022
Release EIA Report for 30-day commenting period	September – October 2022
Submit Final EIA Report to DARDLEA for Decision-Making	November 2022
Decision-Making on the Final EIA Report and issue of Decision (i.e. grant or refuse EA): <b>107 days</b>	March 2023
EAP to Notify I&APs of Decision (14 days)	Within 14 days of EA being issued





## **F.3.PRE-APPLICATION MEETING NOTES**





## MEETING NOTES FROM THE PRE-APPLICATION MEETING WITH THE DEPARTMENT OF AGRICULTURE, RURAL DEVELOPMENT, LAND AND ENVIRONMENTAL AFFAIRS (DARDLEA) TO DISCUSS THE SCOPING AND EIA PROCESS FOR THE PROPOSED VHUVHILI SOLAR PHOTOVOLTAIC ENERGY FACILY AND ASSOCIATED INFRASTRUCTURE NEAR SECUNDA IN THE MPUMALANGA PROVINCE

Meeting:	Pre-Application Meeting with DARDLEA: Meeting Notes
Date of Meeting:	23 May 2022
Meeting Platform:	Microsoft Teams
Duration:	11H00 – 12H30
Attendees:	Sindi Mbuyane (SM), DARDLEA
	<ul> <li>Whitney Tshimbana (WT), DARDLEA</li> </ul>
	<ul> <li>Okwethu Fakude (OF), (DARDLEA)</li> </ul>
	<ul> <li>Lesedi Nake (LN), ENERTRAG South Africa (Pty) Ltd (Project Proponent)</li> </ul>
	Minnelise Levendal (ML), CSIR (Environmental Assessment Practitioner (EAP))

### PRE-APPLICATION MEETING WITH DARDLEA

#### Attachments:

- 1. Agenda for the proposed Vhuvhili Solar Photovoltaic Energy Facility (SEF) and the associated infrastructure near Secunda in the Mpumalanga Province (Appendix 1); and
- 2. Presentation of the EIA process to be undertaken for the proposed Vhuvhili SEF and associated infrastructure near Secunda in the Mpumalanga Province (Appendix 2).

#### Purpose of Meeting and Agenda

The meeting constituted the Pre-Application Meeting with the DARDLEA to discuss the Scoping and EIA (S&EIA) process to be undertaken for the proposed Vhuvhili SEF near Secunda in the Mpumalanga Province.

Note from the CSIR: This EIA process only includes the proposed Vhuvhili SEF and associated infrastructure. The proposed 132 kV power line and associated Electrical Grid Infrastructure (EGI) to connect the proposed Vhuvhili SEF to the grid at Sasol or to the national grid (should the project be bid into the REIPPPP or similar bidding process) is subject to a separate Basic Assessment (BA) that will be undertaken by the Project Applicant.

The meeting provided an introduction and overview of the proposed Vhuvhili SEF and associated infrastructure and confirmed the proposed S&EIA process to be undertaken. This included the project location, project description, the proposed specialist studies and types of assessments to be undertaken to inform the S&EIA process. The proposed approach to the S&EIA process, including the Public Participation Process (PPP) and the proposed EIA schedule, were also discussed.

#### AGENDA FOR PRE-APPLICATION MEETING WITH DARDLEA TO DISCUSS THE SCOPING AND EIA PROCESS TO BE UNDERTAKEN FOR THE PROPOSED VHUVHILI SOLAR ENERGY FACILITY AND ASSOICATED INFRASTRUCTURE NEAR SECUNDA IN THE MPUMALANGA PROVINCE

Торіс	Presenter	Time
1. Welcome and Introductions	Minnelise Levendal (ML) CSIR (EAP)	11:00 – 11:10
2. Introduction and Description of the proposed project	Lesedi Nake (LN) ENERTRAG South Africa (Pty) Ltd (Project Proponent)	11:10 – 11:20
3. Proposed Approach to the EIA process to be undertaken	ML	11:20 – 11:25
4. Specialist studies to be undertaken	ML	11:25 – 11:35
5. Level of Assessment of specialist studies	ML	11:35 – 11:50
6. Approach to Public Participation Process	ML	11:50 – 12:00
7. Confirmation on cumulative assessment	ML	12:00 – 12:10
8. Project Schedule and Way forward	ML	12:10 – 12:15
9. Questions	All	12:15 – 12:25
10. Closure of Meeting	ML and LN	12:25 – 12:30

The meeting was chaired by ML.

#### 1. Welcome and Introduction

ML asked the meeting participants to introduce themselves. ML outlined the proceedings of the meeting.

#### 2. Introduction and Description of the proposed Vhuvhili SEF

LN provided an overview of the Project Developer, ENERTRAG, including their current experience in the Renewable Energy sector internationally and locally (including their current applications for Environmental Authorisation (EA) for Wind and Solar PV Energy projects as well as the Green Hydrogen and Green Ammonia projects in the Camden and Hendrina area in the Mpumalanga province)). He also provided an overview of the proposed Vhuvhili SEF project. He noted that the proposed Vhuvhili SEF may provide energy to Sasol to produce green Hydrogen which can be used as a Sustainable Aviation Fuel as part of an international bidding

process. Alternatively, the proposed project can be entered into one of the upcoming bidding windows of the National Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) to supply electricity to the national grid.

ML provided an overview of the proposed Vhuvhili SEF project, the project location, project description and the S&EIA process to be undertaken. ML presented the specialist team, the specialist studies and the level of assessment to be undertaken for each study based on the outcomes of the National Screening Tool and based on Site Sensitivity Verifications undertaken by the specialists during the Scoping Phase, as applicable.

ML also provided an overview of the proposed Public Participation Process (PPP) to be undertaken and the proposed project schedule.

Please refer to Appendix 2 for the full presentation which provides details of all the aspects mentioned above.

THE COMMENTS RAISED DURING AND FOLLOWING THE PRESENTATIONS BY ENERTRAG AND THE CSIR, WITH THE CORRESPONDING RESPONSES AND PROPOSED FOLLOW UP ACTIONS, ARE PROVIDED IN THE TABLE BELOW.

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QUERIES OR COMMENTS RAISED	RESPONSES	ACTION
	•	
AGENDA POINT 3: PROPOSED	APPROACH TO THE EIA PROCESS TO BE UNDE	RTAKEN
<ul> <li>ML provided an overview of the proposed approach to the S&amp;EIA process to be undertaken for the proposed Vhuvhili SEF project. She noted that an application, with the Draft Scoping Report (DSR), will be submitted to DARDLEA for comment. She explained that the proposed project does not fall within a Renewable Energy Development Zone (REDZ). Therefore, the proposed Vhuvhili SEF is subject to a full S&amp;EIA process, instead of a BA process.</li> </ul>	• None	<ul> <li>ML to submit an application to DARDLEA together with the DSR for comment. ML will release the DSR for a 30-day commenting period to all Interested and Affected Parties (I&amp;APs) on the project database. The DSR and all other relevant reports that will be released for comment will be placed on a dedicated project website.</li> </ul>
<ul> <li>ML requested confirmation on the relevant Competent Authority (CA) is for this application.</li> </ul>	<ul> <li>SB responded that DARDLEA is the CA in this context as the preferred option is to provide energy to the grid at Sasol to feed into its proposed Green Hydrogen project as explained by LN in his presentation.</li> </ul>	<ul> <li>ML to submit an application to DARDLEA in the context of the current project.</li> </ul>
<ul> <li>ML provided an overview of the specialist studies and level of assessment to be undertaken as part of the EIA for the proposed Vhuvhili SEF project.</li> <li>SM: You mentioned that a Geotechnical study will not be undertaken as part of the EIA process and that motivation will be provided in the Scoping Report as to why such a study has been excluded from this S&amp;EIA process. It should be noted that this study is included in the the list of specialist studies to be undertaken for this project as specified in the National Screening Tool. At this study are be evaluated another to another the astronometers.</li> </ul>	ML: Your comments regarding the Geotechnical assessment are noted. In the past, for other renewable energy projects, motivation was provided to the DFFE, as the CA, why a Geotechnical study was excluded from the specialist assessments to be undertaken. It was motivated that the Geotechnical assessment comprises a technical study and that a detailed study will be commissioned by the Project Developer, should the project receive preferred bidder status in terms of REIPPPP or another bidder status in terms of REIPPPP or another	<ul> <li>ML to submit an inquiry and motivation to DARDLEA as to why a Geotechnical will not be undertaken during the EIA process, but that a detailed technical study will be undertaken prior to construction should the project receive preferred bidder status.</li> <li>Proposed action following the pre- application modular.</li> </ul>
whether such a study can be excluded or not. The Department	bidding process. In the past, this motivation was	

QUERIES OR COMMENTS RAISED	RESPONSES	ACTION
is guided by the outcomes of the Screening Tool to inform the specialist studies to be undertaken. We will also consult the Mpumalanga Spatial Development Framework (MSDF) to confirm any potential environmental sensitivities identified in for that area. Based on your motivation to be provided in the Scoping Report and the outcome of the sensitivity analysis from the MSDF, the Department will reach a decision as to whether a Geotechnical assessment can be excluded or not from the list of specialist studies to be undertaken for the proposed Vhuvhili SEF project as indicated in the National Screening Tool.	<ul> <li>accepted by DFFE and the relevant wind an solar PV projects received EA.</li> <li>ML: Can a motivation to exclude th Geotechnical study be submitted to DARDLE, prior to the submission of the application an Draft Scoping Report? This is to follow a risk averse approach and to know upfront DARDLEA requires such a study to b undertaken or not. This will allow the EAP an Project Proponent to address this requiremer upfront to prevent possible delays further on i the process.</li> <li>SM: Yes, you can submit an inquiry to this effect to the Department. Please submit the inquiry to eimgertsibande@mpg.gov.za and we wiretrieve it from there.</li> <li>ML: How long will the Department take to respond to this enquiry?</li> </ul>	<ul> <li>ENERTRAG will appoint a specialist to undertake a desktop Geotechnical study which will be included in the EIA Reports. It should be noted that this study will comprise a technical study and will not be undertaken in terms of Appendix 6 of the 2014 NEMA EIA Regulations, as amended.</li> </ul>
AGENDA POINT 6: PROPOSE	D PUBLIC PARTICIPATION PROCESS TO BE FO	LLOWED
<ul> <li>ML provided an overview of the PPP to be followed.</li> <li>ML enquired whether a Public Participation (PP) Plan must be submitted to DARDLEA for approval prior to the submission of the application form. She noted that they received notice from DFFE that such a plan is no longer required for applications to be submitted to DFFE.</li> </ul>	<ul> <li>SB confirmed that a PP Plan is not require anymore.</li> </ul>	d None.
<ul> <li>ML confirmed that a hard and electronic copy of the Draft Scoping Report (DSR) will be submitted to DARDLEA for comment as per a previous discussion she had with SB.</li> </ul>	<ul> <li>SB noted that is correct and requested that th Gert Sibande District Municipality (GSDM) b added to the project database and that a har copy of the DSR (and all other relevant dra reports) be submitted to them for comment a well. She noted that should the GSDM no provide comments on the report/s, this should</li> </ul>	<ul> <li>ML to submit a hard copy of the DSR (and the Draft EIA Report) to the GSDM for comment.</li> <li>ML to place a hard copy of the DSR (and the Draft EIA Report) in the local library in the Secunda area for public viewing.</li> </ul>

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ſ	QUERIES OR COMMENTS RAISED	RE	SPONSES	AC	TION
	• ML indicated the cite potices and advertisements will be	-	be indicated in the Final Scoping Report or the Final EIA Report, as applicable. <b>SB</b> requested that a hard copy of the DSR (and Draft EIA Report once released) be placed in the local library in the Secunda area to enable community members, who do not have access to emails, to access the report/s.	-	MI to place site potices in
	<ul> <li>ML indicated the site folices and adventisements will be placed in English and Afrikaans.</li> </ul>	-	isiZulu as well to enable community members who are not learned in English or Afrikaans to understand what is going on in their area. She noted that it is not necessary to place the advertisement/s in isiZulu.	-	isiZulu as well.
	<ul> <li>ML confirmed that the Ward Councillor will be added to the project database and will be consulted with during the Scoping and EIA processes and that he/she will be notified of the release of the Draft Scoping or Draft EIA Reports for comment. She enquired whether there are any other specific local stakeholders that need to be added to the project database.</li> </ul>	-	<b>SB</b> requested that the Govan Mbeki Local Municipality (GBLM), the GSDM and the Mpumalanga Tourism and Parks Agency (MTPA) be added to the project database and be notified of the release of the Draft Scoping and EIA reports for comment.	-	ML to add the GBLM, the GSDM and the MTPA to the project database and notify them of the release of the DSR and the Draft EIA report for comment.
	AGENDA POINT 7: C	ON	FIRMATION ON CUMULATIVE ASSESSMENT		
	ML explained that cumulative impacts will be assessed by the specialists during the EIA phase. She noted that the proposed approach to assess cumulative impacts will be to include renewable energy projects (i.e. Wind and Solar PV) within a 50 km radius from the Vhuvhili SEF site that have received an EA, or has a BA/EIA in progress as at May 2022. Two projects have been identified within the 50 km radius to include in the assessment of cumulative impacts. These include the proposed Tutuka Solar PV Facility (9.5 MW) which has received EA and the proposed Forzando Solar PV Facility (66 MW) for which an EIA process is currently underway. ML noted that the information has been sourced from the National DFFE Renewable Energy EIA Application (REEA) database, as well as from the South African Heritage Resources Information System (SAHRIS).	•	<b>OT</b> noted that an application for the Becrux Solar PV Facility is currently underway. She also noted that she is aware of the proposed Green Hydrogen Energy project proposed by ENERTRAG (which LN referred to in his presentation), but noted that is located far from Secunda and is therefore not relevant to the cumulative assessment for this application.	•	<b>ML</b> to source information on the proposed Becrux Solar PV project to determine if it falls within 50 km from the Vhuvhili project site. If it does, ML to add the Becrux project to the cumulative assessment of the proposed Vhuvhili SEF project. The specialists to assess the cumulative impacts during the EIA phase.

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QU	ERIES OR COMMENTS RAISED	R	ESPONSES	AC	TION
•	ML indicated that it is important to note that although the				
	applications for the Mukondeleli WEF and the Impumelelo				
	WEF projects, also proposed by ENERTRAG, have not been				
	submitted to the CA yet, these projects have also been				
	included in the list of cumulative projects to be assessed.				
	These projects have been included as a precautionary				
	measure to provide the CA with an overarching overview of all				
	potential renewable energy projects which may be developed				
	within a 50 km from the proposed Vhuvhili SEF area.				
•	ML enquired if DARDLEA is aware of any other renewable				
	energy project applications for EA within the area which are				
	currently underway or have been approved.				
	AGENDA POINT 8: PROP	so	SED PROJECT SCHEDULE AND WAY FORWAR	RD	
•	ML presented the proposed project schedule. She noted that	•	No response	•	None
	the proposed Vhuvhili SEF project does not fall within a				
	Renewable Energy Development Zone (REDZ) and is				
	therefore subject to an EIA and a decision-making timeframe				
	of 107 days.				
•	ML asked if a case officer has been assigned yet. She noted	•	SB noted that a case officer has not been	•	DARDLEA to assign a case
	that she will contact the case officer should she have any		assigned to this project yet. The project will be		officer once an application has
	queries to ensure that the requirements of DARDLEA are met.		assigned to a case officer once an application		been submitted.
	She reiterated that the case officer should also contact her		has been submitted to DARLEA. She noted that		
	with any comments or questions regarding the proposed		one of them present at the meeting will be		
	Vhuvhili SEF project and/or EIA process.		assigned as the case officer.		
	AC	GEN	NDA POINT 9: QUESTIONS		
The	e questions raised and comments thereto are indicated in the se	ectic	ons above.		
	AGENDA	PC	DINT 10: CLOSURE OF MEETING		
•	ML noted that she will prepare the meeting notes and will	•	SB thanked ML and LN for the informative	•	ML to compile the meeting
	submit it to DARDLEA.		presentations.		notes and submit it to
•	ML and LS thanked everyone for availing themselves for the	•	WT and OF noted they have no further		DARDLEA for review and
	meeting and for their valuable inputs.		questions or comments.		approval.

The meeting was adjourned at 12H06.

## APPENDIX 1:

AGENDA FOR PRE-APPLICATION MEETING WITH DARDLEA TO DISCUSS THE SCOPING AND EIA PROCESS TO BE UNDERTAKEN FOR THE PROPOSED VHUVHILI SOLAR ENERGY FACILITY AND ASSOICATED INFRASTRUCTURE NEAR SECUNDA IN THE MPUMALANGA PROVINCE

		AGENDA		
Pre-Application Meeting to discuss the EIA for the proposed Vhuvhill Solar Photovotalc (PV) project near Secunda in the Mpumalanga Province Venue: On-Line Teams Meeting Date: Monday, 23 May 2022; Duration: 11H00-12H30 Purpose of meeting: To discuss the proposed Vhuvhill Solar PV project near Secunda and the EIA process to be undertaken.				
Торіс	Presenter	Time		
1. Welcome and Introductions	Minnelise Levendal (ML) CSIR (EAP)	11:00 - 11:10		
2. Introduction and Description of the proposed project	Lesedi Nake (LN) ENERTRAG South Africa (Pty) Ltd (Project Proponent)	11:10 - 11:20		
<ol> <li>Proposed Approach to the EIA process to be undertaken</li> </ol>	ML	11:20 - 11:25		
4. Specialist studies to be undertaken	ML	11:25 - 11:35		
5. Level of Assessment of specialist studies	ML	11:35 - 11:50		
6. Approach to Public Participation Process	ML	11:50 - 12:00		
7. Confirmation on cumulative assessment	ML	12:00 - 12:10		
8. Project Schedule and Way forward	ML	12:10 - 12:15		
9. Questions	All	12:15 - 12:25		
10. Closure of Meeting	ML and LN	12:25 - 12:30		

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APPENDIX 2:

PRESENTATION FOR THE PRE-APPLICATION MEETING WITH DARDLEA

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## NOTES OF PRE-APPLICATION MEETING ON MONDAY 23 MAY 2022 WITH DARDLEA

From: Minnelise Levendal
Sent: Thursday, 09 June 2022 11:07
To: Mbuyane <<u>mbuyanesb@mpg.gov.za</u>>
Subject: RE: Notes of Pre-Application Meeting on Monday 23 May 2022 with DARDLEA to discuss the Vhuvhili SEF

Dear Ms Mbuyane

Thank you very much for confirming yesterday that you accept the meeting notes that was submitted to you on 1 June 2022 with no further comments. The pre-application meeting was held with you/DARDLEA on 23 May 2022.

The meeting notes will be included in the Draft Scoping Report which will be submitted to DARDLEA for comment.

Thank you very much, Minnelise



Minnelise Levendal Pri Sci Nat | BSc Ed | BSc Hons Bot | MSc Bot Environmental Assessment Practitioner: EMS Tel: +27 21 888 2495 Cell: +27 83 309 8159 Email: mlevendal@csir.co.za www.csir.co.za

From: Mbuyane <<u>mbuyanesb@mpg.gov.za</u>>
Sent: Wednesday, 01 June 2022 15:41
To: Minnelise Levendal <<u>MLevendal@csir.co.za</u>>
Subject: Re: Notes of Pre-Application Meeting on Monday 23 May 2022 with DARDLEA to discuss the Vhuvhili SEF

Thank you, received.

>>> Minnelise Levendal <<u>MLevendal@csir.co.za</u>> 06/01/22 3:24 PM >>> Good day Ms Mbuyane, Ms Tshimbana and Ms Fakude

Please find the meeting notes of the Pre-Application Meeting for the Vhuvhili Solar Energy Project attached for your review and approval.

Many thanks once again for meeting with us on 23 May 2022 to discuss the above-mentioned project. Thank you also very much for your valuable inputs.

Please note the presentations are attached as separate documents due to size limitations.

We intend to release the Draft Scoping Scoping for comment next week.

Your response to the meeting notes would therefore be highly appreciated.

Many thanks and best wishes,

## Minnelise

From: Mbuyane <<u>mbuyanesb@mpg.gov.za</u>>
Sent: Friday, 20 May 2022 08:46
To: Minnelise Levendal <<u>MLevendal@csir.co.za</u>>
Cc: Lesedi.nake <<u>Lesedi.nake@enertrag.com</u>>
Subject: Re: Agenda for Pre-Application Meeting on Monday 23 May 2022 with DARDLEA to discuss the Vhuvhili
SEF

Good morning,

Thank you for the agenda.

Kind regards, Sindisiwe Mbuyane

>>> Minnelise Levendal <<u>MLevendal@csir.co.za</u>> 05/19/22 8:31 PM >>> Dear Ms Mbuyane

Please see attached Agenda for our Pre-Application meeting on Monday, 23 May 2022 from 11H00 until 12H30.

We thank you once again for availing yourself to meet with us.

Best wishes, Minnelise

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# ENVIRONMENTAL IMPACT ASSESSMENT REPORT

EIA Report for the proposed development of the Vhuvhili Solar Photovoltaic (PV) Facility near Secunda in the Mpumalanga Province

# APPENDIX G

Assessment Methodology of the CSIR to assess the significance of environmental impacts





# ASSESSMENT METHODOLOGY OF THE CSIR TO ASSESS THE SIGNIFICANCE OF ENVIRONMENTAL IMPACTS

The impact assessment includes:

- the nature, status, significance and consequences of the impact and risk;
- the extent and duration of the impact and risk;
- the probability of the impact and risk occurring;
- the degree to which impacts and risks can be mitigated;
- the degree to which the impacts and risks can be reversed; and
- the degree to which the impacts and risks can cause loss of irreplaceable resources.

Terminology used in impact assessment can overlap. To avoid ambiguity, please note the following clarifications (that are based on NEMA and the EIA Regulations):

- The term environment is understood to have a broad interpretation that includes both the natural (biophysical) environment and the socio-economic environment. The term socio-ecological system is also used to describe the natural and socio-economic environment and the interactions amongst these components.
- Significance = Consequence x Probability, which means that significance is equivalent to risk.
- The impact can have a positive or negative status. The significance of a negative impact may be called a risk, and the significance of a positive impact may be called an opportunity.

The following principles are to underpin the application of this methodology:

- Transparent and repeatable process specialists are to describe the thresholds and limits they apply in their assessment, wherever possible.
- Adapt parameters to context (where justified) the methodology proposes some thresholds (e.g. for spatial extent, in Step 3 below), however, if the nature of the impact requires a different definition of the categories of spatial extent, then this can be provided and described.
- Combination of a quantitative and qualitative assessment where possible, specialists are to
  provide quantitative assessments (e.g. areas of habitat affected, decibels of noise, number of jobs),
  however, it is recognised that not all impacts can be quantified, and then qualitative assessments
  are to be provided.

As per the DFFE Guideline 5: Assessment of Alternatives and Impacts, the following methodology is applied to the prediction and assessment of impacts and risks. Potential impacts and risks have been rated in terms of the direct, indirect and cumulative:

- Direct impacts are impacts that are caused directly by the activity and generally occur at the same time and at the place of the activity. These impacts are usually associated with the construction, operation or maintenance of an activity and are generally obvious and quantifiable.
- Indirect impacts of an activity are indirect or induced changes that may occur as a result of the activity. These types of impacts include all the potential impacts that do not manifest immediately when the activity is undertaken or which occur at a different place as a result of the activity.
- Cumulative impacts are impacts that result from the incremental impact of the proposed activity on a common resource when added to the impacts of other past, present or reasonably foreseeable future activities. Cumulative impacts can occur from the collective impacts of individual minor actions over a period of time and can include both direct and indirect impacts.

The impact assessment methodology includes the aspects described below.

- <u>Step 1</u>: Nature of impact/risk The type of effect that a proposed activity will have on the environment.
- <u>Step 2</u>: Status Whether the impact/risk on the overall environment will be:
  - Positive environment overall will benefit from the impact/risk;
  - o Negative environment overall will be adversely affected by the impact/risk; or
  - Neutral environment overall not be affected.

# • <u>Step 3</u>: Qualitatively determine the consequence of the impact/risk by identifying the a) SPATIAL EXTENT; b) DURATION; c) REVERSIBILITY; AND d) IRREPLACEABILITY.

- A) Spatial extent The size of the area that will be affected by the impact/risk:
  - Site specific;
  - Local (<10 km from site);</li>
  - Regional (<100 km of site);</li>
  - National; or
  - International (e.g. Greenhouse Gas emissions or migrant birds).
- **B)** Duration The timeframe during which the impact/risk will be experienced:
  - Very short term (instantaneous);
  - Short term (less than 1 year);
  - Medium term (1 to 10 years);
  - Long term (the impact will cease after the operational life of the activity (i.e. the impact or risk will occur for the project duration)); or
  - Permanent (mitigation will not occur in such a way or in such a time span that the impact can be considered transient (i.e. the impact will occur beyond the project decommissioning)).
- **C) Reversibility** of the Impacts the extent to which the impacts/risks are reversible assuming that the project has reached the end of its life cycle (decommissioning phase):
  - High reversibility of impacts (impact is highly reversible at end of project life i.e. this is the most favourable assessment for the environment);
  - Moderate reversibility of impacts;
  - Low reversibility of impacts; or
  - Impacts are non-reversible (impact is permanent, i.e. this is the least favourable assessment for the environment).
- D) Irreplaceability of Receiving Environment/Resource Loss caused by impacts/risks the degree to which the impact causes irreplaceable loss of resources assuming that the project has reached the end of its life cycle (decommissioning phase):
  - High irreplaceability of resources (project will destroy unique resources that cannot be replaced, i.e. this is the least favourable assessment for the environment);
  - Moderate irreplaceability of resources;
  - Low irreplaceability of resources; or
  - Resources are replaceable (the affected resource is easy to replace/rehabilitate, i.e. this is the most favourable assessment for the environment).

Some of the criteria are quantitative (e.g. spatial extent and duration) and some may be described in a quantitative or qualitative manner (e.g. reversibility and irreplaceability). The specialist then combines these criteria in a qualitative manner to determine the **consequence**.

The consequence terms ranging from slight to extreme must be calibrated per Specialist Study so that there is transparency and consistency in the way a risk/impact is measured. For example, from a biodiversity and ecology perspective, the consequence ratings could be defined according to a reduction in population or occupied area in relation to Species of Conservation Concern (SCC) status, ranging from slight consequence for defined areas of Least Concern, to extreme consequence for defined areas that are Critically Endangered. For example, from a social perspective, a slight consequence could refer to small and manageable impacts, or impacts on small sections of the community; a moderate consequence could refer to impacts which affect the bulk of the local population negatively or may produce a net negative impact on the community; and an extreme consequence could refer to impacts which could result in social or political violence or institutional collapse.

- **Consequence** The anticipated consequence of the risk/impact is generally defined as follows:
  - Extreme (extreme alteration of natural or socio-economic systems, patterns or processes, i.e. where environmental or socio-economic functions and processes are altered such that they permanently cease);
  - Severe (severe alteration of natural or socio-economic systems, patterns or processes, i.e. where environmental or socio-economic functions and processes are altered such that they temporarily or permanently cease);
  - Substantial (substantial alteration of natural or socio-economic systems, patterns or processes, i.e. where environmental or socio-economic functions and processes are altered such that they temporarily or permanently cease;
  - Moderate (notable alteration of natural or socio-economic systems, patterns or processes, i.e. where the natural or socio-economic environment continues to function but in a modified manner; or
  - Slight (negligible and transient alteration of natural or socio-economic systems, patterns or processes, i.e. where natural systems/environmental or socio-economic functions, patterns, or processes are not affected in a measurable manner, or if affected, that effect is transient and the system recovers).
- **<u>Step 4</u>**: Rate the **probability** of the impact/risk using the criteria below:
  - **Probability** The probability of the impact/risk occurring:
    - Extremely unlikely (little to no chance of occurring);
    - Very unlikely (<30% chance of occurring);</li>
    - Unlikely (30-50% chance of occurring)
    - Likely (51 90% chance of occurring); or
    - Very Likely (>90% chance of occurring regardless of prevention measures).
- <u>Step 5</u>: Use both the consequence and probability to determine the significance of the identified impact/risk (qualitatively as shown in Figure 1). Significance definitions and rankings are provided below:





## Figure 1. Guide to assessing risk/impact significance as a result of consequence and probability.

- Significance Will the impact cause a notable alteration of the environment?
  - Very low (the risk/impact may result in very minor alterations of the environment and can be easily avoided by implementing appropriate mitigation measures, and will not have an influence on decision-making);
  - Low (the risk/impact may result in minor alterations of the environment and can be easily avoided by implementing appropriate mitigation measures, and will not have an influence on decision-making);
  - Moderate (the risk/impact will result in moderate alteration of the environment and can be reduced or avoided by implementing the appropriate mitigation measures, and will only have an influence on the decision-making if not mitigated);
  - High (the risk/impact will result in major alteration to the environment even with the implementation on the appropriate mitigation measures and will have an influence on decision-making); and
  - Very high (the risk/impact will result in very major alteration to the environment even with the implementation on the appropriate mitigation measures and will have an influence on decision-making (i.e. the project cannot be authorised unless major changes to the engineering design are carried out to reduce the significance rating)).

With the implementation of mitigation measures, the residual impacts/risks are ranked as follows in terms of significance:

- Very low = 5;
- Low = 4;
- Moderate = 3;
- High = 2; and
- Very high = 1.

The specialists must provide a written supporting motivation of the assessment ratings provided.

- <u>Step 6</u>: Determine the **Confidence Level** The degree of confidence in predictions based on available information and specialist knowledge:
  - o Low;
  - Medium; or
  - o High.