

ENVIRONMENTAL IMPACT ASSESSMENT: PROPOSED WIND ENERGY FACILITY NEAR COPPERTON, NORTHERN CAPE



JANUARY 2012
DEA REF. NO. 12/12/20/2099



SUMMARY DOCUMENT: DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT

Background

Plan 8 Infinite Energy (Pty) Ltd (Plan 8) proposes to construct a wind energy facility to generate approximately 140 Megawatts (MW) on a farm, near Copperton in the Northern Cape. Aurecon South Africa (Pty) Ltd (Aurecon) has been appointed to undertake the requisite Environmental Impact Assessment (EIA) process as required in terms of the National Environmental Management Act (No. 107 of 1998)(NEMA), as amended, on behalf of Plan 8.

The proposed project would take place on Struisbult Farm (Farm No. 103 Portions 4 and 7 and Farm No. 104 Portion 5), near Copperton in the Northern Cape. An existing airstrip would also be relocated as part of the proposed project, to Portions 1 and 2 of Farm No. 105. Struisbult Farm is located approximately 5 km east of Copperton and the two main portions (excluding the transmission line portion) cover approximately 3 130 ha. The airstrip would be relocated to a 385 ha area within Portions 1 and 2 of Farm No. 105 which covers an area of 7 578 ha).

Proposed project

Plan 8 proposes to construct a 140 MW wind energy facility, consisting of 56 turbines of 2.5 MW each, on the farm Struisbult (Farm No. 103 Portions 4 and 7 and Farm No. 104 Portion 5) near Copperton in the Northern Cape (see **Figure 1**). Originally a three phased, 200 MW wind energy facility was proposed, however in terms of the Department of Energy's Independent Power Producers process wind energy projects are limited to 140 MW and as such the project has been changed to a single phase 140 MW project. It would also be necessary to rebuild an existing airstrip adjacent to the site. This would be moved to Portions 1 and 2 of Farm No. 105, approximately 7 km east of the site onto Armscor (Alkantpan) test range. See **Figure 1** for the proposed project layout. The airstrip would be approximately 1 700 x 60 m in size.

Purpose of this document

This document provides a summary of the Draft Environmental Impact Assessment Report (EIAR) for the proposed wind energy facility near Copperton, Northern Cape. It provides a brief background and overview of the proposed project, a description of the public participation process undertaken thus far, the list of project alternatives and potential impacts that have been assessed.

In addition, you are also invited to attend a Public Meeting where the findings of the Draft EIAR will be presented and discussed on **22 February 2012, 17h00-19h00**, at the **letznietz Conference Room, Copperton**. Should you wish to attend please RSVP for further details. **Due to low attendance of the public meeting held at the Scoping Phase (three I&APs) I&APs have been requested to RSVP by 15 February 2012, and should the number of RSVP's be insufficient the meeting will be cancelled and I&APs will instead be contacted telephonically/electronically to discuss any issues and concerns they may have.**

Please review this Summary Document and, preferably, the full EIAR, and submit your comments on the proposed project by **6 March 2012**. All EIA documents will be available at Prieska (Elizabeth Vermeulen) Public Library, letznietz in Copperton and on the Aurecon (Pty) Ltd (Aurecon) website (www.aurecongroup.com change "Current Location" to South Africa and follow the "Public Participation" link). To comment, write a letter, call or e-mail the Louise Corbett of Aurecon at the details below:

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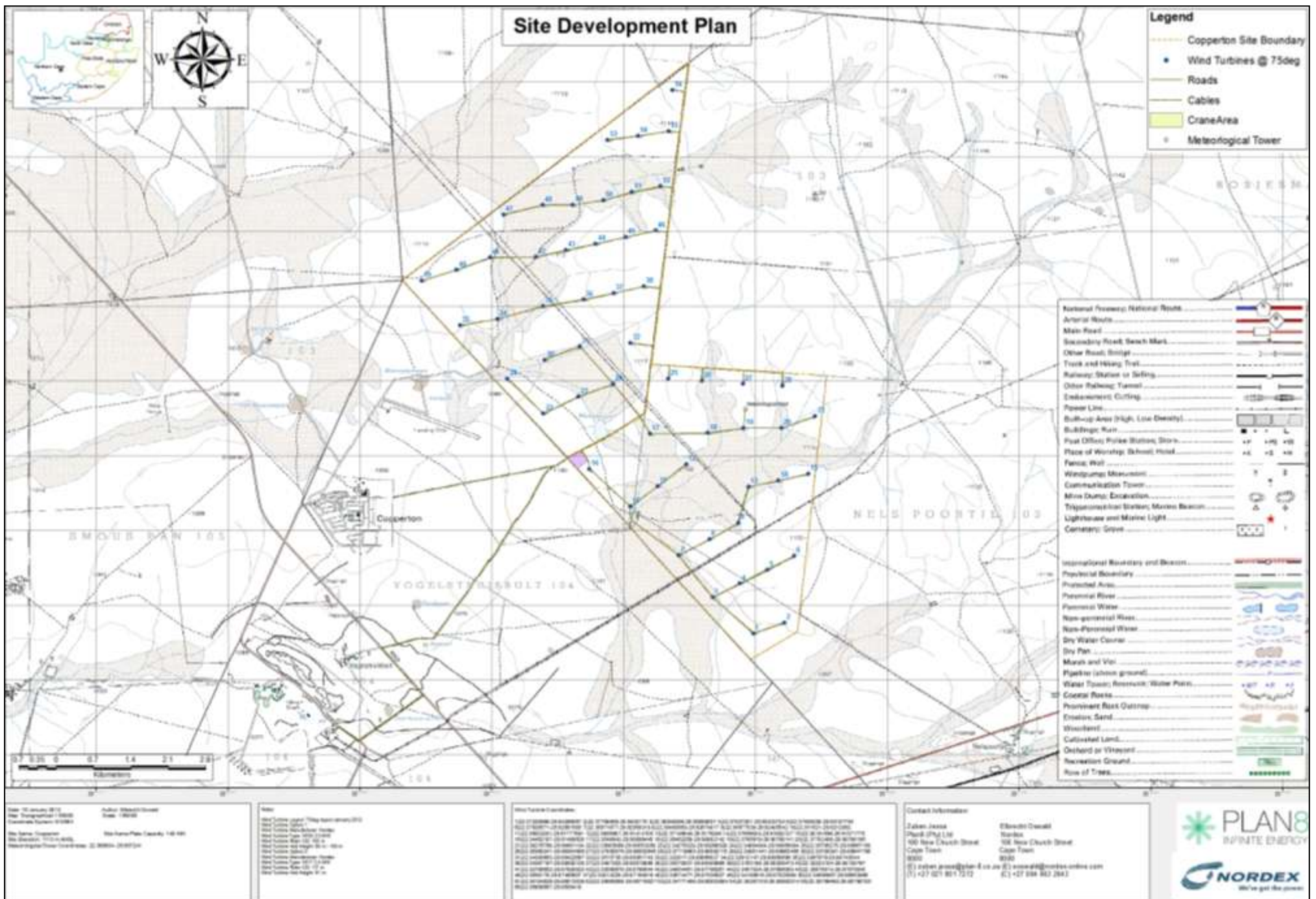


Figure 1. Preferred layout, dated October 2011, for the proposed wind energy facility (Source: Plan 8, Nordex)

EIA Process

EIA Regulations (Regulations 544, 545 and 546) promulgated in terms of NEMA, identify certain activities, which “could have a substantial detrimental effect on the environment”. These listed activities require environmental authorisation from the competent environmental authority, i.e. the Department of Environmental Affairs (DEA) in the case of energy applications, prior to commencing.

This proposed project triggers a number of listed activities in terms of NEMA and accordingly requires environmental authorisation from DEA via the EIA process outlined in Regulation 543 of NEMA.

Aurecon has been appointed to undertake the required environmental authorisation and licencing processes on Plan 8’s behalf.

The EIA process consists of an Initial Application Phase, a Scoping Phase and an EIA Phase. The purpose of the Initial Application Phase is to commence the project *via* the submission of the relevant department’s application forms. The purpose of the Scoping Phase is to identify and describe potential positive and negative environmental impacts, (both social and biophysical), associated with the proposed project and to screen feasible alternatives to consider in further detail.

The purpose of the EIA Phase (the current phase) is to comprehensively investigate and assess those alternatives and impacts identified in the Scoping Report and propose mitigation to minimise negative impacts. Ultimately the EIAR provides the basis for informed decision-making by the applicant, with respect to which alternatives to pursue, and by DEA with respect to the environmental acceptability of the applicant’s chosen option. This summary cannot replace the comprehensive EIAR, but it gives an overview of what is contained in the report.

How you can get involved

Public participation is a key component of this EIA process and will take place at various stages throughout the project.

The initial consultation phase occurred at the outset of the EIA process in November 2010, and its purpose was to present the proposed project and elicit initial issues and comments that Interested and Affected Parties (I&APs) may have had in this regard. The Initial Phase comprised the following steps.

- Distribution of the Background Information Document on 24 November 2010 to inform Interested and Affected Parties (I&APs) of the project and to invite I&APs to register on the database;
- Advertisements were placed in a local newspaper, the *Gemsbok*, notifying the broader public of the initiation of the EIA and inviting them to register as I&APs from 24 November 2010; and
- A site notice was erected at the entrance to Struisbult Farm on 9 February 2010.

The primary purpose of the public participation during the Scoping Phase was to present the Draft Scoping Report (DSR) to registered I&APs, to illustrate how their comments to date had been incorporated into the report and to elicit additional issues of concern and/or comment. The Scoping Phase comprised the following steps:

- Erection of a site notice at the entrance to Struisbult Farm on 24 November 2010;
- Lodging the Draft Scoping Report (DSR) at Prieska (Elizabeth Vermeulen) Public Library, Ietznietz in Copperton and on the Aurecon website from 17 February 2011. All registered I&APs were notified of the availability of the DSR and of a public meeting by means of a letter sent by post and/or e-mail on 17 February 2011. The notification letters also included a copy of the Executive Summary of the DSR in English and Afrikaans.
- Holding a public meeting on Thursday, 10 March 2011 to present and discuss the findings of the DSR at the Ietznietz Conference Room, Copperton from 18h00-20h00. Notes of the public meeting were sent to all those who attended on 30 March 2011;

- I&APs had until 40 days, until 30 March 2011, to submit their written comments on the DSR. Cognisance was taken of all comments when compiling the final report, and the comments, together with the project team and proponent's responses thereto, were included in final report.
- The Final Scoping Report (FSR) was made available to the public for review and comment until 1 June 2011 at the same locations as the DSR from 10 May 2011. All registered I&APs were informed of the lodging of the FSR by means of a letter posted on 10 May 2010. The FSR outlined the full range of potential environmental impacts and feasible project alternatives and how these were derived. Moreover, it included a Plan of Study for EIA, which outlined the proposed approach to the current EIA Phase, including the requisite specialist investigations to be undertaken; and
- The FSR and associated Plan of Study for EIA was submitted to DEA on 10 May 2011 and accepted on 15 June 2011. DEA required that, in addition to the proposed specialist studies, a study must be done to determine the land use potential of the area especially with regard to the agricultural potential of the site and the impact of the proposed project on this potential.

All written comments received were included as an annexure to the Draft EIAR. All issues raised via written correspondence have been summarised into a Comments and Response Report with responses from the project team and are included as an annexure to the Draft EIAR.

The current EIA Phase aims to present the Draft EIAR to registered I&APs. This phase comprises:

- Lodging the Draft EIAR at Prieska (Elizabeth Vermeulen) Public Library, Ietznietz in Copperton on Aurecon's website (www.aurecongroup.com) change "Current Location" to South Africa and follow the "Public Participation" link) from **26 January 2012**;
- Holding a public meeting to present the Draft EIAR on 22 February 2012. Notifying registered I&APs of the meeting and providing them with copy of the Draft EIAR Summary Document; and
- Finalising the EIAR by incorporating all public comment received into a Comments and Responses Report.

An appeal period, where I&APs have the opportunity to appeal against the Environmental Authorisation issued by DEA, will follow the EIA Phase.

Project alternatives

The proposed project comprises:

- A wind energy facility consisting of approximately 56 turbines;
- Associated infrastructure including, *inter alia*:
 - Hardstandings alongside turbines;
 - Access roads 6 m wide between turbines; and
 - A power line connection to the existing grid.

The following feasible alternatives were considered in the EIAR:

- **Location alternatives:**
 - One location for the proposed wind energy facility;
 - Electricity distribution via onsite linkage to the existing grid; and
 - Electricity distribution via an 8.6 km 132 kV connection to Cuprum substation.
- **Activity alternatives:**
 - Wind energy generation via wind turbines; and
 - "No-go" alternative to wind energy production.
- **Site layout alternatives:**
 - One layout (October 2011) alternative.
- **Technology alternatives:**
 - N100 turbine; and
 - N117 turbine.

Identified impacts

The EIAR has provided a comprehensive assessment of the potential environmental impacts, identified by the EIA team and I&APs, associated with the proposed wind energy facility.

The following specialist studies and specialists were undertaken to provide more detailed information on those environmental impacts which had been identified as potentially being of most concern, and/or where insufficient information is available, namely:

- *Botanical assessment:* Dr David MacDonald, Bergwind Botanical Tours and Surveys;
- *Avifauna assessment:* Dr Andrew Jenkins of Avisense Consulting;
- *Bat assessment:* Mr Werner Marais of Animalia Zoological and Ecological Consultation;
- *Heritage Impact Assessment:* Mrs Melanie Atwell of Melanie Atwell Associates (cultural heritage component), Mr Nicholas Wiltshire of Agency for Cultural Resources Management (archaeology component) and Dr John Almond of Natura Viva cc (palaeontology component); and
- *Visual Impact Assessment:* Mrs Karen Hansen of Viridian Consulting.

The significance of the potential environmental (biophysical and socio-economic) impacts associated with the proposed project are summarised in **Table 1**.

With reference to **Table 1**, the most significant (**high (-)**) operational phase impacts on the biophysical and socio-economic environment, without mitigation was for the potential impacts of the proposed wind energy facility on bats, visual aesthetics and surrounding landuses.

Table 1 Summary of significance of the potential impacts associated with the proposed development

IMPACT			Preferred Layout	
			No Mit	With Mit
OPERATIONAL PHASE IMPACTS				
1.1	Impact on botany:	Preferred layout	L	L
1.2		No-go alternative	L	L
2	Impact on birds		M	L-M
3	Impact on bats		H	L
4	Impact on fauna		VL	VL
5	Impact on climate change		L+	L+
6.1	Impact on heritage resources:	Archaeology	L	L
6.2		Palaeontology	L	L
6.3		Cultural heritage	N	N
7	Visual aesthetics		M-H	M-H
8	Impact on energy production		L+	L+
9	Impact on local economy (employment) and social conditions		M+	M+
10	Impact on agricultural land		L	L
11	Impact on surrounding land uses		H	Undetermined

12	Impact of noise		N	N
CONSTRUCTION PHASE IMPACTS				
13	Impacts on flora, avifauna, fauna and bats		L-M	L
14	Sedimentation and erosion		L	VL
15	Visual aesthetics		M	L
16	Impact on local economy (employment) and social conditions		M+	M+
17	Impact on transport		L	L
18	Noise pollution		VL	VL
19	Storage of hazardous substances on site		L	L
20	Impact of dust		L	VL

With the implementation of mitigation measures the impact on bats would decrease to **low-medium (-)**. It is not currently known what the significance of the impact on surrounding landuses would decrease to, however it is anticipated that mitigation measures agreed to in consultation with SKA would decrease to a level acceptable to SKA, failing which the proposed project could not proceed. However the impact on visual aesthetics would remain the same. It should be noted that two potential positive impacts on energy production and local economy (employment) and social conditions would result and these would be of **low (+) and medium (+)** significance, with and without mitigation measures.

In comparing the proposed project and the “no-go” alternatives it can be seen that the “no-go” alternative results in only one negative impact of **low (-)** significance on the biophysical and socio-economic environment whilst the proposed wind energy facility results in **low to medium (+)** impacts and **low to high (-)** impacts on the environment. The negative impacts of the proposed project are considered to be environmentally acceptable, considering the positive impacts.

In terms of differences in the significance of potential impacts of the feasible alternatives, including the distribution and turbine alternatives, they are all considered to be equivalent, and therefore no significant differences would result. As such it is recommended that Plan 8 choose its preferred option based on technical and financial considerations.

Conclusions and recommendations

The impacts associated with the proposed project would result in regional impacts (both biophysical and socio-economic) that would negatively affect the area. The significance of these impacts **without mitigation** are deemed to be of **high or lower** significance. However, with the implementation of the recommended mitigation measures the significance of the negative impacts would be minimized and would be **medium or lower**, for all but one (visual) impact.

Associated with the proposed project are positive impacts on energy production and local economy (employment) and social conditions of **low (+) and medium (+)** significance.

Based on the above, the EAP is of the opinion that the proposed wind energy facility and associated infrastructure, including alternatives, being applied for be authorised as the benefits outweigh the negative environmental impacts. The significance of negative impacts can be reduced with effective and appropriate mitigation through a Life-Cycle EMP, as described in this report. If authorised, the implementation of an EMP should be included as a condition of approval.

It should be noted that, should the SKA project be awarded to South Africa, and it is not possible to implement mitigation measures to ensure an acceptable impact on the SKA project, the proposed project should not be authorised.

In terms of differences in the significance of potential impacts of the feasible alternatives, including the distribution and turbine alternatives, they are all considered to be equivalent, and therefore no significant differences would result. As such it is recommended that Plan 8 choose its preferred option based on technical and financial considerations.

Way forward

The Draft EIAR has been lodged at the Prieska (Elizabeth Vermeulen) Public Library, Ietznietz in Copperton and on the Aurecon website (www.aurecongroup.com/) (change “Current Location” to South Africa and follow the “Public Participation” link). All registered I&APs have been notified of the availability of the Draft EIAR by means of a letter which includes a copy of the Draft EIAR Executive Summary. The public will have until 6 March 2012 to submit written comment on the Draft EIAR to Aurecon.

Registered I&APs were invited to a public meeting being held on 22 February 2011 at Ietznietz Conference Room in Copperton from 17h00 – 19h00 to discuss the findings of the EIAR. Due to low attendance of the public meeting held at the Scoping Phase (three I&APs) I&APs have been requested to RSVP by 15 February 2012, and should the number of RSVP’s be insufficient the meeting will be cancelled and I&APs will instead be contacted telephonically/electronically to discuss any issues and concerns they may have.

The Final EIAR will be completed via the addition of any I&AP comments and the addition of a letter from Plan 8 indicating which mitigation measures will be implemented. The Final EIAR will then be submitted to the Northern Cape DEANC and DEA for their review and decision-making, respectively.

Once DEA has reviewed the Final EIAR, they will need to ascertain whether the EIA process undertaken met the legal requirements and whether there is adequate information to make an informed decision. Should the above requirements be met, they will then need to decide on the environmental acceptability of the proposed project. Their decision will be documented in an Environmental Authorisation, which will detail the decision, the reasons therefore, and any related conditions. Following the issuing of the Environmental Authorisation, DEA’s decision will be communicated by means of a letter to all registered I&APs and the appeal process will commence, during which any party concerned will have the opportunity to appeal the decision to the Minister of Environmental Affairs in terms of NEMA.

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List of Acronyms

DEA	Department of Environmental Affairs
DSR	Draft Scoping Report
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EMP	Environmental Management Programme
FSR	Final Scoping Report
Ha	Hectare
I&AP	Interested and Affected Party
Km	Kilometer
Kv	Kilovolt
MW	Megawatts
NEMA	National Environmental Management Act