

MEETING NOTES

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Job Title	BioTherm Wind EIA's
Project Number	47579
DEA Reference Number:	14/12/16/3/3/2/967 14/12/16/3/3/2/963 14/12/16/3/3/2/962
Date	24 February 2017
Time	09:00 am
Venue	NG Kerk Saal, Sutherland
Subject	Pubic Meeting for the Esizayo and Maralla Wind Energy Facilities
Client	BioTherm Energy (Pty) Ltd
Present	See Appendix A
Apologies	None
Distribution	As above

MATTERS ARISING

ACTION

1.0 WELCOME AND INTRODUCTION

- 1.1 Ashlea Strong (AS) welcomed the community to the meeting.
- 1.2 AS introduced the project team and their roles in the project.

2.0 SCOPING & EIA PHASE

- 2.1 AS: As we are at the beginning of the Project we are still doing the Environmental Impact Assessment (EIA) Process. Following the granting of the Environmental Authorisation (EA) the project will be submitted into the next Renewable Energy Independent Power Producer Programme (REIPPP) bidding window. Therefore, it is still 2 to 3 years until the project commences, if it receives preferred bidder status.
- 2.2 AS explained that we had undertaken a public meeting in Sutherland previously but we did not have a good turn out.
- 2.3 AS stressed that this meeting was for the Scoping and EIA Phase we are running and jobs are not yet available, as the project is not yet approved.

3.0 TECHNICAL DESCRIPTION & LOCATION

- 3.1 Three Proposed wind farms:
 - Esizayo
 - Maralla East
 - Maralla West
 AS explained the locations of each of the wind farms as per the Map attached as **Appendix B**.
- 3.2 Maralla West is located fully in the Northern Cape.
- 3.3 Maralla East has a portion of the site in the Northern Cape and a portion in the Western Cape.
- 3.4 The Esizayo site is located fully in the Western Cape.
- 3.5 The Esizayo WEF is located adjacent to the road to Sutherland (R356)
- 3.6 The Maralla East and West WEFs are located approximately 34 km southeast of Sutherland.

MATTERS ARISING	ACTION
3.7 We originally had 125 turbines however we have revised the layout to only 56 turbines.	
4.0 LEGAL FRAMEWORK	
4.1 AS: As the environmental assessment practitioner (EAP) we are running the EIA process as per the National Environmental Management Act (NEMA) EIA Regulations. Each Wind Facility and the powerlines require separate authorisations.	
4.2 We also looked at: <ul style="list-style-type: none"> → Water Use License Applications - there may be some linear infrastructure crossing a watercourse; → Critical Biodiversity Area's → Heritage Impact and Palaeontological Impact Assessments → Renewable Energy Development Zones (REDZ) – The project fall within the Komsberg Wind Zone 	
5.0 ALTERNATIVES	
5.1 AS showed the initial layout and the revised layouts as per the images in the Presentation (Appendix B).	
6.0 IMPACT IDENTIFICATION AND ASSESSMENT	
6.1 Specialist Studies: <ul style="list-style-type: none"> → Social, Land Capacity and Wetlands → Biodiversity → Avifauna → Bats → Heritage → Palaeontology → Visual → Social → Traffic → Noise 	
6.2 The specialist studies have commenced however the full assessments have not yet been completed.	
6.3 Soils & Land Capacity: <ul style="list-style-type: none"> → The most significant impact is the loss of grazing land for animals during construction and operation. → Medium significance across all three but with the implementation of all mitigation measures significance is Low. → No sensitive areas identified. 	
6.4 Biodiversity: <ul style="list-style-type: none"> → Most significant impact is the impact to biodiversity is the impact on both fauna and flora and protected species. → There is also the increased risk of erosion following construction. → Only small areas of vegetation will be cleared where the turbine will be constructed. There will be no need to clear the entire site. 	
6.5 Avifauna: <ul style="list-style-type: none"> → Higher impact at Maralla East and West species such as the Verreaux's eagle, Martial Eagle, Jacke; nbuzzard and Black Harrior Hawk have been identified onsite. A 3km buffer has been placed around Verreaux nest identified. → It is proposed that a spiral is placed on powerlines to deter birds from flying close to the site. This will reduce the risk of collision with the turbines. 	
6.6 Bats:	

MATTERS ARISING	ACTION
<ul style="list-style-type: none"> → The impacts are Medium to High across all three sites. Very difficult to mitigate. → Barotrauma is a significant impact however, a SoP will be implemented to reduce the impact on Bats. This will include adjusting the operating hours, speed etc... 	
<p>6.7 Surface water:</p> <ul style="list-style-type: none"> → Mostly to do with the ancillary infrastructure (powerlines, roads etc..) transversing a watercourse or wetland. → Mitigation would be to avoid these areas all together. 	
<p>6.8 Heritage:</p> <ul style="list-style-type: none"> → No major heritage concerns on the farms identified for the development. There were some colonial ruins identified on Esizayo but no turbines are proposed for that area of the site. The ruins will be made no go zones. 	
<p>6.9 Palaeontology:</p> <ul style="list-style-type: none"> → Impacts on Palaeontology are of low significance as no palaeontological items or sensitive areas have been identified. 	
<p>6.10 Visual:</p> <ul style="list-style-type: none"> → All visual impacts are similar with exception of Esizayo, which is located along the R356 and will be visible to the road. → Most significant impact is the visual intrusion of the turbines themselves. Not really possible to mitigate however a 500 m buffer between the R354 and the first turbines has been implemented. → Visual impact is very subjective. 	
<p>6.11 Traffic:</p> <ul style="list-style-type: none"> → Impacts were of Low to Medium significance with the most significant being the noise, dust and exhaust pollution due to additional; trips on the access road. → Due to the low traffic volumes on the access roads it is not anticipated that the transportation of the wind turbines will cause major traffic congestion. 	
<p>6.12 Noise</p> <ul style="list-style-type: none"> → Noise impacts are higher at Esizayo and Maralla West due to the proximity of homesteads to the WEF. These impacts were reduced to low significance once mitigation measures are introduced. 	
<p>6.13 Social:</p> <ul style="list-style-type: none"> → Most importantly are the positive impacts of Job creation and economic development. 	
<p>6.14 Cumulative impact</p> <ul style="list-style-type: none"> → The DEA requested that we look at the cumulative impacts of all the planned WEF within 65km the study area. → Some of the projects we got all the information we required (i.e. Specialist studies and other sites we did not. → Bats, Palaeontology, Land Capacity, Surface Water, Social, Noise and Traffic were all Low impact. → Avifauna, Biodiversity, Heritage and Visual were all of Low to Medium Significance. → Most significant cumulative impacts were Biodiversity and Visual. 	
<p>6.15 AS briefly showed the sensitivity maps in the Presentation (Attached as Appendix B)</p>	
<h2>7.0 PUBLIC PARTICIPATION PROCESS</h2>	
<p>7.1 Public participation process to date:</p> <ul style="list-style-type: none"> → Pre- Application consultation with the DEA; → Newspaper adverts in: <ul style="list-style-type: none"> ■ The Courier ■ Die Noordwester → Email notification of I&APs; → Site notice placement; 	





MATTERS ARISING	ACTION
<ul style="list-style-type: none"> → DSR for 30-day public review (15 September – 17 October 2016); → Public Meetings (Laingsburg and Sutherland); → DEIR out for 30 day comment and review (2 February – 2 March 2017). → Public Meetings <ul style="list-style-type: none"> ■ 23 February 2017 ■ 24 February 2017 	
8.0 DISCUSSION	
8.1 AS mentioned that WSP will send through a list of skills that are required for a WEF so that the municipality could start with skills development planning. AS asked SK to come up and give an overview of the social development aspects of the project. This list of skills is included in Appendix C .	
8.2 SK: Under the REIPPP there are certain requirements the Preferred Bidder will need to meet. These include: <ul style="list-style-type: none"> → Job creation- allocation of jobs from the local community; → Enterprise Development- A percentage of the project revenue needs be committed to the local community. This goes towards enterprise development and assisting entrepreneurs source start up funding and trading advice. → Social development- education, healthcare and rural development. 	
8.3 BioTherm have existing operation facilities, 2 solar facilities in the Northern Cape and 1 WEF in the Western Cape. For these projects we have focused on developing the communities through education, welfare and training.	
8.4 BioTherm work closely with the IDP and municipalities.	
9.0 QUESTIONS	
9.1 Community Member (CM): Who is responsible for the rehabilitation of the facilities when the project is complete?	
9.2 AS: The project has a 20 year life span. After 20 years the development or project company would investigate what is the most feasible way forward. Do things need to be refurbished and can it carry on, does need to be decommissioned or does it need to be updated with new technology. But once it is built it has a definite 20 year span.	
9.3 CM: In terms of rehabilitation, there were issues with the previous company who did rehabilitation for the SALT. There were issues with the registration of businesses in Sutherland.	
9.4 SK: This is good information to know so that if BioTherm are awarded preferred bidder status then we can ensure we don't make the same mistakes.	
9.5 AS: BioTherm have been successful in the bidding windows to date and they hope that they will successful with these ones too.	
10.0 CLOSING	
10.1 AS thanked the community for listening and reminded everyone to sign the attendance register to ensure that they are registered on the database	
10.2 Meeting closed at 10:30am.	

NEXT MEETING





No additional meetings are anticipated.

Appendix A: Attendance Register





ATTENDANCE REGISTER 24 February 2017

Name	Company Name	Contact Details	Signature
Rufus Sydors	-	Tel: 0711363962 Fax: Mobile: Email:	
GERARD WILKINS	-	Tel: 063150116 Fax: Mobile: Email:	
Stephanus Afrika	-	Tel: Fax: 0748501745 Mobile: Email:	
MARIUS PARSON	-	Tel: 0748501745 Fax: Mobile: Email:	


ATTENDANCE REGISTER 24 February 2017

Name	Company Name	Contact Details	Signature
Bronwyn Fisher	WSP Environmental	Tel: 021 481 8662 Fax: Mobile: Email: Bronwyn.Fisher@wspgroup.co.za	
Ashlea Strong	WSP	Tel: 011 360 1392 Fax: Mobile: Email: ashlea-strong@wspgroup.co.za	
ABRAHAM. OUPHANT	-	Tel: Fax: Mobile: Email:	
Bazil Couter	-	Tel: 0747979205 Fax: Mobile: Email:	




ATTENDANCE REGISTER 24 February 2017

Name	Company Name	Contact Details	Signature
MOHAMMED JUNAID YUSUF	BIOTHERM ENERGY	Tel: 011 367 4600 Fax: Mobile: 076 7652 789 Email: myusuf@biothermenergy.com	
Anna Verhoog		Tel: Fax: Mobile: 063 634 3723 Email: anna.sydus 68@gmail.com	
Wilhelm Jordaan	DR Schunck	Tel: Fax: Mobile: 082 297 3618 Email:	
DE KLIJF TREU	GEMEENSKAP	Tel: 023 - 5711379 Fax: Mobile: 073 5712277 Email: dewtreu@gmail.com	


ATTENDANCE REGISTER 24 February 2017

Name	Company Name	Contact Details	Signature
SARAH JACOBS		Tel: 0624343117 Fax: Mobile: Email:	
Magdalena Afrika		Tel: 0622837202 Fax: Mobile: Email:	M. Afrika
senna Farao		Tel: 678281139 Fax: Mobile: Email:	S. Farao
ALWYN JACOBS		Tel: 0732526672 Fax: Mobile: Email:	A Jacobs

ATTENDANCE REGISTER 24 February 2017

Name	Company Name	Contact Details	Signature
KAROL MEERKA	-	Tel: Fax: Mobile: - Email:	X
ELTON VAN DYK	-	Tel: 023 5711026 Fax: Mobile: Email:	
GAVIN MEERKA	-	Tel: Fax: Mobile: - Email:	
MARTJA MEERTAS	-	Tel: Fax: Mobile: - Email:	

ATTENDANCE REGISTER 24 February 2017

Name	Company Name	Contact Details	Signature
Simphine kuly	BioTherm Energy	Tel: (011) 367 4600 Fax: Mobile: Email: skulu@biothermenergy.com	
		Tel: Fax: Mobile: Email:	
		Tel: Fax: Mobile: Email:	
		Tel: Fax: Mobile: Email:	

ATTENDANCE REGISTER 24 February 2017

Name	Company Name	Contact Details	Signature
Mamuz		Tel: Fax: Mobile: Email:	
PASSAR		Tel: Fax: Mobile: Email:	
		Tel: Fax: Mobile: Email:	
		Tel: Fax: Mobile: Email:	

Appendix B: Presentation



BioTherm Wind Energy Developments

Public Meeting

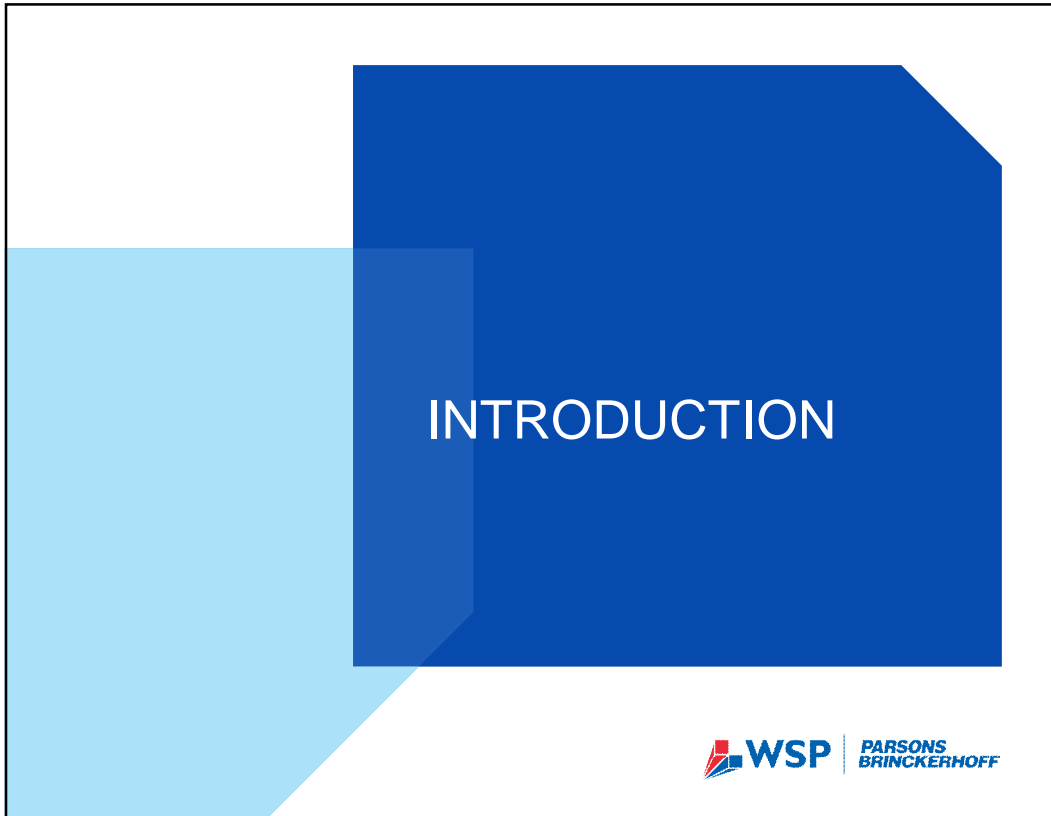
Date: 24 February 2017
Time: 09:00 – 11:00
Venue: NG Kerk Saal



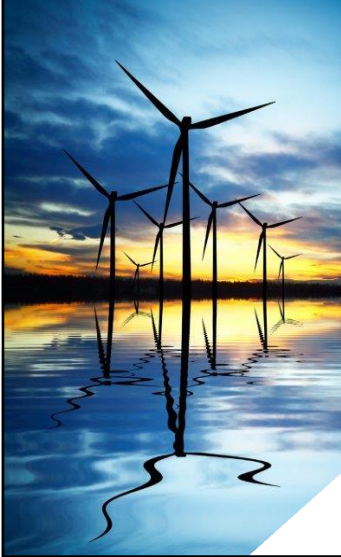
AGENDA



- à **Welcome and Introductions**
 - § Purpose of the Meeting
 - § Conduct of the Meeting
 - § Responsibilities
- à **Environmental Authorisation Process**
- à **Project Description & Locality**
- à **Legal Requirements**
- à **Outline of the Alternatives**
- à **Impact Assessment**
- à **Public Participation Process**
- à **Way Forward**
- à **Questions**



PURPOSE OF THE MEETING



- à **Provide stakeholders with information regarding:**
 - § The proposed project
 - § The Environmental Impact Assessment (EIA) process to date
 - § Findings of the Draft Environmental Impact Report (DEIR)
- à **Provide stakeholders with the opportunity to raise issues regarding the potential impacts of the project on the environment**
- à **Provide an opportunity for stakeholders to interact with the project team**



CONDUCT OF THE MEETING



- à **Focus on issues at hand**
- à **Presentation will be presented in English**
- à **Questions should please raised through the facilitator**
- à **Be courteous and ensure equal opportunity**
- à **Cell phones to be switched off or on silent**



RESPONSIBILITIES

Roleplayer	Responsibility
Applicant (BioTherm)	<ul style="list-style-type: none"> • Appoint suitable, independent EAP • Ensure adequate resources are available to conduct an effective, efficient & equitable S&EIR process • Ensure that the EAP is provided with relevant information to undertake the S&EIR process effectively • Ensure that the EAP provides all relevant information to the Authorities
EAP (WSP)	<ul style="list-style-type: none"> • Be independent with no vested interest • Have the necessary qualifications & experience • Responsible for authorisation process, information & reports • Provide relevant & objective information to the authorities, the stakeholders & the proponent • Ensure public participation process (PPP) is undertaken • Ensure all issues raised are addressed or responded to




RESPONSIBILITIES CONT.

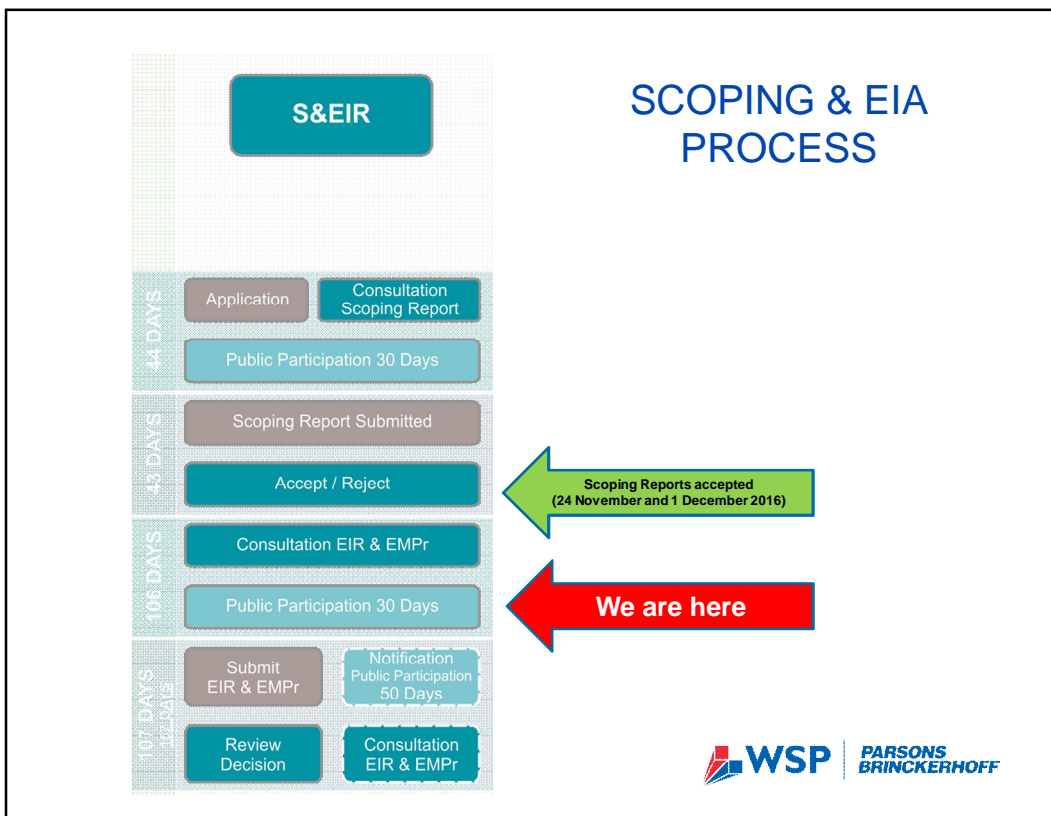
Roleplayer	Responsibility
Stakeholders	<ul style="list-style-type: none"> • Provide input & comment during the S&EIR process • Review of reports <ul style="list-style-type: none"> • Draft Scoping Report (DSR) • Environmental Impact Report (EIR) • Environmental Management Programme (EMPr) • Provide input & comment within specific timeframes
Decision-making Authority (Department of Environmental Affairs)	<ul style="list-style-type: none"> • Efficient & expedient in evaluating proposals • Compliance with regulatory requirements • Inter-departmental co-operation & consultation • Consultation with the Applicant & the Consultant • Evaluation/review & decision-making • Requiring sufficient detail to make informed decisions



ENVIRONMENTAL AUTHORISATION PROCESS



The slide features a large blue graphic on the right with the title 'ENVIRONMENTAL AUTHORISATION PROCESS' in white capital letters. The background is white with a light blue shape on the left. The logos for WSP and PARSONS BRINCKERHOFF are located in the bottom right corner.





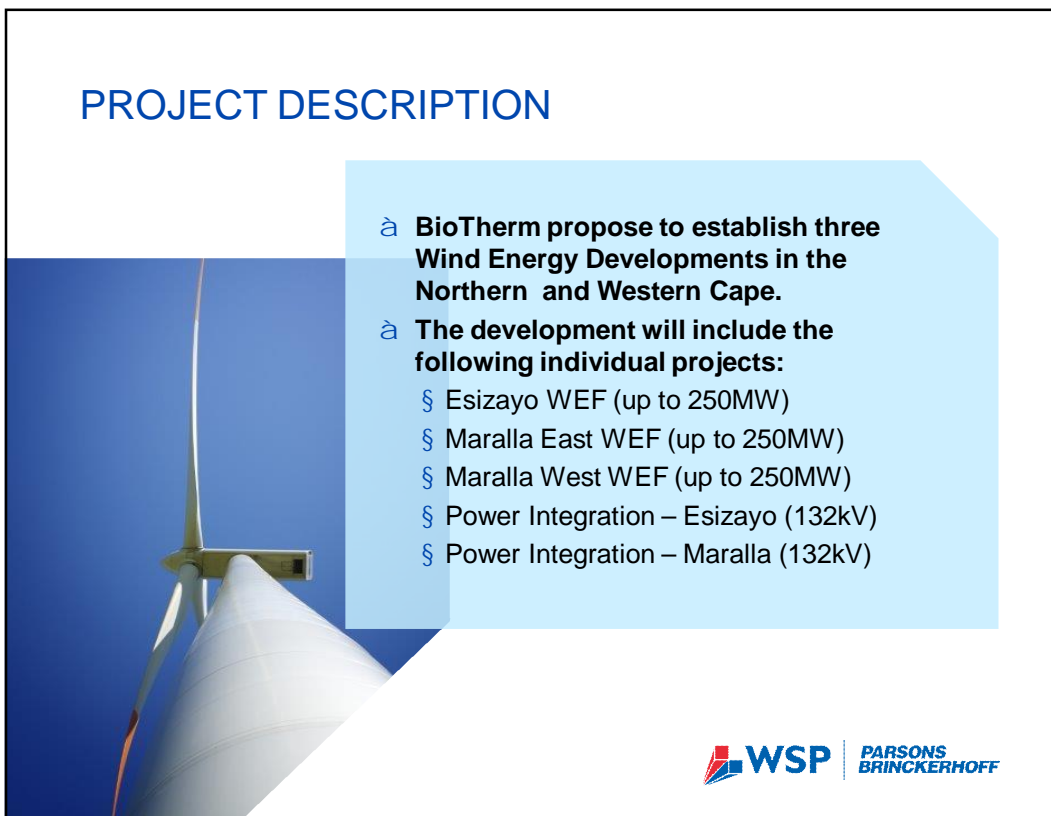
The slide features a dark blue background with a light blue geometric shape on the left. The text is centered in white and yellow.

PROJECT DESCRIPTION

Project and Technical Description and Locality




WSP | PARSONS BRINCKERHOFF



The slide features a background image of a wind turbine against a blue sky. The text is overlaid on a light blue geometric shape.

PROJECT DESCRIPTION

- à **BioTherm propose to establish three Wind Energy Developments in the Northern and Western Cape.**
- à **The development will include the following individual projects:**
 - § Esizayo WEF (up to 250MW)
 - § Maralla East WEF (up to 250MW)
 - § Maralla West WEF (up to 250MW)
 - § Power Integration – Esizayo (132kV)
 - § Power Integration – Maralla (132kV)



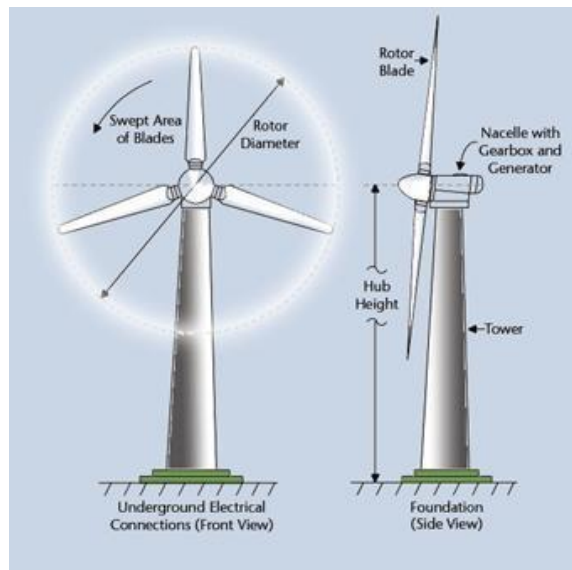
WSP | PARSONS BRINCKERHOFF

TECHNICAL DETAILS

Generation Capacity	Up to 250 MW
Number of turbines	Up to 125 (Revised Layout includes 56 Turbines)
Area occupied by each turbine	0.5 ha (85m x 60m)
Turbine hub height	Up to 120m
Rotor Diameter	Up to 150m
Width of internal roads	Between 4.0m and 6.0m, however this may increase to 8m on bends
Footprint of internal onsite substation	150m x 150m
Onsite substation capacity	Up to 132kV
Width of the powerline servitude	31m (15.5m either side)
Powerline tower types and height	Tower (suspension / strain) / Steel monopole structure, which may be self-supported or guyed suspension.



WIND ENERGY GENERATION PROCESS



Drawing of the rotor and blades of a wind turbine, courtesy of ESN



PROJECT LOCATION

Esizayo Development Location

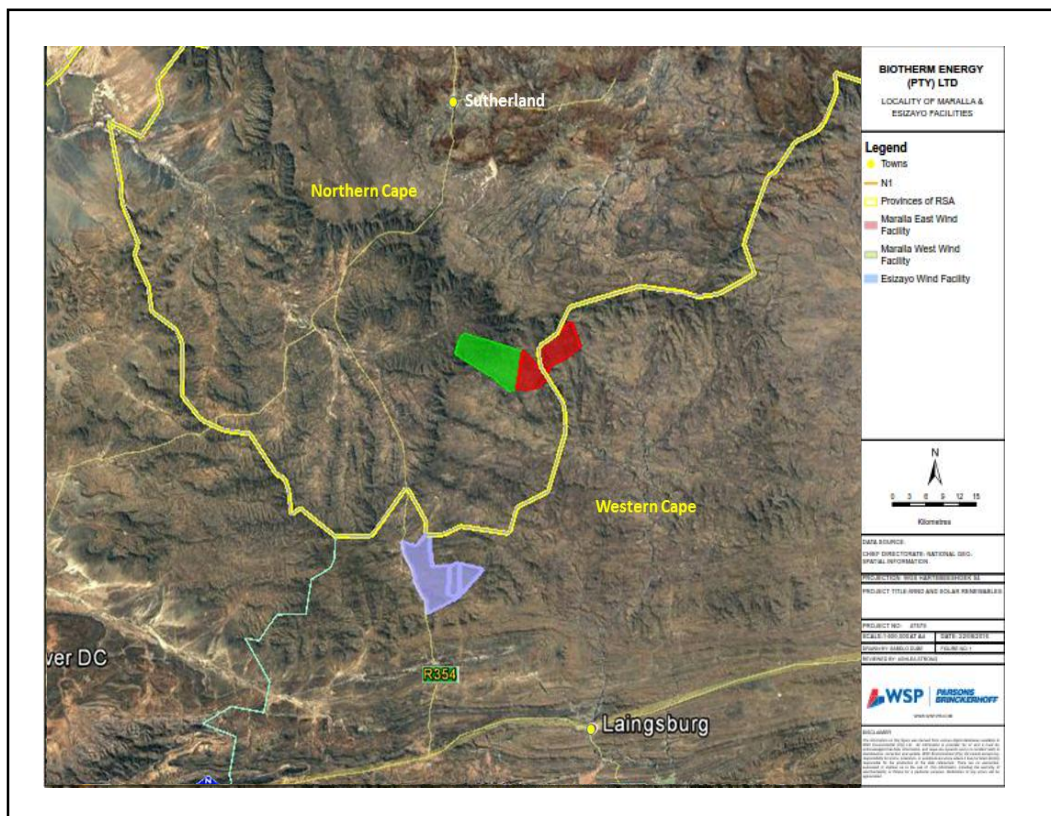
FARM NAME & NUMBER	FARM SIZE (HA)
Portion 1 of Aanstoot Farm No. 72	762.42 ha
Annex Joseph's Kraal Farm No.84	913.32 ha
Aurora Farm No. 285	4 385.29 ha

Maralla East Development Location

FARM NAME & NUMBER	FARM SIZE (HA)
Farm Welgemoed 268, Remainder	2 649 ha
Farm Schalkwykskraal 204, Remainder	1 056 ha
Farm Drie Roode Heuvels 180, Remainder	3 929 ha

Maralla West Development Location

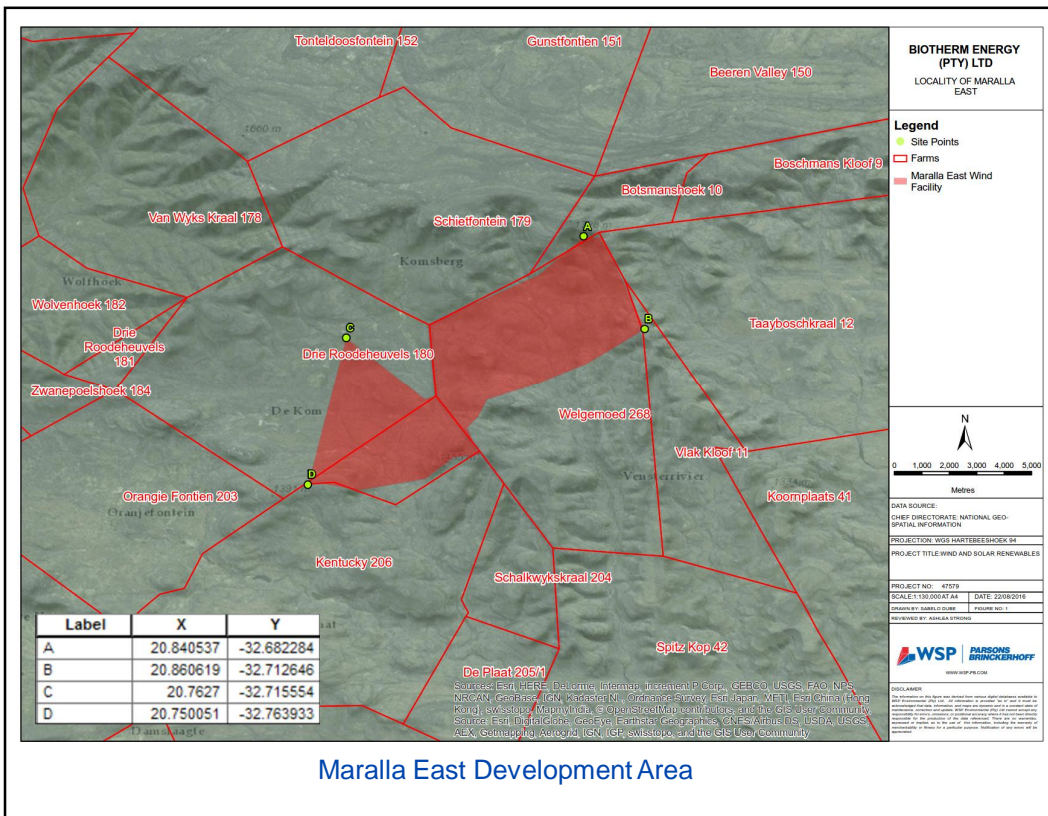
FARM NAME & NUMBER	FARM SIZE (HA)
Farm Drie Roode Heuvels 180, Remainder	3 929 ha
Farm Annex Drie Roode Heuvels 181, Remainder	329 ha
Farm Wolven Hoek 182, Portion 1	763 ha
Farm Wolven Hoek 182, Portion 2	625 ha



PROJECT LOCATION- MARALLA EAST



- à **The Maralla East Wind Energy Development will be located:**
- § Farm Welgemoed RE/268
 - § Farm Schalkwyskraal RE/204
 - § Portion of Farm Drie Roode Heuvels RE/180
 - § Approximately 34km southeast of Sutherland
 - § Laingsburg and Karoo Hoogland Local Municipalities
 - § Central Karoo and Namakwa District Municipalities
 - § Northern and Western Cape

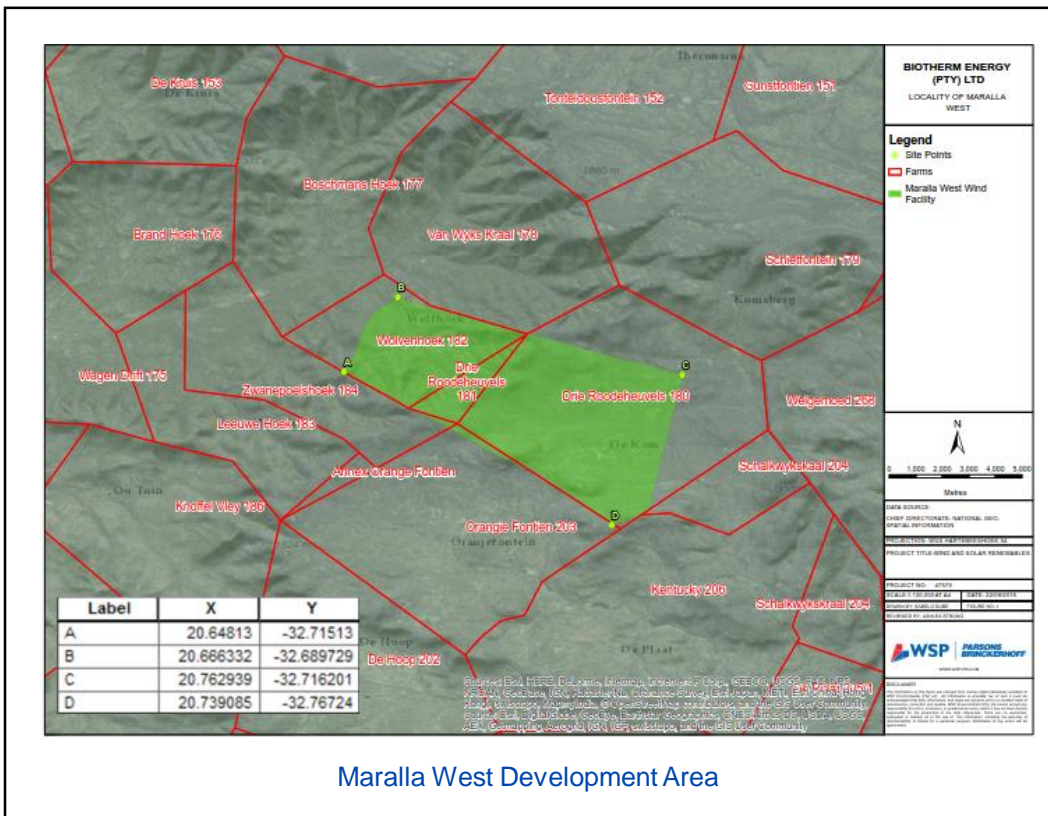


PROJECT LOCATION- MARALLA WEST



à **The Maralla West Wind Energy Development will be located:**

- § Portion of Farm Drie Roode Heuvels RE/180
- § Farm Annex Drie Roode Heuvels RE/181
- § Farm Wolven Hoek 1/182
- § Farm Wolven Hoek 2/182
- § Approximately 34km southeast of Sutherland
- § Karoo Hoogland Local Municipality
- § Namakwa District Municipality
- § Northern Cape





LEGAL REQUIREMENTS

Relevant Act	Competent Authority
National Environmental Management Act (No. 107 of 1998) (NEMA)	Department of Environmental Affairs (DEA)
<ul style="list-style-type: none"> • An environmental authorisation is required prior to the establishment of the Proposed Projects • A full S&EIR Process is required to be conducted for the WEF Projects • A Basic Assessment is required to be conducted for the power integration projects • Listed Activities triggered under Government Notice Regulation (GNR) 983, 984 and 985 of 2014 	
National Water Act (No. 36 of 1998)	Department of Water and Sanitation
<ul style="list-style-type: none"> • The following water uses have been identified as potentially applicable: <ul style="list-style-type: none"> • Section 21 (a) and 21 (b) • Section 21 (c) and 21 (i) • Water Use Licence or General Authorisation required prior to the establishment of the Proposed Projects 	
National Environmental Management: Biodiversity Act, 2004 (No. 10 of 2004)	
<ul style="list-style-type: none"> • The are Critical Biodiversity Areas (CBAs) in the study areas. 	
National Heritage Resource Act (No. 25 of 1999)	
<ul style="list-style-type: none"> • A Heritage Impact Assessment (HIA) will be undertaken looking at Archaeology, Heritage and Palaeontology for each of the above mentioned projects 	
Renewable Energy Development Zone	
<ul style="list-style-type: none"> • The project areas fall within the Komsberg Wind REDZ 	

WATER USE LICENSING

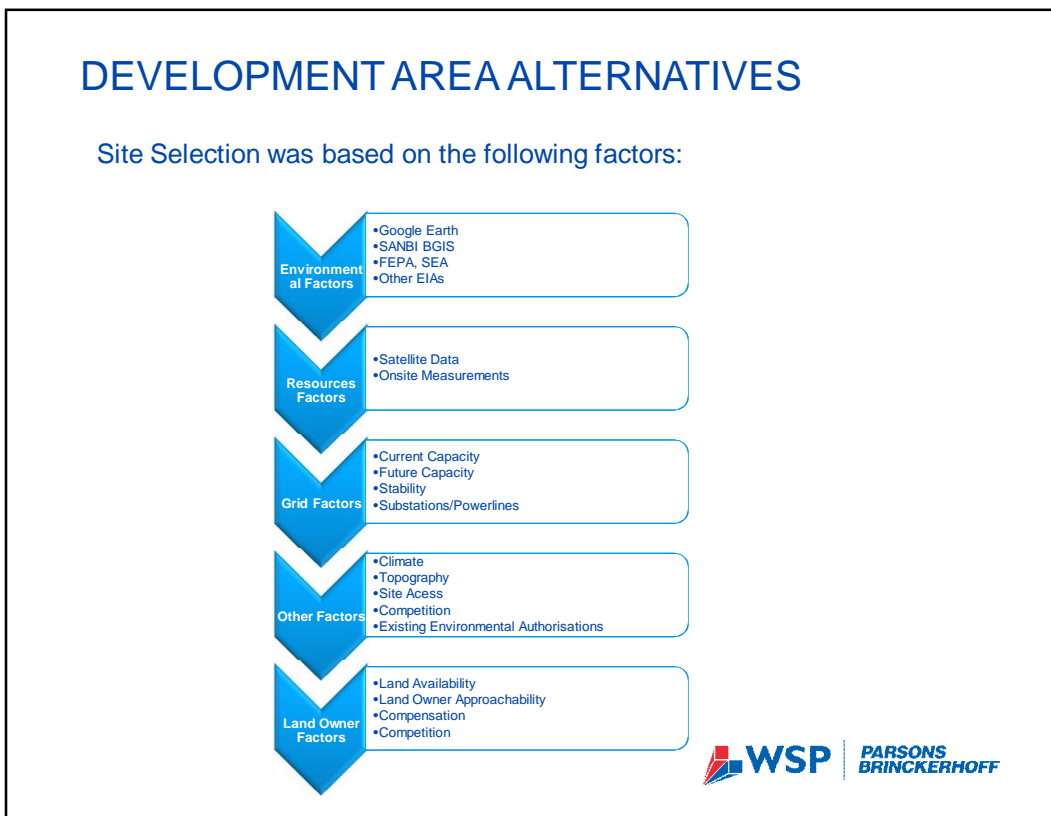
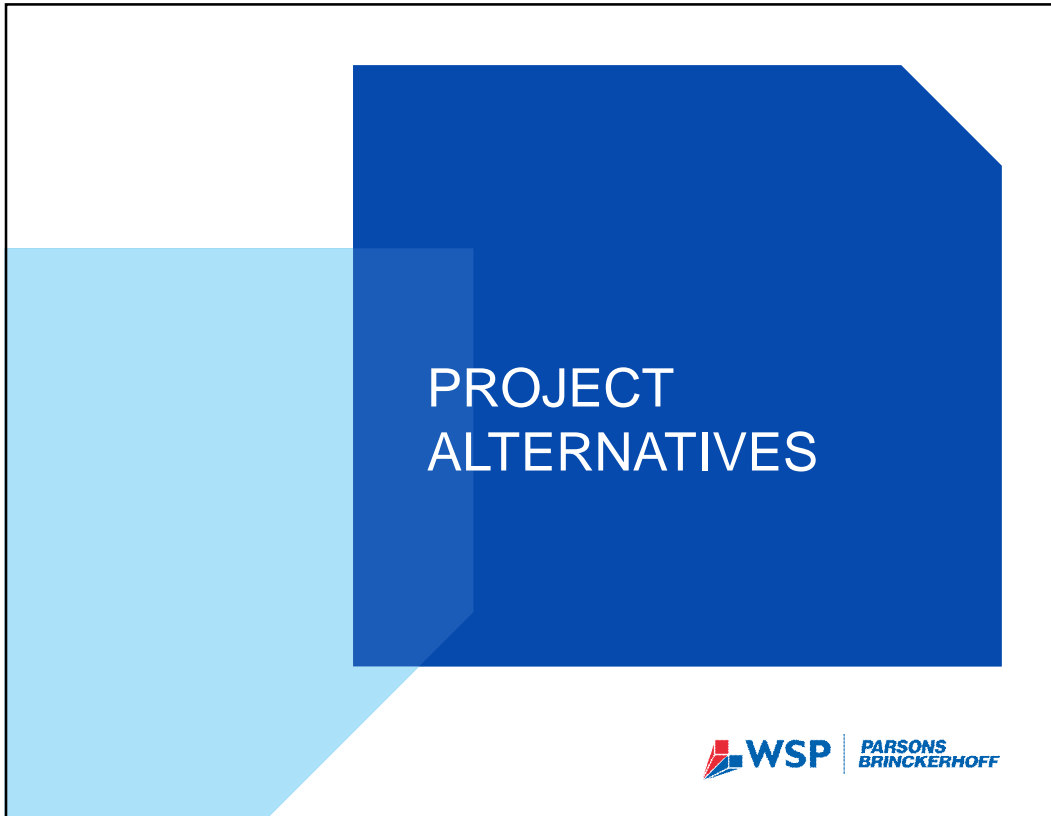
Relevant Water Use	Description	Applicability
Section 21 (a)	Taking water from a water resource	In the event that ground water abstraction is required for operational activities
Section 21 (b)	Storage of raw water	In the event that the storage of raw water is required for operational activities
Section 21 (c)	Impeding or diverting the flow of water in a watercourse	In the event that the powerlines or access roads cross a watercourse, drainage line or wetland area or if a turbine is constructed within 500m of a watercourse, drainage line or wetland
Section 21 (i)	Altering the bed, banks course or characteristics of a water course	



LISTED ACTIVITIES

Project Name	Listing Notice	Activities Triggered						
		11(i)	12 (xii) (a&c)	19(i)	24(ii)	28(ii)	30	56
Maralla West, Maralla East and Esizayo	GNR 983	11(i)	12 (xii) (a&c)	19(i)	24(ii)	28(ii)	30	56
	GNR 984	1	15	-	-	-	-	-
	GNR 985	4	10	12	14	18	23 (iii)	-
Power Integration	GNR 983	11(i)	12 (xii) (a&c)	19(i)	27	28(ii)	30	-
	GNR 985	4	12	14	-	-	-	-

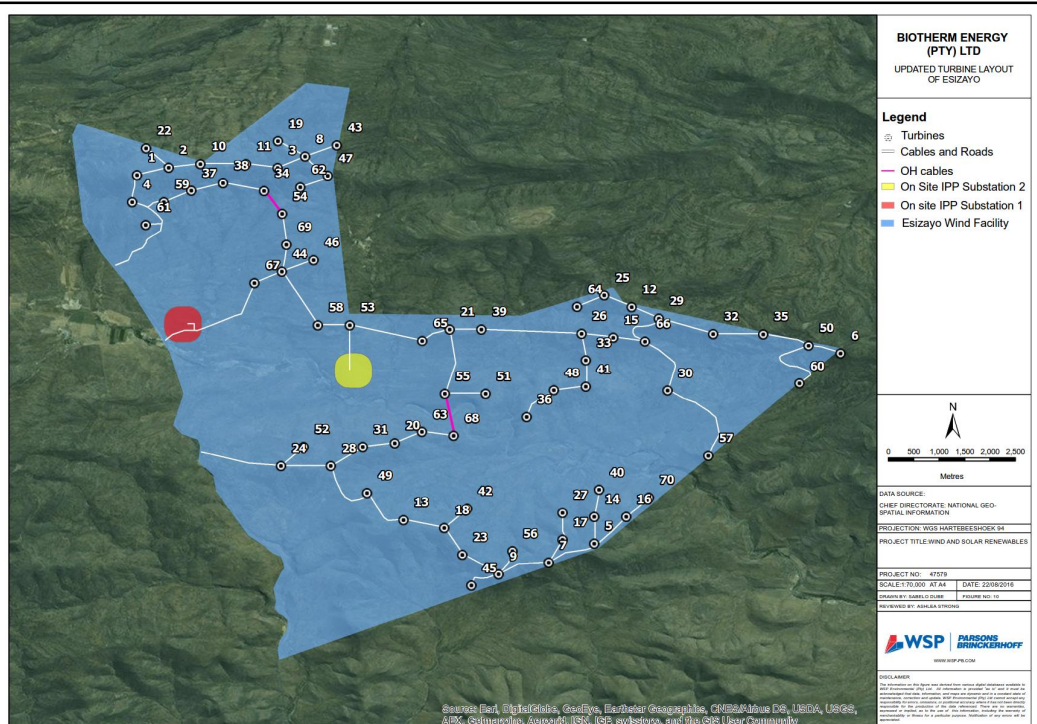




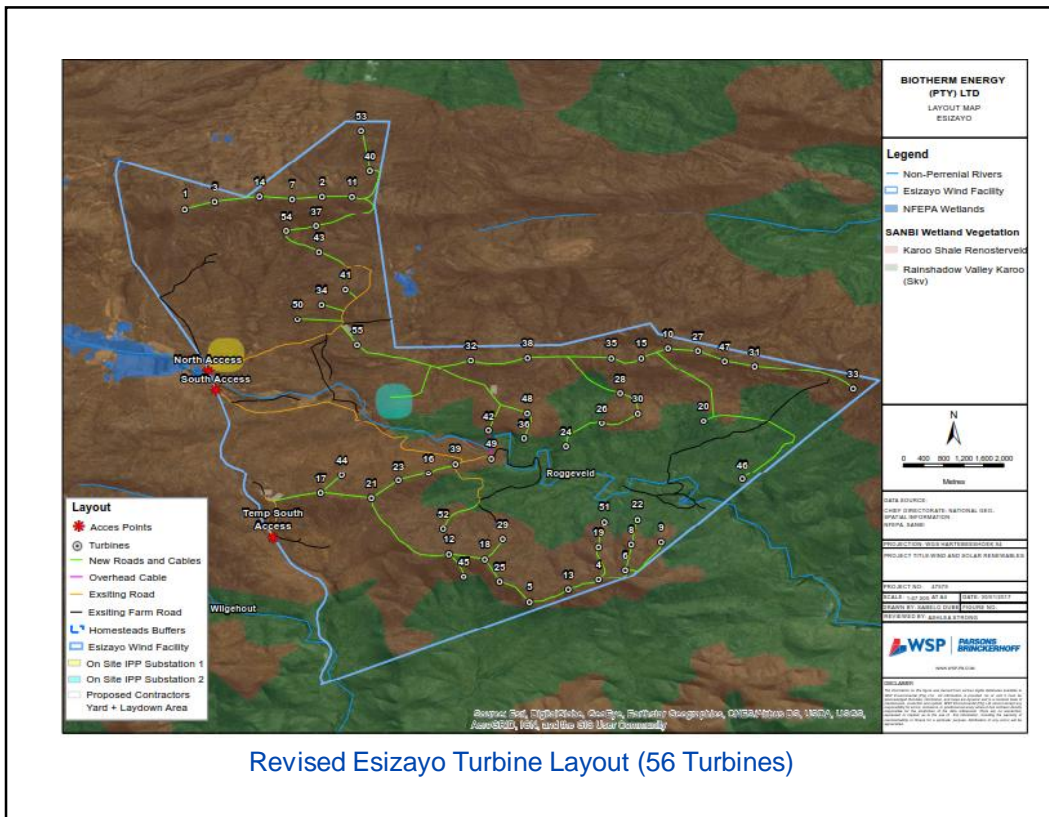
LAYOUT ALTERNATIVES- ESIZAYO



Esizayo Initial Turbine Layout (125 Turbines – 250 MW)

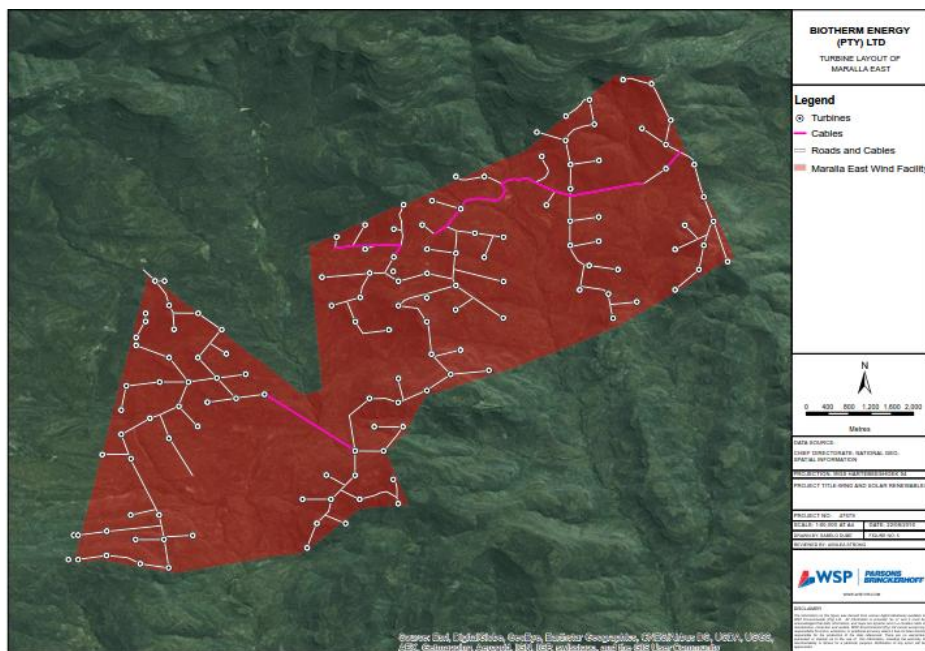


Revised Esizayo Turbine Layout (70 Turbines – 140 MW)

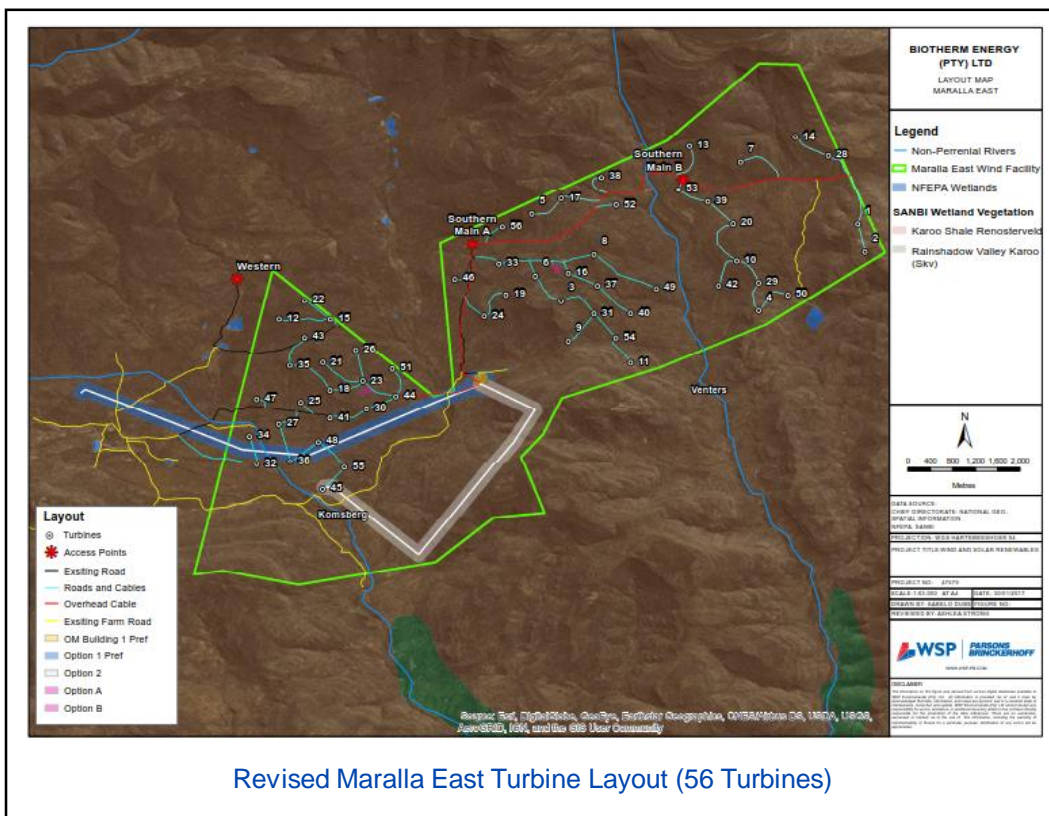
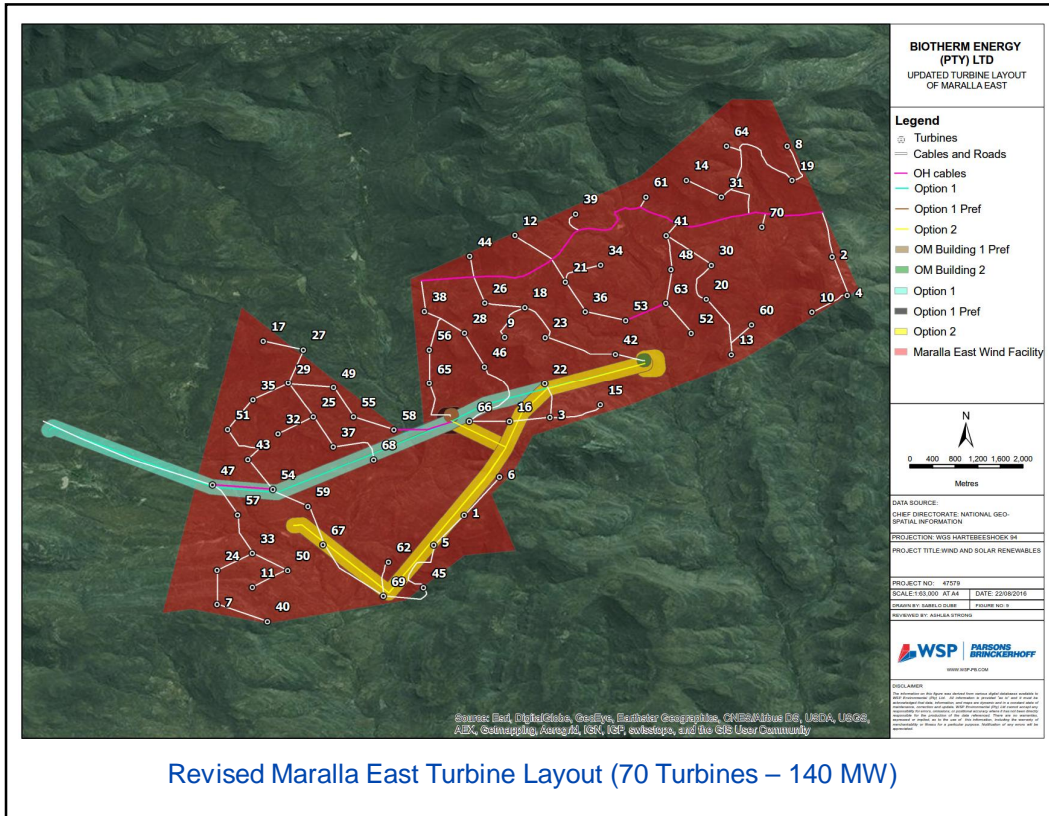


Revised Esizayo Turbine Layout (56 Turbines)

LAYOUT ALTERNATIVES- MARALLA EAST



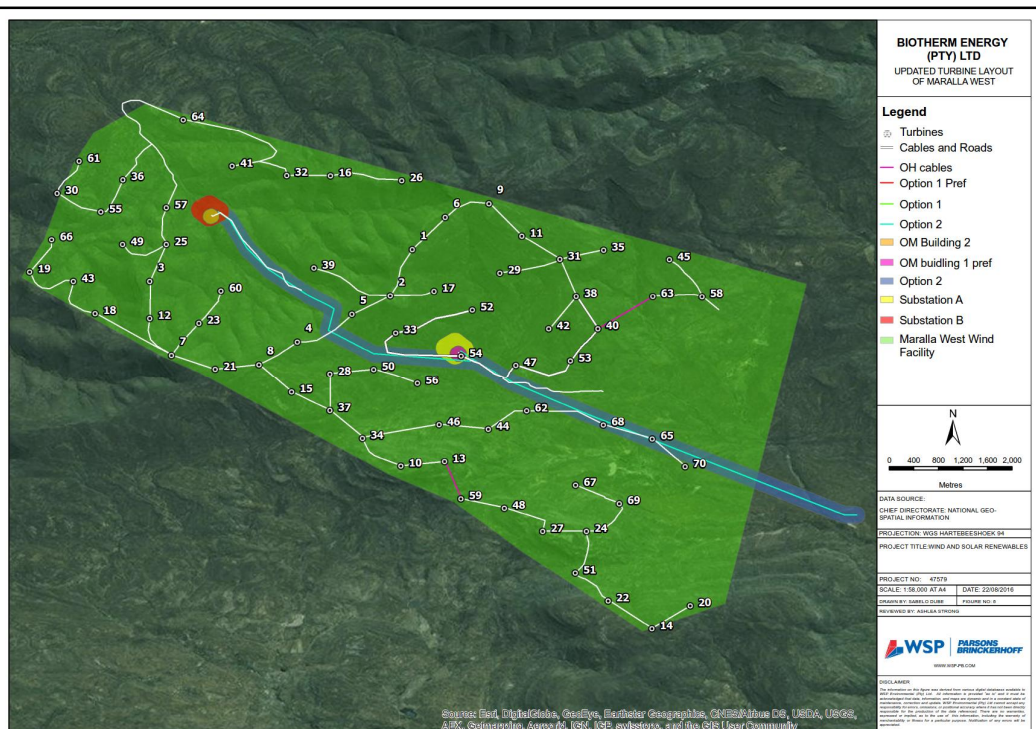
Maralla East Initial Turbine Layout (125 Turbines – 250 MW)



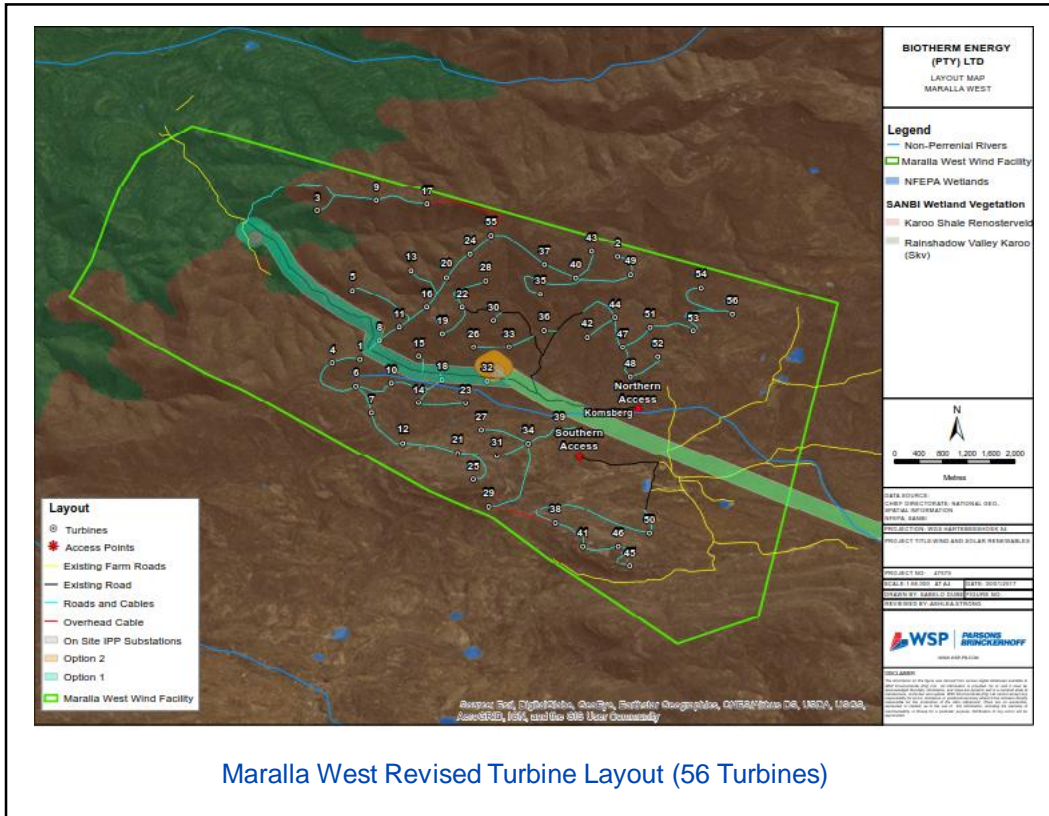
LAYOUT ALTERNATIVES- MARALLA WEST



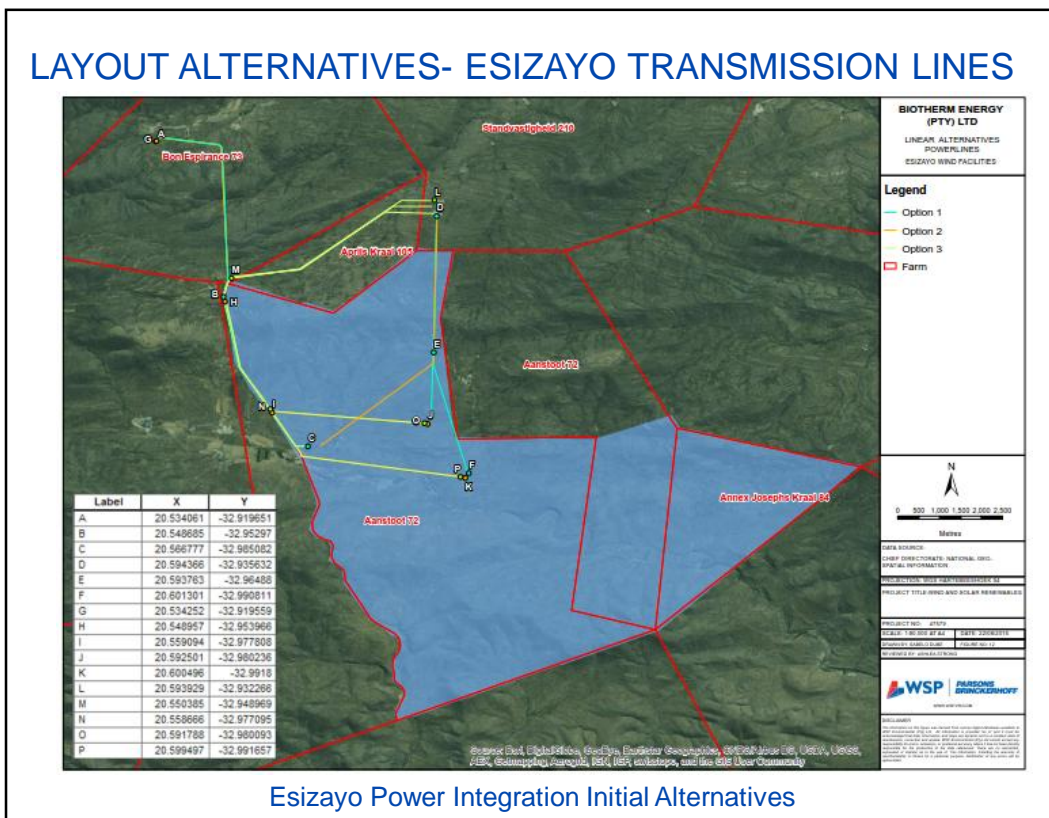
Maralla West Initial Turbine Layout (125 Turbines – 250 MW)



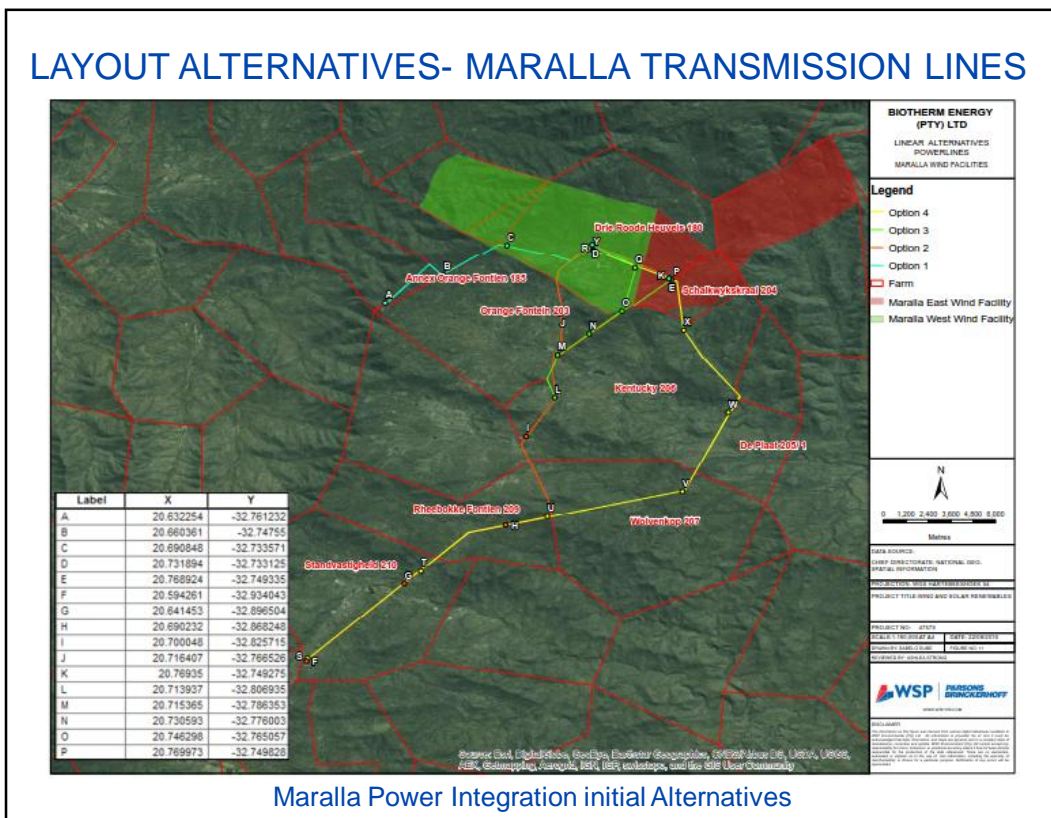
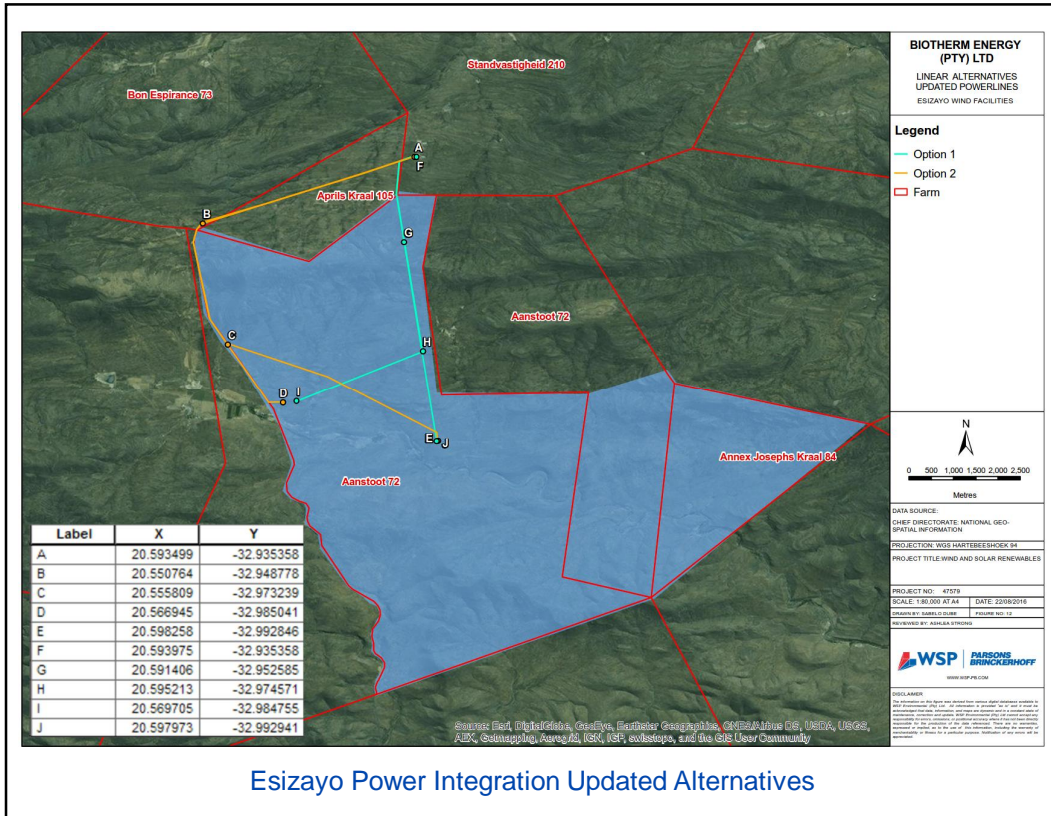
Maralla West Revised Turbine Layout (70 Turbines – 140 MW)

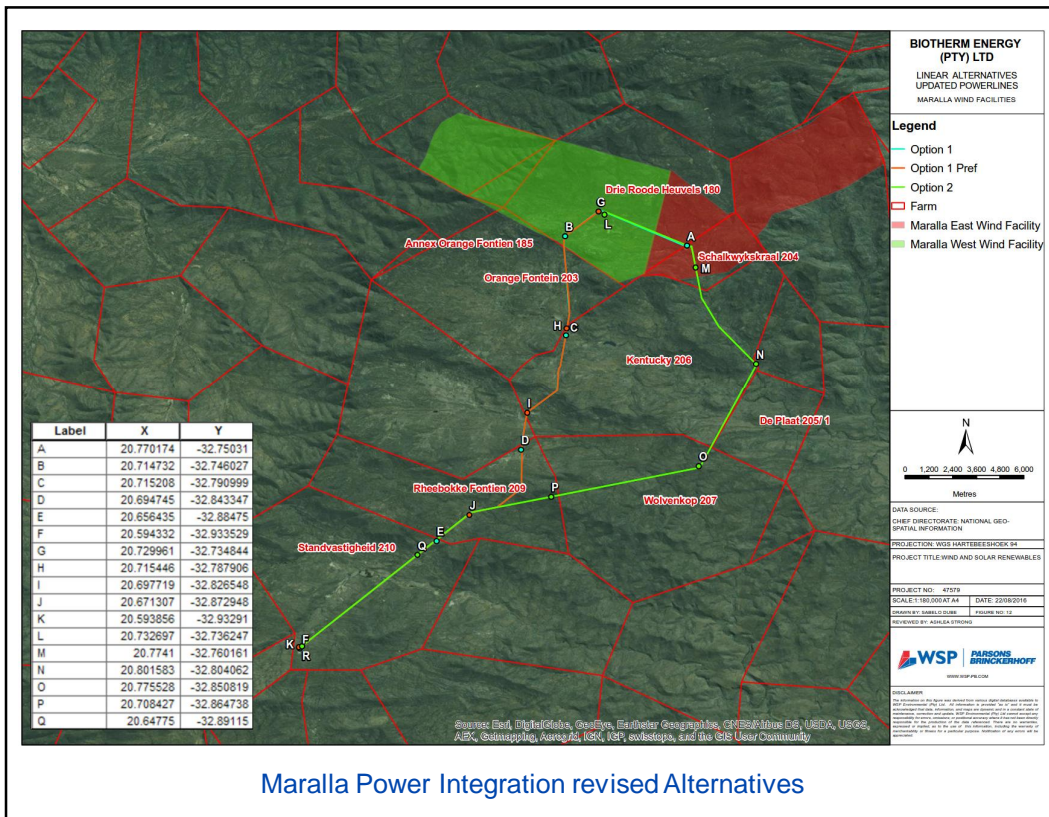


Maralla West Revised Turbine Layout (56 Turbines)



Esizayo Power Integration Initial Alternatives





Maralla Power Integration revised Alternatives

IMPACT ASSESSMENT

SPECIALIST STUDIES

SPECIALIST FIELD	COMPANY NAME	TEAM MEMBERS	ASSESSMENT IN EIA PHASE
Soil, Land Capability and Wetlands	WSP Environmental (Pty) Ltd	Bruce Wickham, Gerg Matthews	Yes
Biodiversity	Simon Todd Consulting	Simon Todd	Yes
Avifauna	Chris van Rooyen Consulting	Chris van Rooyen, Albert Froneman	Yes
Heritage	ACO Associates	Tim Hart, Lita Webley, David Halkett	Yes
Palaeontology	Natura Viva	John Almond	Yes
Visual	-	Belinda Gebhardt	Yes
Social	WSP Environmental (Pty) Ltd	Danielle Sanderson, Hillary Konigkramer	Yes
Traffic	WSP Group Africa (Pty) Ltd	Christo Bredenhann	Yes
Noise	WSP Environmental (Pty) Ltd	Kirsten Collett	Yes



SOILS AND LAND CAPACITY

Ref.	Impact Description	Phase	Status	Significance (Pre-Mitigation)	Residual Significance (Post-Mitigation)
SLC1	Loss of land (including wetlands) previously used for grazing.	Construction	Negative	Medium	Low
SLC2	Vegetation clearance, soil disturbance and high traffic movement on site, resulting in a higher potential for soil erosion		Negative	Low	Low
SLC3	Potential spillage of hazardous substances		Negative	Low	Low
SLC4	Loss of land (including wetlands) previously used for grazing.	Operation	Negative	Medium	Low
SLC5	Vegetation clearance, soil disturbance, and increased traffic movement on site, resulting in a higher potential for soil erosion		Negative	Low	Low
SLC6	Potential land contamination from hazardous substances..		Negative	Low	Low
SLC7	Increased potential of soil erosion due to soil disturbance and a high traffic movement on site.	De-commissioning	Negative	Low	Low
SLC8	Potential spillage of hazardous substances		Negative	Low	Low

The impacts are the same for all three WEFs

NATURAL VEGETATION AND ANIMAL LIFE

Ref.	Impact Description	Phase	Status	Significance (Pre-Mitigation)	Residual Significance (Post-Mitigation)
BIO1	Impacts on vegetation and protected plant species	Construction	Negative	Medium	Medium
BIO2	Faunal impacts due to construction activities		Negative	Medium	Medium
BIO3	Increased Soil Erosion risk during construction		Negative	Medium	Low
BIO4	Faunal impacts due to operational activities of the wind farm such as noise, and human presence during maintenance activities	Operation	Negative	Medium	Medium
BIO5	Erosion		Negative	Medium	Low
BIO6	Alien Plant Invasion		Negative	Low	Low
BIO7	Faunal impacts due to decommissioning of the wind farm such as noise, and operation of heavy machinery on-site	De-commissioning	Negative	Medium	Low
BIO8	Erosion		Negative	Medium	Low
BIO9	Alien Plant Invasion		Negative	Medium	Low

The impacts are the same for all three WEFs

AVIFAUNA

Ref.	Impact Description	Phase	Status	Esizayo WEF		Maralla East and West WEF	
				Significance (Pre-Mitigation)	Residual Significance (Post-Mitigation)	Significance (Pre-Mitigation)	Residual Significance (Post-Mitigation)
AV1	Displacement of priority species due to disturbance during construction operations	Construction	Negative	Medium	Medium	Medium	Medium
AV2	Priority species mortality due to collision with the turbines	Operation	Negative	High	Medium	High	Medium
AV3	Displacement of priority species due to habitat transformation		Negative	Medium	Low	Medium	Low
AV4	Priority species mortality due to collision with the on-site powerlines		Negative	Medium	Medium	High	Medium
AV5	Priority species mortality due to electrocution on the on-site powerlines		Negative	Medium	Low	Medium	Low
AV6	Displacement of priority species due to disturbance during decommissioning operations	De-commissioning	Negative	Low	Low	Low	Low

BATS

Ref.	Impact Description	Phase	Status	Significance (Pre-Mitigation)	Residual Significance (Post-Mitigation)
BAT1	Destruction of bat roosts due to earthworks and blasting -	Construction	Negative	Medium	Low
BAT2	Loss of foraging habitat.		Negative	Medium	Low
BAT3	Bat mortalities due to direct blade impact or barotrauma during foraging activities (not migration).	Operation	Negative	High	Medium
BAT4	Artificial Lighting		Negative	Medium	Low
BAT5	Loss of foraging habitat.	De-commissioning	Negative	Medium	Low

The impacts are the same for all three WEFs



SURFACE WATER

Ref.	Impact Description	Phase	Status	Significance (Pre-Mitigation)	Residual Significance (Post-Mitigation)
SW1	Alterations of flow regimes of watercourses,	Construction	Negative	Medium	Low
SW2	Increased potential of soil erosion due to vegetation clearance, soil disturbance and a high traffic movement on site. Subsequent potential sedimentation of watercourses.		Negative	Low	Low
SW3	Potential land contamination from hazardous substances..		Negative	Low	Low
SW4	Temporary potential degradation of wetland habitat due to the proposed positioning of road access		Negative	Medium	Low
SW5	Alterations of flow regimes of watercourses		Negative	Medium	Low
SW6	Increased potential of soil erosion due to vegetation clearance, and more run-off from harden surfaces (i.e. roads). Subsequent potential sedimentation of watercourses.	Operation	Negative	Low	Low
SW7	Potential land contamination from hazardous substances.		Negative	Low	Low
SW8	Alterations of flow regimes of watercourses, in close proximity to the site, or that is proposed to be traversed by roads.	De-commissioning	Negative	Medium	Low
SW9	Increased potential of soil erosion due to soil disturbance and a high traffic movement on site.		Negative	Low	Low
SW10	Potential land contamination from hazardous substances.		Negative	Low	Low

The impacts are the same for all three WEFs

HERITAGE

Ref.	Impact Description	Phase	Status	Significance (Pre-Mitigation)	Residual Significance (Post-Mitigation)
ESIZAYO					
H1	Impacts to buried archaeological material and graves	Construction	Negative	Low	Low
H2	Substation 1 will result in the destruction of South African War Military Outpost		Negative	Medium	Low
H3	Access road ,au damage or destroy the Nuwerus Cemetery		Negative	Medium	Low
MARALLA EAST					
H1	Impacts to ruined settlement and graveyard on public access road through De KOM	Construction	Negative	Medium	Low
H2	Impacts to late Stone Age sites along river bed		Negative	Medium	Low
H3	Impacts to the Farm House of Wolvenhoek		Negative	Medium	Low
MARALLA WEST					
H1	Impacts to a graveyard on the Komsberg River, Sckalkwykskraal	Construction	Negative	Medium	Low
H2	Impacts to a 19 th century stone stockpost and kraal on the Komsberg River, Sckalkwukskraal		Negative	Medium	Low
H3	Impacts to graves and a rock art site on Venters River, Welgemoed		Negative	Medium	Low



PALAEONTOLOGY

Ref.	Impact Description	Phase	Status	Significance (Pre-Mitigation)	Residual Significance (Post-Mitigation)
P1	Disturbance, damage or destruction of fossils (direct, negative impacts) preserved at or beneath the ground surface within the development footprint during the construction phase, mainly due to surface clearance or excavation activities	Construction	Negative	Low	Low

The impacts are the same for all three WEFs



VISUAL

Ref.	Impact Description	Phase	Status	Significance (Pre-Mitigation)	Residual Significance (Post-Mitigation)
V1	Visual impact during construction due to dust, vehicles and equipment	Construction	Negative	Medium	Low
V2	Visual impact during construction due to vegetation clearing		Negative	Medium	Low
V3	Visual impact during construction on landforms		Negative	Medium	Low
V4	Intrusion on sense of place and rural landscape	Operation	Negative	Medium	Medium
V5	Visual impact of wind turbines		Negative	High	Medium
V6	Visual impact of substation and other buildings and infrastructure		Negative	Medium	Medium
V7	Visual impact of shadow flicker		Negative	Low	Low
V8	Visual impact of lighting from facility		Negative	Medium	Medium
V9	Visual impact of additional roads and road widening		Negative	Low	Low
V10	Visual impact during decommissioning due to dust, vehicles and equipment		De-commissioning	Negative	Medium

The impacts are the same for all three WEFs



TRAFFIC AND TRANSPORTATION

Ref.	Impact Description	Phase	Status	Significance (Pre-Mitigation)	Residual Significance (Post-Mitigation)
T1	Noise, dust and exhaust pollution due to vehicle trips on-site	Construction	Negative	Low	Low
T2	Noise, dust and exhaust pollution due to additional trips on the access roads		Negative	Medium	Medium
T3	Noise and exhaust pollution due to additional vehicle trips on the R354		Negative	Low	Low

The impacts are the same for all three WEFs

NOISE

Ref.	Impact Description	Phase	Status	Esizayo and Maralla West WEF		Maralla East WEF	
				Significance (Pre-Mitigation)	Residual Significance (Post-Mitigation)	Significance (Pre-Mitigation)	Residual Significance (Post-Mitigation)
N1	Acoustic impact on residential receptors	Construction	Negative	Medium	Low	Medium	Low
N2	Acoustic impact on residential receptors	Operation	Negative	Medium	Low	Low	Low
N3	Acoustic impact on residential receptors	De-commissioning	Negative	Medium	Low	Medium	Low

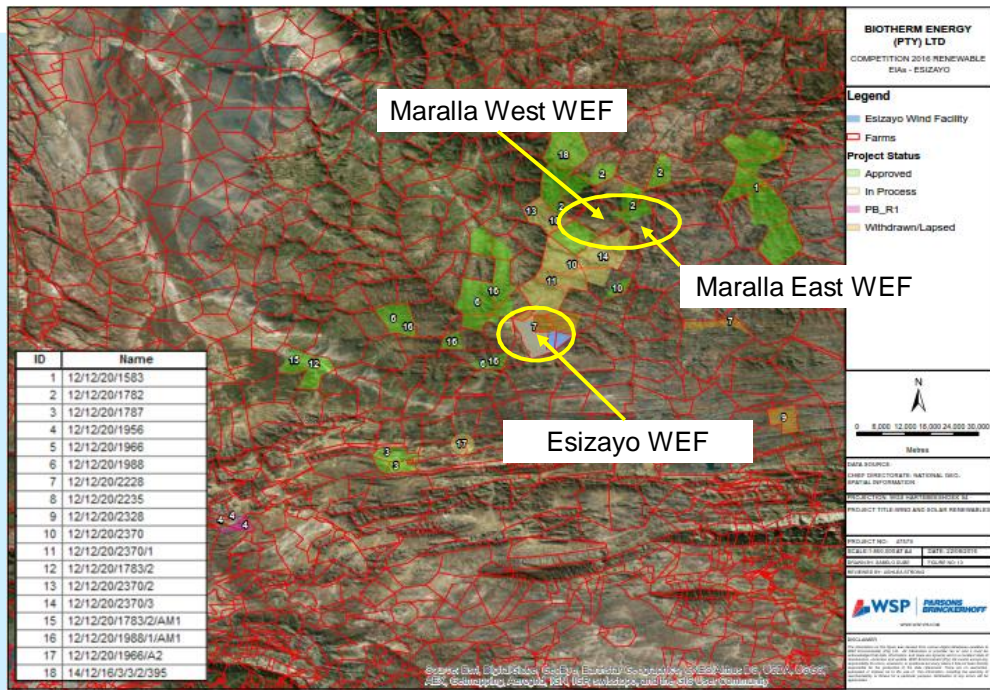


SOCIAL ENVIRONMENT

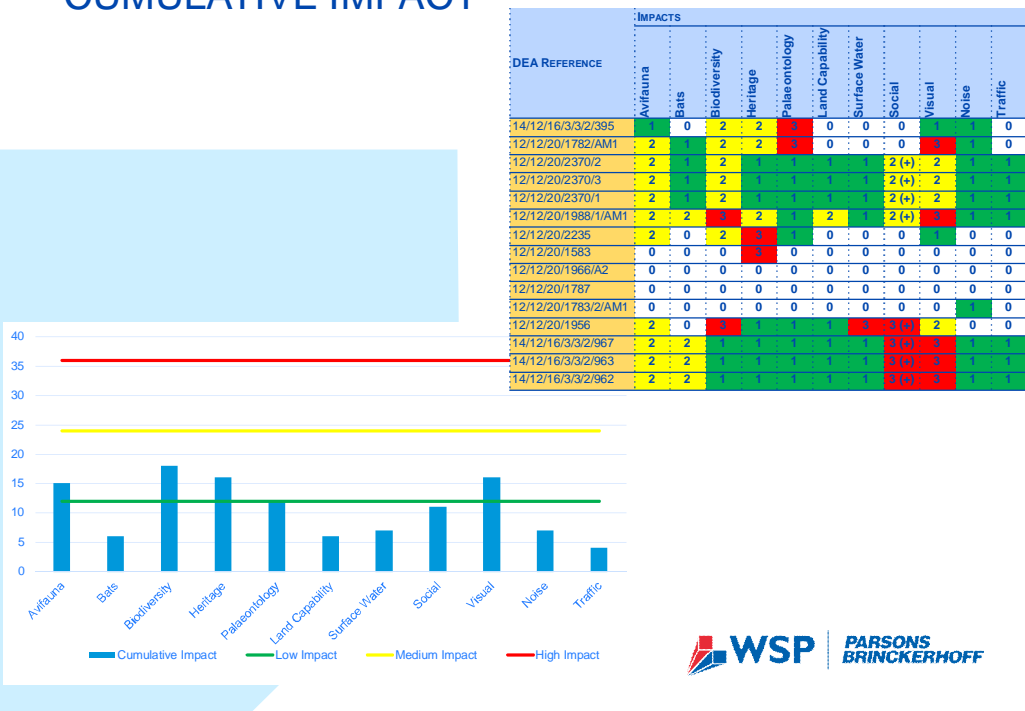
Ref.	Impact Description	Phase	Status	Significance (Pre-Mitigation)	Residual Significance (Post-Mitigation)
SE1	Increase in Employment Opportunities	Construction	Positive	Medium	High
SE2	Increased Economic Development Opportunities		Positive	Medium	High
SE3	Disruption due to influx of job seekers		Negative	Medium	Medium
SE4	Increase in communicable diseases and reduced public health		Negative	Medium	Medium
SE5	Change in sense of place		Negative	Medium	Low
SE6	Nuisance from noise, dust and traffic disturbances		Negative	Medium	Low
SE7	Increased risk to neighbouring land users		Negative	Low	Low
SE8	Increased risk of veld fires		Negative	Medium	Low
SE9	Increased employment opportunities	Operation	Positive	Medium	High
SE10	Increased economic development opportunities		Positive	Medium	Medium
SE11	Change in sense of place		Negative	Medium	Medium
SE12	Loss of permanent employment	De-commissioning	Negative	Medium	Low
SE13	Gain of short term employment		Positive	Low	Medium
SE14	Nuisance from dust, noise and traffic		Negative	Low	Low
SE15	Increased risk to neighbouring land users		Negative	Low	Low
SE16	Increased risk of veld fires		Negative	Medium	Low

The impacts are the same for all three WEFs


CUMULATIVE IMPACT

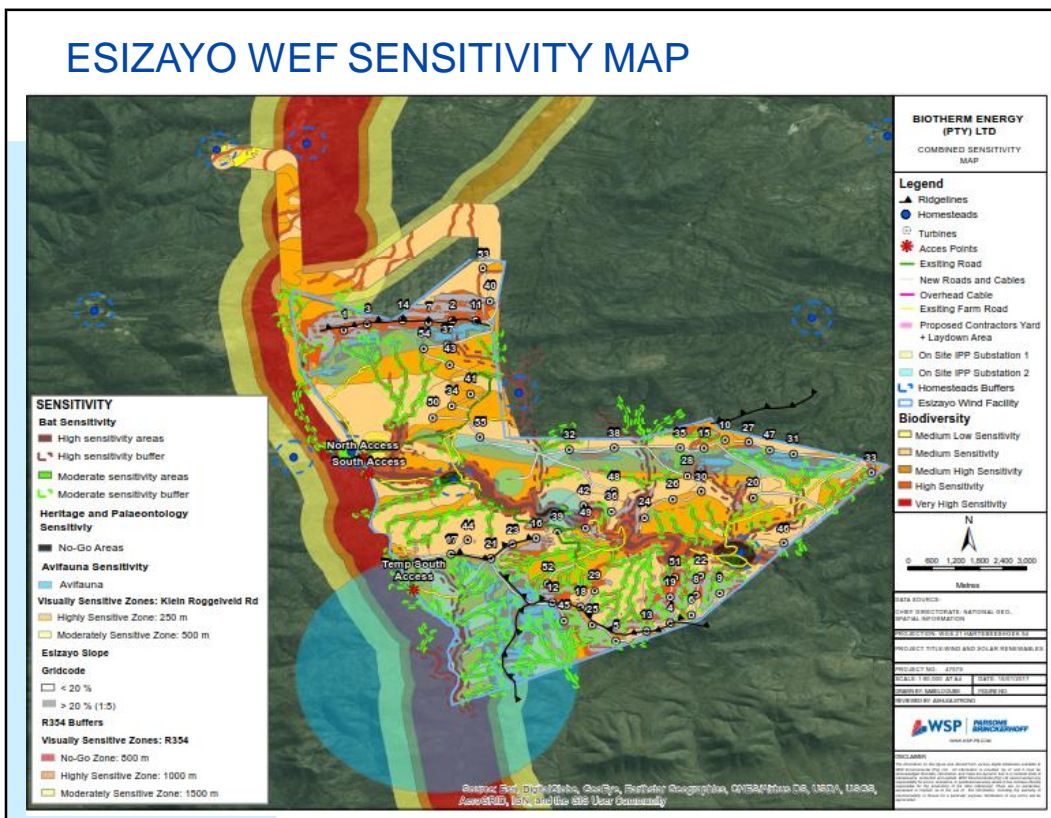


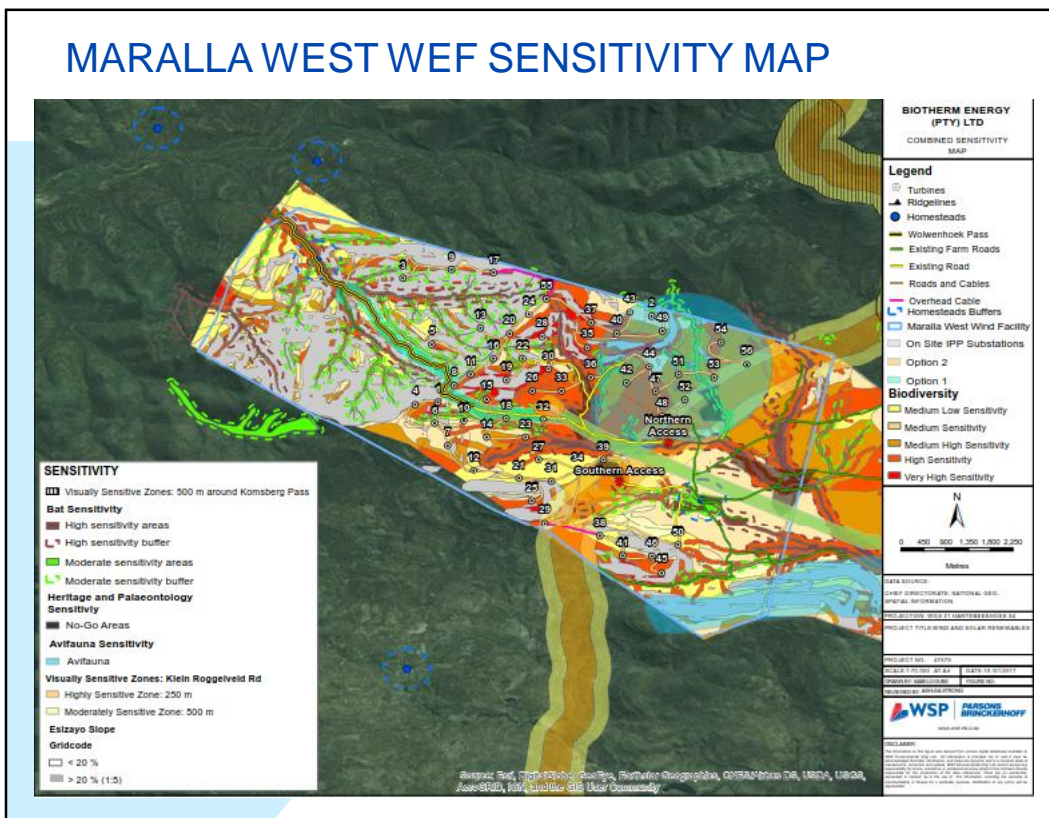
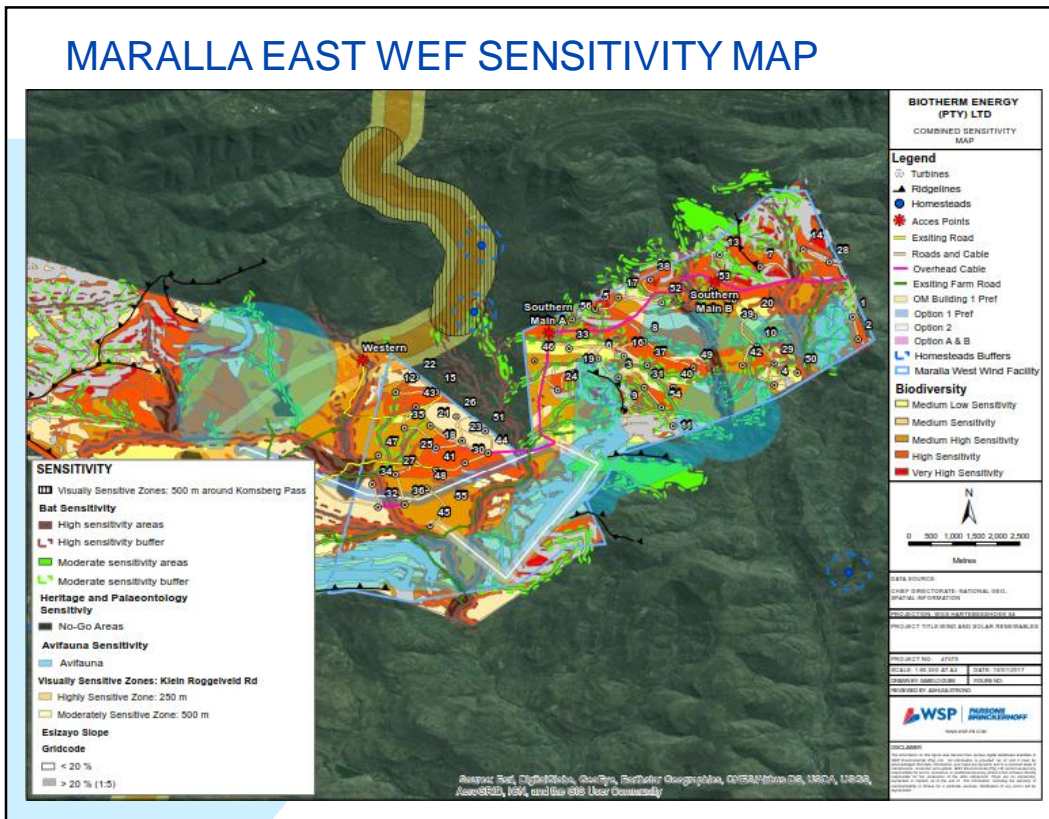
CUMULATIVE IMPACT




SENSITIVITY MAPPING








PUBLIC PARTICIPATION PROCESS

 **WSP** | **PARSONS BRINCKERHOFF**

PUBLIC PARTICIPATION PROCESS

Pre-Application	Pre-application consultation with DEA	P
	Newspaper Adverts	P
Scoping	Submit Application	P
	Notification of IAPS	P
	Newspaper Adverts	P
	Site Notices	P
	Draft Scoping Report – 30 days	P
	Submit Final Scoping Report	P
EIA	EIR – 30 Days	P
	Submit EIR for Decision	
Appeal	Notification of decision	
	Appeal Process	
	Must be submitted within 20 days from date of decision	

 **WSP** | **PARSONS BRINCKERHOFF**

PUBLIC PARTICIPATION PROCESS TO DATE



à The Public Participation process has consisted of:

- § Pre-application Consultation with DEA
- § Newspaper adverts in:
 - The Courier (9 September 2016)
 - Die Noordwester (8 September 2016)
- § Email notification of I&APs
- § Site Notices placed at the entrance to the site
- § DSR for 30 day public review
- § Public Meetings
 - 29 September 2016 – Laingsburg
 - 30 September 2016 - Sutherland
- § DEIR for 30 day public review
- § Public Meetings
 - 23 February 2017 – Matjiesfontein
 - 24 February 2017 - Sutherland



WAY FORWARD



WAY FORWARD

Activity	Anticipated Timeframe
Stakeholder Meetings	21 – 24 February 2017
Close of public review period	2 March 2017
Finalisation of DEIR and submission to authorities	3 - 28 March 2017
Authority review	31 March – 17 July 2017
Receipt of Environmental Authorisation (EA)	Mid – end July 2017
Appeal Period	20 days from receipt of the EA



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Appendix C: List of Skills

Construction	Operation
<ul style="list-style-type: none"> • Environmental coordinator • Project manager • Director • Technical buyer • Engineering manager • Engineering director • Site manager • Engineer • Logistic project manager • Substation and OHL manager • Telecontroller/telecommunications • Management committee control • General labourer • HR/IR officer • HSE manager • Wind turbine technicians and assistants • Climber • Foremen/section foremen • Carpenter • Site supervisor • Truck driver • Surveyor • Operator • Managing director • Site administrator • Supply chain manager • Buyer senior • Commercial manger • Construction manager • Contract manger • Sub-station site manager • Site admin clerk • H&S representative • Bricklayer • Ecologists 	<ul style="list-style-type: none"> • Ecologists • General workers • Buyers • Security guards • Operations managers • Bird specialists • Bat specialists • Data sorters • Office assistants • Office Administrators • Technician/Junior technicians • Assistant Engineer • HR Director • Operations and Maintenance Manager • Buyer Seniors • ED Director • Commercial manager • Engineers