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**ANNEXURE H**  
**LEGAL REQUIREMENTS**

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## LEGAL REQUIREMENTS

### National Environmental Management Act, No. 107 of 1998 (NEMA)

NEMA, as amended, establishes the principles for decision-making on matters affecting the environment. Section 2 sets out the National Environmental Management Principles which apply to the actions of organs of state that may significantly affect the environment. Furthermore, Section 28(1) states that *“every person who causes or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring”*. If such pollution or degradation cannot be prevented then appropriate measures must be taken to minimise or rectify such pollution or degradation.

Mulilo has the responsibility to ensure that the proposed activity as well as the EIA (Environmental Impact Assessment) process conforms to the principles of NEMA. In developing the EIA process, Aurecon has been cognisant of this need, and accordingly the Environmental Authorisation (EA) process has been undertaken in terms of NEMA and the EIA Regulations promulgated on 18 June 2010<sup>1</sup>.

In terms of the EIA regulations, certain activities are identified, which require authorisation from the competent environmental authority, in this case the Department of Environmental Affairs (DEA), before commencing. Listed activities in Government Notice (GN) No. 545 require Scoping and EIA whilst those in GN No. 544 and 546 require Basic Assessment (unless they are being assessed under an EIA process). The activities being applied for in this EIA process are listed in **Table 1.1**.

**Table 1.1 Listed activities in terms of NEMA GN No. 544, 545 and 546, 18 June 2010, to be authorised for the proposed photovoltaic (PV) plants**

NO	LISTED ACTIVITY
<b>GN No. R544, 18 June 2010</b>	
<b>10</b>	The construction of facilities or infrastructure for the transmission and distribution of electricity - <ul style="list-style-type: none"> <li>• outside urban areas or industrial complexes with a capacity of more than 33, but less than 275 kilovolts; or</li> <li>• inside urban areas or industrial complexes with a capacity of 275 kilovolts or more.</li> </ul>
<b>11</b>	The construction of - <ul style="list-style-type: none"> <li>(x) buildings exceeding 50 square metres (m<sup>2</sup>) in size; or</li> <li>(xi) infrastructure or structures covering 50m<sup>2</sup> or more</li> </ul> <p>where such construction occurs within a watercourse or within 32m of a watercourse, measured from the edge of a watercourse, excluding where such construction would occur behind the development setback line.</p>
<b>18</b>	The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from: <ul style="list-style-type: none"> <li>(i) a watercourse</li> </ul>

<sup>1</sup> GN No. R 543, 544, 545, 546 and 547 in Government Gazette No. 33306 of 18 June 2010.

NO	LISTED ACTIVITY
GN No. R545, 18 June 2010	
1	The construction of facilities or infrastructure for the generation of electricity where the electricity output is 20 MW or more.
15	Physical alteration of undeveloped, vacant or derelict land for residential retail, commercial, recreational, industrial or institutional use where the total area to be transformed is 20 hectares or more.
14	The clearance of an area of 5 hectares or more of vegetation where 75% or more of the vegetation cover constitutes indigenous vegetation <ul style="list-style-type: none"> <li>(a) in the Northern Cape <ul style="list-style-type: none"> <li>(i) All areas outside urban areas.</li> </ul> </li> </ul>

Since the proposed project is based in the Northern Cape, DEA would work closely with the provincial Department of Environmental Affairs and Nature Conservation (DEANC), to ensure that the provincial environmental concerns are specifically identified and addressed.

Further information on the EIA approach is provided in **Section** Error! Reference source not found..

### **National Heritage Resources Act, No. 25 of 1999**

In terms of the National Heritage Resources Act (No. 25 of 1999) (NHRA), any person who intends to undertake *“any development ... which would change the character of a site exceeding 5 000 m<sup>2</sup> in extent”*, *“the construction of a road...powerline, pipeline...exceeding 300 m in length”* or *“the rezoning of site larger than 10 000 m<sup>2</sup> in extent...”* must at the very earliest stages of initiating the development notify the responsible heritage resources authority, namely the South African Heritage Resources Agency (SAHRA) or the relevant provincial heritage agency. These agencies would in turn indicate whether or not a full Heritage Impact Assessment (HIA) would need to be undertaken.

Section 38(8) of the NHRA specifically excludes the need for a separate HIA where the evaluation of the impact of a development on heritage resources is required in terms of an EIA process. Accordingly, since the impact on heritage resources would be considered as part of the EIA process outlined here, no separate HIA would be required. SAHRA or the relevant provincial heritage agency would review the EIA reports and provide comments to DEA, who would include these in their final environmental decision. However, should a permit be required for the damaging or removal of specific heritage resources, a separate application would have to be submitted to SAHRA or the relevant provincial heritage agency for the approval of such an activity, if Mulilo obtains authorisation and makes the decision to pursue the proposed projects further.

### **Astronomy Geographic Advantage Act, No. 21 of 2007**

The Astronomy Geographic Advantage Act (No. 21 of 2007) provides for the preservation and protection of areas within South Africa that are uniquely suited for

optical and radio astronomy; for intergovernmental co-operation and public consultation on matters concerning nationally significant astronomy advantage areas and for matters connected thereto.

Chapter 2 of the act allows for the declaration of astronomy advantage areas whilst Chapter 3 pertains to the management and control of astronomy advantage areas. Management and control of astronomy advantage areas include, amongst others, the following:

- Restrictions on use of radio frequency spectrum in astronomy advantage areas;
- Declared activities in core or central astronomy advantage area;
- Identified activities in coordinated astronomy advantage area; and
- Authorisation to undertake identified activities.

On 19 February 2010, the Minister of Science and Technology (the Minister) declared the whole of the territory of the Northern Cape province, excluding Sol Plaatje Municipality, as an astronomy advantage area for radio astronomy purposes in terms of Section 5 of the Act and on 20 August 2010 declared the Karoo Core Astronomy Advantage Area for the purposes of radio astronomy.

The area consists of three pieces of farming land of 13 407 hectares in the Kareeberg and Karoo Hoogland Municipalities purchased by the National Research Foundation. The Karoo Core Astronomy Advantage Area would contain the MeerKAT radio telescope and the proposed core of the planned Square Kilometre Array (SKA) radio telescope that would be used for the purposes of radio astronomy and related scientific endeavours. The proposed plant falls outside of the Karoo Core Astronomy Advantage Area (KCAA), but inside the general astronomy advantage area.

The Minister may still declare that activities prescribed in Section 23(1) of the Act may be prohibited within the area, such as the construction, expansion or operation of any fixed radio frequency interference sources and the operation, construction or expansion of facilities for the generation, transmission or distribution of electricity. It should be noted that solar energy facilities are unlikely to cause radio frequency interference. While the Minister has not yet prohibited these activities it is important that the relevant astronomical bodies are notified of the proposed projects and provided with the opportunity to comment on the proposed projects.

### **National Water Act, No 36 of 1998**

The National Water Act (NWA) (Act No 36 of 1998) provides for the sustainable and equitable use and protection of water resources. It is founded on the principle that the National Government has overall responsibility for and authority over water resource management, including the equitable allocation and beneficial use of water in the public interest, and that a person can only be entitled to use water if the use is permissible under the NWA.

If a water use licence application is required it would fall outside of the scope of this EIA and would be addressed by Mulilo as part of their broader project planning. Comment would however be sought from the Department of Water Affairs (DWA) as part of the Scoping and EIA process.

### **Conservation of Agricultural Resources Act, No. 43 of 1983**

The Conservation of Agricultural Resources Act (No. 43 of 1983) (CARA) makes provision for the conservation of the natural agricultural resources of South Africa through maintaining the production potential of land, combating and preventing erosion, preventing the weakening or destruction of the water sources, protecting vegetation, and combating weeds and invader plants. Regulation 15 of CARA lists problem plants (undesired aliens, declared weeds, and plant invaders). Plants listed in this regulation must be controlled by the landowner.

As part of the EIA process, recommendations should be made to ensure that measures are implemented to maintain the agricultural production of land, prevent soil erosion, and protect any water bodies and natural vegetation on site. Mulilo together with the relevant landowners should also ensure the control of any undesired aliens, declared weeds, and plant invaders listed in the regulation that may pose as a problem as a result of the proposed PV plants.

### **Other applicable legislation and policies**

This section provides an overview of the policy and legislative context in which the development of renewable energy projects takes place in South Africa. The following policies and legislative context are described:

- White Paper on the Energy Policy of the Republic of South Africa (1998);
- White Paper on Renewable Energy (2003);
- National Energy Act (2008);
- National Electricity Regulation Act (2006);
- Integrated Energy Plan for the Republic of South Africa (2003);
- Integrated Resource Plan (2011);
- Independent Power Producer (IPP) Procurement Process; and
- Policies regarding greenhouse gas and carbon emissions.

### **White Paper on the Energy Policy of the Republic of South Africa (1998)**

As required by the Constitution of the Republic of South Africa (Act No. 108 of 1996), the White Paper on the Energy Policy of the Republic of South Africa (1998) was published by the Department of Minerals and Energy in response to the changing political climate and socio-economic outlook. Key objectives are identified in terms of energy supply and demand, as well as co-ordinated with other social sectors and between energy sub-sectors.

The White Paper commits to government's focused support for the development, demonstration and implementation of renewable energy sources for both small and

large-scale applications. With the aim of drawing on international best practice, specific emphasis is given to solar and wind energy sources, particularly for rural and often off-grid areas.

While considering the larger environmental implications of energy production and supply, the White Paper looks into the future to adopting an integrated resource planning approach, integrating the environmental costs into economic analysis. It is with this outlook that the renewable energy, including solar energy, is seen as a viable, attractive and sustainable option to be promoted as part of South Africa's energy policy towards energy diversification.

### **White Paper on Renewable Energy (2003)**

Published by the Department of Minerals and Energy (DME) in 2003, the White Paper on renewable Energy supplements the above-mentioned Energy Policy which identified the medium- and long-term potential for renewable energy as significant. The White Paper sets out the vision, policy principles, strategic goals and objectives in terms of renewable energy. At the outset the policy refers to the long term target of *"10 000 GWh (0.8 Mtoe) renewable energy contribution to final energy consumption by 2013."* The aim of this 10-year plan is to meet this goal via the production of mainly biomass, wind, solar and small-scale hydro sources. It is estimated that this would constitute approximately 4% of projected energy demand for 2013.

The White Paper presents South Africa's options in terms of renewable energy as extensive and a viable and sustainable alternative to fossil fuel options. A strategic programme of action to develop South Africa's renewable energy resources is proposed, particularly for power generation and reducing the need for coal-based power generation. The starting point would be a number of initial investments spread across both relatively low cost technologies, such as biomass-based cogeneration, as well as technologies with larger-scale application, such as solar water heating, wind and small-scale hydro.

Addressing environmental impacts and the overarching threats and commitments to climate change, the White Paper provides the platform for further policy and strategy development in terms of renewable energy in the South African energy environment.

### **National Energy Act (No. 34 of 2008) and Electricity Regulation Act (No. 4 of 2006)**

South Africa has two acts that direct the planning and development of the country's electricity sector:

- i. The National Energy Act (No. 34 of 2008); and
- ii. The Electricity Regulation Act (ERA) (No. 4 of 2006).

In May 2011, the Department of Energy (DoE) gazetted the Electricity Regulations on New Generation Capacity under the ERA. The New Generation Regulations establish rules and guidelines that are applicable to the undertaking of an IPP Bid Programme and

the procurement of an IPP for new generation capacity. They also facilitate the fair treatment and non-discrimination between IPPs and the buyer of the energy<sup>2</sup>.

In terms of the New Generation Regulations, the Integrated Resource Plan (IRP) has been developed by the DoE and sets out the new generation capacity requirement per technology, taking energy efficiency and the demand-side management projects into account. This required, new generation capacity must be met through the technologies and projects listed in the IRP and all IPP procurement programmes would be undertaken in accordance with the specified capacities and technologies listed in the IRP<sup>3</sup>.

### IPP Procurement Process

South Africa initially aimed to procure 3 725 MW capacity of renewable energy by 2016 (the first round of procurement). This 3 725 MW is broadly in accordance with the capacity allocated to renewable energy generation in the IRP2010. It was also announced on 19 December 2012 that South Africa would move to procure an additional 3 200 MW of renewable energy capacity by 2020, over and above the 3 725 MW being procured currently under the Renewable Energy Independent Power Producer Programme (REIPPP). A brief overview of the IPP Procurement process to date is provided below and in **Table 1.2**.

On 3 August 2011, DoE formally invited interested parties with relevant experience to submit proposals for the finance, operation and maintenance of renewable energy generation facilities adopting any of onshore wind, solar thermal, solar photovoltaic, biomass, biogas, landfill gas or small hydro technologies for the purpose of entering, inter alia, an Implementation Agreement with DoE and a Power Purchase Agreement with a buyer (Eskom) in terms of the ERA. This Request for Qualification and Proposals for new generation capacity was issued under the IPP Procurement Programme. The IPP Procurement Programme has been designed to contribute towards the target of 6 925 MW, and towards socio-economic and environmentally sustainable growth, and to start and stimulate the renewable industry in South Africa.

In terms of this IPP Procurement Programme, Bidders would be required to bid on tariff and the identified socio-economic development objectives of DoE<sup>4</sup>. The tariff would be payable by the Buyer should the project be selected.

**Table 1.2 Milestones of the IPP process**

First Bid Submission	
• <b>First Bid Submission Date</b>	• 4 November 2011
• <b>Announcement of Preferred Bidders in respect of First Bid Submission Date</b>	• 7 December 2011
• <b>Solar PV capacity awarded</b>	• 631.53 MW

<sup>2</sup> Source: <http://www.eskom.co.za/c/73/ipp-processes/>. Accessed on April 2013

<sup>3</sup> Source: <http://www.eskom.co.za/c/73/ipp-processes/>. Accessed on April 2013

<sup>4</sup> After the second bid submission the prices for solar PV were capped at below 285c/kWh.

<b>Second Bid Submissions</b>	
<b>Second Bid Submission Date</b>	5 March 2012
<ul style="list-style-type: none"> <li><b>Announcement of Preferred Bidders in respect of Second Bid Submission Date</b></li> </ul>	21 May 2012
<ul style="list-style-type: none"> <li><b>Solar PV capacity awarded</b></li> </ul>	417.1 MW
<b>Third Bid Submission</b>	
<ul style="list-style-type: none"> <li><b>Third Bid Submission Date</b></li> </ul>	19 August 2013
<ul style="list-style-type: none"> <li><b>Announcement of Preferred Bidders in respect of Third Bid Submission Date</b></li> </ul>	October 2013

If the maximum MW allowance for any particular technology has been allocated during any particular window, then the subsequent bidding opportunities would not be opened for that technology. The MW capacity per technology is indicated in **Table 1.3**.

**Table.1.3 Megawatts capacity per technology**

<b>Technology</b>	<b>Initial MW</b>	<b>Additional MW</b>	<b>Total MW per Technology</b>
<b>Onshore wind</b>	1,850MW	1,470MW	3,320MW
<b>Concentrated solar thermal</b>	200MW	400MW	600MW
<b>Solar photovoltaic</b>	1,450MW	1,075MW	2525MW
<b>Biomass solid</b>	12.5MW	47.5MW	60MW
<b>Biogas</b>	12.5MW	47.5MW	60MW
<b>Landfill gas</b>	25MW	-	25MW
<b>Small hydro</b>	75MW	60MW	135MW
<b>Small projects<sup>5</sup></b>	100MW	100MW	200MW
<b>TOTAL</b>	<b>3,725MW</b>	<b>3,200MW</b>	<b>6,925MW</b>

IPPs that wish to connect to Eskom's network would be required to apply for a connection, pay a connection charge and sign a connection and use-of-system agreement<sup>6</sup>. All IPPs would be provided non-discriminatory access to Eskom's network, subject to the IPP's obtaining its required approvals such as EA's and a generating and trading licence from the National Energy Regulator South Africa (NERSA).

### **Integrated Energy Plan for the Republic of South Africa**

Commissioned by DME in 2003, the Integrated Energy Plan (IEP) aims to provide a framework in which specific energy policies, development decisions and energy supply trade-offs can be made on a project-by-project basis. The framework is intended to create a balance in providing low cost electricity for social and economic developments, ensuring security of supply and minimising the associated environmental impacts.

<sup>5</sup> Small projects are less than or equal to 40MW.

<sup>6</sup> Source: <http://www.eskom.co.za/c/article/150/independent-power-producers-ipp/>. Accessed on April 2013.



The IEP projected that the additional demand in electricity would necessitate an increase in electricity generation capacity in South Africa by 2007. Furthermore, the IEP concluded that, based on energy resources available in South Africa, coal would be the primary fuel source in the 20 year planning horizon, which was specified as the years 2000 to 2020, although other cleaner technologies continue to be investigated as alternatives in electricity generation options. Therefore, though the next two decades of energy generation are anticipated to remain coal-based, alternative technologies and approaches are available and need to be contextually considered.

### Integrated Resource Plan

The Integrated Resource Plan (IRP) is a National Electricity Plan, which is a subset of the Integrated Energy Plan. The IRP is also not a short or medium-term operational plan but a plan that directs the expansion of the electricity supply over the given period.

The IRP, indicating the schedule for energy generation programmes, was first gazetted on 31 December 2009. A revised schedule was gazetted on 29 January 2010 and the schedule has once again been revised and the final IRP (IRP2010-2030) was gazetted on 6 May 2011.

Developed for the period of 2010 to 2030, the primary objective of the IRP2010, as with its predecessors, is to determine the long-term electricity demand and detail how this demand should be met in terms of generating capacity, type, timing, and cost. While promoting increased economic development through energy security, the IRP2010 aims to achieve a *“balance between an affordable electricity price to support a globally competitive economy, a more sustainable and efficient economy, the creation of local jobs, the demand on scarce resources such as water and the need to meet nationally appropriate emission targets in line with global commitments”*.

As can be seen in the table below (**Table 1.4**) the current final IRP provides for an additional 20,409 MW (shaded in grey) of renewable energy in the electricity mix in South Africa by 2030.

**Table 1.4 Policy adjusted scenario of the IRP2010 as gazetted on 6 May 2011**

Technology	Total generating capacity in 2030		Capacity added (including committed) from 2010-2030		New (uncommitted) capacity options from 2010-2030	
	MW	%	MW	%	MW	%
Coal	41,074	45.9	16,383	29.0	6,250	14.7
OCGT	7,330	8.2	4,930	8.7	3,910	9.2
CCGT	2,370	2.6	2,370	4.2	2,370	5.6
Pumped Storage	2,912	3.3	1,332	2.4	0	0
Nuclear	11,400	12.7	9,600	17.0	9,600	22.6
Hydro	4,759	5.3	2,659	4.7	2,609	6.1
Wind	9,200	10.3	9,200	16.3	8,400	19.7

	Total generating capacity in 2030		Capacity added (including committed) from 2010-2030		New (uncommitted) capacity options from 2010-2030	
<b>CSP</b>	1,200	1.3	1,200	2.1	1,000	2.4
<b>PV</b>	8,400	9.4	8,400	14.9	8,400	19.7
<b>Other</b>	890	1.0	465	0.8	0	0
<b>Total</b>	89,532	100	56,539	100	42,539	100

<sup>1</sup> <http://www.eskom.co.za/c/article/150/independent-power-producers-ipp/> (accessed 06/10/11)

<sup>1</sup> Small projects are less than or equal to 40MW.

The final IRP2010 reflects both the consultation process on the draft IRP2010 currently being undertaken with stakeholders and the further technical work undertaken in this period. It is noted that *“given the rapid changes in generation technologies and pricing, especially for “clean” energy sources, the IRP would have to be reviewed on a regular basis, for instance every two years, in order to ensure that South Africa takes advantage of emerging technologies. This may result in adjustments in the energy mix set out in the balanced revised scenario within the target for total system capacity.”*

### **Policies regarding greenhouse gas and carbon emissions**

Gases that contribute to the greenhouse effect are known to include carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), water vapour, nitrous oxide, chlorofluorocarbons (CFCs), halons and peroxyacynitrate (PAN). All of these gases are transparent to shortwave radiation reaching the earth's surface, but trap long-wave radiation trying to leave the earth's surface. This action leads to a warming of the earth's lower atmosphere, resulting in changes in the global and regional climates, rising sea levels and extended desertification. This in turn is expected to have severe ecological consequences and a suite of implications for mankind.

Electricity generation using carbon based fuels is responsible for a large proportion of carbon dioxide (CO<sub>2</sub>) emissions worldwide. In Africa, the CO<sub>2</sub> emissions are primarily the result of fossil fuel burning and industrial processes, such coal fired power stations. South Africa accounts for some 38% of Africa's CO<sub>2</sub> emissions. The global per capita CO<sub>2</sub> average emission level is 1.23 metric tonnes. In South Africa however, the average emission rate is 2.68 metric tonnes per person per annum. The International Energy Agency (2008) estimates that nearly 50% of global electricity supplies would need to come from renewable energy sources in order to halve CO<sub>2</sub> emissions by 2050 and minimise significant, irreversible climate change impacts

The United Nations Framework Convention on Climate Change (UNFCCC) has initiated a process to develop a more specific and binding agreement on the reduction of greenhouse gas (GHG) emissions. This led to negotiations with a particular focus on the commitments of developed countries, and culminated in the adoption of the Kyoto Protocol in 1997, which came into effect in February 2005. Using the above framework to inform their approach, the Kyoto Protocol has placed specific legal obligations in the form of GHG reduction targets on developed countries and countries with 'Economies in

Transition'. The developed countries listed in Annex 1 of the UNFCCC are required to reduce their overall emissions of six GHGs by at least 5% below the 1990 levels between 2008 and 2012. While South Africa, as a developing country, is not obliged to make such reductions, the increase in greenhouse gas emissions must be viewed in light of global trends to reduce these emissions significantly. More recently under the Copenhagen Accord 2010, countries representing over 80% of global emissions have submitted pledges on emission reductions. South Africa's commitment is to reduce GHG emissions 34% by 2020 and 42 % by 2025.

The Kyoto Protocol, to which South Africa is a signatory, was informed by the principles of sustainable development which resulted in related policies and measures being identified to promote energy efficiency while protecting and enhancing the 'sinks and reservoirs' of greenhouse gases (forests, ocean, etc.). Other methods/approaches included encouraging more sustainable forms of agriculture, in addition to increasing the use of new and renewable energy and the adoption/implementation of advanced and innovative environmentally sound technologies. South African policies are being informed by the Kyoto Protocol (which was valid until 2012) and its partial successor the Copenhagen Accord 2010 and associated sustainable development principles whereby emphasis is being placed on industries for 'cleaner' technology and production.