

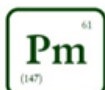
# ELECTRICITY GRID ACCESS IN SOUTHERN AFRICA

## COUNTRY-SPECIFIC INFORMATION ON REGULATORS AND REGULATIONS PERTAINING TO INDEPENDENT POWER PRODUCERS

*MARCH 2016*



**PROMETHIUM**  
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British  
High Commission  
Pretoria

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This *Guideline* was informed by inputs from various organisations, institutes, government departments in the member states of Southern African Development Community including: Botswana (British High Commission in Gaborone, Cenkal, Department of Energy and Kalahari Energy); Lesotho (Lesotho Energy and

Water Authority); Malawi (Malawi Energy Regulatory Authority); Mozambique (Aggreko Mozambique, Department for International Development Mozambique and Fundo de Energia); Namibia (NamPower); South Africa (Cennergi, Department of Trade and Industry, Eskom, Industrial Development Corporation of South Africa, IPP Office, South African Independent Power Producers Association, South African Wind Energy Association, Standard Bank); Swaziland (Swaziland Electricity Company); Zambia (Copperbelt Energy Corporation, Lunsemfwa Hydro Power Company); Zimbabwe (British Embassy Harare, Counterfactual, Confederation of Zimbabwe Industries and the Zimbabwe Electricity Supply Authority) and the Southern African Power Pool.



**THE GLOBAL GOALS**  
For Sustainable Development

**Goal 7 Affordable and Clean Energy**

Ensure access to affordable, reliable, sustainable and modern energy for all

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# 1 Introduction

Electricity markets in most countries in Southern Africa and in the Southern African Power Pool have traditionally been controlled by governments and dominated by large state owned utility companies. Recent global trends and developments, such as declining costs of renewable energy technologies, government policies on greenhouse gas emissions and the distributed nature of renewable energy technologies have provided the opportunity for private companies to enter the electricity market. This is transforming the structure of the electricity supply industry.

*The Southern African Development Community has recently mandated that member states implement cost-reflective electricity tariffs by 2017.*

Southern Africa has very good renewable energy resources. The policies, legislation and regulations to support reforms of the electricity sectors in the various countries of the region are however at early stages of development. Renewable energy technologies have not been able to compete with fossil fuel orientated utilities in the past. The Southern African Development Community has recently mandated that member states implement cost-reflective electricity tariffs by 2017. This will certainly make participation in the regional sector more attractive than ever before for Independent Power

Producers (IPPs)<sup>1</sup>. In addition to this the Paris Agreement reached at the end of 2015 may increase cooperation at bi-lateral, regional and sub-regional levels, providing further positive signals for prospective investors in the market<sup>2</sup>.

The processes to develop new electricity plants within the region are often not available or poorly publicised. The aim of this *Guideline* is to assist prospective IPPs to identify (and compare) the procedures required to licence a new electricity generation facility within the region. The following countries are considered: Botswana; Lesotho; Malawi; Mozambique; Namibia; South Africa; Swaziland; Zambia and Zimbabwe.

This *Guideline* presents a snapshot of these countries with respect to the relevant overarching electricity legislation, country-specific requirements to register as an IPP and the related licensing procedures.

***This Guideline does not represent a complete or extensive study. It only contains the essential processes required to license IPPs within the countries considered during 2015/2016. Potential project developers are encouraged to peruse the official documents, many of which are referenced here, relating to the specific requirements of the relevant countries, which may be updated from time to time.***

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<sup>1</sup> The term IPP refers to private or non-government generators, which own facilities to generate electric power for sale to utilities and other end users.

<sup>2</sup> Maesela Kekana, South Africa's Chief Director of International Climate Change Relations and Negotiations

## 2 Botswana

Botswana is located between Namibia to the west, Zimbabwe to the east and South Africa to the South (Figure 1). Its electricity is generated largely from coal-fired power stations and is supplemented by diesel facilities which run during peak hours. The country's peak demand is around 600 MW, most of which could be generated by the Morupule thermal power station, owned by the Botswana Power Corporation, once fully functional in 2020. Currently, however, Botswana imports a significant portion of its required electricity from neighbouring countries (around 50% of total consumption in the 2014/2015 financial year).



**Figure 1: Location of Botswana,**  
(Source <http://www.countryreports.org>)

The country's electricity sector is dominated by the state-owned Botswana Power Corporation, which monopolises generation, transmission and distribution activities. Load shedding, however, is a common practice. The constrained

electricity supply is well recognised as a barrier to the economic growth and development needed by the country<sup>3</sup>. As Botswana has vast reserves of untapped coal, the government faces increasing pressure to build more coal fired power stations.

Capacity shortages may provide opportunities for the growth of IPPs in the sector. While there are various projects which are being developed, only one IPP currently exists, which generates electricity from diesel. This fossil fuel is a popular resource, and due to lack of security regarding energy supply, there is a growing number of companies and households using onsite diesel generators.

Investments in renewable energy technologies are expected as Botswana intends to achieve an overall 15% greenhouse gas reduction by 2030 (using 2010 as the baseline) mainly in the energy sector (both mobile and stationary). Botswana announced its contribution to the global climate change effort in October 2015.

The country is in the process of developing a comprehensive legal and regulatory framework for its electricity sector, which will guide the development of the renewable energy segment.

### 2.1 Overarching Legislation

Botswana is also in the process of establishing the Botswana Energy and

<sup>3</sup> AECOM. 2009. *Technical Report: National Energy Policy For Botswana – Final Draft*

Water Regulatory Agency as an independent regulator, which will be responsible for development of the country's legal framework relating to the electricity sector. In the interim, the Department of Energy regulates the electricity sector. This government division monitors and regulates the state-owned Botswana Power Corporation.

There are a number of key regulations pertaining to the licencing of activities in the electricity value chain. The following is a snapshot of the relevant statutes relating to new builds in the Botswana electricity sector.

**The Botswana Electricity Supply (Amendment) Act, 2007**, is the overarching legislative framework for the electricity sector. Clause 3 of the Act stipulates that licences are required for any activities relating to the generation, supply, transmission, distribution, export, import, use, work or operation in the electricity sector. Licences are issued by the Minister of Minerals, Energy and Water Resources, in consultation with the Botswana Power Corporation. While the Act authorises the participation of IPPs in the electricity sector, the Botswana Power Corporation remains vertically integrated and is the only off-taker of IPP generated electricity in the country.

Licences are not required for government-owned enterprises, or for any own-generation installations under 25 kW. Applicable own-generation facilities must be situated on the owner's property and used solely by the owner, or where no public supply of electricity is available.

The Minister may issue licences for access to, or use of, transmission facilities and associated infrastructure owned and operated by the Botswana Power Corporation. The terms and conditions are outlined in the licence.

**The Electricity Supply (Licensing) Regulations (under section 15(1)) (26<sup>th</sup> November, 1993)**<sup>4</sup> specify that the IPP rates for the supply of electricity to consumers must be established in an agreement between the IPP and the consumer. The tariff must however be approved by the Minister.

*While Botswana has excellent conditions for the development of renewable energy from solar resources, no legislation or regulations currently exist to support such projects. The Government of Botswana has engaged the World Bank for technical assistance regarding the development of a renewable energy strategy for the country, and it is expected that this will be available in 2016<sup>5</sup>.*

In addition to the lack of supporting policy and legal frameworks, access to finance for the development of renewable energy projects is one of the more significant barriers to the growth in the segment. Compared to electricity generated from coal-sources, renewable power plants have much higher capital costs and they have low penetration in the market. This makes them riskier investments. It is however anticipated that the IPP segment of the electricity market will be kick-

<sup>4</sup> Which can be accessed at <http://faolex.fao.org/docs/pdf/bot91876.pdf>

<sup>5</sup> <http://nl4worldbank.org/2015/02/02/renewable-energy-strategy-botswana/>

started once the relevant regulatory framework is in place, and there have been reports indicating that the country may consider feed-in tariffs for renewable energy technologies.

## 2.2 Requirements to register an IPP

Any electricity activity (i.e. relating to generation, transmission, distribution and supply) in Botswana exceeding 25 kW require a licence. In the absence of an independent regulator, the application for an IPP licence is made by writing a letter to the Minister of Minerals, Energy and Water Resources<sup>6</sup> and completing the first schedule of the Electricity Supply (licensing) Regulations, SI 116 of 1993.

Prior to the application for an IPP licence, a positive record of decision regarding an Environmental Impact Assessment licence must be obtained from the Department of Environmental Affairs.

If not already in existence, IPPs must also apply to the Department of Water Affairs for a Grant of Water Right<sup>7</sup>. The Department will conduct a site visit to assess the feasibility for connection. If the feasibility report is positive, the request is accepted. The IPP must complete the prescribed form, W2 or W1, which must be accompanied by the verification of title to the land (i.e. Customary Land Grant

Certificate, Title Deed and Letter of authority from the Director of Lands). The costs related to this procedure are stipulated by the Minister of Minerals, Energy and Water Resources. At the time of writing these were:<sup>8</sup>

- processing the application: P60.00;
- pipeline trenches done by customer: P479.00; and
- pipeline trenches done by the Department: P879.00.

In cases of connection outside the water works area, the fees are determined by the total cost of the provision of the connection.

## 2.3 Licensing procedure

The procedure to licence IPPs in Botswana requires prospective IPPs to write a cover letter to the Ministry of Minerals, Energy and Water Resources requesting a licence to generate and/or supply electricity, and must complete the prescribed application form<sup>9</sup>. The application form (*First Schedule of the Electricity Supply Regulations, SI 116 of 1993*) requests various pieces of information such as the capacity and the location of the generating facilities, specifics of the transmission and distribution systems, the

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<sup>6</sup> Minister of Minerals, Energy and Water Resources, Private Bag 00378, Gaborone

<sup>7</sup> <http://www.gov.bw/en/Ministries--Authorities/Ministries/Ministry-of-Minerals-Energy-and-Water-Resources-MMWER/Tools--Services/Services--Forms/?FromPageID=2181&FromPageType=1&pid=1&ClearSearch=true>

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<sup>8</sup> <http://www.gov.bw/en/Ministries--Authorities/Ministries/Ministry-of-Minerals-Energy-and-Water-Resources-MMWER/Tools--Services/Services--Forms/?FromPageID=2181&FromPageType=1&pid=1&ClearSearch=true>

<sup>9</sup> <http://1govportal.imexsystems.net/en-gb/Documents/MMEWR%20Ministry%20of%20Minerals%20Energy%20and%20Water/Forms/Electricity%20Generation%20licence%20application%20form%20First%20Schedule.pdf>



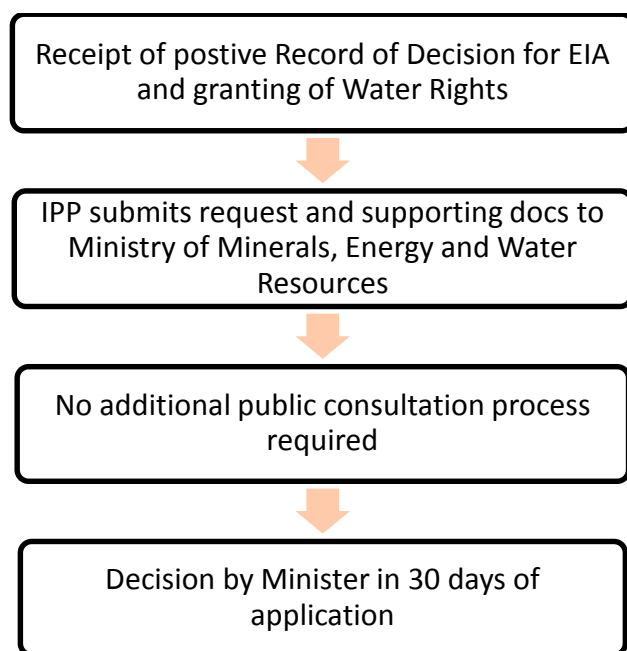
number of consumers, estimated capital costs and more.

Qualifications of operating staff relating to the proposed electricity activity should be attached to the cover letter. The applications can be submitted either to the Ministry's headquarters or to the Department of Energy's office

The Government of Botswana<sup>10</sup> indicates that once all of the necessary documents are submitted, the licensing process takes 30 days from the date of initial application. There are no fees associated with this service. The procedure discussed above is illustrated in Figure 2.

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<sup>10</sup> <http://1govportal.imexsystems.net/en-gb/Citizens-Residents/Land%20and%20Construction/Pages/Electricity-Generation-and-Supply-Licence-Application.aspx>



**Figure 2: IPP Licensing Process in Botswana**

Licensed IPPs must submit, to the Minister, annual audited revenue and expenditure accounts, as well as statistical

returns for each year of operation as prescribed in the Regulation Schedules.

### Contact details for Ministry of Minerals, Energy and Water Resources

<b>Physical address</b>	Fairgrounds Office Park (Block C), Plot No 50676, Samora Machel Drive, Gaborone, Botswana
<b>Telephone</b>	+267 364 0200 / 364 0207
<b>Facsimile</b>	+267 397 2738
<b>Email addresses</b>	tmatshameko@gov.bw; tkentse@gov.bw; ead@gov.bw
<b>Website</b>	<a href="http://www.gov.bw/en/Ministries--Authorities/Ministries/Ministry-of-Minerals-Energy-and-Water-Resources-MMWER/Tools--Services/Services--Forms/Electricity-generation-license-Electricity-supply-license/">http://www.gov.bw/en/Ministries--Authorities/Ministries/Ministry-of-Minerals-Energy-and-Water-Resources-MMWER/Tools--Services/Services--Forms/Electricity-generation-license-Electricity-supply-license/</a>
<b>Licence applications to be sent to</b>	The Minister of Minerals, Energy and Water Resources, Private Bag 00378, Gaborone (applications must be made in writing)

### 3 Lesotho

Lesotho is a landlocked country, wholly surrounded by South Africa. The geographical location of Lesotho is presented in Figure 3.



**Figure 3: Location of Lesotho**  
(Source: <http://www.countryreports.org>)

Lesotho’s maximum electricity demand is around 143 MW as experienced in the 2014 financial year. Locally about 56% of this electricity is generated from the Muela hydropower plant. The remainder of the electricity is imported from Eskom in South Africa, making Lesotho very dependent on its neighbouring country to meet its electricity demand.

The Lesotho Electricity Company is the monopoly transmitter, distributor, and remains the sole supplier of electricity in Lesotho. The Lesotho Highlands Development Authority is the main generator of electricity through the Muela hydropower station. The Lesotho Electricity Company and the Lesotho Highlands Development Authority thus

remain the dominant players in the Lesotho electricity sector. Lesotho Electricity Company has bilateral bulk Power Purchase Agreements with Muela and Eskom.

Although Lesotho currently trades exclusively with South Africa’s Eskom, the Lesotho Electricity Company is also full operating member of the Southern African Power Pool, which opens the opportunity for participation in the regional electricity competitive environment. Being a member of the Southern African Power Pool is beneficial for Lesotho as it interconnects the power utilities of the region. However, regional shortages of electricity mean that the required supply of electricity for Lesotho cannot always be guaranteed. In addition, the problem is further compounded by the country’s aged electricity distribution network infrastructure.

Being a member of the Southern African Power Pool should, allow a Lesotho based independent power producer to access other buyers of electricity. However, Lesotho is landlocked in the middle of South Africa and Eskom owns the transmission networks neighbouring Lesotho and consequently access issues arise which would need to be resolved in order for Lesotho based IPPs to sell electricity to other entities other than Eskom.

*Hydro power generation has real potential in Lesotho as has been demonstrated by the Lesotho Highlands Development Authority. Another benefit for the country is its location in the heart of South Africa, where a few of the larger cities of South Africa are nearer Lesotho than they are to some of Eskom's large power stations. This could indicate cost benefit opportunities for transmission requirements.*

### 3.1 Overarching Legislation

The principle legislation related to the electricity sector in Lesotho is the **Lesotho Electricity and Water Authority Act, No. 12 of 2002**. The Act, along with its amendments, requires all persons or entities generating, transmitting, distributing, supplying, importing and exporting electricity to do so under the authority of a licence granted by the Lesotho Electricity Authority. The Act provides that no person may undertake a regulated activity without being in possession of a licence issued by the Lesotho Electricity and Water Authority Act.

People or entities that do not need a licence to generate, transmit, distribute and supply electricity are as follows<sup>11</sup>:

- a person who generates electricity which does not exceed 2 MW;
- a person who distributes electricity which does not exceed 50 kW for domestic consumption;
- a person who, onsite, supplies electricity which he generates or is

<sup>11</sup> <http://www.lewa.org.ls/licensing/Licence%20Application%20rules.pdf>

supplied to him by licensed supplier; or

- a person who generates electricity and supplies it to a consumer who is in the same premises as the generating station.

### 3.2 Requirements to register an IPP

The IPP wishing to apply for an electricity generation licence must complete and submit the official form<sup>12</sup> along with the generation licence application fee of 7 500 Lesotho Maloti <sup>13</sup> , and supporting documentation.

The application for a generation licence must include the following information:

- the particulars of the applicant, along with the particulars of the type of licence being applied for;
- particulars of the proposed generation station, including details on the location (map to be included), whether the station will be connected to the transmission system and details of the electric lines linking, description of the fuelling, the maximum and the aggregate power expected to be available each year along with the generation capacity of each unit for the next five years, and the expected life of the station;

<sup>12</sup> Link to the official electricity generation application form for generation of electricity in Swaziland is found at:

[http://www.sipa.org.sz/images/documents/pdf/sector\\_specific/Application\\_for\\_Licence\\_to\\_Generate\\_Electricity\\_Electricity\\_Act\\_No3\\_of\\_2007.pdf](http://www.sipa.org.sz/images/documents/pdf/sector_specific/Application_for_Licence_to_Generate_Electricity_Electricity_Act_No3_of_2007.pdf)

<sup>13</sup> <http://www.lewa.org.ls/licensing/Licence%20Application%20rules.pdf>

- financial information, including detailed audited annual financial statements and auditor's report for the three most recent years, as well as management accounts and a statement indicating whether the applicant will be able to finance the activities authorised by the licence if the application is granted;
- a business proposal for the next five years, including annual forecasts of costs, sales and revenues and project financing;
- details of any expected substantial capital outflows including decommissioning costs;
- estimates of net annual cash flows for subsequent periods sufficient to demonstrate the financial security and feasibility of the project to which the application relates;
- expected commencement date of the operations;
- a statement indicating whether the applicant has or will acquire the necessary skills to undertake the activities; and
- copies of authorisations or permits including, trader's licence, environmental impact assessment licence and proof of the applicant's right to use land, as well as the power purchase agreement signed by the applicant.

The 'base criteria' for the granting of a licence by the Lesotho Electricity and

Water Authority Act is that the Lesotho Electricity Authority must be satisfied that the prospective licensee has an appropriate financial standing as well as technical and managerial competence. Once the application has been received by the Lesotho Electricity Authority, they shall within 14 days, publish a notice in respect of the application. The notice shall be published in print and electronic media and contain information on: (i) the particulars of the applicant; (ii) type of business applied for; (iii) likely effects of the business on the environment and human health; (iv) area where the business will be conducted.

Once the notice is published, residents within the area who may be directly affected by the licence shall be given an opportunity to make written representations or objections. Residents will be provided a minimum of 28 days (after receipt of the application by the Lesotho Electricity Authority) to make their objections by way of written applications.

### **3.3 Licensing procedure**

The procedure followed during the issuing of a licence by the LEWA in Lesotho is presented in Figure 4.

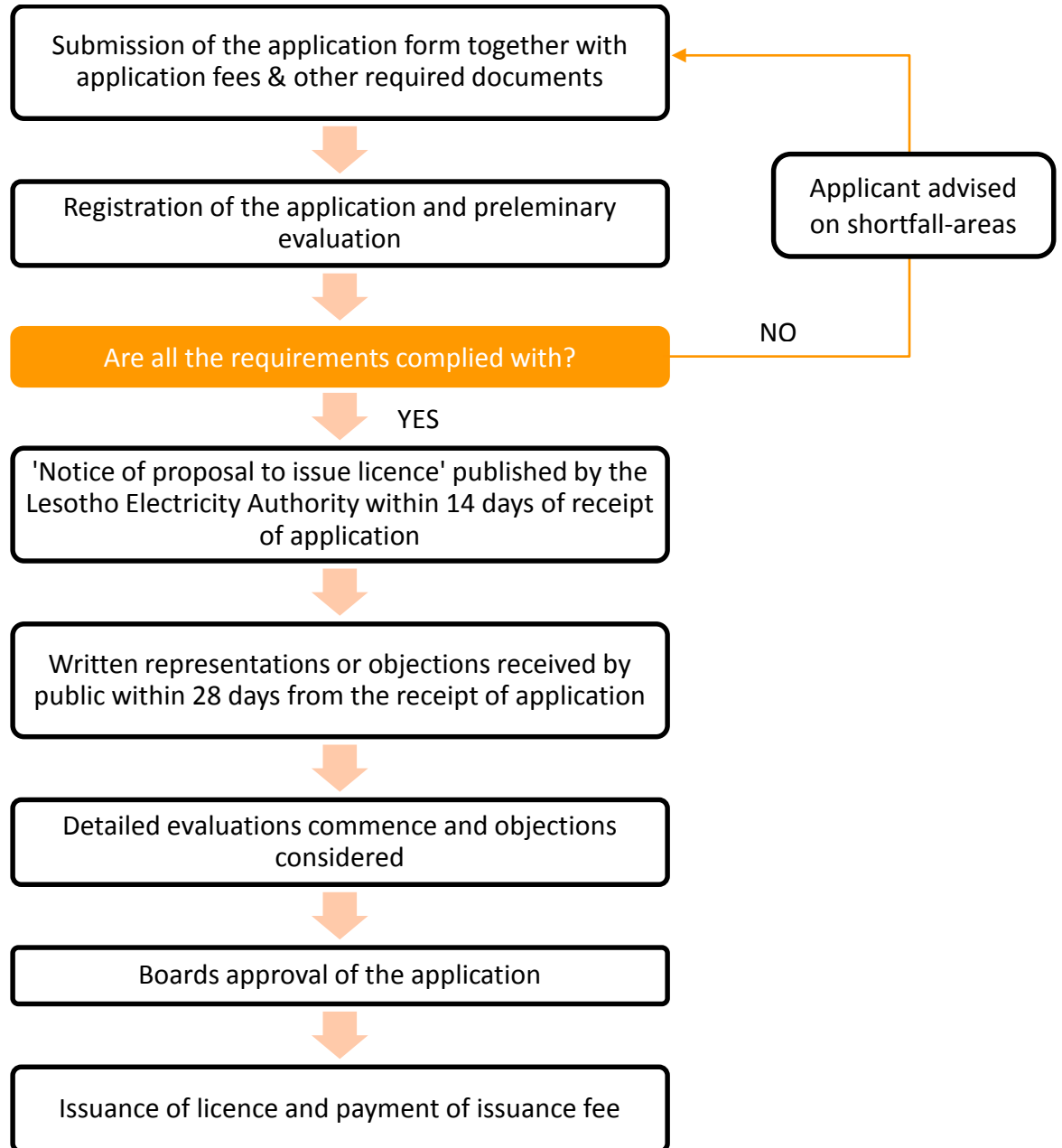


Figure 4: IPP Licensing Process in Lesotho

### Contact details for Lesotho Electricity and Water Authority (LEWA)

<b>Physical address</b>	7th Floor, Moposo House, Kingsway, Maseru, Lesotho
<b>Telephone</b>	+266 2231 2479
<b>Facsimile</b>	+266 2231 5094
<b>Email address</b>	secretary@lewa.org.ls
<b>Website</b>	www.lewa.org.ls
<b>Licence applications to be sent to</b>	Chief Executive: Zimbabwe Energy Regulatory Authority Private Bag A315 Maseru 100 Lesotho

## 4 Malawi

Malawi is a landlocked country in south eastern Africa, bordered by Mozambique, Zambia and Tanzania (Figure 5).



**Figure 5: Location of Malawi**  
(Source <http://www.countryreports.org>)

The country is characterised by critical electricity shortages and has one of the lowest electrification rates in Africa. Less than 10% of the population has access to electricity, largely generated from hydro sources<sup>14</sup>. Malawi has however published its intention to reduce its greenhouse gas emissions, as per its contribution to global climate change mitigation efforts. It is anticipated that this will support investments in renewable energy IPPs.

The state-owned and vertically integrate utility, the Electricity Supply Corporation of Malawi (ESCOM), completely dominates the Malawian electricity sector. The utility is currently being

unbundled into two separate entities: one for generation and the other for transmission and distribution. This unbundling is aimed at stimulating competition and private investment within electricity generation.

IPPs may only sell their electricity to the utility and not directly to consumers. As yet, no IPPs are operational in the country. The regulatory environment is still developing and there is no clarity as yet regarding IPPs access to the electricity grid or what tariffs they may be able to receive<sup>15</sup>.

### 4.1 Overarching Legislation

The principle legislation related to the electricity sector in Malawi is the **Electricity Act, No. 22 of 2004**. The Act prohibits the generation of electricity for sale, transmission, supply, distribution, importation and export without a licence issued under the terms described in the document. No licensee can be granted more than one type of licence.

*The policy and energy laws in Malawi encourage the participation of the private sector in electricity generation and distribution. The Ministry drafted the Feed-In Tariff Policy in 2012 to guide private sector investment within the market, however, to date it has not been published<sup>16</sup>.*

<sup>14</sup> *Electricity in Malawi, January 2014, Available at: <http://ogjresearch.stores.yahoo.net/electricity-in-malawi.html>*

<sup>15</sup> *As above*

<sup>16</sup> *Climate Scope 2015 – The Clean Energy Country Competitiveness Index, Multilateral Investment Fund (MIF), Available at: <http://global->*

There are reports to suggest that further developments can be expected in the Malawi regulatory environment. However, uncertainty remains in key areas such as IPPs' access to the electricity grid and what tariffs IPPs could receive<sup>17</sup>.

## 4.2 Requirements to register an IPP

The applicant wishing to apply to the Malawi Energy Regulator Authority for an electricity generation licence must complete and submit the official form<sup>18</sup> and supporting documentation which the Regulator records and captures in a registry. The application for the licence must be accompanied by a licence application fee and a schedule of the proposed tariffs which a licensee intends to charge customers. It is required that all generators must sign power sale agreements with the transmission company for sale of their power at a price to be agreed between the parties, but approved by the Malawi Energy Regulatory Authority.

The application form must include the following information:

- the particulars of the applicant;
- the particulars of the licence application type, commencement date, purpose and duration of licence;

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*climatescope.org/en/country/malawi/#/details, Bloomberg New Energy Finance*

<sup>17</sup> *Electricity in Malawi, January 2014, Available at: <http://ogjresearch.stores.yahoo.net/electricity-in-malawi.html>*

<sup>18</sup> *Link to the official electricity generation application form for sale of electricity in Malawi can be found at: [http://www.meramalawi.mw/documents/application\\_form\\_electricity\\_generation\\_sale.pdf](http://www.meramalawi.mw/documents/application_form_electricity_generation_sale.pdf)*

- the particulars of the generation station, including the type of facility, the expected commissioning date, installed capacity, life of plant, generating capacity expected, and energy conversion efficiencies;
- the particulars of any long term arrangements with energy suppliers;
- details of the generation business including maintenance programmes, expected rehabilitation and modification information for five years, details of the expansions expected on the facility, particulars of power sales agreements and tariffs, as well as expected availability;
- detailed financial information, including income statements, investment programme for current and the next five years, summary of the fixed assets, copies of the latest audited accounts and reference letters from local and international banks;
- provide information on human resources, along with curriculum vitae of the top management personnel of the applicant;
- provide information of the potential negative impact of the generation facility on the environmental, along with mitigation measures as well as copy of the approved environmental mitigation plan (if any);
- submit copies of the permits required from other government departments or regulatory authorities<sup>19</sup>;

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<sup>19</sup> A list of these departments and authorities can be found at the following web address: <http://www.meramalawi.mw/documents/Energy%2>



- attach a copy of the advertising notice and a copy of the newspaper it was published in. The advertisement must have been published at least 14 days prior to submitting the licence application to the Regulator and must comprise details of the proposed licensee and the project so as to enable affected parties to raise objections with the Regulator; and
- provide a schedule of the proposed tariffs.

All applications shall be submitted using prescribed application forms provided by the **Electricity by-laws 5 & 7 of 2008**<sup>20</sup>. The application is submitted along with the application fee of K 50 000<sup>21</sup> (Malawian Kwacha) for the issuance of a new license. Applications are accepted only when they comply with the application requirements described above.

### 4.3 Licensing procedure

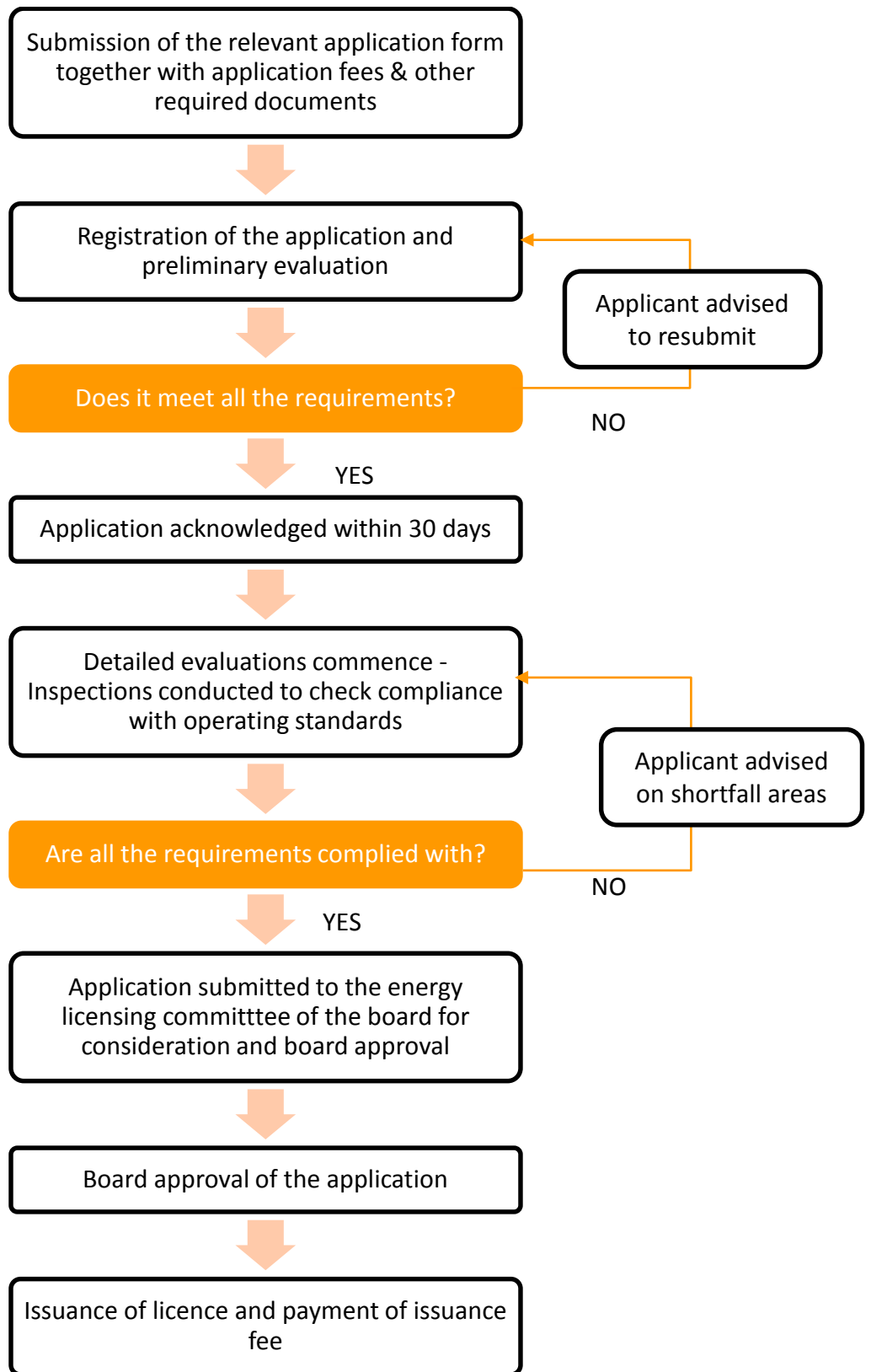
The procedure to obtain a licence to generate electricity from the Malawi Energy Regulator Authority is outlined in Figure 6.

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0Licences%20-%20Application%20Procedures%20%282%29.pdf

<sup>20</sup> *Link to the official electricity generation application form for sale of electricity in Malawi can be found at:*  
[http://www.meramalawi.mw/documents/application\\_form\\_electricity\\_generation\\_sale.pdf](http://www.meramalawi.mw/documents/application_form_electricity_generation_sale.pdf)

<sup>21</sup> [http://www.meramalawi.mw/documents/licensing\\_fees\\_schedule.pdf](http://www.meramalawi.mw/documents/licensing_fees_schedule.pdf)



**Figure 6: IPP Licensing Process in Malawi**

## Contact details for Malawi Energy Regulatory Authority (MERA)

<b>Physical address</b>	2 <sup>nd</sup> Floor, Development House, City Centre, Lilongwe, Malawi
<b>Telephone</b>	+265 1 775 810
<b>Facsimile</b>	+265 1 772 666
<b>Email</b>	mera@meramalawi.mw
<b>Website</b>	www.meramalawi.mw
<b>Licence applications to be sent to</b>	Malawi Energy Regulatory Authority (MERA) Private Bag B496 Capital City Lilongwe 3, Malawi

## 5 Mozambique

Mozambique is located on the south-eastern side of the African continent. Mozambique is bordered by Tanzania to the north, the Indian Ocean to the east, Malawi and Zambia to the northwest, South Africa and Swaziland to the south and Zimbabwe to the west. A geographical representation of Mozambique is presented in Figure 7.



**Figure 7: Location of Mozambique**  
(Source <http://www.countryreports.org>)

The country's electricity sector is still dominated by the two large state players: the vertically integrated utility, Electricidade de Moçambique and Hidroeléctrica de Cahora Bassa, the large hydro facility that continues to generate the bulk of the electricity consumed by the country.

Electricidade de Moçambique was originally developed as a quasi-monopoly of the generation, transmission and distribution of energy in Mozambique. Since the enactment of the Electricity Act in 1997, the utility has been unbundled, to

a degree. Provision for participation by the private sector and third party access to the grid have also been formalised in the regulations. Private organisations are required to bid for concessions or licences for any activities in the electricity value chain (generation, transmission, distribution and supply).

Mozambique has also published its intention to reduce its greenhouse gas emissions and increase access to renewable energy sources through various policies and measures, as per its contribution to global climate change mitigation efforts. It is anticipated that this will support investments in renewable energy IPPs.

### 5.1 Overarching Legislation

There are a number of key regulations pertaining to the licensing of activities in the electricity value chain in Mozambique. The following is a snapshot of the relevant statues relating to new builds in the electricity sector.

**The Electricity Act**, enacted in 1997, is the overarching legislative framework for the electricity sector in Mozambique. The Law sets out the terms of the concession contracts that are awarded for the development of power projects. Hydroelectric power projects are typically provided an initial term of 50 years and all other cases are given terms of 25 years.

*The Law also allows for the participation of Independent Power Producers in the sector, and related third party access to the grid (owned and operated by Electricidade de Moçambique). In addition, the Electricity Act sets out a 'transit tariff' for third-party use of transmission and distribution facilities, which is not regulated.*

The processes for concession applications and approvals are governed by the **Energy Concessions Regulation**. All state entities are required to follow the **Procurement Regulations**, should they be involved in applying for a concession. The regulations are designed to ensure transparency, equality, competitiveness, impartiality and sound financial management by the government.

The **National Transmission Grid Regulation** allows and regulates third party access to the electrical networks. With regards to transmission concessionaires, this regulation requires that the set rates must:

- assure non-discriminatory treatment of consumers;
- assure the coverage of costs consistent with 'standard costs';
- stimulate new investment in the expansion of electrical systems;
- induce the use of electrical systems;
- minimise the costs for expansion or use of electrical systems; and
- be fixed between the generation and energy supply concessionaires.

For distribution concessionaires, the regulations require that a tariff for use of the distribution system must also be set.

## 5.2 Requirements to register an IPP

All companies that wish to operate in Mozambique must obtain a commercial licence and/or an industrial licence, as applicable, from the Ministry of Industry and Commerce.

Concessions are required to construct or operate power plants in Mozambique. This includes facilities that are to be developed and operated for own-use. Environmental licences are required should the projects have significant negative environmental impacts. Such licences must be issued prior to the application requests of any other licences required for proposed projects.

The granting of concessions is subject to a public procurement process, as per the Energy Concessions Regulation. Bids are evaluated by the procuring authority and the electricity regulator, Conselho Nacional de Electricidade (CNELEC). Plants that have a power output greater than 100 MVA require approval by the Council of Ministers.

Potential investors are required to demonstrate a number of key criteria in their bids. These include assurances that the economic and social benefits of the proposed project outweigh any environmental impacts, that the tariff is fair and reasonable, and that the proposed plant's capacity corresponds to the overall planning for the transmission system to which it will be connected. Technical and financial details are also required. Hydroelectric projects in particular require additional information

on the use of the water resources. Public consultation processes are required for projects that require land use rights.

### **5.3 Licensing procedure**

The authorities with licensing powers are responsible for the call for concession applications. Bidders submit their concession applications to CNELEC as per the format, content and processes required by the relevant regulations.

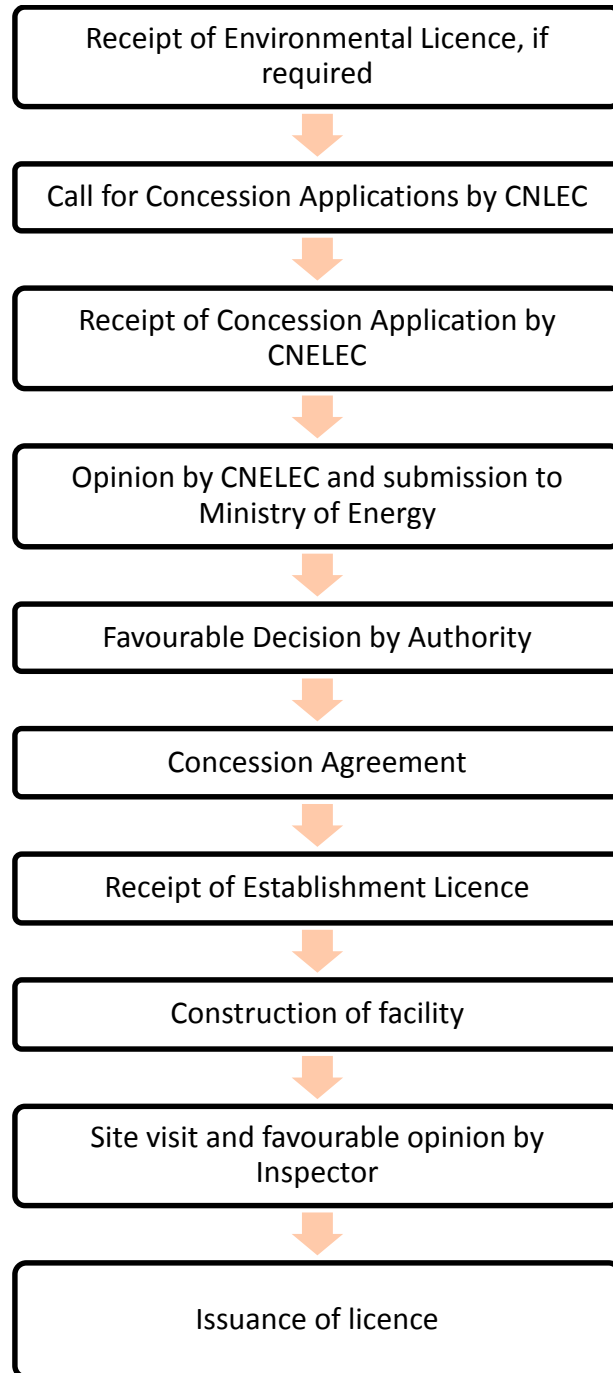
CNELEC issues an opinion on the subject and the application is subsequently forwarded to the Ministry of Energy. The Ministry issues a decision within 15 days of receipt of the application. The decision may be subject to various conditions, such as expropriation or the granting of land use rights.

The parties may enter into a concession agreement once a favourable decision is reached by the authority. The concession agreement will typically contain the terms relating to duration, applicable taxes and tariffs, conflict resolution mechanisms, guarantees, reversion and applicable laws.

The agreement must also include a draft of the agreement to be signed by the National Transmission Network Operator.

Prior to the initiation of construction activities, electricity facilities must also obtain establishment and operation licences which are granted by the Ministry of Energy. Proof of concession and the technical features of the facilities must be submitted with the application, in addition to any other documentation requested by the Ministry of Energy. The Ministry will issue a decision in 15 days of receipt of the application. If granted, the approval notice is published as an edict in the Official Gazette. Construction of the facility may then begin. Once construction is complete, the licence will be issued following a final site visit and favourable opinion from the competent inspector. The IPP will then have legal licence to operate and supply power to the grid as required.

The procedure discussed above is illustrated in Figure 8.



**Figure 8: IPP Licensing Process in Mozambique**

### Contact details for Conselho Nacional de Electricidade (CNELEC)

<b>Physical address</b>	Rua Carlos Albers No.41, Maputo, Mozambique
<b>Website</b>	<a href="http://www.cnelec.org.mz/">http://www.cnelec.org.mz/</a>

### Contact details for Fundo de Energia (FUNAE)

<b>Physical address</b>	Rua da Imprensa, 256 6 <sup>th</sup> Floor, doors 607-610, Maputo, Mozambique
<b>Telephone</b>	+258 2130 4717/20
<b>Facsimile</b>	+258 2130 9228
<b>Website</b>	<a href="http://www.funae.co.mz/">http://www.funae.co.mz/</a>



## 6 Namibia

Namibia is situated on the west coast of the southern tip of Africa. It is bordered to the south by South Africa, to the east by Botswana and to the north by Angola (Figure 9).



Figure 9: Location of Namibia, Source <http://www.countryreports.org>

Namibia's maximum electricity demand is around 657 MW and the country is heavily reliant on electricity imports from neighbouring countries. Electricity imports amounted to 58%<sup>22</sup> of the country's consumption in the 2015 financial year. Namibia generated 42% of its own power during the 2015 financial year, which was mainly supplied by the Ruacana hydro power plant.

The Namibian electricity sector is dominated by the Namibia Power Corporation (NamPower) (Proprietary) Limited. NamPower is a vertically integrated electricity utility with responsibility over electricity generation,

transmission, import and export, trading and to a limited extent distribution. Recently, with the intention of reforming the Namibian electricity market, regional electricity distributors (REDs) were created within the country. The REDs (NORED, CENORED and Erongo RED), along with other electricity distribution entities (local authorities, regional councils and village councils), are responsible for the distribution and supply of electricity.

*Namibia's electricity market model is currently in an evolutionary state. Although the country has a de facto modified single buyer market model, it is currently pursuing a modified single buyer model, which permits small IPPs to sell power directly to NamPower, REDs and large power users such as mines. Exports and imports are currently exclusive to NamPower.*

Currently Namibia does not have many IPPs. In order to attract renewable energy IPPs, country has developed a renewable energy procurement mechanism which is currently in implementation phase. The mechanism recommended tendering for renewable energy projects greater than 5 MW, a renewable energy feed in tariff for projects less than 5 MW but greater than 500 kW, and net metering for solar rooftop projects.

In this regard, Namibia tendered for three solar plants of 10 MW each. The Renewable Energy Feed in Tariff programme includes 14 IPPs for landfill, small hydro, small wind and biomass

<sup>22</sup> NamPower Annual Report 2015

energy resources (less than 5 MW). Furthermore the first Namibian IPP to feed power into the NamPower system, Omburu Sun Energy, was commissioned in May 2015 with a capacity of 4.5 MW. This was followed by a 5.6 MW plant developed by HopSol feeding into the CENORED distribution system.

Other recommendations such as soft loans and tax incentives are also being considered, to further promote other IPP projects.

## 6.1 Overarching Legislation

The principle legislation related to the electricity sector in Namibia is the **Electricity Act 4 of 2007**. The Act prohibits generation, trading, transmission, supply, distribution, importation and export of electricity without a licence issued under this Act. A separate licence is required for each of these activities. A generation licence for an IPP must be obtained before commencement of construction of the project and prior to signature of a power purchase agreement (PPA).

## 6.2 Requirements to register an IPP

The applicant wishing to apply for an electricity generation licence to the Regulator (the Electricity Control Board of Namibia) must complete and submit the official form <sup>23</sup> and supporting documentation which the Regulator

records and captures in a registry. The application must be accompanied by the prescribed fee<sup>24</sup> and must include:

- the particulars of the licence application type;
- the particulars of the applicant;
- information regarding the geographical area to which the application relates. An accurate map clearly indicating the boundaries where the plant will be situated is required for the issue of a licence;
- a description of the proposed facility. This includes the type of power station, installed and generation capacity, expected life of the plant and an operational plan;
- the particulars of any long term arrangements with primary energy suppliers;
- details of the maintenance programme and decommissioning costs;
- the particulars of the customer to be served and their power profile, along with details of the distribution of the electricity to the customer; and
- detailed financial information, including a business plan, proposed tariffs and if there is a power purchase agreement<sup>25</sup>, this must first be approved by the Regulator before signature.

Besides the application to the Electricity Control Board, the applicant is also

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<sup>23</sup> Link to the official generation application form. Click on Documents, and then select Generation License Application:  
[http://www.ecb.org.na/index.php?option=com\\_content&view=article&id=33&Itemid=1061](http://www.ecb.org.na/index.php?option=com_content&view=article&id=33&Itemid=1061)

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<sup>24</sup> N\$500 for application fee. With an additional N\$1000 required if the licence is granted and issued.

<sup>25</sup> If the license applicant is independent of Namibia Power Corporation (NamPower), a Power Purchase Agreement (PPA) with NamPower or Regional Electricity Distributor (RED) will be required.

required to publish an advertisement comprising details of the proposed licensee and the project so as to enable affected parties to raise objections with the Regulator. The Regulator will then consider the application along with any objections, or before doing so, conduct a public hearing. The public hearing allows the Regulator to take into account all concerns of stakeholders.

During this process the Minister of Mines and Energy or the Regulator may request the applicant to submit an Environmental Impact Assessment study. Construction and operation of power plants will require environmental clearance under the Environmental Management Act, 2007<sup>26</sup>.

The Regulator may request details of the technical and financial resources available to the applicant to execute the work, to operate the system and to carry on the business. In addition, the Minister of Mines and Energy or the Regulator may take into consideration the extent to which the activities of the applicant will or may be detrimental to the rights and operation of other licensees or their customers in their area of operation, the ability of the applicant to provide an effective service to customers, and whether the grant or refusal of the application in question is in the interest of the public.

Once all documents are received, the Regulator must submit the application and any objection along with its recommendations to the Minister of

Mines and Energy. The Regulator should include any conditions which it recommends should be imposed in relation to the licence. The Minister of Mines and Energy may then either grant or refuse an application for the issuance of a licence. If the licence is declined, the Minister must inform the applicant in writing with reasons for its rejection. If an application is granted, the Regulator must issue the licence.

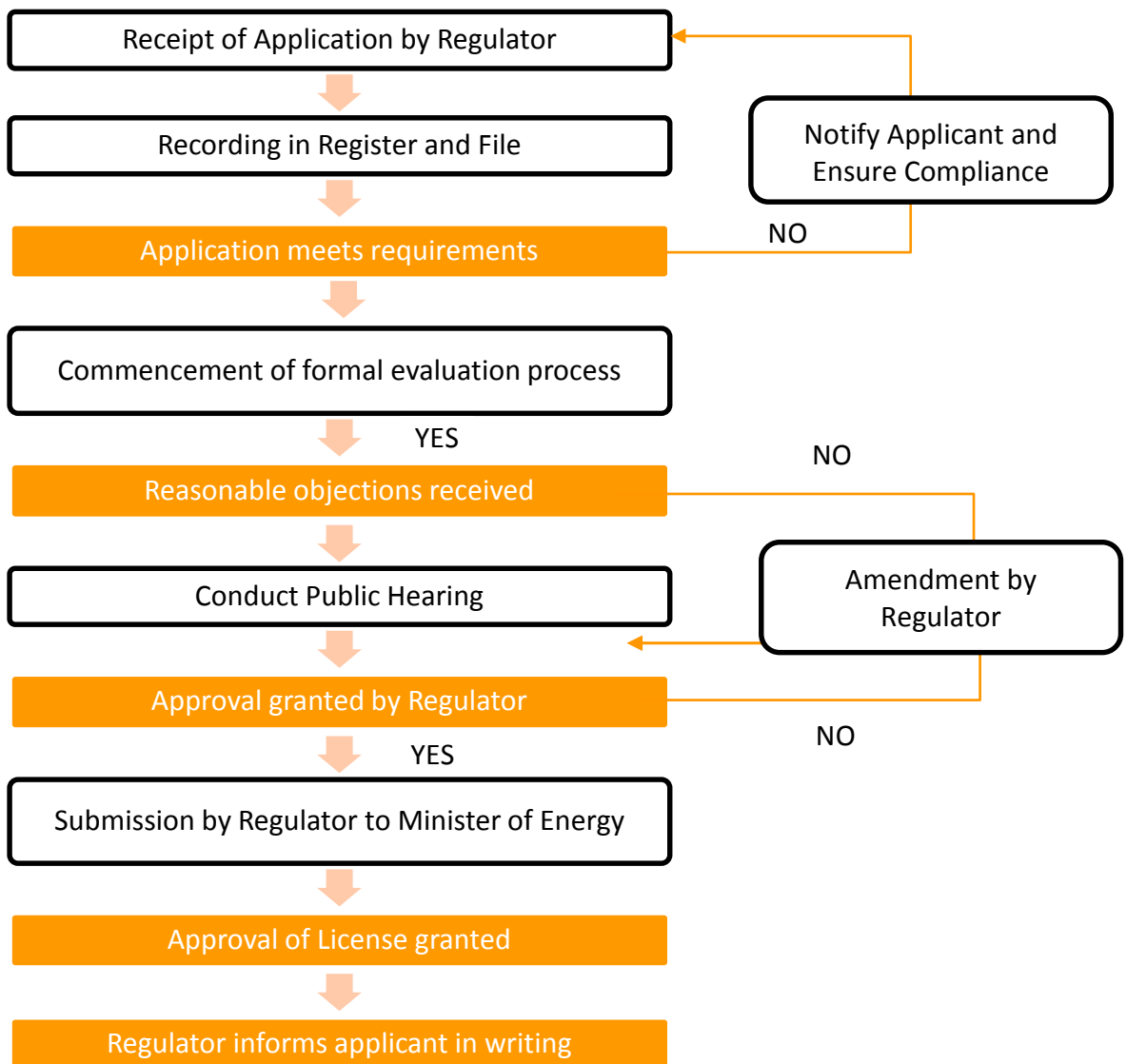
Included in the issuing, the Regulator must specify the particular activity authorised by the licence, define the area in respect of which the licence is issued, contain or have attached to it any conditions imposed in relation to the licence and if applicable, contain a schedule specifying the approved tariffs that may be charged by the licensee for the provision of electricity to different classes of customers.

### **6.3 Licensing procedure**

The procedure followed during the issuing of a licence by the Minister of Mines and Energy in Namibia is presented in Figure 10.

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<sup>26</sup> Investing in the African electricity sector – Namibia, Norton Rose Fulbright



**Figure 10: IPP Licensing Process in Namibia**

In the event of a rejection, the applicant can appeal in writing to the Minister of Mines and Energy for a re-evaluation. In case of an approval, the Minister instructs

the Electricity Control Board to issue the license document, with the necessary conditions.

## Contact details for the Electricity Control Board (ECB)

<b>Physical address</b>	ECB House, 8 Bismarck Street, Windhoek, Namibia
<b>Telephone</b>	+264 61 374 300
<b>Facsimile</b>	+264 61 374 305
<b>Email</b>	info@ecb.org.na
<b>Website</b>	<a href="http://www.ecb.org.na">http://www.ecb.org.na</a>
<b>Licence application to be sent to</b>	P.O. Box 2923 Windhoek Namibia

## 7 South Africa

South Africa is the southernmost country in Africa. The south and south-western coastline of South Africa is bounded by the South Atlantic Ocean while the eastern coastline is bounded by the Indian Ocean. South Africa shares borders with Namibia to the northwest, Botswana and Zimbabwe to the north, Mozambique and Swaziland to the northeast and surrounds Lesotho. A geographical representation of South Africa is presented in Figure 11.



**Figure 11: Location of South Africa**  
(Source <http://www.countryreports.org>)

The electricity sector in South Africa was historically dominated by the state-owned utility, Eskom. Eskom was mandated as the country's only large-scale generator, which owns the transmission network and half the distribution networks in the country.

The sector has since opened up to new IPPs with a view to creating competition in the market. South Africa has a comparatively large number of operational renewable energy IPPs.

*The White Paper on Energy Policy, 1998 (Act 34 of 2008), is of particular relevance as it formally promotes the introduction of independent power producers as a means to create competition in the electricity supply industry.*

### 7.1 Overarching Legislation

**The Nuclear Energy Act, 1999 (Act 46 of 1999)** provides for the establishment of the National Energy Corporation of South Africa and defines its functions, powers, financial and operational accountability, governance and management. The Act also authorises the Minister to set regulations for the acquisition, possession, import and export of nuclear fuel, nuclear and related material and equipment.

**The Electricity Regulation Act, 2006 (Act 4 of 2006)** established a national regulatory framework for the electricity supply industry to be enforced by the National Energy Regulator of South Africa.

**The National Energy Act, 2008 (Act 34 of 2008)** was legislated to ensure that the country's range of energy resources are available in sustainable quantities and at affordable prices by mandating the Minister of Energy's responsibility to produce an Integrated Energy Plan. The Act also provides for the increased use of renewable energies, contingency energy supplies, the holding of strategic energy feedstock and carriers, and adequate investment in energy infrastructure. It also legislates the South African National

Energy Research Institute, its purpose and structure.

## **7.2 Requirements to register an IPP**

IPPs in the country typically fall into one of the following categories: Coal, Renewable Energy and Nuclear. Licences are required for generation, transmission and distribution facilities, as well as activities relating to electricity import, export or trading. Exemptions from licensing include demonstration plants (not connected to an inter-connected power supply); generation for own use and off-grid facilities (unless these are for commercial use). However, such licence-exempted activities may be required to register with the Regulator, unless otherwise determined by the Minister.

The typical terms of generation or transmission licences vary but are generally provided for a minimum of 15 years. The term of distribution or trading licences varies more widely and will depend on the particular licence application.

Any person or entity that holds a relevant licence is considered as registered with the Regulator. The Regulator must therefore issue said person or entity with a registration certificate, without requiring said licence holder to comply with the prescribed registration procedure.

Currently, all IPPs wishing to obtain licences from the National Energy Regulator of South Africa in order to generate power must be selected as

preferred bidders under the Department of Energy's Renewable Energy IPP Procurement Programme (REI4P). Eskom is nominated as the sole buyer in this regard and the tariff is approved by the Department.

Thus far, the Minister of Energy has mandated the generation of 6 925 MW under the Large Project Programme. The country's Integrated Resource Plan makes provision for the generation of 17.8 GW of renewable energy by 2030, to be commissioned under the REI4P.

A Small Projects REI4P (for projects between 1 MW - 5 MW) was also launched recently and the preferred bidders were announced under the first Bid Window in 2015. The aim of this programme is to generate 100 MW from small scale producers.

Similar procurement programmes for cogeneration and coal IPPs are also in the process of development.

The cogeneration IPP procurement programme has been designed to procure the target of 800 MW of energy generation capacity from cogeneration. The projects under this programme include those relating to waste to energy, combined heat and power and industrial biomass. The requests for bids have been closed for the first and second rounds of the cogeneration procurement programme, and the announcement of the preferred bidders is expected in 2016.

The Coal Baseload IPP Procurement Programme aims to procure 2 500 MW of electricity from coal fired power stations, with individual bids capped at 600 MW

per project. It is expected that the preferred bidders of the first bid window will be announced in 2016.

### 7.3 Licensing procedure

All IPPs must obtain an Environmental Authorisation from the Department of Environmental Affairs. The requirements of the authorisation are subject to the National Environmental Management Act: Environmental Impact Assessment Regulations of 2014. Subsequent to the initiation of the REI4P, the Department has also published a Guideline in this regard, specifically for renewable energy projects<sup>27</sup>.

Similarly, all prospective IPPs must apply for Water Use Licences with the Department of Water and Sanitation.

Licences are required for generation, transmission and distribution facilities, the import or export of electricity, trading or any other related activities. While South Africa has an extensive renewable energy programme (the REI4P) currently in place, which has considerable requirements with regards to the bidding process, the ultimate licensing application procedure for the development of renewable power facilities remains the same as for coal IPPs. The detailed conditions for licence applications may be found in the Electricity Regulation Act, 2006 (Act 4 of 2006) and on the Regulator's website: [www.nersa.org.za](http://www.nersa.org.za). The following is a summary of these requirement and procedures. The process to apply for a

licence to develop a nuclear facility is very different and not discussed in this document.

Persons wishing to apply to the Regulator for a licence must complete and submit the official form<sup>28</sup> and supporting documentation which the Regulator records and captures in a registry. The application must be accompanied by the prescribed fee and must include, among other items, a description of the proposed facility or proposed service, a general description of the type of customer to be served, the proposed tariff and full details of the applicant. Documentary evidence of the administrative, financial and technical abilities of the applicant is also required by the Regulator. The ability of the applicant to comply with applicable labour, health, safety and environmental legislation, subordinate legislation and such other obligations is also required.

When application is made for a licence, the Regulator may require proof of a public consultation process in the form of notices published in appropriate newspapers or media circulating in the area, in at least two official languages. The Regulator's Internal Processing Team assesses the information provided and makes recommendation to proceed.

The public may also address queries or objections to the Regulator, which will allow the applicant the opportunity to respond. The period in which the public

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<sup>27</sup> <http://pmg-assets.s3-website-eu-west-1.amazonaws.com/140911eiaguideline.pdf>

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<sup>28</sup> <http://www.nersa.org.za/Admin/Document/Editor/file/Electricity/Application%20Form/Electricity%20generation%20licence%20application%20form.pdf>



may lodge objections is typically 30 days<sup>29</sup>. The Regulator may request additional information from the applicant in order to consider the application properly.

After an evaluation of the information supplied by the applicant, the Regulator will undertake an inspection *in loco* (site visit) to verify the details provided. Following the site visit and resolution of any outstanding queries or concerns, the Regulator must schedule and hold a public hearing. Notices of the hearing must be communicated to the public via two national newspapers.

Following the outcome of the public hearing, the application is considered by the Electricity Subcommittee at a subsequent Energy Regulator meeting and a decision is reached. The Regulator must make its decision available to the public together with its reasons for such decision. Should the application be approved, the Regulator must issue the relevant licence, signed by the Regulator's Chief Executive Officer. The licence will then be published on the Regulator's website: [www.nersa.org.za](http://www.nersa.org.za).

The timeframe in which the Regulator must decide on an application is 120 days after the expiration of the period given in the newspaper or media notice, or alternatively 120 days after receiving additional information requests to consider any objections during the public consultation process. The period in which the public may lodge objections is during the typically 30 days.

Separate licences must be issued for:

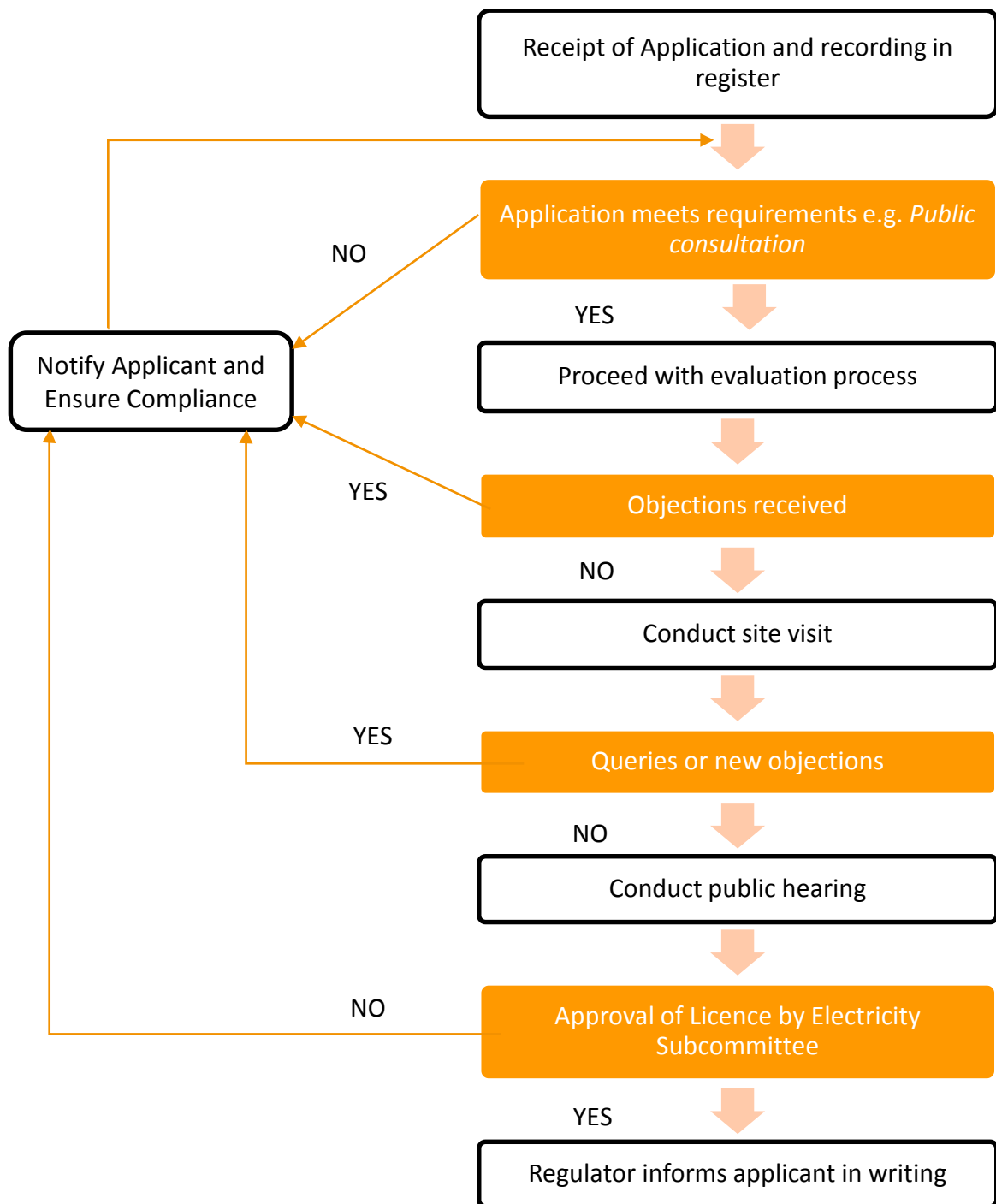
- the operation of generation, transmission and distribution facilities;
- the import and export of electricity; or
- trading.

The Regulator may issue only one licence per applicant for each of the activities described above.

A graphic representation of the procedure to be followed by the applicant and the Regulator with regards to the issuance of a licence in South Africa is presented in Figure 12.

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<sup>29</sup> Nersa 2012. Internal Electricity Distribution Licence Procedure



**Figure 12: IPP Licensing Process in South Africa**

## Contact details for National Energy Regulator of South Africa (NERSA)

<b>Physical address</b>	Kulawula House 526, Madiba (former Vermeulen) Street Arcadia, Pretoria
<b>Telephone</b>	+27 12 401 4600
<b>Facsimile</b>	+27 12 401 4700
<b>Email address</b>	info@nersa.org.za
<b>Website</b>	<a href="http://www.nersa.org.za/">http://www.nersa.org.za/</a>
<b>Licence applications to be sent to</b>	P.O. Box 40343 Arcadia 0007 South Africa

## Contact details for Renewable Energy Independent Power Producer Procurement Programme (REI4P)

<b>Email address</b>	query@ipp-renewables.co.za
<b>Website</b>	<a href="http://www.ipprenewables.co.za/">http://www.ipprenewables.co.za/</a>
<b>Registration</b>	<a href="http://www.ipprenewables.co.za/cms/registration#gong/user/registration/registration">http://www.ipprenewables.co.za/cms/registration#gong/user/registration/registration</a>



## 8.1 Overarching Legislation

The principle legislation related to the electricity sector in Swaziland is the **Electricity Act of 2007**. Any entity generating, transmitting, performing the functions of integrated power system operator, off-grid and mini-grid supplies of electricity, distributing or supplying and importing or exporting of electricity into or out of the country is required to be licensed by the Swaziland Energy Regulatory Authority.

People or entities that do not need a licence to generate, transmit, distribute and supply electricity are as follows<sup>34</sup>:

- any person who generates, transmits or distributes electricity for his own use;
- any person who sells less than 1 GWh of electricity per year to customers;
- off-grid and mini-grid schemes specifically exempted by the Minister under the statutory ministerial powers provided for within the Energy Act.

However, the Swaziland Electricity Company is authorised by the Regulator to be the sole transmitter of electricity within the country<sup>35</sup>.

## 8.2 Requirements to register an IPP

The applicant wishing to apply to the regulator for an electricity generation licence must complete and submit the

official form <sup>36</sup> and supporting documentation.

The application for a generation licence must include the following information:

- the particulars of the licence application type, commencement date, purpose and duration of licence;
- the particulars of the applicant, including vertical and horizontal relationships with other persons engaged in generation, transmission, distribution or supply activities, or the import or export of electricity;
- geographical area to which the application relates, a description of the technical design of the generation facility to be constructed, including maps and diagrams where appropriate as well as a calculation of the net present value of the proposed plant and any alternative plants;
- the particulars of the generation station, including the type of facility, the expected commissioning date, installed capacity, life of plant, generating capacity expected, and energy conversion efficiencies;
- the particulars and copies of any long term arrangements with primary energy suppliers;
- details of the generation business including maintenance programs, expected rehabilitation and modification information for five years, details of the expansions

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<sup>34</sup> <http://www.sec.co.sz/aboutus/legislation/index.php>

<sup>35</sup> <http://www.observer.org.sz/news/69568-power-generation-applications-flooding-sera.html>

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<sup>36</sup> Link to the official electricity generation application form for generation of electricity in Swaziland is found at:  
[http://www.sipa.org.sz/images/documents/pdf/sect\\_or\\_specific/Application\\_for\\_Licence\\_to\\_Generate\\_Electricity\\_Electricity\\_Act\\_No3\\_of\\_2007.pdf](http://www.sipa.org.sz/images/documents/pdf/sect_or_specific/Application_for_Licence_to_Generate_Electricity_Electricity_Act_No3_of_2007.pdf)

expected on the facility, particulars of power sales agreements and tariffs, as well as expected outages;

- the particulars of the person to whom electricity will be provided, along with the particulars of the distribution of the electricity;
- financial information, including detailed audited annual financial statements consisting of a balance sheet, income statement and cash flow statement for each licensed activity;
- an outline of the intended operational and business plan of the applicant, including an estimate of the expected income and expenditure of the relevant undertaking as well as project financing details; and
- a copy of the advertisement which was published in the newspaper.

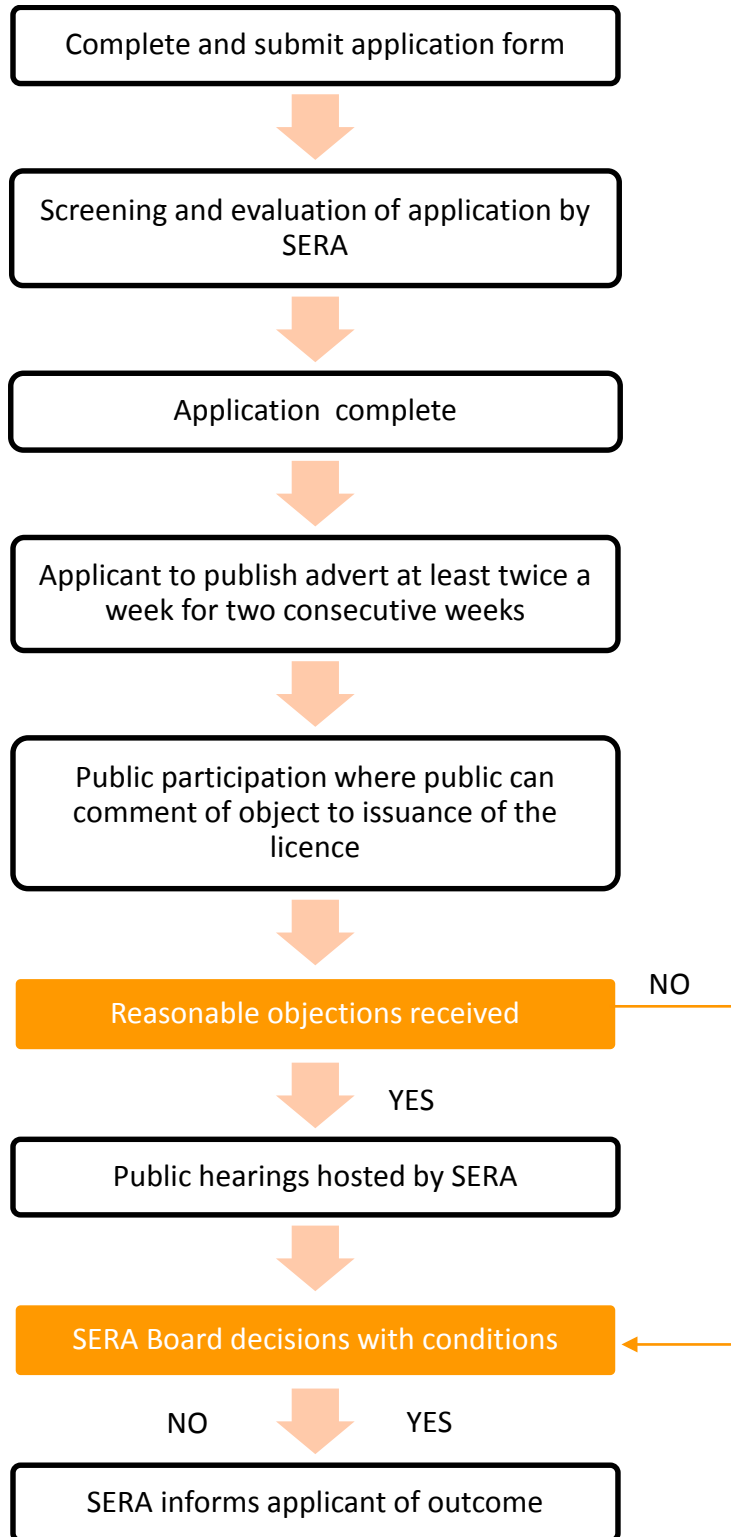
The applicant must publish an advertisement of the proposed generation facility in at least one national newspaper circulating in the area where the licensed

activities will be performed. The advertisement must be published at least twice a week for two consecutive weeks. It must provide a brief summary of the activity to be performed; it must specify that any interested person may provide comment on or object to issuance of the licence to the Regulator in writing within 30 days of such publication; and it must indicate clearly the physical address or website where further detailed information can be obtained.

The Regulator may hold public hearings to canvass the opinion of interested parties on the application for the issuing, renewal, transfer or revocation of a licence. This then follows the Regulator's Board decision process, where an applicant may be issued or denied a licence.

### **8.3 Licensing procedure**

The procedure followed during the issuing of a licence by the Regulator in Swaziland is presented in Figure 14.



**Figure 14: IPP Licensing Process in Swaziland**

## Contact details for the Swaziland Energy Regulatory Authority (SERA)

<b>Physical address</b>	192, SoMhlolo Road, Mbabane, Swaziland
<b>Telephone</b>	+268 2404 2103
<b>Facsimile</b>	+268 2404 8474
<b>Email address</b>	sera@swazi.net
<b>Website</b>	<a href="http://www.sera.org.sz">www.sera.org.sz</a>
<b>Licence applications to be sent to</b>	P.O. Box 7137 Mbabane H100 Swaziland



## 9 Zambia

The Republic of Zambia is located in the Northern part of the Southern African region. It is a landlocked country and shares borders with the following countries: The Democratic Republic of the Congo to the north, Tanzania to the north-east, Malawi to the east, Mozambique to the south-east, Zimbabwe and Botswana to the south, Namibia to the south-west and Angola to the west. The geographic location of Zambia is presented in Figure 15.



**Figure 15: Location of Zambia**  
(Source <http://www.countryreports.org>)

Zambia has a total installed electricity generation capacity of 2.35 GW. Electricity is primarily generated by means of hydropower stations (96% of total electricity production) while the remainder is produced by means of diesel generators<sup>37</sup>. The current electrification in Zambia is approximately 20% of the population.

<sup>37</sup> <http://www.zambia-invest.com/energy>

*During 2014, Zambia imported 12.8 GWh electricity and exported 1 256 GWh<sup>38</sup> of electricity from the Southern African Power Pool and other bilateral markets.*

The Zambian electricity supply industry is dominated by three companies: The Zambian Electricity Supply Corporation, Copperbelt Energy Corporation and Lunsemfwa Hydropower Company. The Zambian Electricity Supply Corporation is a vertically integrated government owned electricity utility that generates, transmits, distributes and supplies the majority electricity within Zambia. Copperbelt Energy Corporation is an independent transmission company that transmits and distributes electricity throughout Zambia and sub-Saharan Africa. Lunsemfwa Hydropower Company is an IPP that generates electricity which they currently sell to Zambian Electricity Supply Corporation.

In the event that a drought occurs within Zambia, electricity generation is severely crippled due to insufficient water throughputs at the hydropower stations. The current generation capacity is sufficient for the time being (during periods without droughts) but at an electricity demand increase of between 150 MW and 200 MW per annum, additional generation capacity has to be developed. Zambia plans to meet the rising electricity demand with additional

<sup>38</sup> <http://www.erb.org.zm/reports/EnergySectorReport2014.pdf>

hydropower installations and improvement and expansion of the existing ones; addition of solar PV farms and the possible addition of geothermal power stations.

### 9.1 Overarching Legislation

The **Electricity Act: Chapter 436 of the Laws of Zambia** <sup>39</sup>, the **Electricity Amendment Act** <sup>40</sup> and the **Energy Regulation Act: Chapter 436 of the Laws of Zambia** <sup>41</sup> provide requisites for the licensing of IPPs. Part III of the Energy Regulation Act: Chapter 436 of the Laws of Zambia<sup>41</sup> states the requirements for the licensing of undertakings related to electricity.

### 9.2 Requirements to register an IPP

According to information on the site of the Energy Regulatory Board of Zambia<sup>42</sup>, IPPs require a licence for each of the following:

- generation of electricity;
- transmission of electricity;
- supply of electricity;
- distribution of electricity; and
- manufacture, supply, installation and maintenance of renewable/solar energy systems.

A licence under the Energy Regulation Act authorizing any person to supply

electricity within the area under the jurisdiction of a local authority shall not be issued:

- without the consent of that authority; and
- in the absence of an environmental impact assessment report.

### 9.3 Licensing procedure

The licensing of activities which include one or more of the items in the list above is regulated by the Energy Regulation Act of Zambia - Statutory Instrument No 2 of 1998. The prescribed application form for the licence required is to be completed and then sent to the Energy Regulatory Board of Zambia for approval. The approval procedure requires the Board to conduct a physical inspection of the assets or assessment of the project plan which the applicant proposes to use.

If the Energy Regulatory Board provides a positive feedback report following the physical inspection, the licensing regulations require that the application be advertised in the Government Gazette for a period of at least 30 days. During this period the public is offered an opportunity to comment on or object to the issuance of the licence applied for by the applicant. If after the prescribed 30 day period, no adverse reports or objections are received with respect to the licence application, the Energy Regulatory Board will ordinarily proceed and issue the licence.

The Energy Regulatory Board has published two documents that outline the licensing procedure and indicate which documents should be included with a

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<sup>39</sup> <http://www.erb.org.zm/downloads/legislation/Electricity%20Act.pdf>

<sup>40</sup> <http://www.erb.org.zm/downloads/legislation/Electricity%20Amendment%20Act.pdf>

<sup>41</sup> <http://www.erb.org.zm/downloads/legislation/Energy%20Regulation%20Act.pdf>

<sup>42</sup> <http://www.erb.org.zm/content.php?viewpage=lals>

licence application. These two documents are: **The Licensing and Investment Endorsement Guidelines for Electricity Projects in the Electricity sub-sector**<sup>43</sup> and the **Procedure for Approval of Projects in the Electricity sub-sector**<sup>44</sup>.

The Licensing and Investment Endorsement Guidelines for Electricity Projects in the Electricity sub-sector document stipulates that the following information should be contained in the application or accompany it in the form of additional documentation:

- a description of the project location;
- a technical description;
- the estimated costs which should include capital, operating, fuel and any other relevant costs;
- details relating to loans or agreements with third parties entered into to assist in funding the project; power purchase agreement details;
- a technical and economic justification of the proposed project that indicates why the proposed approach is the most viable and reasonable;
- proposal for inclusion of project costs that will be included in the proposed tariff; and
- how tariff price escalations will be justified based on project expenses.

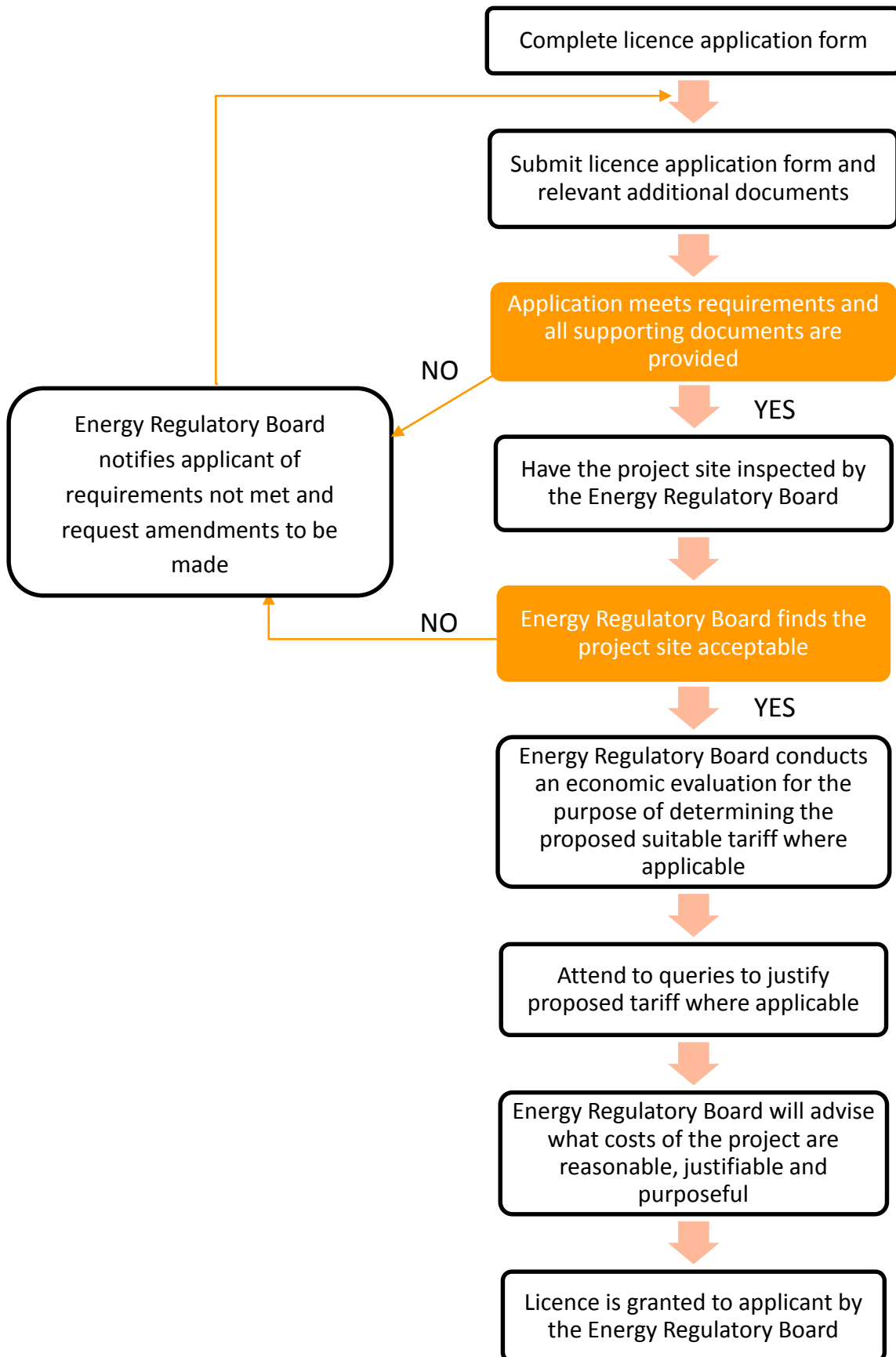
The Procedure for Approval of Projects in the Electricity sub-sector document states that the following documentation should accompany a licence application: business plan; audited financial statements; proof of funds; certificate of incorporation/registration; diagrams and drawings of the proposed project.

The general procedure to issue a licence in Zambia is presented by the flow diagram in Figure 16.

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<sup>43</sup> <http://www.erb.org.zm/downloads/licensing/LicensingGuidelines.pdf>

<sup>44</sup> <http://www.erb.org.zm/downloads/licensing/Procedure.pdf>



**Figure 16: IPP Licensing Process in Zambia**

## Contact details for **Zambian Energy Regulatory Board (ERB)**

<b>Physical address</b>	Plot No 9330, Off Alick Nkhata Road, Lusaka, Zambia
<b>Telephone</b>	+260 211 258844/49
<b>Facsimile</b>	+260 211 258852
<b>Email address</b>	erb@erb.org.zm
<b>Website</b>	<a href="http://www.erb.org.zm/">http://www.erb.org.zm/</a>
<b>Licence applications to be sent to</b>	The Chairman Energy Regulation Board

## 10 Zimbabwe

Zimbabwe is landlocked between four neighbouring countries: Zambia to the north, Mozambique to the east, South Africa to the south and Botswana to the west. A geographic representation of Zimbabwe is presented in Figure 17.



**Figure 17: Location of Zimbabwe**  
(Source: <http://www.countryreports.org>)

Zimbabwe's current available generation capacity is approximately 1 GW. The electricity is primarily generated by five power stations. The Kariba hydropower station is the primary source (468 MW) while the remainder is produced by four thermal power stations: Hwange (416 MW), Munyati (26 MW), Bulawayo (19 MW) and Harare (19 MW). The four thermal power stations were commissioned between 1946 and 1958<sup>45</sup>. The Kariba hydropower station is currently not producing at full generation capacity due to water shortages in the

Kariba Dam. The current age of the power stations result in frequent breakdowns (as they are nearing end-of-life). This results in severely reduced available generation capacity.

The primary stakeholders in the Zimbabwean electricity industry are Zimbabwe Electricity and Supply Authority, Zimbabwe Power Company and Zimbabwe Electricity Transmission and Distribution Company. The Zimbabwe Electricity and Supply Authority (ZESA) is a vertically integrated government owned electricity utility that generates, transmits, distributes and supplies the majority electricity within Zimbabwe.

*The majority of electricity in the country is produced by Zimbabwe Power Company (the electricity generation subsidiary of ZESA) while a small portion of electricity is produced by four thermal IPPs of 22 registered IPPs in Zimbabwe<sup>46</sup>.*

All registered IPPs in Zimbabwe are required to sell electricity to the Zimbabwe Electricity and Supply Authority.

The current electrification rate in Zimbabwe is approximately 40.5% of the population. The large electricity shortage has resulted in Zimbabwe signing a firm contract with Mozambique's Hydro Cohora Bassa for 500 MW worth of imported electricity capacity. In 2016, Zimbabwe signed an agreement with the

<sup>45</sup> <http://www.financialgazette.co.zw/govt-crafting-ipp-policy/>

<sup>46</sup> <http://www.esi-africa.com/zimbabwe-government-commands-ipp-to-deliver/>

South African national utility, Eskom, to import 300 MW of electricity due to declining available generation capacity. No electricity is currently exported from Zimbabwe to any neighbouring countries.

### 10.1 Overarching Legislation

The legislation related to the electricity sector in Zimbabwe is published in the **Electricity Act, No. 4 of 2002 (Chapter 13:19)** and the **Energy Regulatory Act, 2011 (Chapter 13:23)**. Section 40 of the Act states that: no person within the borders of Zimbabwe may partake in an activity which is related to generation, supply, transmission or distribution of electricity exceeding 100 kW without a licence.

The act further specifies that a separate licence is required for each of these practices. Lastly, any enactments relating to electrical activities made by the Minister of Mines and Energy (or any other Minister to whom the President may from time to time assign the administration of the Electricity Act) need to be taken into consideration when applying for a licence for any of the activities above.

### 10.2 Requirements to register an IPP

An IPP requires a generation licence to gain permission from the Regulator to construct, own, operate and maintain a facility for the purpose of generation and supply of electricity. An IPP may supply electricity to any licensed transmission, distribution and bulk supply entity that purchases electricity for resale purposes,

at present this is only ZESA. In the event that an IPP with a generation licence wishes to supply electricity to one or more consumers, pre-authorization is required from the Regulator.

For the purposes of Section 42.2 of the Electricity Act of 2002, a holder of a generation licence includes a generating company outside Zimbabwe that is entitled, under an arrangement approved by the Regulator or permitted by a licence issued to another licensee, to sell power to Zimbabwean licensees or consumers without a licence from the Regulator.

An IPP is subject to a number of conditions with which they have to comply to retain the generation licence. These conditions are:

- adhere to all requirements, legislation and regulations that are stipulated within both the Electricity Act 2002, No. 4 of 2002 (Chapter 13:19) and the Energy Regulatory Act (Chapter 13:23);
- adhere to industrial technical codes and standards that are approved by the Regulator; and
- plan, develop, construct, operate and maintain the generation facility in an efficient and cost effective manner.

### 10.3 Licensing procedure

The licensing requirements and application forms are provided on the Regulator's website<sup>47</sup>. Currently licence application forms are available for electricity generation and standby

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<sup>47</sup> [http://www.zera.co.zw/images/Electricity\\_Licencing\\_Guidelines\\_2015.pdf](http://www.zera.co.zw/images/Electricity_Licencing_Guidelines_2015.pdf)

electricity generation. In general, the Regulator requires any licence application to provide supporting documentation that includes the following:

- a detailed business plan;
- a certificate of incorporation;
- a memorandum of association;
- the particulars of all shareholders and directors of the company;
- the board profile; shareholder structure and shareholder agreement;
- proof of financial capability; audited financial statements for the past three years;
- tax clearances;
- application fees; and
- the technical capacity to complete the project.

In addition to the general documentation that is required with any licensing application, the Regulator also requires the following documents for an electricity generation or standby electricity generation licence:

- the generation capacity of the facility that is to be constructed;
- details about the off-taker of the generated electricity;
- the cost of electricity generation;
- a detailed grid impact assessment;
- fuel supply agreement(s) in the event that it is not a renewable generation facility;

- the proposed power purchase agreement;
- the proposed interconnection point to the transmission system;
- a report which details the results of the feasibility study for the construction and operation of the electricity generating facility;
- maps which indicate the location of the generation facility;
- the land use permit; and
- the water extraction permit and the environmental social impact assessment.

Any licence application that is submitted for approval must be made public for a period that is determined by the Regulator. During this time, stakeholders may raise concerns or comments about the application. In the event that comments are raised, the Regulator will evaluate the comments and determine whether the applicant has to provide additional documentation or amend any information with which stakeholders had concerns. A generation licence is issued for a period of 30 years in the event that it is approved by the Regulator.

The general procedure to issue a generation licence in Zimbabwe is presented in Figure 18.



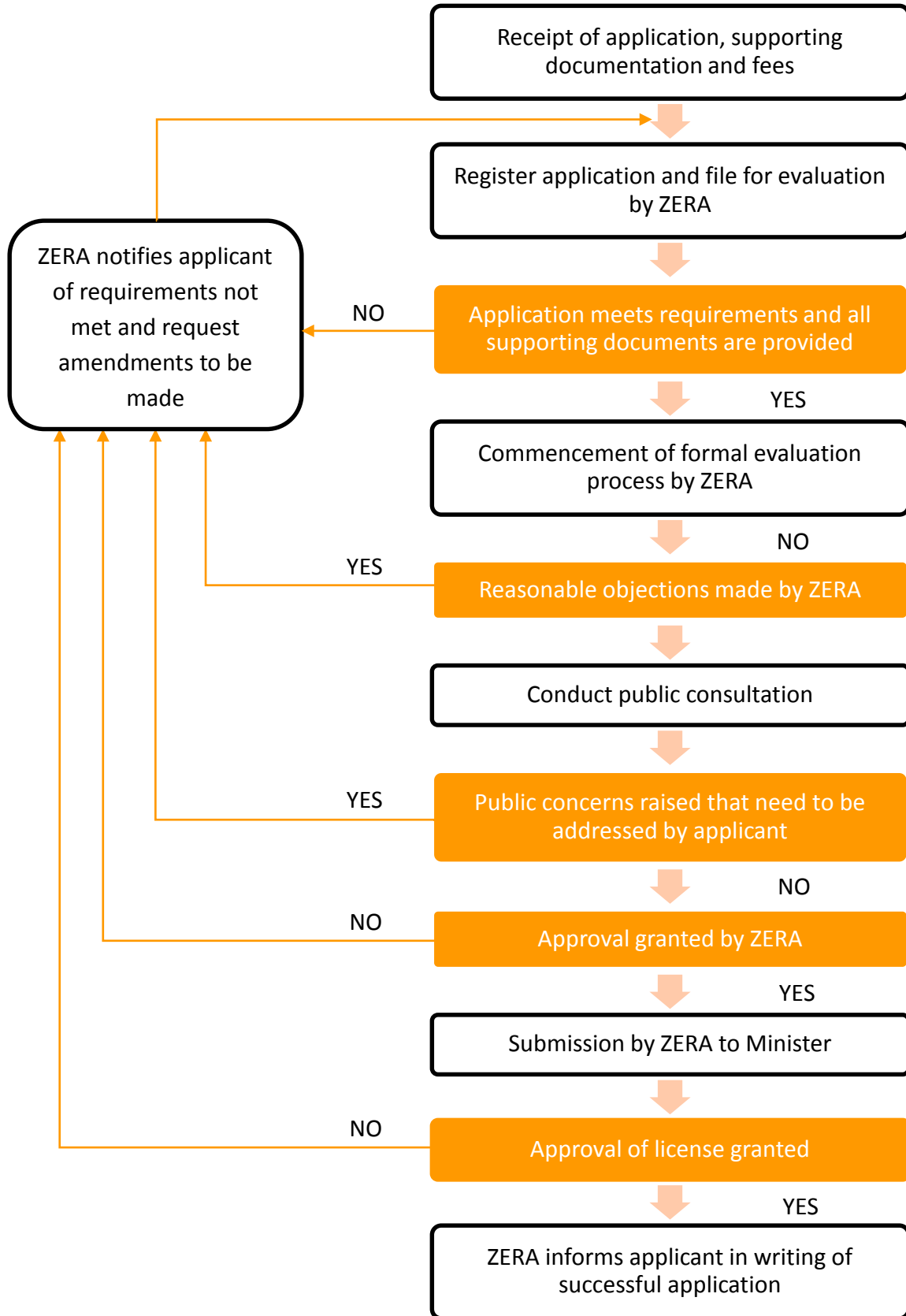


Figure 18: IPP Licensing Process in Zimbabwe

## Contact details for Zimbabwe Energy Regulatory Authority (ZERA)

<b>Physical address</b>	45 Samora Machel Ave, Harare, Zimbabwe
<b>Telephone</b>	+263 4 780010
<b>Facsimile</b>	+263 4 250696
<b>Email</b>	admin@zera.co.zw
<b>Website</b>	<a href="http://www.zera.co.zw/">http://www.zera.co.zw/</a>
<b>Licence applications to be sent to</b>	Zimbabwe Energy Regulatory Authority 14th Floor, Century Towers 45 Samora Machel Avenue Harare Or Zimbabwe Energy Regulatory Authority P.O. Box CY 2585 Harare

## 11 Conclusion

The country assessments undertaken during the course of the research study, and the subsequent compilation of this *Guideline*, indicate that the national electricity markets within the Southern African Development Community region are evolving. Changes in the external environment are some of the drivers behind the markets' advancement. These include increasing pressures to mitigate climate change, increasing demand for electrification, the rapid rate of innovations in the information, communication and technology sectors, growing focus on promoting clean electricity supplies and global political and economic pressures.

Of note are the increased instances of IPP access to the electricity markets, as supported by the respective national regulatory frameworks. Of the

government departments and regulators consulted with during the course of the study, almost all were in favour of increasing cooperation at bi-lateral, regional and sub-regional levels. This *Guideline* therefore seeks to identify the high level processes required to license new electricity generation facilities in various Southern African Development Community member states.

Licenses are required by prospective electricity generators in all the countries assessed, albeit based on varying criteria. The various national legislative frameworks largely support the introduction of IPPs to their electricity markets in the Southern African Development Community region. The conditions under which a license is required are summarised in Table 1.

**Table 1: Licences for Generation Activities in Various Southern African Development Community Countries**

<b>Country</b>	<b>Licence Required for Own Generation</b>	<b>Licence Required for Commercial Generation</b>
<b>Botswana</b>	Yes: for activities greater than 25 kW	Yes: for all generation activities
<b>Lesotho</b>	Yes: for activities greater than 2 MW	Yes: for activities greater than 2 MW
<b>Malawi</b>	Not specified in Electricity Act	Yes: for all generation activities
<b>Mozambique</b>	Yes: for all generation activities	Yes: for all generation activities
<b>Namibia</b>	Yes: for activities greater than 500 kW	Yes: for all generation activities
<b>South Africa</b>	Yes: for activities greater than 1 MW	Yes: for all generation activities
<b>Swaziland</b>	Not required	Yes: for activities that sell over 1 GWh of electricity per year to customers
<b>Zambia</b>	Yes: for activities greater than 100 kW	Yes: for all generation activities
<b>Zimbabwe</b>	Yes: for activities greater than 100 kW	Yes: for activities greater than 100 kW

Some countries within the Southern African Development Community region do not yet have fully independent energy regulators, for example, Botswana and Mozambique. Energy regulators are generally responsible for implementation of legislation related to the issuance of licences that are required to generate electricity as a third party. The lack of independent authorities hinders the development of regulations relating to the requirements for registering an IPP.

In general, the registration or licence application process is fairly standardised (on a high level basis) across the respective countries, particularly from the regulators' perspectives.

For example, most of the countries require assurances from the relevant authority that the facility in question does not negatively impact the environment or society in which it will operate. In addition, most licence applications require a public consultation process.

While the legislative and regulatory environments support the entry of IPPs to the electricity generation sectors, barriers are still very high. As a result, all of the electricity generation segments assessed in this guideline remain dominated by the various state-owned and vertically integrated utilities.

The level of participation of IPPs in the various electricity markets and

opportunities for IPP entrants are summarised in Table 2.

These findings are based on desktop analyses of the electricity sectors and communications with key stakeholders during country-visits.

While there are opportunities for hydro power in certain parts of the region, droughts are threatening the viability of these clean and low cost options.

During the course of the country assessments, the following additional broad threats to investments in new generation were also identified as pressing concerns across the region:

- the state of the regional transmission and distribution grid is widely acknowledged as a major barrier to investment, and therefore growth, in the Southern African Development Community region. While there are reports in various media relating to the development of projects in this regard, progress has been very slow in implementing such projects; and
- access to finance remains a challenge. The requirement for long term power purchase agreements in particular has consistently been raised as a stumbling block in this regard.

**Table 2: IPP Intensities and Opportunities in Country Electricity Markets**

<b>Country</b>	<b>Penetration of IPPs in Market</b>	<b>Opportunities for IPPs</b>
<b>Botswana</b>	Very low	Opportunities exist, particularly in the coal sector
<b>Lesotho</b>	None	Opportunities exist, particularly in the hydro and wind sectors
<b>Malawi</b>	None	The utility is in process of being unbundled; draft Feed-In Tariff Policy exists but is still to be finalised
<b>Mozambique</b>	Low	Large potential generation capacity in the hydro, natural gas and coal sectors; tariffs are not regulated
<b>Namibia</b>	Low	IPPs can sell their electricity to other consumers in the market; renewable energy procurement programme is being implemented
<b>South Africa</b>	High	The renewable energy and coal IPP procurement programmes provide opportunities for new entrants to the market. Competition is however very intense
<b>Swaziland</b>	Very low	Opportunities exist in the renewable sector, particularly biomass and hydro
<b>Zambia</b>	Low	Opportunities exist in the renewable sector, particularly hydro and solar
<b>Zimbabwe</b>	Low	Opportunities exist in the renewable sector, particularly hydro and solar; IPPs required to sell electricity to utility

In conclusion, there are opportunities for growth and development in the Southern African Development Community due to the opening up of many of the respective national markets to IPP participation. High level, Southern African Development Community support for the development of a competitive market is evident in the Southern African Power Pool’s mandate to increase trade across the region.

It is hoped that prospective investors’ knowledge and confidence will be

boosted by having this diverse information presented in a concise but comprehensive format. The benefit of presenting this data in a single source is that the information can be compared across the respective countries, thereby assisting IPPs and investors in making the decision to invest, and ultimately in the pursuit of obtaining the appropriate generation licence.

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## Promethium Carbon

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