



RULES ON SELECTION CRITERIA FOR RENEWABLE ENERGY PROJECTS UNDER THE REFIT PROGRAMME

Regulatory Rules

on selection criteria for renewable energy projects under the REFIT Programme

In terms of regulation 7 of GN R. 721 GG No. 32378 of 5 August 2009 (Electricity Regulation Act No.4 of 2006: Electricity Regulations on New Generation Capacity), the National Energy Regulator of South Africa (“NERSA”) is required to issue rules relating to the selection of renewable energy or cogeneration Independent Power producers (IPPs) that qualify for licences. It is in this context that these rules are issued. The document, “Rules on selection criteria for renewable energy projects under the REFIT Programme” which contains these Rules is hereby promulgated. Electronic copies of the document may be downloaded from www.nersa.org.za as from **Friday, 19 February 2010**.

All stakeholders and public are invited to submit public written comments on important issues raised on Regulatory Rules on selection criteria for renewable energy projects under the REFIT programme.

Closing date for submitting written comments is **Thursday, 18 March 2010**. Written comments and enquiries can be directed to **Dr. Bianka Belinska**. Contact details are:

- E-mail : refitrules@nersa.org.za
- Fax : 012 – 401 4700
- Tel : 012 – 401 4650

EXPLANATORY MEMORANDUM

The provisions of regulation 7 of GN R.721 GG No. 32378 of 5 August 2009 (Electricity Regulation Act No. 4 of 2006: Electricity Regulations on New Generation Capacity) (“the Regulations”) authorise the Energy Regulator to prepare and pass rules not inconsistent with these regulations for purposes of setting out criteria for the selection of preferred IPP under the REFIT programme.

These Rules and the Act must be read together when licence applications are made.

The Regulations require the Energy Regulator to develop rules related to the selection criteria for renewable energy or cogeneration IPP that qualify for a licence based on the following considerations:

- (a) compliance with the integrated resource plan and the preferred technologies;*
- (b) acceptance by the IPP of a standardized power purchase agreement;*
- (c) preference for a plant location that contributes to grid stabilisation and mitigates against transmission losses;*
- (d) preference for a plant technology and location that contributes to local economic development;*
- (e) compliance with legislation in respect of the advancement of historically disadvantaged individuals;*
- (f) preference for projects with viable network integration requirements;*
- (g) preference for projects with advanced environmental approvals;*
- (h) preference for projects demonstrating the ability to raise finance;*
- (i) preference for small distributed generators over centralized generators; and*
- (j) preference for generators that can be commissioned in the shortest time.*

This document contains the rules relating to the selection criteria that will be used by the SO to select qualifying IPPs under the REFIT programme. Although the rules will also be applicable for cogeneration projects, specific rules for cogeneration projects might be added upon completion of the cogeneration feed-in tariff. These rules will be applicable to new projects that have not entered the procurement phase at the time of approval. Should the rules be revised then they will be applicable to the next procurement phase only and will not be applied retrospectively.

The rules will apply to REFIT projects located on the territory of South Africa.

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1. Definitions, Acronyms and Abbreviations

Definitions

“**buyer**” means any person or entity designated by the Minister in terms of section 34(1)(c) and (d) of the Act and authorised under a licence; this includes any person or entity running a procurement process in respect of the IPP bid Programme or entering into a power purchase agreement;

“**cogeneration**” means the simultaneous generation of electricity and useful thermal energy (heat) at a single plant. This occurs either through the use of thermal energy during electricity generation or via the use of waste energy for electricity during heating processes. Cogeneration is also referred to as combined heat and power (CHP). In a South African context, cogeneration can also refer to the production of electricity as a by product of an industrial process, without the need for a combined heat and power system to necessarily be in place;

“**distribution**” means the network infrastructure operating at nominal voltage of 132kV or below;

“**energy planner**” means the Department of energy;

“**generation licence**” means the licence granted by the Energy Regulator of South Africa to generate or transmit or distribute electricity in terms of the Electricity Regulation Act, 2006 (Act No. 4 of 2006);

“**grid code**” means the South African grid code as approved by NERSA, which is updated by NERSA from time to time;

“**Independent Power Producer**” or “**IPP**” means any undertaking by any person or entity, in which the government of South Africa does not hold a controlling ownership interest (direct or indirect), of new generation capacity at a generating facility following a determination made by the Minister in terms of section 34(1) of the Act;

“**Minister**” means the Minister of Energy;

“**integrated resource plan**” or “**IRP**” means a resource plan established by the national sphere of government to give effect to national policy or the least cost plan that assesses a variety of demand and supply side options to meet customer electricity needs under environmental and social considerations;

“National Energy Regulator of South Africa” or “**NERSA**” means a statutory body established as a juristic person in terms of section 3 of the National Energy Act, 2004 (Act No. 40 of 2004), with specific responsibilities detailed in Electricity Regulation Act, 2006 (Act No. 4 of 2006) as amended, Gas Act and Petroleum Act;

“**power purchase agreement**” or “**PPA**” means an agreement concluded between an IPP and the buyer for the sale and purchase of –

- a) electricity generation capacity;

- b) electricity, and/or
- c) ancillary services;

“project agreement” means the agreements including the power purchase agreement to be entered into by and between the buyer, the government and the IPP in respect of any IPP project;

“renewable energy feed in-tariff” or **“REFIT”** means a tariff approved by the regulator for a renewable energy generator or cogeneration;

“scheduling” means the process to determine which unit or piece of equipment will be in operation and at what loading;

“system operator” or **“SO”** means the entity responsibly for short-term reliability of the interconnected power system, which is in charge of controlling and operating the transmission system and dispatching generation (or balancing the supply of demand) in real time;

“transmission” means the network infrastructure operating at nominal voltage of 132kV or above;

ACRONYMS AND ABBREVIATIONS

BBBEE	Broad Based Black Economic Empowerment
DoE	Department of Energy
EIA	Environmental Impact Assessment
FIT	Feed-In Tariff
IPP	Independent Power Producer
MW	Mega Watt
NERSA	National Energy Regulator of South Africa
NSP	Network Services Provider
IRP	Integrated Resource Plan
PPA	Power Purchase Agreement
RE	Renewable Energy
REFIT	Renewable Energy Feed-In Tariff
RSA	Republic of South Africa
SO	System Operator

2. Evaluation criteria (Rules) and measurement description for selection of renewable energy projects under REFIT program

Individual projects will be evaluated and ranked based on the measurements outlined below. Several gate keeping criteria were established in order to ensure that the minimum requirements are met.

In line with the established Regulations the system operator will initiate a solicitation process for renewable energy projects eligible for the REFIT programme based on the selection criteria outlined below. The proposals that score the highest score will enter into power purchase agreement (PPA) with the buyer, provided that the project obtains a generation licence by NERSA.

2.1 Compliance with the integrated resource plan and the preferred technologies

2.1.1 In terms of the Act the Integrated Resource Plan (IRP) means a resource plan established by the national sphere of government to give effect to national policy. In terms of the Regulations the system operator (SO) in consultation with the regulator and the energy planner is responsible for the development of the IRP. One of the key criteria for qualifying renewable energy technologies under REFIT is compliance with the Integrated Resource Plan that is approved by the Minister of Energy. The renewable energy capacity projected in the IRP tabled for adoption is illustrated in Fig 1 below while the contributions of the specific renewable energy technologies in terms of MW for the planning period are illustrated in Table 1 overleaf:

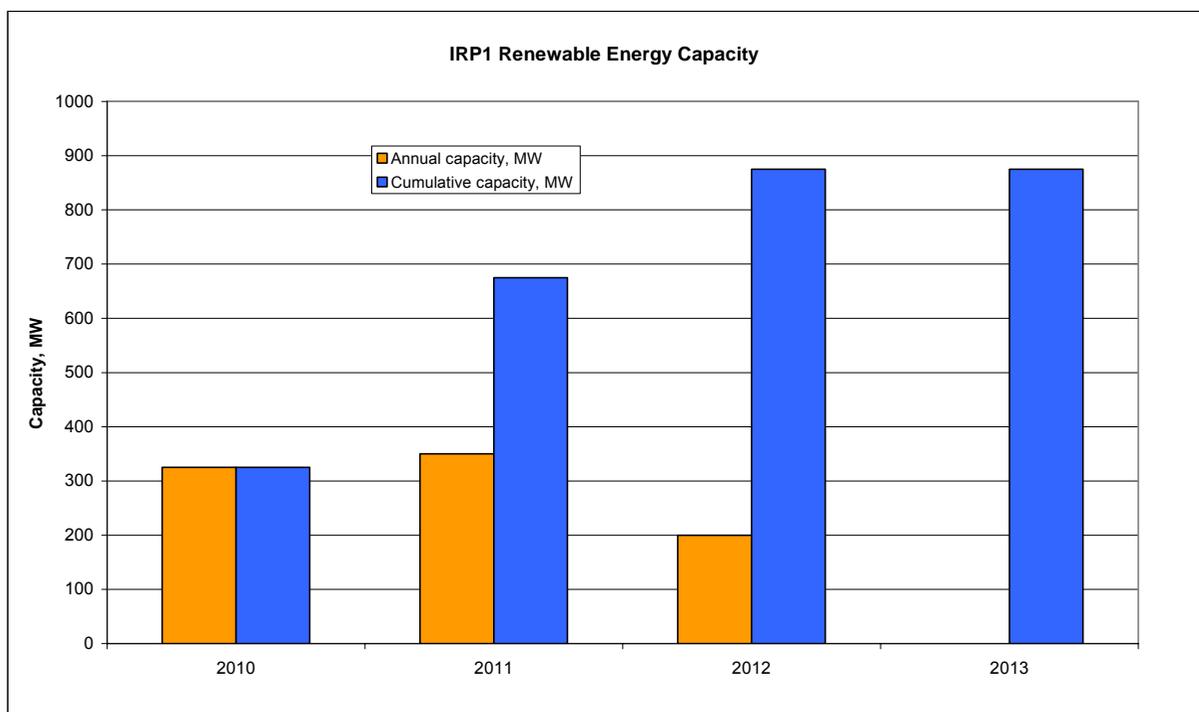


Fig 1: IRP Renewable Energy Capacity

Renewable Energy Technologies (RET)		2009	2010	2011	2012	2013
Sere Eskom Wind	MW		100	100	100	100
CSP	MW		50	50	50	50
Wind1	MW			200	200	200
Wind2	MW				200	200
OTHER RE1	MW		175	175	175	175
OTHER RE2	MW			150	150	150
Annual capacity, MW			325	350	200	
Cumulative capacity, MW			325	675	875	875

Table 1: IRP1 Renewable Energy Technologies

2.1.2 The near term renewable energy plan includes 500 MW of wind energy including Eskom wind project Sere with a capacity of 100 MW and 50 MW of Concentrated Solar Plant (CSP). The other RE technologies in the near term represents a mix of the remaining technologies considered under the REFIT program. In addition to the renewable capacity illustrated above, in the period 2010 to 2012 the IRP provides for commissioning of 420 MW cogeneration capacity under the Medium Term Power Purchase Program (MTPPP) not reflected in the Table 1 above.

2.1.3 Within the above renewable energy targets established by the IRP1 the Renewable Energy Feed-in-Tariff (REFIT) guidelines highlight the

technologies that are to be considered for the program. In line with the REFIT guideline preferred technologies for phase 1 and 2 of REFIT program shall be defined as new investments in electricity generation using the following technologies:

- 1) Landfill gas power plant;
- 2) Small hydro power plant (> 1 MW but less than 10MW);
- 3) Wind power plant (on shore);
- 4) Concentrating Solar Thermal plant;
- 5) Biomass solid;
- 6) Biogas; and
- 7) Large scale grid connected photovoltaic systems (PV).

2.1.4 Compliance with the IRP and the eligibility of technologies outlined in REFIT guidelines is a minimum requirement for qualification. Technologies that do not meet the IRP and REFIT eligibility criteria will be disqualified.

2.2 Acceptance by the IPP of a standardizes power purchase agreement

The REFIT Phase II program has considered development of a standard (generic) REFIT PPA that was subject of the REFIT Phase 2 consultation process. NERSA is in a process of integration of the public comments in the PPA as well as development of technology specific schedules. In order to avoid lengthy negotiation processes and ensure efficient delivery of the renewable energy, project developers accepting the general terms of the revised PPA will be given a priority.

2.3 Plant location that contributes to stabilization of the grid and mitigates against transmission losses

In the light of the current and near-term system capacity constraints, the selection of the renewable energy project will favor projects that contribute significantly to the system operational reserve and alleviate existing system constraints. The plant location will be considered in terms of contributions to grid stabilization and reduction of the transmission and distribution losses. This criterion will be considered in terms of the impact on voltage control and system losses at the point of connection. Preference will be given to projects with higher power credit that contribute to the voltage and reactive power control and the reduction of the loss factor at the closest load center.

2.3.1 Determination of the capacity (power) credit or value of the facility

Renewable energy resources are characterized by a variability of the power resource and energy production. The variability of the power resource refers to the ability of the plant to deliver energy upon demand notwithstanding technical failures or supply chain interruptions. With regard to variability the generation resources can be divided into two main types: firm and variable. The firm generation resources are those that can deliver power on demand excluding circumstances of technical failure of the facility. The energy delivery of the variable resources is dependant on the availability as well as the variability of the primary energy resource (fuel) for energy production. With regard to the defined above firmness of energy supply most of the renewable resources fall under the variable type of generation resource. The power factor or credit is the measure used internationally for determining the extent of the variability of the generation resource. Various approaches are used to determining the power credit ranging from complex power flow simulations based on measured data to assessment of the actual power contribution of the resource to the weekly or monthly zonal maximum demand. For the purposes of the first round of procurement of renewable energy resources it is proposed to determine the power credit for each facility as follows:

- 1) as part of the solicitation process the project sponsor will be required to provide measured, where applicable, or estimated data for the hourly delivered power and energy of the facility for the first year of commissioning.
- 2) depending on the location and size of the facility the network service provider in collaboration with the system operator will determine the network zone affected by the facility
- 3) the network service provider will provide the local annual hourly periods within 10% of the maximum demand of the affected network zone for the first year of the facility operation.
- 4) the power credit will be calculated as a ratio of the average of the facility sent out capacity in MWs (measured or estimated) in the periods within the 10% maximum network demand of the zone and the installed capacity in MW.

2.3.2 Loss Factor Credit

2.3.2.1 For the purposes of these rules the loss factor credit refers to the technical losses of the network to which the facility is connected. The

technical losses of the system are defined as the losses associated with the electrical system.

2.3.2.2 The loss factor credit will be calculated individually per facility according to the actual network and connection point characteristics.

2.3.2.3 The loss factor credit will be calculated as the difference between the loss factor of the affected network zone before and after the connection of the power generation facility. Since the existing Grid Code is silent on the methodology for calculation of the loss factors, the NSP in consultation with the system operator shall provide the methodology for calculation of the network loss factor calculation as part of the solicitation documentation.

2.3.2.4 The publication of the loss factor calculation methodology will provide transparency and consistency to the market participants on how the loss factors are determined and will assist the market participants in their planning processes.

2.4 Preference for a plant location and technology that contributes to local economic development

One of the overarching objectives of the rules for selection of projects under REFIT program is to support the socio-economic development. In that context the proposed projects will be assessed in terms of the contribution of the technology to employment and local development. A measurement of the impact of the technology on the employment will be the job creations per MW of installed capacity created by the facility after commissioning or plant operational employment. That metric will be applied in terms of the maintenance and operation of the facility post commissioning.

2.5 Compliance with legislation in respect of the advancement of historically disadvantaged individuals

The selection of projects under the REFIT program will favor project that comply with legislation in respect of the advancement of historically disadvantaged individuals. In order to qualify as BBEE the project sponsor must score at least one point each on Black ownership, Black management, %Black skilled personnel and Black female management, or in total minimum 4 points. Proposals that do not meet the minimum requirements for BBEE will be disqualified.

2.6 Preference for projects with viable network integration requirements

Projects that will be connected to the grid shall comply with the relevant law and interconnection standards and codes such as the Distribution and Transmission Grid Codes as well as the requirements of the applicable grid owner. Projects that will deliver energy at points of the system with no or limited requirement for downstream and upstream upgrade of the transmission and distribution infrastructure will receive priority. In terms of interconnection status projects with advanced transmission agreements will receive priority.

The main factors that will be considered include geographical location of the facility as well as the electrical characteristics such as fault contribution. The evaluation metrics under this criterion is the connection costs as described below.

2.6.1 Connection Cost

2.6.1.1 Total Cost of Connection

2.6.1.1.1 The cost associated with the delivery of the generated energy to the customers comprises the total cost of the connection, or the total connection cost.

2.6.1.1.2 In terms of the direct and indirect infrastructure cost associated with the delivery of the generated energy the total cost could be further divided into shallow and deep connection costs. For the purposes of these rules the shallow connection cost is defined as the cost of the **standard dedicated equipment** for the connection of the facility to the network and excludes the cost of downstream and upstream strengthening and/or refurbishment of the network cost incurred solely by the connection and operation of the facility. The **deep connection cost** constitutes the additional infrastructure cost over and above the shallow cost defined above for upstream and downstream strengthening of the network, necessary for connection operation of the facility.

2.6.1.1.3 The system operator in consultation with network service provider (NSP) will determine the deep and shallow connection cost for each facility, excluding any existing network constraints. The deep and shallow connection costs will be determined for the network infrastructure that would be available at the commercial operation date of the facility.

2.6.1.1.4 Any additional cost associated with a specific project sponsor requirements for higher than the standard connection quality of supply of the facility will be considered as deep connection cost and added to the deep connection costs.

2.6.1.1.5 The measurement factor under this criteria will be calculated as a ratio of the shallow connection and the total connection costs. The

grid owner will have the obligation to provide shallow and deep connection costs, which are not directly related to constraints.

2.6.2 Funding of Connection Cost

Given the provision for recovery of the connection costs in the REFITs, the connection costs for renewable energy facilities shall be financed **in full up front** by the project sponsor before the commercial operation date of the facility. The alternative option provided of the Grid Code of financing of the connection cost by the NSP and repayment by the project sponsor over 25 years is disallowed for the purposes of the REFIT projects.

2.7 Preference for projects with advanced environmental impact approvals

- 2.7.1 Projects with concluded Environment Impact assessment (EIA), i.e. Record of Decision of DWEAT, will receive priority. In order of preference the following ranking will apply:
- 2.7.2 Valid Record of Decision (RoD)
- 2.7.3 Application for an Environmental Impact Assessment (EIA) submitted
- 2.7.4 EIA in preparation

2.8 Preference for projects demonstrating the ability to raise finance

Project promoters under REFIT program will be required to demonstrate their ability to finance the project and provide evidences regarding the structure and status of the project financing. The ability to finance will be assessed in terms of the status of the project financing at the time of application. Preference will be given to projects with fully underwritten bids. Projects that still need to secure finance will be given lower score.

2.9 Preference for small distributed generators over centralized generators

- 2.9.1 The REFITs are applicable for qualifying renewable energy generation facilities with a size greater or equal to 1 MW. However, for some technologies small scale generators with capacity less than 10 MW will add to administrative complexity and volume of work per site and therefore costs.

2.9.2 In line with the REFIT qualifying criteria the minimum connection considered will be for plant size of 1 MW at a minimum voltage level of 11 kV.

2.9.3 In order to achieve economies of scale and faster administration process the preferred minimum size of the facility per technology will be:

- 1) Landfill gas ≥ 1 MW
- 2) Biomass ≥ 1 MW
- 3) Biogas ≥ 1 MW
- 4) Concentrated Solar Power (CSP) ≥ 20 MW
- 5) Wind ≥ 20 MW
- 6) Small Hydro ≥ 1 MW
- 7) Photovoltaic (PV) ≥ 1 MW
- 8) Landfill gas ≥ 1 MW

The above facility sizes are for an adjacent site.

2.10 Preference for projects that can be commissioned in the shortest time

Projects that can be commissioned in the shortest time will be given preference. Preference will be given to projects with a time to Commercial operation date (COD) of less than 10 months provided that all other agreements as well as the network connection are in place.

2.11 Evaluation matrix

2.11.1 The evaluation matrix containing the above rules and associated weighting points is shown in Schedule 1. There are three gate keeping criteria that should be met before further evaluation of the proposals is conducted.

2.11.2 Projects that have met the minimum criteria and achieved the highest scores in terms of the evaluation matrix will receive priority in the award of PPA and generation licence under REFIT program.

2.11.3 The criteria will be applied across the technologies in the context of the IRP1 prescribed capacities.

Schedule 1 – Evaluation Matrix Table

No	Description of criterion	Gate keeping criteria	Points	Maximum points per subcriterion	Maximum points per criterion
				100	100
1	Compliance with the integrated resource plan and the preferred technologies :				7
	Compliance with IRP and REFIT technologies	Pass or fail		7	
2	Acceptance by the IPP of a standardized power purchase agreement		10	10	10
3	Plant Location that contributes to stabilization of the grid and mitigates against transmission losses				15
	Power credit of the facility in terms of the system reserve			6	
	>=0.8		6		
	>=0.4 and < 0.8		3		
	<0.4		1		
	Loss factor reduction credit				
	>=2%		9		
	1-2%		5		
	<1%		1		
4	Preference for a plant location and technology that contributes to local economic development				10
	Local employment under plant operation per MW of installed capacity(operating employment rate):				
	>2		10	10	
	>1 but <= 2		6		
	<=1		2		
5	Compliance with legislation in respect of the advancement of historically disadvantaged individuals	Pass or fail on the minimum of 4 points			8
	Black Ownership		8	8	
	10% to <20%	1			
	20% to 50%	1.5			
	>50%	2			
	Black Management				
	20% to <35%	1			
	35% to 50%	1.5			
	>50%	2			
	Black Female Management				
	1% to <5%	1			
	5% to 10%	1.5			
	>10%	2			
	Black Skilled Personnel as % of payroll				
20% to <35%	1				
35% to 50%	1.5				
>50%	2				
6	Preference for projects with viable network integration requirements			15	15
	Shallow connection cost as a Percentage of the total cost				
	>=80%		15		
	<80%		5		
7	Preference for projects with advanced environmental impact approvals			10	10
	Record of Decision (ROD)		10		
	EIA application		6		
	EIA preparation		2		
8	Preference for projects demonstrating the ability to raise finance			10	10
	Underwritten bids		10		
	Letter(s) of undertaking from investment and/or commercial bankers to secure term finance		6		
	Letter(s) of undertaking from investment and/or commercial bankers to secure construction finance		2		
9	Preference for small distributed generators over centralized generators	Pass or fail on the minimum size of facility	5	5	5
	Biomass >=1 MW				
	Biogas >=1 MW				
	Landfill gas >=1 MW				
	Concentrated Solar Power (CSP) >= 20 MW				
	Wind >= 20 MW				
	Small hydro >= 1 MW				
Photovoltaic (PV) >= 1 MW					
10	Preference for projects that can be commissioned in the shortest time			10	10
	Time to Commercial Operation Date				
	<10 months		10		
	10-18 months		6		
	>18 months		2		