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Protocol for registering renewable energy sourced generation devices

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Subsidiary document: Hydro power facilities

Version (26Feb2010)

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Contents

Definitions and Accronyms

AIB	Association of Issuing Bodies
CRD	Central Registry Database
EECS	European Energy Certification System
MWh	MegaWatt hour – a measure of electrical energy equivalent to one hour of output at an output power of one MegaWatt.
REC	Renewable Energy Certificate
RED	Renewable Energy Declaration
RES – E	Renewable Energy Source – Electricity
PD	Production Declaration

1. Background

This report outlines the development of the Hydro-based device component of an interim domain protocol for South Africa in line with the Association of Issuing Bodies Principles and Rules of Operation (PRO). The protocol was informed by a device registration audit of the Friedenheim Hydro Facility and will be broadened to encompass envisaged differences at other hydro-based renewable energy production devices in South Africa. It is anticipated that further hydro-based facilities will be registered according to this protocol in the near future. It is essentially a methodology for auditing hydro-based electricity generation facilities to satisfy production device registration requirements on the basis of the above documentation and with a view to aligning these with the role of a national Renewable Energy Certificate Issuing Body.

Nano Energy was contracted to develop this protocol, conduct the production device registration for the Friedenheim Hydro Facility and issue certificates for renewable energy produced by the RES-E device from February 2010.

The set of definitions and criteria as set out in the European Energy Certification System's (EECS's) PRO have been followed in developing this protocol component. Any deviations from the PRO requirements have been noted. The hydro-specific component of the requisite South African domain protocol is an additional step towards and contributes to the development of the South African protocol and follows the development of the same for Bagasse-based and PV-based facilities which began in 2004. The domain protocol sets the rules that are supplementary to the PRO.

2. Hydro-based generation protocol

The process required to be followed prior to the issuing of certificates as detailed in Article 3 of the EECS PRO requires:

- Identification of the domain within which the market participants are commercially active (South Africa – 27).
- Each RES-E generator must gain registration for the production device (see chapter 3)
- Submission of a Renewable Energy Declaration (RED) by the generator or aggregator acting on its behalf to the issuing body seeking registration as a RES-E.
- Assignment of a unique identifier to the production device.
- An additional requirement has been included to ensure that suitable reporting processes and data collection is in place at the device to ensure suitable transfer (periodic production declarations) of this to the Issuing Body to enable the issuing of certificates.
- Acceptance of the RED by the Issuing Body.

This protocol details the audit requirements for the Issuing body to follow in ensuring that the RED deposited by a Hydro-based generation facility conforms to the requirements of the EECS PRO and the South African Domain Protocol.

2.1. Qualifying Criteria

The qualifying criteria for Production Devices are set out in the Directive (2001-77-EC) and are summarised here. In the event of any differences, the definitions of the Directive take precedence.

(a) All wind turbine devices.

(b) All solar devices (This document).

(c) Energy from water devices except for pumped storage.

(d) All geothermal devices.

(e) Biomass devices as defined in the Renewable Energy Directive, the Large Combustion Plants Directive and the Waste Combustion Plants Directive.

For biomass devices deriving energy from waste or by-product sources, only the energy attributable from the non-fossil element will be eligible for Certificates.

2.2. Domain definition

For the purpose of these activities the domain has been defined as the South AFrica.

2.3. Production device identifier

The EECS PRO suggests an 18 digit device reference be recorded in the Central Registry Database (CRD). An algorithm has been chosen to assign unique South African device references. The device registration record associated with this identifier is composed of:

- The domain of origin – South Africa (27),
- installed electrical capacity of the device(s) generating the green electricity in kVA,
- date of device commissioning or of first operation in current configuration,
- technology code ('05' – Hydro power)
- issuing body identity (zaRECs – 30)
- a check integer as a check for reference authenticity.

Production Devices are coded in the format of the 18 digit element string being made up of a Global Service Relation Number, an 8 digit Company Prefix Service Reference and a check digit for authenticity as per AIB-PRO-SD03 EECS Registration Databases - Release 5-1. The 9 digit Global Service Relation Number is assigned by the CMO and relates to an individual Production Device.

3. EECS Requirement for device registration

The European Energy Certification System outlines the following requirements for registration of a RES-E:

A RES-E Generator or a Production Aggregator acting on behalf of a RES-E Generator wishing to receive Certificates for the electrical output from a RES-E Production Device shall first gain Registration for that Production Device from the Issuing Body responsible for the Domain within which the Production Device lies by making a Renewable Energy Declaration (or RED) to the Issuing Body. Any Production Device that is not so Registered may not be Issued with Certificates.

A Renewable Energy Declaration shall state that the installation fulfills the criteria set out in this Basic Commitment and relevant Domain Protocol. The RED must have a period of validity limited according to the Domain Protocol for the Domain in which this Production Device is registered but will in any case be no longer than is stipulated in is stipulated in the monitoring regime of the EECS PRO, after which time it must be re-submitted. The value for the first hydro-based registration has been set to 24 months. Failure to do so will result in cessation of certificate issue for this Production Device. The criteria and the procedure for the RED may change over time.

A Renewable Energy Declaration shall include:

A.) The name, address, contact details (including person responsible, phone, fax and e-mail) and Issuing Body for that RES-E Generator or of a Production Aggregator acting on its behalf;
B.) The account into which the Certificates are first to be transferred upon issue;
C.) The location of the Production Device;
D.) The location and detail of the export and, where appropriate, import meter(s);
E.) All possible sources of fuel to be converted into electrical energy by this Production Device, whether or not this is renewable,
F.) The type of generation technology in place at this Production Device, from the agreed list as set out in Annex 2 to the AIB Basic Commitment [Bagasse is an agricultural by-product – code '11'];
G.) The installed capacity of this Production Device. This is the "nominal capacity" (the maximum capacity obtainable under continuous operation which is usually determined by the manufacturer's specification and often appears on the "nameplate" of the equipment and need not relate to any operational reality). "Nominal capacity" is a characteristic of a particular class of equipment considered in operation, and for prime movers is measured in kW on the shaft. Where it refers to a power station (kW or kVA), it is the arithmetic sum of the nominal capacities of the machines of the same type (e.g. steam, gas turbine, hydro), and normally includes the main and auxiliary generators of all generator sets including standby generator sets. Values of kVA and cos(j) should also be recorded where these are available;
H.) The date of commissioning of this Production Device;
I.) Any schemes associated with any Public Support that are or have been received in addition to Certificates by this Production Device, together with an indication as to whether they are currently being received;
J.) A guarantee that the RES-E Generator owning this Production Device will not during the period of its Registration and for the same unit of electrical energy receive tradable evidence such as certificates which represent the benefit of renewable electricity generation from both this and another similar system that similarly certifies the origin or represents the benefits of the associated renewable electricity and can be exchanged for financial support;
K.) A diagram showing the Production Device, the location of export meters used for metering its generation and of transformer substations at the plant site. If there are generating auxiliaries for the Production Device and/or import meters for metering their demand these shall be also shown on the diagram; and
L.) Any additional information required by the Issuing Body as contained in the Domain Protocol.

A RED template for South African facilities in use since May 2004 is included as Appendix B.

It is furthermore stated that:

Should any planned or unplanned change to a Production Device, including changes to any Public Support received by it, render the statements made in the RED inaccurate, then the corresponding RES-E Generator or the Production Aggregator acting on its behalf shall:

- Inform the appropriate Issuing Body prior to planned changes coming into effect or immediately where such changes are unplanned; and

- Not receive Certificates in association with this Production Device other than in its original state until it has been re-Registered by the Issuing Body.

Each Production Device shall be assigned a unique identifier.
The current details as set out in the Renewable Energy Declaration of each Production Device that has been Registered shall be made available in electronic form to each Participant[1].
The Issuing Body shall publish clear and unambiguous procedures for the Registration of Production Devices. These procedures shall require that the RES-E Generator or the Production Aggregator acting on its behalf:

a) Completes and provides to the Issuing Body a RED;
b) Will permit the Issuing Body to inspect the Production Device and such records as it considers to be necessary to verify the authenticity of the RED and that such inspection may be conducted without prior announcement;
c) Requests an account on the CRD where the issued Certificates for theProduction Device will be deposited;
d) Discloses details of any past infringements of Domain or inter-Domain agreements regarding Certificates and including the Basic Commitment and any Domain Protocol by itself or by any subsidiary, parent or related undertaking;
e) Provides details of an officially endorsed source of meter readings, the means of collecting these, approval for their collection and accepts liability for the delivery, quality and accuracy of these meter readings; and

If a RES-E Generator seeking Registration of a Production Device meets the criteria for participating then the Issuing Body shall accept the application.

[1] REDs are to be made publically available on www.zarecs.co.za

4. Device registration inspection methodology

The issuing body can appoint a production registrar for the purpose of initial and periodic device inspections. For the purpose of the initial device inspection for first registration of the device as a RES – E generator the Production Registrar as appointed by the Issuing Body shall:

- Send a request prior to a site visit for the following documentation to be available on site:
    - documentation for the preparation of the Production Declaration including specifications for the device(s), the meters to be inspected and internal measurement methodologies
    - any documentation supporting data to be supplied in completion of the Renewable Energy Declaration by the device owner.
- Send a RED template (included as Appendix B) for the device owner to prepare for the device inspection and subsequent lodging of the RED with the Issuing Body.
- Conduct an on-site device inspection accompanied by suitably qualified device owner members of staff in order to verify data to be specified in the RED.
- Identify device owner staff members to be interviewed regarding relevant data collection methodologies and procedures
- Satisfy itself that suitable procedures and data collection are in place to provide an accurate RED and reliable Combustion and Production Declarations.

5. Reporting process and data collection

The declaration of production from a device for the purpose of issuing certificates must make a statement both of the volume of electrical output by the device and of the proportion of electricity which has been generated from renewable resources. The statement of electrical production is to be deposited with the Issuing Body monthly and is referred to as a Production Declaration (PD). It is furthermore required that this proportion be calculated by reference to the energy content of the renewable and non-renewable fuels and own consumption where appropriate. This is accomplished by the device owner preparing and submitting a Combustion Declaration (CD) to the Issuing Body. Hydro facilities are not required to submit a CD. Own consumption is recorded in the monthly PD. The issuing body must satisfy itself that systems and procedure are in place at the device or facility for data of a suitable resolution to be captured and transferred to the issuing body in accordance with preparation of monthly CDs and PDs.. The following documentation will therefore be used for the process of issuing certificates to the device owner's account in the CRD:

- Total monthly production in MWh.
- Total monthly auxiliary or own consumption in MWh.

6. Conclusion

The Issuing Body shall provide a decision on the acceptance of the RED lodged by the device owner within 10 working days. This shall be provided to both the device owner and to market participants with a period of comments on the RED and the decision of a further 10 working days being allowed. Thereafter the Issuing Body will provide final acceptance of the RED and issue the device identifier and ensure that it has been captured in the CRD. If there are objections to the RED or its acceptance the Issuing Body may require the device owner to re-submit the RED for re-evaluation as per the above procedure.

7. References

AIB, 2009. EECS Basic Commitment PRO (Release 6) 1 Jan 2009

AIB, 2009. RECS AIB-PRO-SD03: EECS Registration Databases, 29 July 2009.

AIB, 2004. RECS basic commitment Annexes Release 2.2. 31 January 2004.

SATIB, 2009. RECS Domain Protocol for Republic of South Africa, Ver. 0,1, Nov 2009

8. History of Versions

Version 1	26th February 2010
Version 2 (This version)	17 March 2010

Appendix A.

Standard Terms and Conditions

Appendix B.

Hydro-based facility Renewable Energy Declaration Version 1.0

[Device Owner] _____ wishes to receive renewable energy certificates for the Hydro-based electrical output from [Device Name] _____. Registration is therefore sought for [Device Name]_____ in the South African Domain. This Renewable Energy Declaration (or RED) is prepared with the intention of declaring that the installation fulfils the criteria set out in this Basic Commitment and relevant Domain Protocol.

Period of validity: 24 (twenty-four) months from date of registration on the CRD. After this time a RED will be re-submitted. Failure to do so will result in cessation of certificate issue for this Production Device. The criteria and the procedure for the RED may change over time.

A.) Name:
Address:
Responsible person:
Telephone:
Fax:
Email:

Issuing Body:
Responsible person:
Telephone:
Fax:
Email:

B.) CRD Account Number: To be assigned
C.) Location of device
D.) Location and detail of export and import meters:

E.) Possible Sources of Fuel
F.) Type of generation technology Hydro power (Code '05')
G.) Installed Capacity ___ MW (___ MVA)
H.) Date of commissioning 20__
I.) Public support schemes

J.) It is hereby guaranteed that:

[Device Owner] _____ will not during the period of its Registration and for the same unit of electrical energy receive tradable certificates which represent the benefit of renewable electricity generation from both RECS and another similar system and can be exchanged for financial support

K.) A diagram showing the Production Device, the location of export meters used for metering its generation and of transformer substations at the plant site. If there are generating auxiliaries for the Production Device and/or import meters for metering their demand these shall be also shown on the diagram.

_____ _____
Name: for Device Owner **Date.**
Device Owner