

**STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH**

DOCKET NO. E-100, SUB 121

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of		
Implementing a Tracking System for)	ORDER ESTABLISHING
Renewable Energy Certificates)	PROCESS FOR DEFINING
Pursuant to Session Law 2007-397)	REC TRACKING SYSTEM
)	REQUIREMENTS AND
)	SELECTING A PROVIDER

BY THE COMMISSION: On August 20, 2007, North Carolina enacted comprehensive energy legislation, Session Law 2007-397 (Senate Bill 3), that, among other things, establishes a Renewable Energy and Energy Efficiency Portfolio Standard (REPS) for this State to promote the development of renewable energy and energy efficiency.

G.S. 62-133.8(i) requires the Commission to adopt rules to implement the provisions of this section. In developing such rules, the Commission shall, in part:

- (1) Provide for the monitoring of compliance with and enforcement of the requirements of this section [REPS].
- (7) Develop procedures to track and account for renewable energy certificates, including ownership of renewable energy certificates that are derived from a customer owned renewable energy facility

On February 29, 2008, and March 13, 2008, the Commission issued Orders in Docket No. E-100, Sub 113 adopting final and amended rules implementing Senate Bill 3. In the February 29, 2008 Order, the Commission concluded that REPS compliance would be determined by tracking renewable energy certificates (RECs) associated with renewable energy and energy efficiency. The Commission further concluded that a "third-party REC tracking system would be beneficial in assisting the Commission and stakeholders in tracking the creation, retirement and ownership of RECs for compliance with Senate Bill 3" and stated that "[t]he Commission will begin immediately to identify an appropriate REC tracking system for North Carolina."

On July 17, 2008, the North Carolina Sustainable Energy Association (NCSEA) filed a Petition requesting the Commission to investigate, evaluate, and adopt criteria for a REC tracking system to assist in determining compliance with REPS. In its Petition, NCSEA recommended criteria that it believes are the "bare minimum" necessary for a

functional REC tracking system. Pending issuance of this Order, NCSEA's Petition was filed in Docket No. E-100, Sub 113.

On July 21, 2008, the Public Staff filed comments and recommendations concerning NCSEA's Petition. In its filing, the Public Staff stated its belief that the specification proposed by NCSEA generally "provides a reasonable and desirable basis for the development of the North Carolina REC tracking system." The Public Staff recommended that the Commission: (1) issue an order establishing a deadline for interested parties to comment on, and propose modifications to, the proposed specification; and (2) establish a roundtable, if necessary, after receipt of comments for the purpose of reaching consensus on a specification for the REC tracking system.

After careful consideration, the Commission now finds good cause to initiate this proceeding in order to move ahead with efforts to define the requirements for a third-party REC tracking system and its administrator, with the intent of issuing a Request for Applications (RFA) in late 2008 and selecting a provider during the first quarter of 2009. To that end, the Commission has developed the attached draft Requirements Document and requests North Carolina electric power suppliers, independent generators, customers, and other interested parties to comment and further participate as appropriate in the Commission's REC tracking system provider selection process. The Commission notes that REC tracking systems operating in other states and regions are typically funded via user fees, and encourages potential users (generators and utilities) to participate in this proceeding.

IT IS, THEREFORE, ORDERED, as follows:

1. That all parties of record in Docket No. E-100, Sub 113 shall be deemed to be parties of record in this proceeding without the need to file petitions to intervene.
2. That other interested persons that wish to become formal parties and participate in this proceeding may file petitions to intervene pursuant to Commission Rules R1-5 and R1-19.
3. That parties wishing to comment on the attached draft Requirements Document, including an estimate of the number of generators and users that the North Carolina REC tracking system should attempt to accommodate, shall file any such comments by September 22, 2008.
4. That Commission Staff shall convene a stakeholder group comprised of parties and other interested persons, other than potential REC tracking system providers, to explore parties' comments and finalize the Requirements Document. The initial meeting of the stakeholder group shall begin at 9:30 a.m. on September 26, 2008, in Commission Hearing Room 2115, Dobbs Building, 430 North Salisbury Street, Raleigh.
5. That the Commission shall schedule brief presentations by potential REC tracking system providers that might be interested in responding to the Request for

Applications beginning at 1:00 p.m. on November 3, 2008, in Commission Hearing Room 2115, Dobbs Building, 430 North Salisbury Street, Raleigh. Any potential REC tracking system provider who wishes to make a presentation shall contact Kimberly Jones at (919) 733-0846 and provide 14 copies of its presentation materials by October 23, 2008, in order to be placed on the agenda.

6. That parties wishing to provide comments regarding the criteria that should be used by the Commission in evaluating applications submitted by potential REC tracking system providers should file those comments by November 14, 2008.

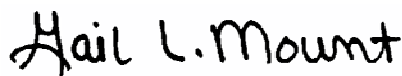
7. That the Chief Clerk shall mail a copy of this Order to all persons who have filed registration statements with the Commission pursuant to Commission Rule R8-66.

8. That the Petition filed on July 17, 2008, by NCSEA and the Comments filed on July 21, 2008, by the Public Staff in Docket No. E-100, Sub 113 shall be transferred to this docket.

ISSUED BY ORDER OF THE COMMISSION.

This the 4th day of September, 2008.

NORTH CAROLINA UTILITIES COMMISSION

A handwritten signature in black ink that reads "Gail L. Mount". The signature is written in a cursive, slightly stylized font.

Gail L. Mount, Deputy Clerk

Kc090408.05

**First Draft
System Requirements
North Carolina Renewable Energy Certificate Tracking System
(NC-RETS)**

I. Introduction and Background

On August 20, 2007, North Carolina enacted comprehensive energy legislation, Session Law 2007-397 (Senate Bill 3), that, among other things, establishes a Renewable Energy and Energy Efficiency Portfolio Standard (REPS) for this State to promote the development of renewable energy and energy efficiency. G.S. 62-133.8(i) requires the Commission to adopt rules to implement the provisions of this section. In developing such rules, the Commission shall, in part:

(1) Provide for the monitoring of compliance with and enforcement of the requirements of this section [REPS].

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On February 29, 2008, and March 13, 2008, the Commission issued Orders in Docket No. E-100, Sub 113 adopting final and amended rules implementing Senate Bill 3. In the February 29, 2008 Order, the Commission concluded that REPS compliance would be determined by tracking renewable energy certificates (RECs) associated with renewable energy and energy efficiency. The Commission further concluded that a “third-party REC tracking system would be beneficial in assisting the Commission and stakeholders in tracking the creation, retirement and ownership of RECs for compliance with Senate Bill 3,” and stated that “[t]he Commission will begin immediately to identify an appropriate REC tracking system for North Carolina.”

The Commission is now moving ahead with efforts to develop the requirements for such a third-party REC tracking system and its administration, with the intent of issuing a Request for Applications (RFA) in late 2008 and implementing NC-RETS in the first quarter of 2009, or as soon thereafter as practicable. The successful Applicant would be expected to become the Contractor that would develop, operate and maintain NC-RETS for at least four years.

II. Scope of the Project

The overall purposes of NC-RETS are to track utility compliance relative to the State’s REPS requirements and to ensure against double-counting of RECs. G.S. 62-133.8 requires all North Carolina electric power suppliers to meet a specific percentage of their customers’ electricity needs via renewable energy and energy efficiency, with slight differences for the electric public utilities versus electric membership corporations and

municipal utilities. In addition, the law sets specific requirements for solar energy resources, swine waste resources, and poultry waste resources. NC-RETS will be required to track each individual utility's compliance against its individual statutory requirements, as well as its contribution toward the statewide aggregated goals for swine and poultry waste resources. The details of these REPS requirements are explained below. To the extent there is any conflict between the requirements in G.S. 62-133.8 and this document, or the requirements in the Commission's Orders in Docket No. E-100, Sub 113 and this document, the requirements in the statute and/or those Orders shall apply.

III. Requirements for Electric Public Utilities¹

In calendar years:	REPS requirement: ²
2012, 2013, 2014	3% of 2011 North Carolina retail sales
2015, 2016, 2017	6% of 2014 North Carolina retail sales
2018, 2019, 2020	10% of 2017 North Carolina retail sales
2021 and thereafter	12.5% of 2020 North Carolina retail sales

An electric public utility may meet the REPS requirement by:

- a. Generating electric power at a "new renewable energy facility" (see glossary of definitions at the end of this document).
- b. Using a renewable energy resource to generate electric power at a generating facility other than the generation of electric power from waste heat derived from the combustion of fossil fuel.
- c. Reducing energy consumption through the implementation of an energy efficiency measure. Up to 25% of the REPS requirement through 2020 may be met through savings due to implementation of energy efficiency measures. Beginning in calendar year 2021 and each year thereafter, an electric public utility may meet up to 40% of its REPS requirement through savings due to implementation of energy efficiency measures.
- d. Purchasing electric power from a "new renewable energy facility." If such a facility is located outside of North Carolina, the electric power must be delivered to an electric public utility in North Carolina, and the RECs cannot be sold separately to another electric public utility.
- e. Purchasing RECs from new renewable energy facilities. For Duke and PEC, RECs from out-of-state facilities shall not be used to meet more than

¹ Duke Energy Carolinas, LLC (Duke), Progress Energy Carolinas, Inc. (PEC), Virginia Electric and Power Company d/b/a Dominion North Carolina Power (Dominion), New River Light and Power, and Western Carolina University.

² In Docket No. E-100, Sub 113, the Commission has requested comments regarding the interpretation of the REPS compliance requirements in G.S. 62-133.8 for specific years. This draft Requirements Document contains one interpretation as a place-holder and will be amended, as necessary, to conform to the Commission's decision in Docket No. E-100, Sub 113.

25% of the REPS requirement. An electric public utility may not purchase RECs derived from energy efficiency to meet its REPS requirement.

IV. Requirements for Electric Membership Corporations (EMCs) (31 entities, including 5 headquartered outside North Carolina) and Municipalities (Munis) (72 entities)

In calendar years:	REPS requirement: ³
2012, 2013, 2014	3% of 2011 North Carolina retail sales
2015, 2016, 2017	6% of 2014 North Carolina retail sales
2018 and thereafter	10% of 2017 North Carolina retail sales

EMCs and Munis may meet the REPS requirement by:

- a. Generating electric power at a new renewable energy facility.
- b. Reducing energy consumption through the implementation of demand-side management or energy efficiency measures.
- c. Purchasing electric power from a renewable energy facility or a hydroelectric power facility, provided that no more than 30% of the REPS requirement may be met with hydroelectric power, including allocations made by the Southeastern Power Administration (SEPA).
- d. Purchasing RECs from renewable energy facilities. RECs from out-of-state renewable energy facilities can be used to meet no more than 25% of the REPS requirement.
- e. Acquiring all or part of its electric power through a wholesale purchase power agreement with a wholesale supplier of electric power whose portfolio of supply and demand options meets the REPS requirement.

³ See Footnote No. 2.

V. Statewide Requirements⁴

RECs derived from swine waste resources and poultry waste resources apply toward both the utility-specific calendar-year requirements as well as toward statewide aggregated requirements, as shown below. In addition, electric power suppliers are required to meet a certain amount of their annual REPS requirement via solar resources, as shown below.

Years	Solar Energy Resource Requirement	Swine Waste Resource Requirement (Aggregated)	Poultry Waste Resource Requirement (Aggregated)
2010 2011	.02% of retail sales in that year (about 28,000 MWh)	N/A	N/A
2012	.07% of retail sales in that year (about 100,400 MWh)	.07% of statewide retail sales in that year (about 100,400 MWh)	170,000 MWh
2013	.07% of retail sales in that year (about 102,000 MWh)	.07% of statewide retail sales in that year (about 102,000 MWh)	700,000 MWh
2014	.07% of retail sales in that year (about 103,600 MWh)	.07% of statewide retail sales in that year (about 103,600 MWh)	900,000 MWh
2015 2016 2017	.14% of retail sales in that year (about 210,600 to 217,300 MWh)	.14% of statewide retail sales in that year (about 210,600 to 217,300 MWh)	900,000 MWh
2018 etc.	.20% of retail sales in that year (about 315,500 MWh in 2018)	.20% of statewide retail sales in that year (about 315,500 MWh in 2018)	900,000 MWh

⁴ See Footnote No. 2.

VI. Anticipated volume of RECs⁵

Compliance Year	Estimated statewide retail sales	REPS requirement as a % of retail sales	REPS requirement expressed in MWh
2012	141,159,021 MWh (2011 sales)	3%	4,234,771 MWh
2013	141,159,021 MWh (2011 sales)	3%	4,234,771 MWh
2014	141,159,021 MWh (2011 sales)	3%	4,234,771 MWh
2015	148,043,643 MWh (2014 sales)	6%	8,882,619 MWh
2016	148,043,643 MWh (2014 sales)	6%	8,882,619 MWh
2017	148,043,643 MWh (2014 sales)	6%	8,882,619 MWh
2018	155,264,041 MWh (2017 sales)	10%	15,526,404 MWh
2019	155,264,041 MWh (2017 sales)	10%	15,526,404 MWh
2020	155,264,041 MWh (2017 sales)	10%	15,526,404 MWh
2021 and thereafter	2020 sales for electric public utilities 2017 sales for EMCs and Munis	12.5% for electric public utilities 10% for EMCs and Munis	

VII. Banking of RECs, Expiration of RECs, Retirement of RECs

1. RECs (whether or not bundled with electric power) claimed by an electric power supplier to comply with the REPS requirement must have been earned (produced) after January 1, 2008. If not created by a utility, they must be purchased by a utility within three years of the date they were earned (produced). RECs shall be retired when used for REPS compliance and shall not be used for any other purpose. A REC may be used for REPS compliance in the year in which it is acquired or obtained by an electric power supplier, or in any subsequent year, except that an electric public utility must use a REC to comply with its REPS requirement within seven years of recovering related costs from customers. EMCs and Munis are under no such deadline.

2. For nonutility generators, RECs expire three years after their creation unless sold within that time to an electric power supplier for REPS compliance.

VIII. Registration of Generators

Generating facilities whose RECs may be used for REPS compliance must register with the Commission before their generation data is accepted into NC-RETS. This includes generating facilities located outside of North Carolina, generating facilities owned by utilities, generating facilities owned by customers, and generating facilities

⁵ See Footnote No. 2.

owned by other independent third parties. The Commission will notify the NC-RETS Administrator when it certifies a generating facility as being eligible to have its RECs counted toward REPS compliance, including informing the NC-RETS Administrator as to whether the generating facility meets the definition of a “new” renewable energy facility and whether its RECs can appropriately count toward the set-asides for solar energy resources, swine waste resources, or poultry waste resources.

IX. Technical Requirements

1. The successful Applicant shall create, maintain, and operate an Internet-based REC tracking system to serve North Carolina. The Applicant must propose an Internet-based system accessible by multiple, simultaneous users with secure login for both input and retrieval of data.

2. The Applicant must provide its proposed architectural solution. Diagrams showing major system components, their interrelationships and interfaces, and supporting diagrams and materials may be included to provide the Commission a visual, as well as a narrative, representation of the proposed technical operating environment. The Applicant must provide the following information:

a. Identification and description of the proposed hardware and operating system (OS) platform and components.

b. The proposed software components, including software development tools, language, and technology, software version(s), database management system, commercial-off-the-shelf software products (as applicable), middleware, other software modules, standard and ad hoc reporting software, and the planned number of installations. This information must include specifying the vendor of each component (including the vendor's proprietary software components). The Applicant must identify and describe the proposed network infrastructure and components that will be used.

c. The proposed application architecture that will be used, including a component model and distribution of the application across an n-tier architecture. The Applicant should also specify which HTML encoding and other standards will be used in developing and maintaining the system and the rationale for selecting each standard that will be applied.

d. A description of how the system will be designed to interoperate with a standard email product, as well as a description of how the http file transfer functionality will be “built-into” NC-RETS to allow users to submit electric generation data, Btu production data and energy efficiency/ demand side management data and certification and eligibility information. NC-RETS should be designed such that Account Holders receive an email notification of any activity in their accounts.

e. A description of the migration path for the system components described above that explains how the system could be upgraded or modified to support extensibility requirements in the event that the actual volume of data or

number of system users increases beyond anticipated numbers or when new functionality is added.

f. A description of how the system can operate as a purely html solution able to run on multiple commercial browsers without requiring the installation of any software on the system users' computers.

g. A description of how the Applicant will migrate historic (from January 2008 until NC-RETS is fully operational) REC data into the system.

h. An overall approach for an integrated database design and model, including products, platform location, redundancy, and centralization. If the proposal does not offer a single, integrated database, the Applicant must include the data synchronization approach or other provisions for maintaining integrity between databases.

3. The Applicant must provide its proposed security and audit strategy for NC-RETS. The Applicant's proposal must provide enough detail so the Commission can evaluate the Applicant's knowledge and intended approach. The Applicant shall provide, at a minimum:

a. A secured web portal interface with password protection for static data collection, user access, and reporting.

b. Restricted access privileges based on participant and user roles.

c. Well-defined system backup and recovery processes.

d. Secured file transfer and data upload processes using encrypted communications for all data interfaces.

4. The Applicant shall demonstrate how NC-RETS will provide an efficient, flexible way to control and administer multiple levels of system user access, including a method for defining roles-based authorizations (permissions) for all system components. The proposal must include at least the following:

a. Identification and description of the proposed security architecture, including each proposed level of security (e.g., application, database, network, server, etc.).

b. Proposed approach for managing security levels (e.g., defining, assigning, and maintaining levels of system access and permissions).

c. Proposed security procedures and associated documentation for various kinds of users.

d. Proposed approach to security with respect to delivering access to NC-RETS end-users via a secured web portal.

e. Proposed approach for providing user and transactional audit capabilities.

f. An explanation of how the Applicant anticipates that the proposed security and audit strategy (in tandem with other of the Applicant's system solution components) will address the requirement that the adopted and

implemented web solution will qualify for certification by an independent, third-party certifier (e.g., Webtrust).

g. In the event future system requirements include two-way authentication (e.g., some subset of end-users require personal identification for specific transactions that essentially necessitate electronic signatures), propose how addressing this possible future requirement would be integrated into the security-related approaches described immediately above.

5. The Applicant must provide its proposed solution to address data volumes and retention requirements. The proposal must provide enough detail to demonstrate that it provides sufficient CPU, storage, and appropriate programming logic to allow for accurate and timely data processing in an environment that must be able to support all of the requirements for:

a. Up to ____ private system users.

b. Up to ____ accounts, some of which will be designated as Generator Accounts, some of which will be utility energy efficiency/demand side management accounts and others of which will be designated as Utility Compliance Accounts.

6. The Applicant must provide a user interface proposal that allows users to easily execute the following actions:

a. Initiate transfer of RECs and confirm receipt of RECs to and from other owners;

b. Transfer RECs, by vintage and fuel type, from various accounts into compliance/retirement accounts;

c. Enter the appropriate prior year's retail sales, which NC-RETS then converts into the current year's REPS compliance obligation (for display in the Utility's compliance account and in reports available to regulators and the public); and

d. Designate the year in which cost recovery for each REC is to occur or has occurred.

7. Each Generator Account will be associated with a generating unit from a registered generating facility. Each Generator Account will list those RECs that have been created by the generating unit. Each Generator Account will also have a Retirement Subaccount, which will list those RECs that were created by the generating unit and have been used for REPS compliance via the associated Utility Compliance Account, or transferred/exported to another participant's Account. Each Generator Account shall be able to be frozen in the event the Commission informs the NC-RETS Administrator that the Commission has revoked the generating unit's registration. Those generators that use a variety of fuels, such that not all of their output is eligible to earn RECs, shall have a Pending Subaccount where total meter data resides pending the provision of fuel information necessary to issue RECs.

a. Each Account (both Generator Accounts and Utility Compliance Accounts) shall have an Export Sub-Account, which shall provide an environment for RECs where the transfer to another participant/owner is pending.

b. Each Utility Compliance Account shall have an Import Sub-Account, which shall provide an environment for RECs where the import from another owner is pending. The receiving Account Holder must accept the RECs to protect against RECs being transferred in error.

c. Generator Accounts may be associated with a Utility Compliance Account, or they may be independent of a Utility Compliance Account. Each Utility Compliance Account shall have a Retirement Subaccount for each calendar year, which will detail the RECs retired toward REPS compliance in that year. After the Commission acts on a utility's annual compliance report, the utility's Retirement Subaccount for that year shall be frozen such that the RECs listed in it may not be reallocated to another year or exported to another account. Two years after the Commission acts on the utility's annual compliance filing, the NC-RETS Administrator may archive the data from the related calendar year Retirement Subaccount so as to free up space in the database.

i. Account holders must be able to view and sort the RECs in each account by information fields, including vintage and fuel type, generate reports about the RECs in their Retirement Subaccount(s), and export RECs from Generator Accounts and Energy Efficiency/Demand-Side Management Accounts into their Retirement Subaccount(s). They may transfer RECs from one year's Retirement Subaccount into another year's Retirement Subaccount, except that they may make no imports or exports from a given year's Retirement Subaccount once they have made the associated annual compliance filing with the Commission.

ii. Account holders must be able to designate RECs in their year-specific retirement accounts as counting toward the set-asides for solar resources, poultry waste resources, and swine waste resources. NC-RETS must generate reports by calendar year indicating the status of meeting the set-aside requirements.

8. The Applicant must demonstrate how its proposal provides data interfaces with utilities and generators to receive electric generation information from registered generating facilities. Energy generation data used to create RECs will be measured and reported to NC-RETS monthly, on an end-of-month basis, except for generating facilities with a nameplate capacity of 150 kW or smaller. (Such generators may report generation data no less often than once per year.) Data files will be electronically transmitted to NC-RETS using a secured protocol and a standard format to be developed by the Applicant. At a minimum the data shall reflect the month and year of generation, monthly MWh for each meter ID, and the associated meter ID(s) for each generating facility. The owner of the generating facility, or its designated representative, will direct the balancing area operator to release its generation data to the NC-RETS Administrator within 62 days of the end of the generation month. The Administrator will accept the data and issue associated RECs, in whole numbers only (one REC for each

eligible MWh), into the appropriate Generator Account(s). If the generating facility uses a variety of fuels, some of which qualify for RECs and some of which do not, the Administrator shall place the generation data into a separate Generator Sub-Account pending receipt of the fuel allocation information. The Administrator will not issue the related RECs for generators that fail to submit data within 62 days of the end of the generation month. For each generator, the Administrator will accept data from a single entity, which must be either a balancing area operator or a Qualified Independent Party.⁶

a. Customer-owned distributed generating facilities of 150-kW nameplate capacity or less may opt to be treated as a Self-Reporting Generator. Solar thermal facilities and combined heat and power (CHP) systems shall be treated as Self-Reporting Generators. The Applicant shall describe how it will develop a self-reporting interface by which Self-Reporting Generators shall enter actual cumulative meter readings measured in kWh (or Btu for solar thermal installations or CHP systems) and the date of each meter reading. Such meter readings must be entered at least once a year. The NC-RETS Administrator shall remind self-reporting facilities of the need to self report 11 months from the last data receipt. If the facility does not enter a cumulative meter reading within 30 days of such a notice, its account shall be deemed inactive and the Administrator shall so inform the facility. If the account is reactivated, the next verified meter read shall be the new baseline for accumulated kWh or Btu data. A Self-Reporting Generator must have its cumulative hourly meter readings verified by a Qualified Independent Party at least once a year, and provide such verifications to the NC-RETS Administrator, who shall make them available for audit by the Public Staff, the Commission, or other parties as approved by the facility owner.

b. Data used to produce RECs in NC-RETS will be derived from balancing area settlements data polled from revenue quality meters, except as noted below. For generating facilities that are interconnected to a utility or balancing area operator, a revenue-quality meter is any meter used by the reporting balancing area operator for settlements. The data will be electronically collected by a meter data acquisition system, such as a MV-90 system, or pulse accumulator readings collected by the balancing area's Energy Management System, and verified through a monthly balancing area checkout/energy accounting or settlements process. If the balancing area does not have an electronic source for collecting revenue meter data, then NC-RETS must accept manual meter reads performed by a Qualified Independent Party:

i. Data from generating facilities that does not go through a balancing area settlements process must be from a revenue quality meter (one that meets the applicable ANSI C-12 standard) adjusted to reflect the energy delivered into the transmission grid at the high side of the

⁶ A Qualified Independent Party may include the interconnecting utility, scheduling coordinator, an independent third-party meter reader, or the purchaser of the generator's RECs. It may not include the facility's owner or operator.

transformer and communicated to the NC-RETS Administrator by the balancing area energy accounting function.

ii. Data from a customer-site distributed generator must be from a revenue-quality meter (one that meets the applicable ANSI C-12 standard) at the AC output of an inverter, adjusted to reflect the energy delivered into either the transmission or distribution grid at the high side of the transformer. If there is no meter at the inverter, the original data source for reporting total energy production must be from revenue-quality metering placed to measure only the hourly positive generation flowing to the distribution system, adjusted to reflect the energy delivered into either the transmission or distribution grid at the high side of the transformer. If the customer-sited distributed generator uses all of the energy produced on site, then no adjustment for transformer losses is needed.

iii. Btu data from solar thermal installations and CHP systems shall be from a Btu meter meeting ____ standards.

9. The Applicant shall demonstrate how it will manage fuel source information and issue appropriate RECs for qualifying generation from multi-fuel generating facilities where one or more of the fuel sources does not qualify for RECs. Biomass co-fired with fossil fuels or using fossil fuels for startup or supplemental firing are eligible for RECs in proportion to the ratio of the net heat content of each fuel consumed to the net heat content of all fuel consumed in that month, adjusted to reflect differential heat rates for different fuels, if applicable. Such generators shall monthly provide the Applicant with the fuel information required to calculate and issue RECs.

10. The Applicant shall demonstrate how it will manage Btu production data from solar thermal facilities and CHP systems and issue related RECs.

11. Each generating unit will have a generation activity log, which is an electronic ledger where generation is posted prior to REC creation. Each time generation data is received by NC-RETS for a particular generating unit, the date and quantity of MWh is posted to the log. Adjustments received will be posted likewise.

a. The status of each entry in the log will be noted as follows:

i. System Accepted: Generation has been logged but has not yet been accepted or disputed by the Account Holder.

ii. Pending: The NC-RETS Administrator is waiting for resolution of a situation or receipt of additional information (such as fuel type allocations) before the RECs can be issued.

iii. Accepted: The Account Holder has accepted the posted generation, but the RECs have not yet been issued.

iv. Auto Accepted: The Account Holder did not accept or dispute the generation posted within 62 days and NC-RETS automatically accepted the generation.

v. Disputed: The Account Holder has disputed the posted amount of generation.

vi. Cancelled: The generation was logged, but RECs were never issued. For example, the Commission revoked the generating facility's registration.

vii. RECs Issued: RECs were issued for the logged generation.

12. NC-RETS must allow the NC-RETS Administrator to change the status of each entry in the log as information is received. On the day of REC creation, RECs will be issued based on the total whole number of MWh in the log that are "Accepted" or "Auto-Accepted." Fractional MWh will be rolled forward until sufficient generation is accumulated for the creation of a REC. NC-RETS will electronically notify the Account Holder each time an item is posted to the log. Account Holders will have at least seven calendar days to accept or dispute any new regular entries to the log and up to 90 days to accept or dispute adjustments. If the Account Holder does nothing, the posting will be automatically accepted after the specified waiting period.

13. The Applicant's proposal will assure that for generating units where the generator supplies meter readings, rather than net production, the log shall include a column where the meter readings are recorded and net generation is calculated. The Applicant's proposal shall describe the generation activity log, which at a minimum will include:

- a. Opening Balance/Prior Month's Balance Forward reflecting the kWh remaining after the prior month's REC creation date
- b. MWh of generation reported to NC-RETS during the current month
- c. Administrative adjustments, if any
- d. Creation of RECs
- e. Balance forward

14. The Applicant shall address its approach to routine archive and restore processes for data imported into NC-RETS and data created within NC-RETS.

15. The Applicant shall address its proposed procedures for importing RECs from other compatible tracking systems and exporting RECs to other compatible tracking systems. Generating facilities in other states whose output is being tracked in other systems must nonetheless be registered by the Commission in order for their RECs to count toward REPS compliance. The Applicant should describe its proposal for assuring that imported RECs are from North Carolina-registered generating facilities.

16. The Applicant must address data interface requirements in enough detail to demonstrate sufficient CPU, storage and appropriate programming logic to allow accurate and timely processing in an environment that must:

- a. Accept and process generation data for registered facilities from authorized reporting entities. Data files are to be electronically transmitted to NC-RETS using a secured protocol and a standard format specified by the

Applicant. The data shall reflect, at a minimum, the month and year of the generation, monthly accumulated MWh or kWh for each meter ID and the associated Meter ID(s) for each resource.

b. Accept and process import of REC data from North Carolina-registered generating facilities in other compatible tracking systems.

c. Accept requests from Account Holders and process the export of RECs to compatible tracking systems.

d. Accept and process certification and eligibility information concerning generating facilities registered with the Commission. The Applicant shall describe its proposal for developing, implementing and operating a user interface that will allow the Commission to submit registration information to NC-RETS.

e. NC-RETS must support two interface methods. This should include a discussion on how NC-RETS's http file transfer functionality to upload/download SSL encrypted data will be integrated into NC-RETS and be accessible by private NC-RETS users from the secure, Internet-based interface. The Applicant should also discuss methods that could be used to optimize the secure submission of data via CD.

X. Functional Requirements

The Applicant shall explain how it will meet these functional requirements:

1. The Applicant will establish a REC Account(s) for any electric power supplier, renewable generating facility, or other entity that wishes to participate in REPS compliance, except that generating facilities must first be registered with the Commission. The Applicant will describe how it will notify each Generator when it has received adequate registration information, including a copy of the Commission's registration order, from the Generator and established an Account for the Generator in NC-RETS.

2. The Applicant will describe how it will require each Account Holder to name a designated representative, a natural person who is authorized by the participant to transfer RECs. The designated representative will serve as the contact person on all matters regarding the Account Holder's account(s).

3. The Applicant shall provide its proposal for registering users and maintaining Account Holder data. The Applicant's proposed approach should be consistent with the Commission's February 29, 2008 and March 13, 2008 Orders (to be attached).

4. To avoid double-counting, the system must track 100% of a participating generating facility's output. The Applicant will develop static data fields as listed in Attachment C [to be developed] for information relative to the physical characteristics of each registered facility.

5. The Applicant will describe its proposed method for accepting and making prior period adjustments to generation data and applying a credit or debit to individual generators' activity logs. Such adjustments may only be requested by a balancing area operator after all of the affected entities agree that the adjustment is appropriate. The NC-RETS Administrator shall not accept prior period adjustments for generation reported more than a year prior to the current month. NC-RETS must inform impacted Account Holders of all credit or debit adjustments as soon as they are posted to the generator's activity log.

6. The Applicant shall propose a system for assigning each REC a unique serial number which shall contain embedded codes that indicate the generating unit, its location by state, the month and year of the generation, etc. The system must be able to track generation-related RECs based on the facility's location (in-state or out-of-state), the date they were created, and whether they were created at a "renewable energy facility" or a "new renewable energy facility." For electric public utilities, the serial number system must be able to note, for each REC, the year in which cost recovery from customers has occurred, with this information being added at the appropriate time via a user interface by the electric utility Account Holder. The system must be able to note the year in which the REC was used for compliance (and by which utility), and hence retired. The system must be able to track ownership of each REC from production through to retirement, and to ensure that RECs that are more than three years old are either owned by a utility, or are retired. Given these requirements, the Applicant must develop, for Commission approval, a numerical certification construct that will assure that each REC has a unique identifier.

7. NC-RETS must be able to generate RECs from verified energy consumption reductions resulting from utility energy efficiency and demand side management programs. NC-RETS shall establish an EE/DSM Account for each utility and generate RECs based on data provided by an independent third party as approved by the Commission.

8. NC-RETS must be able to create annual compliance reports that are unique to the standards required of each kind of utility, be it an electric public utility, an EMC or a municipal utility. Each REC producer, as well as each utility, must have a unique account(s) in which to track the RECs issued to it, and currently owned by it.

9. NC-RETS must be able to create annual compliance reports for the statewide aggregated requirements, and detail each utility's contribution toward meeting the requirements.

10. The successful Applicant must provide system documentation and training to users prior to start-up, as well as for new users through the contract term. This includes operating a help desk to provide on-line or telephonic assistance to users during, at a minimum, normal business hours, Eastern Standard Time.

11. NC-RETS must issue RECs once a month per generating unit, assuming that the unit has qualifying entries in its log. RECs for reduced energy consumption shall be issued annually or as otherwise verified by an independent third party.

12. NC-RETS shall have the capability to perform data validity checks. All generation data received by NC-RETS will undergo an automatic data validity check to ensure that erroneous and technically infeasible data is not entered. The check will compare reported production to an engineering estimate of maximum potential production calculated as a function of technology type, associated maximum capacity factor, nameplate capacity, fuel (if relevant), and time period since the previous cumulative meter reading. If data entered exceeds an estimate of technically feasible generation, NC-RETS will alert the NC-RETS Administrator and the generation will be posted to the log with a status of "pending" until verified accurate data is received.

13. The Applicant must demonstrate how NC-RETS will provide a website, portions of which will be accessible to the public. The public portion of the website shall contain:

- a. Directory of account holders
- b. Directory of registered generating facilities
- c. Link to the Commission's website
- d. Standard reports, one for each utility, of aggregated compliance data
- e. Standard reports regarding compliance with the set asides for energy from poultry waste, swine waste and solar resources

14. NC-RETS's website shall have a portion that is password protected. It shall contain:

- a. Standard reports for each compliance account and generation account
- b. Compliance reports for regulators which detail the RECs each utility is using and retiring for each compliance year, as well as those for which cost recovery is in process
- c. Reports for regulators listing all generating facilities that have been registered and the method by which their generation data is transmitted to NC-RETS

15. NC-RETS must have functions that allow the NC-RETS Administrator to access every account (view only or data entry with the appropriate security and documentation).

16. NC-RETS's report function shall allow printing of screens for each individual account.

XI. Other Requirements

1. In addition to implementing NC-RETS to meet these specifications, the successful Applicant will work with an on-going stakeholder group to be named by the Commission to address system start-up, training and technical issues that may arise from time to time. The Applicant shall demonstrate how it will interact with the stakeholder group and individual users and Account Holders.

2. The Applicant shall provide proposed Terms of Use and an Interface Control Document that describes the terms and conditions under which it proposes that entities would agree to provide data, exchange information and conduct business with the Contractor and NC-RETS. These documents are for review and approval by the Commission. The Interface Control Document will identify generating facilities registered with the Commission whose generation may be submitted to the system, as well as the protocols for collecting information, such as meter IDs, data format, communication protocols and timing, and security requirements for data collection. The Applicant's proposal will describe its plans for working with generators to verify information and address specific requirements.

3. The development and operation of NC-RETS must allow utilities and the Commission to meet the requirements of Senate Bill 3 and the Commission's February 29, 2008, and March 13, 2008, Orders Adopting Final Rules and Amending Final Rules in Docket No. E-100, Sub 113 (to be attached).

4. Once a REC is created in NC-RETS, no changes can be made. In the event an error is discovered after RECs have been issued, the NC-RETS Administrator shall notify the Generator, the REC owner and the Commission as soon as possible with a proposed solution to rectify the error. While the issue is pending resolution, the NC-RETS Administrator shall insure that any RECs that might have been issued in error are not transferred from one Account Holder to another.

5. The Commission intends that NC-RETS will be compatible with other REC tracking systems in North America to the extent that other systems meet essentially equivalent standards for metering, data quality, and separation of RECs compliance attributes from emission-reducing attributes, as well as the North Carolina definitions for renewable energy facilities and resources. The source generating facility for imported RECs must be registered with the Commission. In order to import or export RECs from one system to another, the other tracking system must develop a protocol with the NC-RETS Administrator. After such protocols have been developed, the Contractor will post a list of compatible systems on the NC-RETS website. The Contractor's proposal shall demonstrate how the NC-RETS Administrator will process a request to export or import RECs. The NC-RETS Administrator will assign the designated RECs an "export pending" status to insure they are not inadvertently transferred, sold or retired. The NC-RETS Administrator will communicate with the administrator of the compatible system and arrange for the transfer. If the transfer is accepted by the compatible system, the NC-RETS Administrator will move the RECs from the Account Holder's active account to its export account. The status of the RECs will be changed from "export pending" to "exported." The Applicant's proposal shall describe how the Account Holder is kept informed at each step in this process. The Applicant's proposal shall demonstrate how it will provide a similar process for REC imports.

XII. Term and On-Going Rights to Use Software

1. This RFA is for software development and implementation by April 1, 2009, including training and documentation, as well as NC-RETS and program administration for calendar years 2009, 2010, 2011 and 2012. Program administration includes operations, maintenance, reasonable software modifications, help desk functions, training for new users, billing and any planning and activities necessary to transition those roles to another administrator in the future should either the State of North Carolina or the Contractor elect not to continue contracting for these services at the end of the contract period.

2. The State of North Carolina reserves the right to use NC-RETS and all data and documentation developed under this contract on an ongoing basis in the future, after the term of this contract expires. The State reserves this right even if it selects a different program administrator in a subsequent contract or chooses to act as its own program administrator.

3. The State of North Carolina, via either the Commission or the Public Staff, reserves the right to audit NC-RETS.

XIII. Testing and Acceptance Phases

The Applicant will describe a three-part acceptance phase, including software debugging and roll-out to users, training, help desk availability and documentation. In the first phase, NC-RETS will be populated with test data and made available to approximately 10 users who will ascertain whether the system appears to meet the RFA requirements. Once the Commission is satisfied that it does, the NC-RETS Administrator will migrate historic data (2008 and 2009) into NC-RETS. Generators and utilities that provided that data, as well as the Commission and the Public Staff, will audit the data, via the system. When the Commission is satisfied that the migrated data is accurately reflected in NC-RETS, NC-RETS functions as specified, and NC-RETS generates accurate reports, the Contractor will make NC-RETS available to all users. When two consecutive months of successful data transfers and REC issuances have occurred, the Commission will formally accept NC-RETS as having met the RFA requirements. At that time, the Contractor may begin billing Account Holders for development costs and on-going operating and maintenance costs. The Applicant's proposal shall detail its plan for assuring NC-RETS is available for data migration within three months of the confirming Memorandum of Agreement.

XIV. Cost Proposals

1. Applicants are to submit all cost proposals separately from the rest of their applications. Complete cost proposals, including development costs, operating and maintenance costs, and proposed user fee options, are to be forwarded to Allison Tart, Purchase and Contracts Officer, NC Dept. of Commerce, 4302 Mail Service Center, Raleigh, NC 27699-4302. Only cost proposals for those applications otherwise found to

meet the Commission's criteria will be opened and considered. Applicants that fail to submit their cost proposals separately from the rest of their applications shall be disqualified from further consideration.

2. The Applicant will propose a method of recovering development costs from Account Holders via monthly charges by the end of 2012. Billings will not commence until after the Commission communicates to the Contractor that the system meets the RFA requirements following two consecutive months of successful data transfers and certificate issuances.

3. The Contractor shall annually provide the Commission with a report of the actual costs incurred to operate and maintain NC-RETS, inclusive of all requirements in this RFA. The Contractor shall include information relative to the status of billing system users for these costs.

4. The Applicant will propose a menu of approaches to user fees designed to recover NC-RETS operating and maintenance costs. The menu will include, at a minimum, the following options for consideration by the Commission:

- a. That the issuance of each REC be priced the same.
- b. That the issuance of each REC be via a price schedule based on the size of the generator, with smaller generators paying less (possibly nothing for very small generators) per REC and larger generators paying more.
- c. A price schedule for establishing accounts for new generators, with those prices being the same for all generators, regardless of size.
- d. A price schedule for establishing accounts for new generators, with those prices being lower for smaller generators (possibly nothing for very small generators) and higher for larger generators.
- e. A price schedule for importing or exporting RECs.

5. The Applicant will develop a first and second year annual budget that will allow it to propose actual price schedules.

XV. Definitions

The following definitions are used throughout the RFA.

Account Holder(s) – user(s) of NC-RETS that own RECs generated and tracked in NC-RETS.

Combined heat and power (CHP) system – a system that uses waste heat to produce electricity or useful, measurable thermal or mechanical energy at a retail electric customer's facility.

Contractor – the applicant selected by the Commission to develop and operate the NC-RETS as agreed to via a Memorandum of Agreement.

Demand-side management – includes, but is not limited to, load management, electric system equipment and operating controls, direct load control and interruptible load.

Electric power supplier – a public utility, an electric membership corporation, or a municipality that sells electric power to retail electric power customers in the State.

Energy efficiency measure – an equipment, physical, or program change implemented after January 1, 2007 that results in less energy used to perform the same function. Energy efficiency measure includes, but is not limited to, energy produced from a combined heat and power system that uses nonrenewable energy resources. Energy efficiency measure does not include demand-side management.

NC-RETS – the North Carolina REC tracking system established pursuant to these requirements in order to track RECs and compliance with the REPS requirement in North Carolina.

NC-RETS Administrator or Administrator – the Contractor responsible for managing NC-RETS pursuant to a Memorandum of Agreement with the Commission.

New renewable energy facility – a renewable energy facility that either: a) was placed into service on or after January 1, 2007, b) delivers or has delivered electric power to an electric power supplier pursuant to a contract with NC GreenPower that was entered into prior to January 1, 2007, or c) is a hydroelectric power facility with a generation capacity of 10 megawatts or less that delivers electric power to an electric power supplier.

Qualified Independent Party – an entity qualified to provide independent verification of generation or thermal output data from a Self-Reporting Generator. The NC-RETS Administrator may accept data from the interconnecting utility or scheduling coordinator (as long as it is not also the generator owner), an independent third-party meter reader or the purchaser of the generator's RECs. The owner or operator of the generating facility, solar thermal facility, or CHP system may not act as the Qualified Independent Party.

Renewable energy certificate – a tradable instrument that is equal to one megawatt hour of electricity or equivalent energy supplied by a renewable energy facility, new renewable energy facility, or reduced by implementation of an energy efficiency measure that is used to track and verify compliance with the REPS requirement. A REC does not include the related emission reductions, including but not limited to, reductions of sulfur dioxide, oxides of nitrogen, mercury, or carbon dioxide.

Renewable energy facility – a facility, other than a hydroelectric power facility with a generation capacity of more than 10 megawatts, that either: a) generates electric power by the use of a renewable energy resource, b) generates useful, measurable combined heat and power derived from a renewable energy resource, or c) is a solar thermal

energy facility. RECs from CHP systems and solar thermal facilities shall be earned based on one MWh for every 3,412,000 British thermal units (Btus) of useful heat/thermal energy produced.

Renewable energy resource – a solar electric, solar thermal, wind, hydropower, geothermal, or ocean current or wave energy resource; a biomass resource, including agricultural waste, animal waste, wood waste, spent pulping liquors, combustible residues, combustible liquids, combustible gases, energy crops, or landfill methane; waste heat derived from a renewable energy resource and used to produce electricity or useful, measurable thermal energy at a retail electric customer's facility; or hydrogen derived from a renewable energy resource. Renewable energy resource does not include peat, a fossil fuel, or nuclear energy resource.

Self-reporting generator – an electric generating facility of 150 kW or less, CHP system, or solar thermal facility that chooses to self-report its production data, which is verified once a year via a Qualified Independent Party.

Solar energy resources – a combination of new (placed into service on or after January 1, 2007) solar electric facilities and new metered solar thermal energy facilities that use one or more of the following applications: solar hot water, solar absorption cooling, solar dehumidification, solar thermally driven refrigeration and solar industrial process heat.