**BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the matter of the Application of APX,) Inc. for approval of the North American) Renewables Registry™ as a qualified) renewable energy credit tracking system.)	Case No. 09-909-EL-UNC

APPLICATION OF APX, INC. FOR APPROVAL OF THE
NORTH AMERICAN RENEWABLES REGISTRY™ AS A QUALIFIED
RENEWABLE ENERGY CREDIT TRACKING SYSTEM

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APX, INC.

SUMMARY OF REQUEST

1. APX, Inc. ("APX") respectfully submits this Application for Commission approval of APX's North American Renewables Registry™ ("NAR" or "the Registry") as a qualified tracking system for renewable energy credits that electric utilities and electric service companies may use to comply with Ohio's Alternative Energy Portfolio Standard, codified at §§ 4928.64 - .65, Ohio Revised Code (the "Ohio AEPS"). Although the Commission's proposed rule for qualifying REC tracking systems is not yet in effect, APX has prepared its Application in a manner that conforms to the proposed rule.[1]

BACKGROUND ON APX

2. APX is the leading infrastructure provider for U.S. environmental and energy markets in renewable energy and greenhouse gases, including renewable energy certificates ("RECs"), energy efficiency and conservation certificates and carbon offset certificates such as voluntary emissions reductions With a singular focus on providing trust, transparency, and integrity for environmental markets, the company is the solution of choice for every major renewable energy market in North America and greenhouse gas markets worldwide. In 2009, more than 1,300 corporations across the United States and internationally will rely on APX for integrity in environmental markets.

3. In particular, APX is the nation's leader in designing all (and administers several) of the regional REC tracking systems in the United States. Specifically, APX has designed the following registries:

    3.1.   Midwest ("M-RETS"): M-RETS tracks renewable generation resources located within the state and provincial boundaries of Illinois, Iowa, Manitoba, Minnesota, Montana, North Dakota, South Dakota and Wisconsin.

    3.2.   Michigan Renewable Energy Certification System ("MIRECS"): Currently under development, MIRECS will issue and track renewable energy credits, energy optimization

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[1] See Rule 4901:1-40-04(D)(2)(c) , Ohio Administrative Code, which has been proposed in *In the Matter of the Adoption of Rules for Alternative and Renewable Energy Technology, Resources, and Climate Regulations, and Review of Chapters 4901:5-1, 4901:5-3, 4901:5-5 and 4901:5-7 of the Ohio Administrative Code, pursuant to Amended Senate Bill No. 221*, Case No. 08-888-EL-ORD, Opinion and Order (April 15, 2009); Entry on Rehearing (June 17, 2009); and Entry Nunc Pro Tunc (June 24, 2009).

credits, Michigan incentive renewable energy credits and advanced clean energy credits under Michigan's Clean, Renewable and Efficient Energy Act.

3.3. New England ("NEPOOL GIS"): The NEPOOL GIS issues and tracks certificates for each megawatt-hour ("MWh") of renewable electric energy produced in the ISO New England control area, including imports from neighboring control areas, and all loads served by those renewable generation resources.

3.4. Mid-Atlantic ("PJM GATS"): PJM, which spans all or parts of 13 states[2] and the District of Columbia, uses a centralized registry and accounting system called the Generation Attribute Tracking System ("PJM-GATS") that enables renewable electricity markets and collects information on generation attributes including environmental controls, emissions and types of fuel.

3.5. Western States ("WREGIS"): WREGIS is the accounting and tracking system designed to issue, register and track RECs to verify compliance with regulatory requirements and participation in voluntary market programs throughout the western United States.

3.6. Texas ("ERCOT REC"): The ERCOT REC system enables electricity retailers from any area in Texas to seek out the lowest cost renewable resources without having to take physical delivery of the associated electricity.

THE NORTH AMERICAN RENEWABLES REGISTRY™

4. The North American Renewables Registry™ provides REC origination for states and facilities across the United States, enabling generators, utilities and market participants in States, Provinces and regions to originate, track, transfer and retire RECs. APX developed NAR using the same APX market infrastructure that provides REC tracking in all U.S. REC markets, two of which, M-RETS and PJM-GATS, are also administered by APX.

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[2] Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia and West Virginia.

5. The Registry creates a REC for every MWh of renewable energy produced by a generator and manages the complete life cycle of each REC from issuance to retirement. Additional functionality for the tracking of energy efficiency certificates is being added as well. The system's capabilities and benefits are comprehensive:

- Easy to use, cost-effective, Web-based system;

- Ensures highest levels of transparency, quality, security, accountability and protection against double counting;

- Delivers full documentation, public reports and detailed audit trails for oversight;

- Capacity to meet specific state requirements;

- Drives continued growth of clean energy generation and usage; and

- Offers proven, rapid client service and support.

6. The Registry was launched on June 1, 2009 and has issued more than a quarter million certificates since its launch. Several facilities from Indiana that potentially could be used for the Ohio AEPS are already users of the Registry.[3] The Registry relies on independent reporting of metering data from sources such as the Midwest ISO.

BENEFITS TO OHIO

7. The North American Renewables Registry™ will assist Ohio generators and consumers with their compliance with the Ohio AEPS, as well as the Commission with implementing and overseeing its regulatory mandates, in several ways:

7.1. Implementing and verifying compliance with the Ohio AEPS. The North American Renewables Registry™ will enable the Commission to verify compliance with the Ohio AEPS. The complete audit trail in the Registry helps provide critical oversight capabilities. Additionally,

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[3] This includes Twin Bridges III, Deercroft II, Liberty Plant, Oak Ridge and Prairie View II, all in Indiana. For more information, please the Public Reports section of the NAR web site at http://narenewables.apx.com.

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the system provides data for environmental disclosure labels and allows for verification of green

product claims. The Registry can issue RECs for alternative energy creation as far back as two

years, provided that all required generation and/or fuel data is provided to APX.

7.2.   Providing an additional proven, trusted and low-cost option for REC issuance and

tracking for electric utilities and electric service companies. The North American Renewables

Registry™ is powered by the most widely used, highest volume and technically advanced

environmental market infrastructure currently in use. Developed over the course of the last

decade, and with more than 2 billion environmental credits under management, APX market

infrastructure sets the standard for ensuring integrity in environmental markets. As an

independent and trusted provider of infrastructure solutions, APX is fully committed to the

highest market transparency and a level playing field for all market participants and stakeholders.

7.3.   Providing a flexible platform that can be adapted to maximize value for participants and

consumers. APX remains committed to provide its users with the ability to generate and capture

maximum environmental value for their clean generation. Resource categories that are specific to

Ohio's AEPS will be added upon NAR's designation as an eligible Ohio compliance registry.

And NAR will not remain static. Portfolio standards can and do change over time, and as they do

the, NAR system will be modified to keep pace.

7.4.   Developing specific compliance retirement reports for Ohio's use at the direction of the

Commission and enabling access by the Commission and its staff to the regulatory reporting

features built into NAR. The system will enable a specific log-in and access for the Ohio

regulators to verify REC retirements by entities complying with Ohio's AEPS, granting them

direct access to the data they need to oversee the market. In addition, NAR can be easily

modified to generate reports tailored to the specific needs of the Commission and its staff, as

described more fully below.

7.5.   Broadening the reach of the Ohio market. APX is currently setting up import –export

links between the North American Renewables Registry™, the Midwest Renewable Energy

Tracking System and the soon-to-be launched Michigan Renewable Energy Certification System,

(MIRECS) in order to broaden the market infrastructure in the region. This broader marketplace

will allow Ohio utilities to source from a larger set of facilities. And no other REC registry

currently provides for REC issuance based on settlement data from the Midwest ISO territory that

borders Ohio, including the majority of Kentucky and Indiana.

7.6.   Expand pool of possible generators. NAR allows for aggregation of small and residential

distributed generation facilities in a manner similar to that used in M-RETS. APX is working

with stakeholders in all areas that NAR serves to adopt new methodologies to facilitate easier

registration for small and aggregated facilities. These methodologies will be implemented in

NAR, MIRECS, potentially in M-RETS and NEPOOL GIS, and APX intends to work with the

Commission and its staff to bring them to Ohio.

<div align="center">COMPLIANCE REPORTS CAPABILITY</div>

8.   The North American Renewables Registry™ can readily meet all of the Commission's reporting

requirements. APX regularly produces similar reports for other regional REC registries in the United

States, and will be able to accommodate the Commission and its staff with any level of reporting

necessary. In addition, the system provides administrator access to regulators, allowing them to review

retirement and compliance data that has been tracked and recorded.

9.   The Registry generates reports that track and verify certificate generation and transfers, certificate

balances, public generation and account information and a variety of real-time program information

items. Certain reports can be made available via a public website, while others can be made available

through the account management portal. Public and private users can download select reports as input

into their own analyses. Through consultation with the Commission and its staff, APX can develop a

selection of reports that will help the Commission in its implementation of the Ohio AEPS. The various

report types can include account holder reports, regulator reports, public reports, System Administrator reports and system operator reports. The development of additional reports is simply dependent on defining the report criteria and data content.

10. APX's approach to working with regulators in developing timely and impactful reports has been validated through its extensive dealings with the systems it has designed and/or administered. The same commitment to transparency and service would be applied to the adaptation of NAR to the needs of the Commission and those of Ohio's generators and consumers.

ROBUST SECURITY AND DATA PROTECTION STANDARDS

11. The North American Renewables Registry™ is built on a secure, web-based platform, with continuous back-ups of data utilizing two data centers in separate locations to guard against any loss of data or access. Industry standards and practices for log-in security and password encryption are implemented in NAR. Technical details are included in Appendix A.

CUSTOMER SUPPORT

12. APX offers NAR account holders a proven set of user-friendly support services. From 8:00 A.M. through 7:00 P.M. Eastern Time, Monday through Friday, except for holidays, the NAR Administrators are available to field help calls and requests, including any program, policy and regulatory calls or questions. The NAR Administrator also assigns user IDs for new accounts, and sets initial and re-set passwords. The NAR Administrator is provided with additional APX resources for the escalation of second level and higher level support issues, including program-related problems, application-oriented problems and infrastructure-related problems.

The APX Help Desk will also be available to provide 24x7 support for handling first-level help calls and requests. The APX Help Desk has been providing 24x7 support for NEPOOL GIS, M-RETS, WREGIS and NAR since its inception nine years ago.

COSTS AND FEES

13. The use of North American Renewables Registry™ would be supported by user fees, with no charge to the Commission. Fees are based on the level of a user's activity in the system and not on a fixed-cost based on load served model, as in other registries. This allows electric utilities and electric service companies to participate in NAR at a lower cost than they would incur at registries that base fees on total retail load served by a load serving entity, such as M-RETS and PJM-GATS. The Fee Schedule for the North American Renewables Registry™ is included in Appendix B.

WHEREFORE, for the reasons set forth above, APX respectfully requests that the Commission approve this Application and designate the North American Renewables Registry™ as an acceptable registry for purposes of complying with the Ohio Alternative Energy Portfolio Standard.

Respectfully submitted,
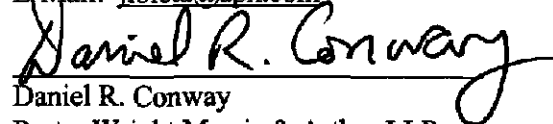
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APPENDIX A: APX REGISTRIES TECHNOLOGY INFRASTRUCTURE

Hardware Platform

Our hardware infrastructure is built on rack-mount production grade servers from first-tier name-brand hardware manufacturers. The Registries use the Microsoft Server Operating System (OS). Database services will be based on Microsoft SQL Server with the latest Service Pack and security patches. The servers have sufficient online high-speed storage to permit the retention of multiple years of transaction-level historical data online.

In addition, our platform uses the following technology:
- Geographically distributed application and database servers using RAID arrays and power sources (for redundancy and information integrity);
- Automatic remote replication (for disaster recovery);
- Automated differential backup;
- Systems are configured for common points of failure which include:
- Dual power supplies connected to separate PDU devices;
- Disk RAID configurations using hot-swappable devices;
- RAID 1, 1+0 (10) and 5 technology employed depending on the application and performance requirements.

System Architecture

The Registry infrastructure is built on two distinct platforms with a typical three-tier architecture model. The layered implementation model shown in Figure 4.1 describes the system architecture.
The presentation tier includes all HTML and JavaScript that executes the client-side in a browser. Other than the commercial web browsers running on their workstations, registry users are not required to install any software on their workstations. All communications use the TCP/IP protocol.

Figure 4.1 System Architecture
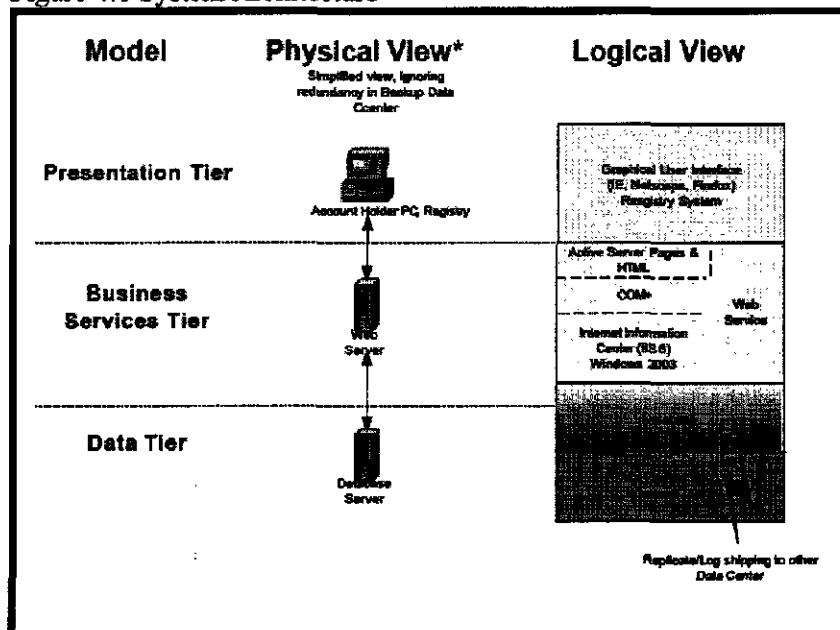
APX Data Centers

- Redundant facilities – San Jose, CA. and Dallas, TX.
- Facilities meet Uptime Institute (www.upsite.com) Tier III classification for Site Infrastructure Performance, with measured uptime of 99.999% over the last 3 years. Facilities summary:
- N+2 power and A/C capabilities.
- Dallas facility has UPS capacity to maintain full power while generators come up to full operational capacity.
- San Jose facility uses fly-wheel technology to maintain full power while generators come up to full operational capacity.
- Generators have a 3 day fuel supply at full capacity before re-fueling is required.
- Fire protection using Dry-Pipe, double pre-action and VESDA fire detection.
- Buildings are configured in a bunker style configuration. NOTE: Dallas facility is located in a multi-story building.
- Physical access to the facilities is controlled by guard and electronic/bio-metric methods, with camera monitoring. Cameras are positioned to view all facility floor space, monitored by on-site guards, and recorded for later playback.
- Access to the hardware is controlled by bio-metric authentication.
- For both Data Centers, IBM Global Services personnel are contracted to be available to assist APX staff on a 24x7 basis. This allows APX to a 24x7 local coverage for both Data Center locations, without the need for APX staff to be present in the Data Centers.

System Security

APX monitors the leading Security Mailing Lists for current information on vulnerabilities and exploits to determine their impact to our services. Updates are applied as required to maintain a secure environment and continuation of services. In addition, APX is in the process of complying with the FERC/NERC CIP security standards using the ISO 27001 and 27002 standards as the framework. APX has membership in the Department of Homeland Security (DHS), National Infrastructure Protection Center (NIPC) InfraGard program.

System Monitoring is accomplished using several methods which include:
- Agents on the hardware that watch for and report out-of-bounds conditions or failures.
- Capture of running system conditions to determine usage and performance trends.
- Monitoring of system response to determine uptime.
- Monitoring of critical services and notification of failures.
- Monitoring of critical network resources and reporting of out-of-band events and failures

Network Security
APX data centers are protected using industry-standard equipment and access methods, including:
- Routers front the Internet. Each router will be setup to allow acceptable network traffic to pass through using the appropriate filters for known attack methods.
- Firewalls sit behind the routers and will be setup in the "deny all" method, allowing only the traffic appropriate for the applications being serviced inbound to the data center.
- Duel Tier-1 ISP carriers with each carrier taking a different path out of the facility.
- ISP connections are connected to separate Core switches provided by our service provider.
- Each Core switch is connected to separate APX routers using dual/meshed switches.
- APX routers are connected to redundant firewall devices using dual/meshed switches.
- APX routers and firewalls are configured to sense failures on all interfaces and execute automated fail-over for continued passage of network traffic.
- Connection to service provider is 10 Mbps, expandable to 100 Mbps.

- All APX router, firewall, and switch hardware have redundancy in hardware, power supply, and PDU feed.

Servers Security
Server systems are placed behind firewall and IPS devices. Direct access to the servers will only be allowed for approved APX personnel responsible for the Registry program. APX personnel access to the servers is only allowed from the APX Corporate network. There will be no direct access to the servers from the Internet, except for the Registry application User Interface.
Servers will have anti-virus and file system monitoring utilities that will report events to a central console monitored by the 24-hour Operations group and IT Security Staff.
An appropriate backup of each server's operating system will be accomplished to allow for the quick restoration of a server in the unlikely condition that the system becomes corrupt.

Application Security
Access to the application levels will be programmed into the application based on the authenticated user. Login name and password will be used to authenticate each user. Each user is assigned a role upon login to the portal. Each role is assigned access to a set of modules. Each module provides for a set of functions that enables the user to accomplish a task or set of tasks.

End-users Security
Access to the Registry Portals will be 128-bit SSL communications. Once connected to the Portal, individual users will be prompted for their unique username and password. Once the username and password are authenticated, the user will be presented with the initial application interface.

Disaster Recovery and Business Continuity
The combination of our dual data centers, hardware configuration, data replication and backup gives APX significant Disaster Recovery and Business Continuity capabilities. Our capabilities are:
- *Fully redundant data center locations in geographically separated regions of the United States (San Jose, CA and Dallas, TX).*
- Fully redundant network infrastructures in each data center location and Operations facility.
- Fully redundant server and database hardware in each data center location.
- Data replication between the data centers is used to maintain synchronization between primary and secondary database systems.
- Electronic vaulting to off-site facility used for near-real time backup of critical data Off-site Operations facility in the event that the primary APX Operations facility can not be used. This would include workstations, network access, and automated phone re-routing. The off-site facility is located less than 30 minutes from the primary APX offices in San Jose.

APPENDIX B: NORTH AMERICAN RENEWABLES REGISTRY –SERVICE FEES

FEE SCHEDULE:

Type	Size	Registration ($)	Subscription ($)
Asset Registration: Micro Generator	<40 kW	0	50
Asset Registration: Small Generator	40 kWs to <1MW	250	500
Asset Registration: Medium Generator	1 MW to <10MW	500	1000
Asset Registration: Large Generator	>10MW	1000	2000
Account Registration: Generator Account	n/a	250	0
Account Registration: General Account	n/a	750	2000
Account Registration: Retail Purchaser Account	n/a	0	1000
Account Registration: Qualified Reporting Entity	n/a	0	0

Volumetric Fees:
Issuance Fee: $0.05 per REC issued
Transfer Fee: $0.01 per REC transferred
Retirement Fee: $0.10 per REC retired

FEE TYPES:

Registration Fee. Subscriber shall pay a one-time Registration Fee at the time that it registers a Generating Unit and/or opens an Account in the Registry, which Registration Fee will be based upon the size of Generating Unit and/or the type of Account(s) opened by Subscriber. If Subscriber is registering more than one Generating Unit, Subscriber will pay a separate Registration Fee for each Generating Unit registered.

Subscription Fee. Subscriber shall pay an annual Subscription Fee, payable at the time that it registers in the Registry and in January of each subsequent calendar year, which Subscription Fee will be based upon the size of any Generating Unit registered and the type of Account maintained by Subscriber. If Subscriber registers more than one Generating Unit, Subscriber will pay a separate Subscription Fee for each Generating Unit registered. Subscription Fees for 2009 will be prorated based on the date on which Subscriber first opens its Account (but no less than a quarter of the annual fee). Subscription Fees for each subsequent year will not be pro-rated, and the entire annual Subscription Fee will be due, regardless of when Subscriber first registers in the Registry.

Volumetric Fees. Subscriber shall pay a monthly Volumetric Fee, which will be determined as follows:
(1) Issuance Fee: Account Holder shall pay an Issuance Fee for each REC issued in the Registry for a project registered by Account Holder.
(2) Transfer Fee: Account Holder shall pay a Transfer Fee for each REC transferred to one of Account Holder's accounts.
(3) Retirement Fee: Account Holder shall pay a Retirement Fee for each REC retired in Account Holder's account in the Registry.