


Clark Energy Cooperative  
2640 Iron Works Road  
Winchester, Ky. 40391  
800.992.3269  
859.901.9236 Todd Peyton Direct



# CLARK ENERGY

A Touchstone Energy Cooperative 

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JUN 27 2016

PUBLIC SERVICE  
COMMISSION

June 24, 2016

Mr. Aaron Greenwell  
Acting Executive Director  
Kentucky Public Service Commission  
211 Sower Boulevard  
P.O. Box 615  
Frankfort, KY 40602-0615

Case No. 2016-00220

Mr. Greenwell,

Enclosed are an original and ten (10) copies of Clark Energy Cooperative Corporation's application for a Certificate of Public Convenience and Necessity to install an Advanced Metering Infrastructure System (AMI). Also enclosed is a motion for confidential treatment of certain information contained in the application. Accordingly, 10 copies of the application with the confidential information redacted are included, and one copy in a separate envelope marked "confidential" with the confidential information highlighted in yellow is also included.

Please contact Todd Peyton, [tpeyton@clarkenergy.com](mailto:tpeyton@clarkenergy.com) 859-901-9236, Manager of Engineering Services, at Clark Energy should you have any questions or need additional information.

Respectfully,

Robert C Brewer  
President & CEO

Attachments

*Our power is our People*

RECEIVED

JUN 27 2016

PUBLIC SERVICE  
COMMISSION

COMMONWEALTH OF KENTUCKY  
BEFORE THE  
KENTUCKY PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

THE APPLICATION OF CLARK ENERGY COOPERATIVE, INC. OF )  
WINCHESTER, KENTUCKY, FOR COMMISSION APPROVAL FOR A )  
CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY TO )  
INSTALL AN ADVANCED METERING INFRASTRUCTURE (AMI) )  
SYSTEM PURSUANT TO KRS 807 KAR 5:001 AND KRS 278.020)

CASE NO. 2016- 00220

APPLICATION

Clark Energy Cooperative, Inc. of Winchester, Kentucky, hereinafter referred to as "Clark", respectfully states:

1. The full name and address of Applicant is:

Clark Energy Cooperative, Inc.  
2640 Iron Works Road  
Winchester, KY 40391  
Email contact for this application: [tpeyton@clarkenergy.com](mailto:tpeyton@clarkenergy.com)

2. Clark is a corporation, duly organized, created and existing by and under the laws of the State of Kentucky, and is engaged in the business of supplying retail electric service in Bath, Bourbon, Clark, Estill, Fayette, Madison, Menifee, Montgomery, Morgan, Powell, and Rowan Counties in Kentucky.

A certified copy of the Articles of Incorporation has been previously filed in Case No. 92-219 with the Kentucky Public Service Commission hereinafter referred to as the "Commission". An Amendment to the Articles of Incorporation pertaining to a name change from Clark Rural Electric Cooperative Corporation to Clark Energy Cooperative, Inc. was filed by letter dated July 17, 1997.

3. Clark is applying for the issuance of a Certificate of Public Convenience and Necessity (CPCN) to install an Advanced Metering Infrastructure (AMI) system over a 48-month period.

4. Estimated cost of the project is shown below.

- a. Meters
- b. Meters with Remote Service Switch
- c. RF Collectors
- d. RF Routers
- e. Computer Infrastructure
- f. RF Engineering\Test Equipment
- g. Software\Support Services

Total



5. The anticipated annual cost of operations, excluding the cost of power, for the AMI system is



6. Clark is a non-profit cooperative corporation, and no kind of stock is desired or would be issued. Clark has filed an application with and received approval from Rural Utility Service (RUS) securing all necessary financing of AMI implementation. The proposed AMI project would be financed initially with internally generated funds, and a short-term line of credit will be used until such time as RUS loan funds are needed.
7. Attached as part of this application are the following:
  - Exhibit 1 – Certificate of Existence
  - Exhibit 2 – Assessment, Research and Vendor Selection
  - Exhibit 3 – AMI Technology and Infrastructure
  - Exhibit 4 – Summary of Benefits to Clark Energy and Consumers
8. **WHEREFORE**, applicant Clark Energy Cooperative, Inc., respectfully requests that the Public Service Commission of Kentucky grant a certificate of convenience and necessity authorizing Clark Energy Cooperative, Inc. to install an advanced metering infrastructure (AMI) system.

**DATED:** This 24<sup>th</sup> day of June, 2016.

COMMONWEALTH OF KENTUCKY

COUNTY OF CLARK,

Chris Brewer, after first being duly sworn, deposes and says: That he is the President and Chief Executive Officer of Clark Energy Cooperative, Inc., a rural electric cooperative corporation, duly organized and doing business under the Rural Electric Cooperative Corporation Act of the Commonwealth of Kentucky: That he has read the foregoing Application and knows the contents thereof: That the same is true of his own knowledge except as to such matters as are therein stated on information or belief, and as to those matters he believes it to be true.

This 24 day of June, 2016 CLARK ENERGY COOPERATIVE, INC.

  
Robert C Brewer, President and CEO

Subscribed and sworn to before me by Robert C Brewer, this 24 of June, 2016

  
Notary Public, Kentucky State-at-Large

My Commission Expires 9/7/2016

My Commission Expires: \_\_\_\_\_  
Notary ID 471829

GRANT, ROSE & PUMPHREY  
51 South Main Street  
Winchester, KY 40391  
Phone: 859-744-6828  
Fax: 859-744-6855  
John S Pumphrey email: [jspumphrey@bellsouth.net](mailto:jspumphrey@bellsouth.net)  
Attorney for Clark Energy Cooperative, Inc.

By:   
JOHN S PUMPHREY



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JUN 27 2016

PUBLIC SERVICE  
COMMISSION

COMMONWEALTH OF KENTUCKY  
BEFORE THE  
KENTUCKY PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

THE APPLICATION OF CLARK ENERGY COOPERATIVE, INC. OF )  
WINCHESTER, KENTUCKY, FOR COMMISSION APPROVAL FOR A ) CASE NO. 2016- 00220  
CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY TO )  
INSTALL AN ADVANCED METERING INFRASTRUCTURE SYSTEM )  
(AMI) PURSUANT TO KRS 807 KAR 5:001 AND KRS 278.020)

**CLARK ENERGY'S MOTION FOR CONFIDENTIAL TREATMENT  
OF CERTAIN INFORMATION CONTAINED IN THE INCLUDED APPLICATION  
FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY**

Clark Energy Cooperative, Inc. of Winchester, Kentucky, hereinafter referred to as "Clark", respectfully requests pursuant to 807 KAR 5:001, Section 13 and KRS 61.878 the Public Service Commission of Kentucky grant confidential treatment to certain information that Clark is simultaneously filing as part of its application for a Certificate of Convenience and Necessity. The information Clark seeks to protect is confidential and hereinafter referred to as the "Confidential Information".

1. Pursuant to 807 KAR 5:001, Section 13, a single copy in a separate envelope with the Confidential Information highlighted in yellow, is being filed with this motion along with ten (10) copies with the Confidential Information redacted.
2. The Confidential Information if openly disclosed could permit an unfair advantage to competitors of Clark and or the Vendor which in this case is Landis+Gyr.
3. The information which has been marked for confidential treatment involves competitively bid products and services which could be bid again in the future and therefor Confidential Information could be used by competitors to the detriment of Clark and Landis+Gyr. Clark and Landis+Gyr have agreed to keep pricing for products and services confidential.
4. The time period for which the material should be considered confidential is ten (10) years from the date of this motion. This should allow sufficient time for the prices to become outdated and no longer a detriment to Clark and or Landis+Gyr.

Based on the information above Clark believes the Confidential Information is entitled to confidential treatment. However, if the Commission disagrees with Clark that this information should be treated as confidential, then Clark requests the Commission to hold an informal conference regarding this issue.

CLARK ENERGY COOPERATIVE, INC.



Robert C Brewer, President and CEO

Subscribed and sworn to before me by Robert C Brewer, this 24 of June, 2016



Notary Public, Kentucky State-at-Large

My Commission Expires 9/7/2011

My Commission Expires: Notary ID 471829

GRANT, ROSE & PUMPHREY

51 South Main Street  
Winchester, KY 40391

Phone: 859-744-6828

Fax: 859-744-6855

John S Pumphrey email: [jspumphrey@bellsouth.net](mailto:jspumphrey@bellsouth.net)

Attorney for Clark Energy Cooperative

By:   
JOHN S PUMPHREY

**Commonwealth of Kentucky**  
**Alison Lundergan Grimes, Secretary of State**

Alison Lundergan Grimes  
Secretary of State  
P. O. Box 718  
Frankfort, KY 40602-0718  
(502) 564-3490  
<http://www.sos.ky.gov>

**Certificate of Existence**

Authentication number: 172212

Visit <https://app.sos.ky.gov/ftshow/certvalidate.aspx> to authenticate this certificate.

I, Alison Lundergan Grimes, Secretary of State of the Commonwealth of Kentucky, do hereby certify that according to the records in the Office of the Secretary of State,

**CLARK ENERGY COOPERATIVE, INC.**

is a corporation duly incorporated and existing under KRS Chapter 14A and KRS Chapter 279, whose date of incorporation is March 16, 1938 and whose period of duration is perpetual.

I further certify that all fees and penalties owed to the Secretary of State have been paid; that Articles of Dissolution have not been filed; and that the most recent annual report required by KRS 14A.6-010 has been delivered to the Secretary of State.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Official Seal at Frankfort, Kentucky, this 20<sup>th</sup> day of January, 2016, in the 224<sup>th</sup> year of the Commonwealth.



*Alison Lundergan Grimes*

Alison Lundergan Grimes  
Secretary of State  
Commonwealth of Kentucky  
172212/0009739

## Exhibit 2

### Assessment, Research and Vendor Selection

Clark Energy currently has in place a hybrid Power Line Carrier (PLC) AMR\AMI system from Landis&Gyr of TS1 and TS2 meters. The majority of these meters and portions of the infrastructure are more than a decade old. Replacement parts are no longer available for any portion of the TS1 system, and it is nearing end of product life cycle expectancy. Therefore Clark Energy began replacing TS1 meters with TS2 meters as part of our 2010-2014 CWP, PSC Case#2011-00303. This plan allowed TS1 and TS2 equipment to work within the same system while also allowing the gradual replacement of aging TS1 meters and infrastructure to utilize the full installed value of the TS1 system.

During the TS2 deployment program Landis&Gyr informed Clark Energy that due to limitations with PLC technology TS2 would not fully function as needed for Clark Energy. This limitation would not allow Clark Energy to offer energy conservation\direct load control (DLC) or prepaid metering programs to all consumers across Clark Energy's system. Clark Energy stopped the deployment of TS2 infrastructure and began looking for alternate methods of fulfilling the desired functionality and the ability to offer as many options to all consumers as possible. Clark Energy met with three vendors, GE, Sensus, and Landis&Gyr, and determined that product development for PLC technology had virtually stopped and the technology shift was to Radio Frequency (RF). Clark Energy then solicited proposals from all three vendors with several factors listed as priorities for performance of the proposed system, such as: future expandability, Pre-Pay Metering, NISC Software Compatibility, Energy Management\Direct Load Control, Voltage Monitoring, Outage Notification, Blink Notification, Net Metering, Multi-Speak Compliance, Remote Connect\Disconnect Capability, Fast\Reliable Two-Way Communication, Interval Data – 15,30,60 Minutes, Cyber Security, and Theft Detection Capabilities.

All three vendors submitted proposals to Clark Energy and were evaluated based on overall cost, cost of infrastructure, recurring cost, functionality, compatibility with existing Outage Management, Customer Information Systems and SCADA Systems. Landis&Gyr was selected as the vendor of choice for meeting all previously listed criteria, as well as being the lowest cost provider. Clark Energy had also previously installed approximately 70% of the TS2 infrastructure so the selection of Landis&Gyr also allows Clark Energy to fully utilize the previously installed TS1 and TS2 meters until end of product life. Clark Energy will target problematic PLC communication areas first in order to provide those consumers with energy management options and replacement of aging TS1 equipped electromechanical meters. Once the RF infrastructure is in place Clark Energy will be able to provide and utilize the functionality listed previously as well as continuing to use the currently installed TS1 and TS2 meters, while all new meters purchased will be RF.



## **Exhibit 3**

### **AMI Technology and Infrastructure**

A high level overview of the AMI system begins with Landis&Gyr performing a Radio Frequency (RF) propagation study to determine the number and location of collectors and routers for data collection. The Landis&Gyr AMI system is a true mesh network so individual meters can be used as relay points to propagate the signal in hard to reach areas as well as being a mesh network, giving it built-in functionality for “self-healing” in the event of equipment failure. This self-healing functionality basically reports to the system operator the failed piece of equipment and then immediately begins rerouting data traffic to other nearby relay points. The RF infrastructure is designed, commissioned and guaranteed to function as quoted by Landis&Gyr or the system will be modified at Landis&Gyr’s expense.

Data is transmitted from the meter to RF Routers or directly to RF Collectors, depending on RF signal strength at the meter, per the previously mentioned propagation study. This data is transmitted utilizing multiple channels in the 902-928 MHz bandwidth. Collected data is transmitted to Clark Energy’s Data Center via point to point Virtual Private Network (VPN) services through multilayer authentication Firewall systems.

Refer to the following pages for examples of:

Page 2 – Basic RF Network Design Flow Chart

Pages 3&4 – RF Meter Cut Sheet

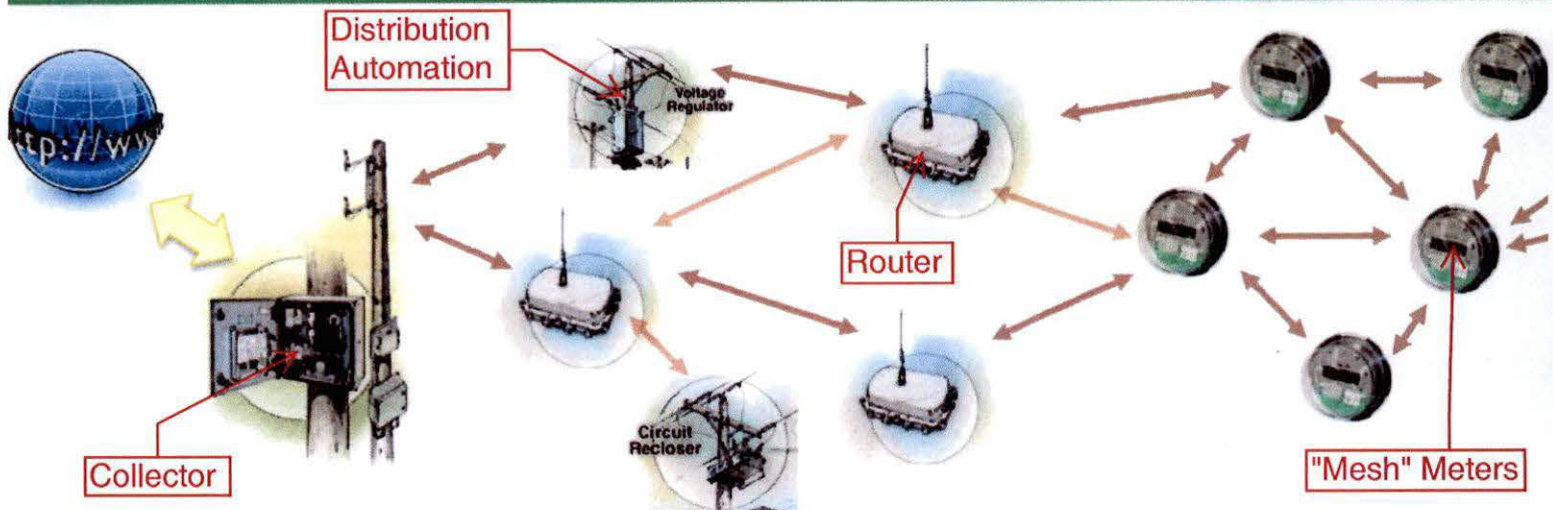
Pages 5&6 – RF Router Cut Sheet

Pages 7&8 – RF Collector Cut Sheet

This RF infrastructure will communicate with the existing Landis&Gyr AMR\AMI software system already in place for the existing TS1 and TS2 systems. This allows Clark Energy to continue to use existing meters currently installed and change the older TS1 meters over a planned 48 month time frame. All new meters purchased and installed for new service requests, consumers requesting pre-paid metering, replacement, etc. would be RF meters.

Basic RF Network Design Flow Chart

# Gridstream™ RF Network Layers



**WAN**

**Utility Core**

- Collectors/HES Backhaul
- Network Entry/Exit Point
- Constant Connectivity
- SSL128/Unique IP
- Secure Provisioning
- TCP/IP 10/100 Mbps

**DAN**

**Gridstream RF**

- Routers
- AMI/DA/DLC communication
- 1-5 Mile Range
- Decreases Latency/Hops
- Message Prioritization

**NAN**

**Gridstream RF**

- Multi-Purpose Mesh
- Self-Forming, Self-Healing
- Peer to Peer Mesh
- 902-928 FHSS
- 80 Channels!





**Residential:**  
**E330 FOCUS AX**  
**E350 AX-SD**  
**Single Phase**



*Scalability Delivered in Advanced Residential Metering*

**Overview**

The FOCUS® AX surpasses other meters in its class to deliver options you need for a highly functional and affordable metering solution. The combination of the FOCUS Service Disconnect base module and powerful AX register supports a variety of connect/disconnect and service-limiting applications. The result: A single solution to manage demand, time of use, load profile and reactive—with no costly upgrades.

Features such as reactive energy and power quality measurements deliver empowering data to run advanced applications such as voltage monitoring, VAR control and load curtailment.

The E350 FOCUS AX-SD incorporates a 200A, motor-driven, cam action disconnect/connect switch under the meter cover. This advanced, market-leading switch, coupled with the field-proven reliability of the E350 AX-SD, delivers Landis+Gyr's third-generation design answer to today's evolving utility requirements.

**FEATURES & BENEFITS:**

*Why Landis+Gyr makes a difference.*

- Most advanced cam-driven switch design to withstand 10K cycles at full rated current
- Switch continues operation even under low voltage conditions
- Prepay ready
- Power quality data (sag/swell)
- Magnetic/DC presence detection (based on leading current)
- 8 channels of load profile
- Surpasses ANSI requirements for surge protection (10KV) and meter accuracy
- Full 200 amp disconnect rating
- Advanced over-the-air-flashable firmware upgrades avoids loss of billing or configuration data

## Product Specifications: E330 FOCUS AX and E350 AX-SD Single Phase

### Specifications

General Specifications	Active Energy "kWh-kW" meter and Reactive Energy "kVA or kVAR"	
	Digital Multiplication Measurement Technique	
	Non-Volatile Memory	
	Designed for 20+ years life	
	Meets ANSI standards for performance	
	Utilizes ANSI protocol (between meter and AMI device)	
	9-Digit LCD	
	Display scroll sequence programmable (factory or end user)	
	Configuration Port – cover does not have to be removed or optional ANSI C12.18 optical port available	
Operating Temperature	-40C to +85C under cover	
Nominal Voltage	120V or 240V	
Operating Voltage	80% to 115% of Vn	
Frequency	60Hz +/- 5%	
Humidity	5% to 95% relative humidity, non condensing	
Starting Load (Watts)	Class 20	0.005 Amp (0.6W)
	Class 100	0.030 Amp (3.6W)
	Class 200	0.050 Amp (12W)
	Class 320	0.080 Amp (19.2W)
	Class 480	0.120 Amp (28.8W)
Voltage Burden	< 1.9W Max	
Load Performance Accuracy	Accuracy Class 0.2% (reactive energy 0.5%)	
Available Forms	Self-Contained	1S, 2S, 2SE, 12S, 25S
	Transformer Rated	3S, 4S
	K-Base	2K
Display Options	Energy Metrics: +kWh, -kWh, Net kWh, and added kWh (Security), kVAh or kVARh	
	Metric Energy Display Format – 4x1, 4x10, 5x1, 5x10, 6x1 or 6x10	
	Time of Use and Demand Billing	
AMI Platform	Modular or Integrated	
Selectable Meter Multiplier	Up to 4096 as result of PT ratio • CT ratio	
Applicable Standards	ANSI C12.1 for electric meters	
	ANSI C12.10 for physical aspects of watt hour meters	
	ANSI C12.18 Protocol specifications for ANSI Type 2 Optical Port	
	ANSI C12.19 Utility Industry End Device Data Tables	
	ANSI C12.20 for electricity meters, 0.2 and 0.5 accuracy classes	
	CAN3-C17-M84 Canadian specifications for approval of type of electricity meters	
Service Disconnect	10,000 operations at full rated current (disconnect/connect)	
	Available forms: 1S, 2S, 12S, 25S	
International Certifications	Measurement Canada (MC) AE-1641, AE-2041 (integrated)	

Phone: 678.258.1500

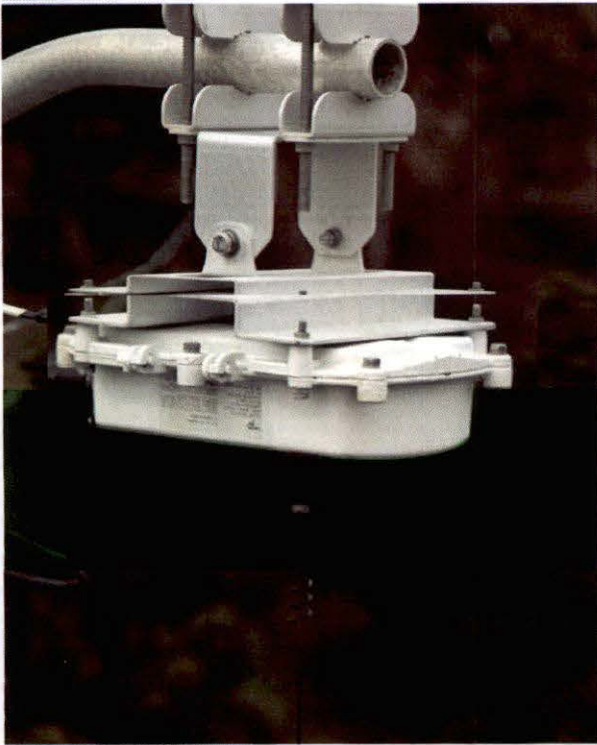
FAX: 678.258.1550

landisgyr.com

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**Landis  
Gyr+**  
manage energy better





## Gridstream RF Router



*Advanced, Yet Cost-effective, Communication Solution*

### Overview

The Landis+Gyr RF Router helps form the powerful Gridstream® RF wireless mesh network used in Advanced Metering, Distribution Automation and Demand Response applications. Network performance and reliability are assured via the routers basic mesh functions including full two-way, peer-to-peer communication to all devices in the network, asynchronous spread spectrum frequency hopping and dynamic message routing.

The RF Router is designed to deliver enhanced on-board memory and communication speeds to support future application and development needs. In addition, advanced functionality enables individual message prioritization, automatic network registration and localized intelligence. The router can also provide distributed device control capabilities via programmable applets. To provide critical network operations—even during small or widespread system power outages—a typical purchase includes battery backup integrated within the aluminum housing.

### FEATURES & BENEFITS:

*Why Landis+Gyr makes a difference.*

- Interoperability to enable integration with numerous partners and supported devices
- Standards-based, including IPv6, to protect existing and future investments
- Individual message prioritization provides end device interfacing with other smart grid applications and functions
- Dynamic routing by each radio in the mesh network
- Data security and error-checking algorithms to assure integrity and reliability
- Downloadable code for easy, over-the-air firmware updates for near real-time monitoring and control

## Product Specifications: **Gridstream RF Router**

### Specifications

Size	11.82"W x 9.30"D x 4.07"H
Weight	Base – 5 lbs 8 oz (2.49 kg)
	Battery adds 2 lbs 8 oz (1.13 kg)
Operating Temperature	-40°C to +85°C (internal ambient of enclosure)
Power Supply	Operating AC Voltage – 96-317 VAC
	Input for Receive mode / 120VAC Operation – 15 mA (max)
	Input for Transmit mode / 120VAC Operation – 95 mA (peak), 25 mA (Avg)
	Input for Battery charging mode / 120VAC Operation – 30 mA (max)
RF Output Power	21, 25, 30 dBm (user selectable)
General Radio Items	Frequency Range – 902-928 MHz
	Channel Spacing – 100 kHz, 300 kHz, or 500 kHz (dependent on mode)
	Channels – 56, 80, 240 (dependent on mode)
	RF Baud Rates – 9.6, 19.2, 38.4, 115.2, 300 kbps
Battery	Backup Time – 8 hours, typical
	Backup – 12V SLA 2500mAh, nominal
	Life – 5-7 years, typical
Processing	CPU – ARM9
	SRAM – 16 MB
	Flash – 8 MB ANSI C12.1 Compliance
Approvals	FCC Certified Part 15.247
ANSI C12.1 Compliance	Operating vibration; operating shock; electromagnetic radiation emissions, electromagnetic susceptibility, surge withstanding capability, electrostatic discharge
Enclosure Material Type	Aluminum/NEMA-4, sealed
Standard Shipment Includes	White, die-cast aluminum all-weather enclosure
	Operation on DC (12/24 VDC) or AC power, with automatic switching between 120 VAC or 277 VAC when connected to power source
	RS-232/485 lines for both LPPx and transparent port communication
	Standard N-Female antenna connector
	Integrated filter for attenuation of out-of-band interference
	Mounting hardware

Phone: **678.258.1500**

FAX: **678.258.1550**

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3.18.14

**Landis  
Gyr+**  
manage energy better





**Gridstream  
C6500 RF Collector**



**C6500 RF Collector**  
Ethernet only

**C6530 RF Collector**  
with CDMA/EVDO wireless modem

*Versatile and Cost-Effective Communication Solution*

**Overview**

Ease of installation and dependable design make the Gridstream® C6500 Collector a cost-effective, workable option for efficient communication between Gridstream RF endpoints, routers and the Command Center server, while performing all necessary functions of the standard data collector.

The C6500 can be installed in a variety of locations and is configured to accept public backhaul communication options. The C6500 can be ordered with an internal CDMA/EVDO wireless backhaul modem or without a modem in cases where an Ethernet connection is available.

**FEATURES & BENEFITS:**

*Why Landis+Gyr makes a difference.*

- Interoperability to enable integration with numerous partners and supported devices
- Standards-based, including IPv6, to protect existing and future investments
- Integrated wireless radio backhaul modem
- Data security and error-checking algorithms assure integrity and reliability
- Simpler and reduced installation time
- Dynamic routing by each radio in the mesh network
- Downloadable code for easy, over-the-air firmware upgrades and near real-time monitoring and control

## Product Specifications: **Gridstream C6500 RF Collector**

### Specifications

Dimensions (excludes antennas)	5.04"H x 11.82"W x 9.30"D
Antennas	Two (2), one blackhaul (top) and one (1) Gridstream (bottom)
Antenna Height Minimum	20 ft.
Weight	9.6 lbs.
Standard Compliance	FCC Part 15, Class B
Operating AC Voltage	96-277 Vrms
Power Consumption	9W typical – batteries not charging 18W typical – batteries charging
Operating Frequency Band	902-928 MHz, unlicensed
Transmit Output Power	1W maximum for single IWR radio
Baud Rate Range	9.6, 19.2, 38.4, 115.2, 300 kbps
Endpoint Capacity (initial)	4,500
Processing	CPU – ARM 9 Internal Memory – 16 MB Flash – 8 MB
Operating Temperature	-40°C to 60°C, outdoors
Storage Temperature	-40°C to 85°C
Color	White
Enclosure Material/Type	Aluminum/NEMA-4, sealed
Battery	Backup Time – 8 hours, typical Backup – LiFePO4 cells in a 4s4p arrangement, 13.2V, 10000mAh nominal Life – 15 years, maintenance free
Backhaul Communications	Integrated wireless CDMA/EVDO or wired Ethernet connection
Supplied Cellular Carriers	C6530: Verizon or Sprint
Mounting Options	Utility poles and streetlights

Phone: **678.258.1500**

FAX: **678.258.1550**

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8.7.14

**Landis+**  
**Gyr+**  
manage energy better



## Exhibit 4

### Summary of RF Benefits to Clark Energy and Consumers

- **Existing Investment** - Existing installed infrastructure will remain in use as RF infrastructure is installed. Existing meters and new RF meters will utilize the same software systems currently in place. This allows Clark Energy to get the most from existing investment. Replacement product and/or parts are no longer available for TS1 facilities; these must be replaced as or before the components fail.
- **Usage Information** – The availability of 15\30\60 minute data intervals and integration with Clark Energy’s Customer Information System (CIS) Meter Data Management System (MDMS) allow for more frequent usage information that will assist Customer Service Representatives in answering consumer questions about usage or conservation.
- **Automated Outage Reporting** – RF meters will report loss of power which will assist Clark Energy Crews in locating the cause of outages as well as verify that all consumers’ power has been restored after an outage has occurred.
- **Direct Load Control** – Due to current limitations with PLC, Clark Energy has only been able to offer direct load control programs (DLC) to some areas of Clark Energy’s service area. With RF, Clark Energy can offer direct load control to all consumers in all areas.
- **Rate Structures** – All RF meters are capable of supporting Real-Time Pricing, Time of Use, On Peak\Off Peak, and Time of Day Rates, as listed in PSC Case#2012-00428.
- **Historical Information for Consumers** – The availability of 15\30\60 minute data intervals and storing of this data allows consumers to access this data via web portal for nearly real time usage information as listed in PSC Case#2012-00428.
- **Pre-Pay Metering** – Clark Energy will be able to develop and offer a Pre-Pay metering tariff to all residential consumers.
- **Remote Connect\Disconnect** – With the use of meters with built in Remote Service Switches, Clark Energy will be able to quickly connect or disconnect power per consumer requests or for non-pay reasons without the consumer having to wait until personnel can get to the service location.
- **Distribution Automation** – The RF infrastructure cannot only communicate with meters but also has the capability to communicate with various distribution equipment such as regulators, reclosers, and fault indicators, providing the future ability to extend control and data retrieval outside the substation.
- **Voltage Data** – The ability to receive voltage readings from individual meters will allow Clark to build historical voltage data at both peak and off peak times to verify voltage levels calculated with engineering analysis software as well as provide system wide voltage levels instead of rotating voltage recorders on the end of individual feeders around the system as required by the PSC.